

GLENVAR ELEMENTARY SCHOOL

ARCHITECTURAL

Glenvar Elementary School was originally built in 1959. 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. At some point, the original steel windows have been replaced with aluminum insulated glass windows. The existing steel windows along the front of the building have been closed off with Exterior Insulation Finish System (EIFS) panels and some replaced with smaller insulated aluminum windows. The building is generally one-story, with a mechanical room / boiler room located between the Kitchen and Administration Offices. The main entrance was renovated in 2014 by the RCPS. The renovation was provided to allow for building accessibility and security controlled by the Administration Office. The building does have a courtyard which appears to be used as green space. The building is not equipped with an automatic sprinkler system. The total square footage for the facility is 52,325 SF.

Exterior Finishes

Exterior Cladding:

Exterior wall material is brick and Exterior Insulation Finish System. The EIFS panels are old window infill.

Other exterior materials include metal gravel stops, flashings, metal fascia panels and precast concrete window sills.

Roof:

The roof is a flat structure with black EPDM roofing membrane. In general, maintenance activities should be increased on the roof. Several roof drains have had strainer baskets removed. These should be replaced as quickly as possible to avoid accumulation of debris in leader piping. Drains were observed with debris blocking passage of water; trees are also growing up and over the roof plane. Tree pruning and debris should be removed from the roof. During the field investigation, the roof had large amount of water ponding. The existing roof is very flat with minimal amount of drains and slope to the drains. Several leaks are and have occurred within the corridors, cafeteria and kitchen areas. Sealants along roof edges should be regularly monitored and replaced as needed. Several joints have experience sealant degradation and cracking and should be resealed.

If renovations and additions are done, a totally new roof system should be installed. This should include additional insulation and proper slopes to the drains to obtain a more efficient building envelope.

Windows:

Most of the old steel windows have been replaced at some time with aluminum windows. Some of these windows have operable vents with screens, which allow natural ventilation. Glazing consists of tinted, insulated glass, and translucent, insulated panels.

These windows are generally in good condition. All remaining steel windows such as the Art classroom windows should be replaced to match the existing aluminum windows.

Exterior Doors:

Exterior doors are hollow door and frame, likely original to the building. Some of the existing hollow metal doors and frames have lites, side lites, and transoms. Glazing condition and door condition at all hollow metal doors should be monitored. Rusting doors and frames should be replaced as required. Glazing can be replaced to improve overall energy efficiency of the system. Door hardware is in good-poor condition, and has mostly been replaced since the building was built. Door and door hardware replacement is recommended during renovations especially since the existing hardware do not meet current handicap accessibility code.

Interior Finishes, Fixtures & Equipment

(See assessment tabulations for interior finish conditions).

Vinyl Composition Tile, Quarry Tile and Ceramic Tile are the predominant floor finishes at Glenvar Elementary School. Other floor finishes include carpet, painted and unpainted concrete, and parquet wood flooring in the gymnasium. Carpet is present in limited locations.

Interior wall finishes are generally painted block and glazed ceramic wall tile. Walls would be patched and painted during renovations.

Window treatments are typically curtains in some rooms. Most are in poor condition and should be replaced with new shades during renovations.

Ceilings are generally 2'x4' suspended acoustical tile (lay-in) with some gypsum wall board ceilings. Exposed painted ceiling structure and roof decking is present in the multi-purpose area. Water damage is present in some of the suspended acoustic tile ceilings. 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 should 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.

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 condition and many would be displaced during renovations because of the need to enlarge and reconfigure spaces.

Casework (cabinets) conditions vary across the facility. Painted casework, generally, needs to have new finish applied. Some fixed wooden casework may need to be refinished. Most casework is not accessible. 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. 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 Glenvar 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 Glenvar Elementary School has almost no visibility to the interior of the building. It does have good visibility of the front parking area no visibility to the side parking area, no visibility to the back where the playgrounds are located. A more transparent administration area should be considered as part of renovations and additions. Renovations and additions should enhance long sight lines as a passive security measure.

