# GREEN VALLEY ELEMENTARY SCHOOL

## ARCHITECTURAL

Green Valley Elementary School (GVES) was originally constructed in 1964. The Gymnasium wing was added in 1970, and the library wing was added in 1993/94. The most recent renovation and addition added a new classroom wing and administration area to the facility. Total square footage for the facility is 69,235 SF.

A seclusion room was present in the cafeteria, on the stage. This room is labeled as a closet. If it is an occupied space, ventilation rates should be adjusted to meet the requirements for an occupied space. The ventilation requirements for a closet are not the same as those for an occupied space.

### Exterior Finishes

Exterior Cladding:

Exterior wall material is, generally, brick with exterior insulating finish system (EIFS) seeing limited use above doors and other accenting locations. Brick was observed to be in good condition, with minor mortar repointing required. Cracks were visible, propagating from the lintel over door #3 to the fascia above. Near the cafeteria loading dock, the corner has been damaged during removal or installation of an electrical device. The conduit remains in the hole, but has been abandoned. The EIFS has experienced some water staining and damage, for example, above door 12. Here, the material is peeling at its lower edge. Condition of joint sealants should be monitored, and the sealant replaced as required.

Roof:

A new roof membrane was installed over the existing built-up roofing system as part of the 2010 renovations. This membrane is in good condition, with some limited areas of ponding. Leaves and other debris should be removed from the roof. Overflow drains do not have strainer baskets installed; these baskets were not sitting loose on the roof. A broken PVC conduit was lying on the surface of membrane, over the kitchen area. This should be removed to avoid damage to the membrane. The gutter at the new classroom addition has standing water.

The gymnasium has an EPDM roof system that appeared to be in good condition. The system should be evaluated based on its remaining warranty life and replaced as required. Water damage at the interior was not significant enough to indicate an immediate need for replacement.

The built-up roof over the library wing should be replaced. Gravel has been removed from areas of the roof, exposing the bitumen below to UV damage. Water is ponding

around roof top mechanical units. One of the roof drains has been covered by flowing bituminous material.

Standing seam roofing over the entries was in good condition. Leaves have accumulated in the gutters at these canopies and should be removed.

Clerestory Area:

At the clerestory, the glue-lam structure penetrates the building envelope and is visible at the exterior. Painted wood trim and painted metal plates have been installed over the structure. The wood trim has rotted and should be replaced. Additional measures to protect the glue-lam structure from the elements may be required. Additionally, the tectum decking extends to the exterior and is provided with no protection from the elements. This is not a recommended application as the material can degrade in the presence of moisture. This degradation has already started at the surface of the material. Steps should be taken to minimize damage to the material.

Windows:

Windows around the building were aluminum framed units. Most were glazed with 1" insulated glazing. Windows appeared to be in good condition. Sill types varied across the facility, depending on location of installation and era. Windows at the clerestory were provided with a pre-finished bent metal sill. These are in good condition, but condition of the sealants should be monitored and sealant replaced as required. Brick rowlock sills were present at locations where windows did not extend to slab level. The remaining windows were provided with an aluminum sill, at slab level.

Exterior Doors:

The main entry has an aluminum storefront system with insulated glazing. The remainder of the exterior doors at the facility are hollow metal units. Hollow metal doors were observed to be in good condition, but requiring general maintenance. Glazing at door lites, sidelites, and transoms was observed to be in good condition.

## Interior Finishes, Fixtures & Equipment

(See assessment tabulations for interior finish conditions).

Vinyl Composition Tile (VCT) was the predominant floor finish at the facility. VCT was in good condition throughout the facility, with minimal joint separation. Corridors through much of the facility have newer, flexible terrazzo tile installed. The material was in good condition, with few cracks or adhesion issues. Corridors of the gymnasium wing have terrazzo, in good condition. The library and admin offices have broadloom carpet in fair to good condition. As it has exceeded its life expectancy, a replacement can be performed when convenient or required. The kitchen is provided with a textured quarry tile floor that was in good condition. The cafeteria has maple parquet flooring. The

finish is in good condition, but there are missing parquet pieces in some locations. The cafeteria stage has pine board flooring that is in good condition. There is no ramp to the stage. Bathrooms, located within classrooms, had a sheet flooring system installed. These were in good condition, but should be monitored for any peeling from substrates. Interior walls were primarily painted concrete masonry units. Corridors in renovated areas had ceramic tile wainscot with a decorative gypsum wall board scene above the wainscot. Toilet rooms, typically, had ceramic wall tile wainscots. The cafeteria area was a mix of painted brick and concrete masonry units. Joint sealants at these brick locations should be monitored for degradation and replaced as required. Window treatments are typically vinyl roller shades. Gypsum wall board at some skylight locations has been damaged due to water infiltration.

Gang bathrooms were provided with high density polyethylene toilet partitions, which were in good condition. The gang rooms were provided with accessible stalls, and most classrooms that were provided with a toilet room were, to some degree accessible. But, in some cases (example Room 210) door signage indicating an accessible bathroom is incorrect. The bathroom is, in no way, compliant with accessibility requirements. It is assumed that a bulk supply of toilet room signs was ordered and one was simply installed at this location. It should be removed and replaced with a proper sign.

Ceilings are generally suspended acoustical tile (lay-in) with gypsum wall board at bulkheads and accenting locations. The suspended acoustical tile ceilings have experienced water staining at various locations, throughout the facility. According to staff, tile is regularly replaced in areas like R1 Resource. Tile in this room is replaced yearly, during the summer. Condensation is likely the cause of the staining. In the corridor, outside of Office 201, there is an active leak on the ceiling. The tile here was wet and slowly dripping. Ceiling tiles in the library wing and the gymnasium wing should be replaced. Tectum in cafeteria was in good condition (see notes in roofing section regarding tectum exposed to the exterior). Tectum in the gymnasium is in good condition.

Most interior doors are wood in hollow metal frames. Veneers were observed to be in good condition. Limited applications of hollow metal doors were observed, in good condition, with some paint peeling issues. These interior hollow metal doors are, typically, at locations where new wings were added to the building. Hollow metal doors and frames should be repainted as required.

Marker boards and tack boards are present in classrooms. Most are in fair to good condition with staining on many marker boards. Stained marker boards would be replaced during renovations. Smart boards have been placed in rooms.

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.

Most classrooms were provided with high pressure laminate clad casework for student and classroom storage. Sinks are provided in base cabinets, with bubblers. Accessible hardware was not observed on the casework. Older, wooden, cabinets were installed in some rooms (i.e. 102). These are provided with knob hardware. The finish was in fair to good condition. Hooks were installed at several locations for backpack storage. Additional storage for classroom use, and for general school use should be planned for any future renovation work.

The elevator is a keyed-only operation.

## Accessibility

Building signage is compliant with older ADA standards, but is not compliant with current standards. Wall mounted features were typically installed above the reach ranges allowed by current standards. Doors are equipped with electric operators, but these are non-functional due to security systems. The stage not accessible, as no ramp is provided to the space. Restrooms were provided with accessible fixtures. Hi-lo drinking fountains were installed with cane aprons. The interior courtyard is not an accessible space. There is a step of over 1" down into the space, which could be a tripping hazard. Accessible hardware is not installed on all casework. Many sliding casework doors are provided with a small hole to act as a pull. No accessible workstations were observed at casework locations.

## Safety and Security

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

The vestibule at GVES provides visibility from the office and control over the secure entry. Door position sensors and locks are provided at all other exterior doors. Exterior doors providing access to corridors and other spaces, not accessed via the vestibule, are equipped with card readers. Sight lines and distance are reasonably long in most areas of the building, but the segmented nature of the building does limit visibility in some areas.

*End of Green Valley Elementary School Architectural Narrative*

## PLUMBING/FIRE PROTECTION

### Plumbing Fixtures:

Water Closets: Water closets observed were floor mounted vitreous china with manual type flush valves. The water closets are from 2010 and seemed to be in good working condition. The flush valves are expected to have a useful life of 12 years and the water closets are expected to have a useful life of 30 years. Several tank type water closets are located in the media center of the building.

Urinals: Urinals observed were wall mounted vitreous china with manual type flush valves. The urinals are from 2010 and seemed to be in good working condition. The flush valves are expected to have a useful life of 12 years and the urinals are expected to have a useful life of 30 years.

Lavatories: Lavatories observed were wall mounted vitreous china with manual type faucets. The lavatories are from 2010 and seemed to be in good working condition. The lavatories are expected to have a useful life of 30 years.

Sinks: Classroom sinks observed were stainless steel with polished chrome gooseneck faucets and wrist blade handles. The sinks are from 2010 and are expected to have a useful life of 30 years.

Electric Water Coolers: The water coolers are wall mounted, ADA compliant high/low models. The water coolers are from 2010 and seemed to be in good working condition. The water coolers are expected to have a useful life of 15 years.

### Water Heaters:

Domestic water heating is done by one 400,000 Btu/hr output gas fired water heater and a 400 gallon storage tank. These are both located in the main mechanical room and installed in 2005. The domestic water heaters are expected to have a useful life of 15 years. There are two tempering valve manifolds and two hot water circulation pumps.

### Piping:

Water: Copper with fiberglass insulation
Sanitary Piping: Cast iron and PVC
Storm Piping: Cast iron
Gas Piping: Black steel

**Domestic Water Entrance**:

The building is primarily served by a 2-1/2" cold water line that is assumed to be from a municipal system. There is a backflow preventer which was installed in 2010. The backflow preventers are expected to have a useful life of 30 years.

There is also a water softener system consisting of two mineral tanks and a brine tank. The water softener system was installed in 2010 and is expected to have a useful life of 25 years.

**Fire Protection**:

The building is not sprinkled.

**Recommendations**:

Add a sprinkler system to the entire building.

*End of Green Valley Elementary School Plumbing/Fire Protection Narrative*

**MECHANICAL (HVAC)**

**Heating**:

The building is primarily heated by water source heat pumps units. Classrooms typically have a Bard type unit exposed on the exterior wall. The larger spaces like the cafeteria typically have rooftop unit heat pump units. The heat pumps are 6 years old and are expected to have a useful life of 18 years.