End of Glenvar Elementary School Architectural Narrative

PLUMBING/FIRE PROTECTION

Plumbing Fixtures:

Water Closets: Most water closets observed were floor mounted vitreous china with manual type flush valves. There were two toilets with wall mounted vitreous china water closets with manual flush valves. There were a number of water closets that were ADA compliant. The condition of the water closets ranged from fair to good considering their age.

Urinals: Urinals observed were wall mounted vitreous china with manual type flush valves. There were several ADA compliant urinals observed. The condition of the urinals and flush valves ranged from fair to good considering their age.

Lavatories: Lavatories observed were wall mounted vitreous china or enamel cast iron with either manual or metered type faucets. There were just a couple of lavatories that appeared to be ADA compliant. Most lavatories observed did not have hot water supply and none had an ASSE 1970 mixing valves that are required by today's codes. The condition of lavatories ranged from fair to good considering their age.

Sinks: Classroom sinks observed were porcelain or stainless steel. It appears that as sinks have been replaced, the original porcelain sinks have been replaced by stainless steel models. Supply fittings varied, with most having gooseneck faucets and bubblers. Most sinks did have hot water supplied by an electric point of use water heater located within the cabinets. Most had an ASSE 1070 mixing valve as required by today's code. The condition of the sinks varied from fair to good in accordance to their age and type construction.

Showers: No showers were observed.

Laboratory Fixtures: No laboratory fixtures observed.

Emergency Fixtures: No emergency fixtures observed.

Electric Water Coolers: Water coolers observed were wall mounted ADA compliant models. The condition of the water coolers ranged from good to very good.

Water Heaters:

Water heating is done by a Jarco Model JNZ, 185 MBH gas-fired water heater and stored in a 325 gallon steel insulated hot water storage tank. Water heater and tank was built in 1984 and probably installed in 1987. This system has a recirculation loop powered by an in-line recirculation pump located near the water heater. A second electric water heater (State model ES630DOLS), 4.5 kW is located in a Janitor's closet outside one of the gang toilets. This water heater is assumed to be manufactured in 2009, there is no indication when it was installed. Could not determine what this electric

water heater served, it is assumed to serve the janitor's sink and the adjacent gang toilet.

Piping:

Water: Copper
Sanitary Piping: Cast iron / PVC
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. Some short pieces are missing throughout the building.

Water Entrance:

The building is served by a 3" cold water line that is assumed to be from a municipal system. There is no backflow preventer or pressure reducing valve observed within the building; pressure seemed to fluctuate between 60 and 90 psi according to usage.

Kitchen:

The kitchen is an older type with mostly direct waste connections; no sanitary floor sinks were observed. There is a small grease interceptor (assume 100 gallon) located outside the refrigerator/freezer fence enclosure. All kitchen equipment is electric with no gas fired equipment.

Sprinklers:

The building was not sprinkled.

Recommendations:

Water pressure inside the building seems excessive; suggest installing a RPZ backflow preventer and pressure reducing valve on incoming line. Add a sprinkler system to the entire building.

End of Glenvar Elementary School Plumbing/Fire Protection Narrative

MECHANICAL (HVAC)

Heating:

The building is heated by rooftop units that have either gas heat or electric heat. There are Trane rooftop units that are gas fired which were installed in 1987 and have passed their useful life expectancy of 18 years. There are carrier rooftop units that have electric heat and were manufactured in 1994. These units have also passed their expected useful life of 18 years. There is a boiler that provides hot water to the building's heating coils with one base mounted pump. The boiler was built in 1984 and is at the end of its useful life expectancy of 30 years. The gym is served by a DX type rooftop unit with a duct mounted hot water reheat coil. This unit was manufactured in 2012 and has a useful life expectancy of 20 years. There are also wall mounted and ceiling cabinet unit heaters that provide heat to bathrooms and corridors.

Ventilation:

Ventilation is provided to the building by rooftop air handling units, a roof intake hood, and rooftop penthouse ventilators. The kitchen and dishwasher hoods have dedicated exhaust fans on the roof. The hoods were installed in 1987.

Air Conditioning:

The building is primarily cooled by DX type rooftop units, the same units that heat the building. There are also unit ventilators that provide cooling to some of the classrooms. The unit ventilators were manufactured in 1994 and have a useful life expectancy of 20 years.

Piping: There is hot water piping, black steel, insulated.

Controls:

The original controls are pneumatic controls that were built in 1958. Additional digital type (DDC) controls by Johnson Controls have been added since then.

Recommendations:

The boiler, rooftop units, and unit ventilators have reached or passed their useful life expectancies and will need to be replaced.

End of Glenvar Elementary School Mechanical Narrative

ELECTRICAL

Main Switch Gear:

Main Switch Gear: The main switch gear is a 600 Amp, 3 phase, 4 wire, 208Y/120 volt GE, service entrance rated main distribution panel (MDP). The existing panelboard is original to the building from 1959 and has exceeded its expected useful lifespan. There is also a secondary 480Y/277 volt service entrance on the exterior of the gym with a disconnect feeding the updated gym AC unit.

Recommendation: In the event of a substantial renovation or addition, the service entrances to the building should be consolidated. Utilize the high voltage 480/277 service with a new main entrance panel and transformer to backfeed the existing building service. Replace the existing main distribution panel and expand as necessary.

Panelboards:

Distribution and Branch Circuit Panelboards: The majority of panelboards are original GE. Some I-T-E panels were added in 1987 for a kitchen renovation and Westinghouse panels were added in 1994 for a renovation. 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: Much 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. Exposed electrical wiring from various systems (data, telephone, power) can be seen in multiple areas throughout the building.

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. All exposed wiring should be enclosed in conduit or raceway to prevent electrical hazards.

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. Many classrooms and computer labs have a shortage of receptacles and so surge protectors are being utilized. This can lead to tripping, electrical, and fire hazards.

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. Additional receptacles should be added to classrooms and computer labs where needed, rather than through the use of surge protector strips.

Light Fixtures:

Light Fixtures: The light fixtures consist of primarily 1x4 surface or pendent fixtures with T8 lamps, 2x4 flat lens 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 toggle switches at the ends of the hallways.

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 older speakers located throughout the school. Each classroom has a PA speaker and an emergency push-to-talk 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, 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 Glenvar Elementary School Electrical Narrative

CIVIL

Traffic Circulation

Buses: There is a dedicated bus loop on the south side of the school adjacent to the main entrance. The outer portion of the loop is shared with faculty parking.

Morning: Buses enter the site from the main entrance and proceed to the bus loop to drop students off at the front door. There is adequate stacking room for several buses to line up along the sidewalk. Drop off works smoothly and quickly. Buses exit through the bus loop exit.

Afternoon: Buses enter the site and proceed to the designated parking spaces in the bus loop. Buses park and wait for all students to load before exiting the site. There are adequate spaces for all buses.

Cars: Cars enter the site using the same entrance as the buses and exit through the same main entrance road. There is a dedicated parent drop off / pick up area adjacent to the service area.

Morning: Cars line up along the entrance road and into the parent drop off area. Students are held in their cars until the buses are unloaded, then students are allowed to exit their cars. Cars will back up down the entrance drive waiting.

Afternoon: Car riders are dismissed after the buses are loaded and have exited the site. Cars will back up down the entrance drive.

Parking: 62 striped parking spaces are provided with 4 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 bus loop is used as overflow parking.

Service: The service area is located in the visitor parking / parent drop off / pick up area. Deliveries do not typically conflict with traffic with proper scheduling. There is adequate maneuvering area for delivery vehicles.

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

Separation: There is no separation from the entrance drive to the bus loop. Faculty parking is adjacent to and shares part of the bus loop. Service and the visitor parking / parent drop off / pick up area shares area as well. Staff reports no current issues with conflicting traffic patterns.

Adjacent Roadways: There is one main two lane entrance road for the elementary school, middle school, and high school. Due to staggered schedules, there are typically

no conflicts with elementary school traffic and the middle school / high school traffic. Sight distance at the elementary school exit is adequate.

Pedestrian: Generally there are not many pedestrians who access the school. There are no sidewalks adjacent to the school.

ADA Accessibility

Parking: Four spaces are designated as ADA parking. All are designated as van accessible.

Signage: Signage is good and meets current code. All parking spaces are van accessible.

Ramps: Curb ramps are in good condition and located correctly. There is a ramp at the northeast paved play area that should have a handrail.

Recommendation: Install a code compliant handrail.

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

Parking Areas, Driveways, and Sidewalks

Asphalt Pavement: Asphalt has some stress cracking, no alligator cracks were observed.

Recommendation: Fill and seal cracks.

Asphalt Walks: Walks have cracks with grass growing through.

Recommendation: Remove grass from cracks, fill and seal cracks. Trim grass back from edges.

Concrete Pavement: Concrete pad for dumpster is aged, but still in fair condition.

Concrete Walks: Concrete walks are aged, but in fair condition with some cracks and grass growing through some areas.

Stairs, Ramps, and Railings: Stairs are aged, but still in fair condition with some cracks and deterioration of the concrete. Concrete ramp to the paved play area at the northeast corner of the building does not have a handrail. Railings are showing signs of rust and paint peeling and chipping.

Recommendation: Provide handrail at concrete ramp to play area. Sand, prime, and paint railings.

Concrete Curb and Gutter: Curbs are aged, but in fair condition with some cracks and deterioration.

Guardrail, Parking Bumpers, and Miscellaneous: Guardrails are rusting.

Recommendation: Monitor guardrail and replace when rust causes structural issues.

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

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

Utilities

Fire Lines and Hydrants: Poor fire hydrant coverage with no spacing as only one fire hydrant located on school site. No paved fire lane around building, but fire truck access present. Adjacent properties (Glenvar Middle School and Glenvar High School) offer accessible hydrants. No fire department connection, post indicator valve or fire department valve.

Recommendation: Consider planning for adding a hydrant for fire protection coverage. A fire department connection and fire department valve should be provided as well; however, this would be contingent on upgrading to county public water service.

Domestic Water System: The water system is aged and has outlived its useful life. Staff indicated when the building has not been used for a few days, the water runs cloudy, indicative of an increase in foreign particles. With aging pipe, leaks and pipe breaks can become more frequent and water quality can be degraded by older pipe. Additionally, the Elementary school remains serviced by well water pump house at Glenvar Middle School, over 50 years old, which could be the cause of cloudy water.

Recommendation: The water inside the building should be tested to see if the quality is acceptable. The water system to the building should be replaced to avoid costly maintenance issues in the future. Abandoning the well water service and connecting to public water service, since it is nearby running under the entrance road to the school, is highly recommended.

Sewer System: The sanitary sewer system consists of old brick manholes and broken, deteriorated pipe. Both the structures and pipe show wear and have outlived their useful lives. There are many infiltration issues with broken pipes and older brick manhole structures.

Recommendation: All of the sanitary sewer structures and piping should be replaced from the school to the trunk line on Malus Drive.

Natural Gas System: There is one gas meter located in the loading dock/service area. The meter is outside of paved areas and is protected by bollards. Piping shows signs of rust and deterioration, but remains functional.

Electric: Electric service is provided via overhead poles from adjacent Glenvar High School property. The service then goes underground to a building mounted electrical cabinet and meter. Other electrical cabinets are present on the east side of the school, near the paved play area, a few of which are weathered and show signs of rust. Both sets of cabinets are located in areas with no vehicular traffic.

Site Lighting: There are some overhead site lights on the bus loop and faculty/staff parking lot. There is no site lighting in the visitor parking lot and service area, although there are building mounted lights all along the perimeter of the building to illuminate building access and sidewalks.

Grading and Drainage

Storm Water System: Internal roof drains convey rainwater to surrounding storm water pipe networks which outlet either to roadside swales along Malus Drive or to the underground storm water network of the adjacent neighborhood to the northeast. The underground piping system which collects runoff from the roof and around the school drains to Malus Drive and is in fair condition, but still functional. There are several concrete drainage structures along the Middle School entrance road and in grassed areas behind the school. Most of these structures are in good to fair condition, but filled with sediment, trash and debris.

Recommendation: Existing underground storm water network around the building, which drains to Malus Drive, should be replaced. Storm structures along the entrance road, which drain to the adjacent neighborhood, are in good shape. All roadside swales and storm water structures along the entrance road should be cleaned of trash, organic material and debris. Pipe outlets should be cleaned out and inspected for erosion potential.

Slopes, Ponding, and other Drainage Issues: There is significant ponding at the rear of the building between the school and the softball field, due to a swale that does not drain positively to drop inlets. Along the faculty/staff parking lot and bus loop there is accumulation of sediment and minor erosion from sheet flow.

Recommendation: Additional yard drains or drop inlets should be installed to properly drain the area at the rear of the school to prevent ponding water. Additional grading to the area to provide positive drainage would also be necessary.

Site Features

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

Recommendation: Continue general maintenance of pruning and mulching.

Lawns: Generally good condition. Minor areas in need of repair.

Recommendation: Repair and reseed bare areas. Provide fencing and erosion control mat to protect seed in high traffic areas.

Fencing and Gates: Generally good condition. Minor damage to CLF near parent dropoff/staff parking lot.

Recommendation: Repair fence at parent drop off.

Signage: Damage to numerous signs and posts. Minimal directional signage.

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: Good condition

Site Furnishings: Site furnishings limited to wood benches and playground seating.

Recommendation: Clean and treat wood furnishings to extend useful life.

Site Retaining Walls: Short walls at front of school in good condition.

Accessory Structures: Outside storage buildings are in good condition.

Play Areas and Physical Education

Play / PE Areas (General):

Playgrounds / Stationary Play Equipment: One playground for grades PreK-1 provided. Two playgrounds for grades 2-5 are provided. All equipment is in good condition. Mulch is in fair condition.

Recommendation: Refresh mulch at playgrounds.

Paved Play Areas: Three paved play areas are provided. Asphalt basketball court and grade Prek-1 are in poor condition. The third paved area near the cafeteria is in condition.

Recommendation: Replace asphalt surfaces at paved play area in poor condition and provide new basketball goals.

Play / PE Fields: Multipurpose games field provided on campus in conjunction with Glenvar Middle School. Turf condition is fair. Infield condition is fair. Fencing is in good condition. Accessory structures are in good condition. Drainage requires improvement to improve outfield/PE field condition.

Recommendation: Re-grade outfield area to direct water to existing inlets. Infield requires re-grading to ensure positive drainage off the field or Turface soil amendments.

End of Glenvar Elementary School Civil Narrative

Project Name: RCPS Facilities Assessment		Comm. #: 1637
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Subject: Glenvar Elementary School	Total Pages:
Date: 9/20/2016	Location: Salem, Virginia
Copies To:	Report Prepared By: JFH

General:

The Facility was constructed in 1959. The building is Brick and Exterior Insulation Finish System (EIFIS) with painted Metal Fascia Panels. The building has a flat EPDM roof structure. The existing building is not sprinkled and the building has had air conditioned added to throughout the years. Consist of individual roof top units and through the wall units. The existing steel windows along the front of the building have been replaced with Exterior Insulation Finish System Panels. Smaller Windows now make up the main office. The new Entrance and Administration Office is the Secure Zone. Visitors are to be buzzed in and out. The existing facility does provide Security and meets the building accessibility requirements.

Entry Vestibule:

VCT Flooring
SATC
CMU Walls.

The existing Main Entrance Vestibule meets security and accessibility requirements.

Main Office:

The flooring is carpeted.
The walls are painted CMU.
The ceiling is 24x24 SATC.
The Windows are Aluminum Frames w/insulated glazing
Wood Doors and HM frames (Need all new hardware throughout)

Corridor:

The flooring is VCT
The walls are glazed tile wainscot and CMU block above.
The ceiling is SATC.

Mechanical Room:

Painted Concrete floors
CMU Walls
Exposed Ceiling Structure
HM doors and frame (Need all new Hardware throughout)



ARCHITECTS AND ENGINEERS

Notes

Kitchen:

- Slip resistance rubber Flooring
- CMU Walls and Glazed Tile
- 24x24 SATC (Ceiling tiles need to be replaced)
- Wood Doors and HM Frames (Wood doors need to be refinished)
- All door hardware needs to be replaced and updated

Cafeteria:

- Painted CMU Walls
- VCT flooring
- SATC
- Aluminum Windows with insulated glazing
- Need new Handicap accessible drinking fountain
- Interior doors are Wood doors with HM Frame (Existing wood doors need to be refinished and new hardware installed)
- Exterior Doors are HM Doors and HM Frame (Exterior doors and frame need to be painted and new hardware installed)

Electric Room off of Kitchen:

The Electrical Closet is being used as a Janitor Closet

Copy Room:

- Concrete floors
- GWB ceiling
- Painted CMU Walls
- Metal Shelving
- Roof access is located in this room

Roof:

- The existing flat roof is 60 mil EPDM
- The roof has roof drains and the roof edging is the over drainage.
- The drain baskets are off of the roof drains
- The fascia panels need scraping and painting
- The existing roof has debris due to lack of maintenance
- The existing roofing shows ponding of water especially over the Kitchen area

Boys Toilet Room:

- Quarry Tile flooring
- Painted CMU Walls
- GWB Ceiling
- 3 floor mounted flush valve water closets (1 meets HC Accessibility)
- 6 Urinals (2 Urinals meet HC Accessibility)
- 3 Wall Hung Lavatories (not one lavatory meets HC Accessibility)



ARCHITECTS AND ENGINEERS

Notes

Resource Room:

Across the Hall from Library
VCT Flooring
Wood Paneling Walls
Suspended Acoustic Tile Ceiling

Library:

Carpet Tile flooring
Glazed Tile Wainscot and Painted CMU Walls
24x24 Suspended Acoustic Tile Ceiling

Corridor off of Library/Lunch Corridor:

VCT flooring
Stone Veneer Wall
Suspended Acoustic Tile Ceiling

Typical Classroom: (Art)

Plaster Ceiling
Painted CMU Walls
VCT flooring
Exterior wall furred out with painted GWB
Existing Steel Windows (Need Replacing)

Janitor/Elec/Plumbing:

Quarry Tile Flooring
Glazed Tile Wainscot with Painted CMU walls
Exposed Structure
Electrical Panel "A-1 for classroom air conditioning unit to close to the water heater".

Counselor Room:

VCT flooring
Walls Separation is wood framing with paneling (not code compliant)
Comments from staff:
1. Roof leaks in corridor, cafeteria and Kitchen
2. Air Conditioning does not work in all classrooms
3. Constant problem with the air conditioning

AV Storage:

Carpeting Flooring
Painted GWB
24x24 SATC (Signs of Leaks, need to be replaced)

Gymnasium/Stage:

Parquet flooring
Wood floor stage (storage under stage)
Painted CMU Walls
Exposed Tectum Ceiling Structure
Wood doors with HM Frames (Doors shall be refinished and new hardware provided)

Conclusion:

The building is in good shape structurally but the facility needs to go through a renovation. The wood doors need to be refinished throughout and all door hardware will need to be replaced. Some windows have been replaced throughout the years but some old steel windows remain. The old steel windows throughout the building should be replaced with new insulated aluminum windows.

The existing flat EPDM roof needs some maintenance, patching and replacement. The existing roof is holding water and not allowing the water to discharge. Large amount of ponding is occurring throughout the roof. The existing drains need to be cleaned out and drain baskets reinstalled.

The Handicap accessible signage, toilets, etc must be brought up to current code. The entrance and access seems appropriate but the accessibility throughout the building needs to be addressed. The code requires the signage to be at lever side of the door and (18" min) distance from the door.

The existing Counselor Room wood partition and Resource Room paneling across from Library should be removed. The additional wood construction is a violation of state and local building codes. All schools classified as education shall be constructed of non combustible material.

Glenvar 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	4	Life	57 years	Life	
Exterior Finishes	4	10 years	N/A	8 years	Exterior insulation finish system looks good
CMU walls	5	Life	57 years	Life	
Wood trim	4	15 years	57 years	N/A	Repair, refinish or replace.
Interior doors	3	20 years	57 years	N/A	Refinish Wood Doors
Exterior doors	3	50 years	57 years	7 years	HM doors and Frame
Door hardware	1	7 years	N/A	N/A	New Hardware shall be ADA Code compliant
Electronic door hardware and Security entrance	5	5 years	2 years	3 years	Security Entrance was completed in 2014
Terrazzo	3	50 years	57 years	7 years	
Carpet	4	5 years	N/A	N/A	
Vinyl floor tile	4	12 years	57 years	N/A	
Ceramic/Porcelain floor tile	2	50 years	57 years	0 years	
Quarry Tile	2	50 Years	57 years	0 years	Toilet room
Wood gym floor	3	10 years	N/A	N/A	Repair and Refinish existing floor
Other wood floors	3	10 years	N/A	N/A	Repair and Refinish existing floor
Exposed concrete floors	3	50 years	57 years	0 years	
Exterior windows	4	30 years	N/A	N/A	Aluminum windows
Interior windows	4	30 years	N/A	N/A	HM Windows
Roof (Including flashings, coping, etc.)	2	20 years	N/A	N/A	60 mil EPDM Roof, large amount of ponding
Suspended acoustical tile ceilings (lay-in)	3	25 years	57 years	0 years	Replace Existing Ceiling Panels
Plaster/GWB ceilings	4	30 years	57 years	N/A	Paint
Sound control panels (wall and ceiling)	5	N/A	N/A	N/A	
Ceiling/exposed structure finish (paint)	3	5 years	57 years	0 years	Paint
Interior wall finishes (paint)	3	5 years	57 years	0 years	Paint
Marker boards, chalk boards, tack boards, projection screens	5	N/A	57 years	N/A	
Casework	5	N/A	N/A	N/A	
Window treatments	4	N/A	N/A	N/A	
Toilet partitions	2	20 years	N/A	N/A	Replace Existing Metal Partitions
Toilet accessories	2	N/A	N/A	N/A	Replace Existing Toilet Accessories
Exterior and Interior railings	4	30 years	57 years	N/A	
School sign	4	25 years	N/A	N/A	Provide new ADA Code Compliant Signage
Sprinkler/No Sprinkler	5	N/A	N/A	N/A	nbvc
ADA Code Compliant	5	N/A	N/A	N/A	Some Toilets are close to ADA Code Compliant
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					

Glenvar 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	2	30 years	29 years	1 year	
Chiller or Cooling tower	N/A				
Mechanical piping	2	30 years	22-29 years	1-8 years	
Refrigerant piping	2	30 years	22-29 years	1-8 years	
Duct	2	30 years	22-29 years	1-8 years	
Outdoor air units	N/A				
Terminal units	N/A				
Package units (1987)	2	18 years	29 years	0 years	
Package units (1994)	2	18 years	22 years	0 years	
Controls	4	20 years	22 years	0 years	
Exhaust fans	4	25 years	22 years	3 years	
Kitchen hood	2	30 years	29 years	1 year	
Plumbing					
Plumbing fixtures and controls	4	30 years	15 years	15 years	
Floor drains	2	30 years	57 years	0 years	
Water heaters - Gas Fired	2	15 years	29 years	0 years	
Pumps	2	15 years	29 years	0 years	
Potable water piping & valves	3	30 years	29 years	1 year	
Sprinkler system					
Back-flow preventer					
Service line & meter (size appropriate)	2	15 years	29 years	0 years	
Wall and yard hydrants					
Eye wash stations					
Emergency showers	5	15 years	7 years	8 years	
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					

Glenvar 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	57	-17	2	
Panelboards	30	57	-27	2	
Panelboards - 1987	30	29	1	2	
Panelboards - 1994	30	22	8	5	
Cabling	40	57	-17	2	
Conduit/raceway	40	57	-17	2	
Light fixtures	20	57	-37	2	
Lighting controls	30	57	-27	2	
Public address system	30	29	1	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	29	1	2	
Site lighting	20	57	-37	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					

Glenvar 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	4	15 years	Unknown	5 years	
Asphalt walks	4	20 years	Unknown	5 years	
Concrete pavement	4	30 years	46-57 years	0 years	
Concrete walks	4	30 years	46-57 years	0 years	
Stairs	4	30 years	46-57 years	0 years	
Ramps	2	30 years	46-57 years	0 years	
Railings	4	15 years	46-57 years	0 years	
Concrete curb and gutter	4	30 years	46-57 years	0 years	
Concrete / Brick Pavers	N/A	N/A	N/A	N/A	
Guardrail, Parking Bumpers, Misc.	4	Varies	Unknown	5-10 years	
Fire lane	4	Varies by Material	Unknown	0 years	
Fire lines and hydrants	4	40 years	20 years	20 years	
Domestic Water system	3	40 years	57 years	0 years	
Sewer system	3	40 years	57 years	0 years	
Natural Gas system	3	40 years	Unknown	0 years	
Electrical System	5	25 years	Unknown	10-15 years	
Exterior Lighting	4	25 years	Unknown	5-10 years	
Storm water system	4	40 years	20-57 years	0-20 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	4	Life	57 years	Varies	
Lawns	4	Life	57 years	Life	
Fencing and gates	4	20 years	Unknown	10+ years	
Signage	4	10 years	Unknown	5+ years	
Flagpoles	5	50 years	57 years	5+ years	
Site furnishings	4	15 years	Unknown	5+ years	
Awnings / Canopies	N/A	N/A	N/A	N/A	
Site retaining walls	5	50 years	57 years	5+ years	
Accessory structures	5	50 years	Unknown	10+ years	
Playgrounds	5	10 years	Unknown	8 years	
Paved play areas	4	20 years	Unknown	5+ years	
Play / PE fields	3	Life	Unknown	5+ years	
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					

Budgetary Cost Estimate

Estimate Date 12/7/2016
 Facility Name Glenvar Elementary School
 Client Name Roanoke County Schools



Quantity	Description	Unit	Cost / unit	Total w/ OH&P
ARCHITECTURAL				
900	Partial window replacement Includes removal of steel windows	SF	\$45.00	\$48,600.00
70	Replace interior doors and hardware	EA	\$1,500.00	\$126,000.00
10	Replace exterior HM doors and hardware	EA	\$1,500.00	\$18,000.00
324	Replace markerboard / tackboards by 4'-0" tall	LF	\$65.00	\$25,272.00
125	New interior signage-adhesive backed/braille ADA complaint	EA	\$42.00	\$6,300.00
1,876	Replace Quarry Tile	SF	\$10.00	\$22,512.00
576	Replace Ceramic/porcelain floor tile	SF	\$15.00	\$10,368.00
52,325	Roof Replacement	SF	\$9.00	\$565,110.00
17,441	Tapered insulation saddles	SF	\$2.50	\$52,323.00
12	Toilet Partitions	EA	\$1,215.00	\$17,496.00
8	Toilet accessories each restroom	EA	\$800.00	\$7,680.00
CIVIL				
30	Install handrails	LF	\$50.00	\$1,800.00
1,000	Repaint curbs and fire lanes	LF	\$0.10	\$120.00
10	Fire lane signage	EA	\$500.00	\$6,000.00
4	Directional signage	EA	\$1,500.00	\$7,200.00
1	Connect to public water	LS	\$30,000.00	\$36,000.00
1	6" Sprinkler System	LS	\$20,000.00	\$24,000.00
1	Replace sanitary sewer system	LS	\$15,000.00	\$18,000.00
6,000	Demo/pave asphalt basketball court	SF	\$2.50	\$18,000.00
2	Replace basketball goals	EA	\$1,500.00	\$3,600.00
1	Regrade outfield of multipurpose field	LS	\$5,000.00	\$6,000.00
MECHANICAL / PLUMBING				
52,325	Replace HVAC system	SF	\$35.00	\$1,831,375.00
1	Add domestic water backflow preventer	EA	\$4,000.00	\$4,000.00
1	Add pressure reducing vavle	EA	\$2,000.00	\$2,000.00
52,325	Add Sprinkler System - includes ceiling modifications	SF	\$6.00	\$313,950.00
1	Replace domestic water heater	EA	\$20,000.00	\$20,000.00
1	Replace domestic hot water circulation pump	EA	\$3,000.00	\$3,000.00
ELECTRICAL				
52,325	Replace HVAC system	SF	\$1.50	\$78,487.50
52,325	Add Sprinkler System - includes ceiling modifications	SF	\$1.00	\$52,325.00
52,325	Electrical Distribution system	SF	\$7.00	\$366,275.00
52,325	Electrical Upgrade	SF	\$7.00	\$366,275.00
52,326	Lighting Upgrade	SF	\$4.00	\$209,304.00
TOTAL Budgetary Cost				\$4,267,373