The older portion of the school is heated by gas fired rooftop air handling units (RTU's). These RTU's are from 2007 and are expected to have a useful life of 18 years.

**Ventilation**: Ventilation is provided to the building by rooftop units.

**Air Conditioning**:

The building is primarily cooled by water source heat pumps units, the same units that heat the building. There is a closed circuit cooler or cooling tower which is used to reject heat during cooling season. The cooling tower is 6 years old and has a useful life expectancy of 18 years. There are two distribution pumps that circulate condenser water to all of the heat pumps in the building. The pumps are 6 years old and are expected to have a useful life of 25 years.

The older portion of the school is cooled by DX type rooftop air handling units (RTU's). These RTU's are from 2007 and are expected to have a useful life of 18 years. The kindergarten classrooms located in the lower level of this portion of the building are cooled with portable A/C units.

**Piping**:

There is condenser water piping, black steel, insulated. The piping is 6 years old and should have a useful life expectancy of 30 years.

**Controls**:

The building automation controls are digital type (DDC) are the Metasys Brand, by Johnson Controls.

**Recommendations**:

There is an RTU that has been abandoned on the roof. It was not clear if this unit was replaced with an adjacent unit. It is recommended that the kindergarten classrooms with portable A/C units be conditioned with a more efficient system.

*End of Green Valley Elementary School Mechanical Narrative*

## ELECTRICAL

**Main Switch Gear**:

Main Switchboard: The main switchboard is a 2000 Amp, 3 phase, 4 wire, 208Y/120 volt Square D, service entrance rated switchboard. The new switchboard was installed in 2010, and backfeeds older panelboards.

Recommendation: In the event of a substantial renovation or addition, existing switchboard can be reused and expanded as necessary. Replacing of the older panelboards is recommended.

**Transformers**: None

**Panelboards**:

Distribution and Branch circuit Panelboards: The majority of panelboards are new Square D. There are also a few older Siemens panels installed in 1993. Panelboards that were added for the 2010 computer labs renovation; the panels have space available, but the original panelboards have reached 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. The newer panelboards may be reused.

**Cabling**:

Cabling: Much of the building wiring is original. Some new wiring has been added for the addition of receptacle. All visible wiring appears to be in conduit. 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. There is not much surface raceway throughout the building, but it could potentially become dislodged from the wall creating a potential shock hazard.

Recommendation: All surface raceway should be evaluated regularly and securely reattached to the wall if it becomes loose. All raceway would be reused 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, some fluorescent can lighting, and 1x4 fixtures with T8 lamps. The T8 lamps are current technology, and meet the current needs of the school. Various emergency wall pack light fixtures are also utilized. 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**:

The building has a Philips Lightolier Optio High Performance lighting control panel to control.

Recommendation: In the event of a renovation or addition, add automatic lighting controls to each room to comply with building energy codes. Consider providing additional control in the classroom areas for multiple scenes for different types of media.

**Public Address System**:

Public Address System: The public address system is currently a Valcom Class Connection system with Valcom Clocks system. Each classroom has a PA speaker, clock, and a push-to-talk button. Teachers and staff use the newer Cisco phone system for communications and announcements. The PA system is currently in the process of being upgraded.

Recommendation: The PA system is currently being operational and in good condition. Expend system as required.

**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 system is a Siemens system installed in 2010. The system consists of smoke detectors, and horn strobes throughout the building including in classroom.

Recommendation: Maintain fire alarm system. No recommendations.

**Generator**:

Generator: A Kohler 45 KW Natural Gas generator is installed feeding a Life safety transfer switch and a standby switch.

Recommendation: Provide a maintenance program to maintain the generator in optimal operating condition.

**Site Lighting**:

Site Lighting: The site lighting consists of LED pole mounted lights for parking areas.

Recommendation: Maintain lights as required. . 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. Some classrooms contain a TV; however, TVs were not consistently present.

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. Each classroom has a phone connected through the PA system. The system is operational.

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

*End of Green Valley Elementary School Electrical Narrative*

**CIVIL**

## Traffic Circulation

Buses: School is served by 7 regular buses, no special needs buses, and 3 daycare vans. There is no dedicated bus loop.

Morning: Buses drop off at the front of the school. The drop off area is short, and buses can back up in to the adjacent road.

Afternoon: Buses enter at the west entrance and stack up along the west side of the school to load students. Once loaded, buses continue around the loop beyond the service area and exit the site.

Cars: Drop off areas are short and back up down the adjacent street frequently.

Morning: Cars enter at the west entrance and stack up along the west side of the school to drop off students. Once dropped off, cars continue around the loop beyond the service area and exit the site.

Afternoon: Parents must park their cars and enter the school to check out their students. Cars fill up the parking lot and back up down the street waiting to enter the parking lot to pick up their students.

Parking: 119 striped parking spaces are provided with 5 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.

Service: Service area is accessed through the west parking / drop off area and has adequate maneuvering area.

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

Separation: There is no dedicated bus area or parent drop off, it switches from front to side. Staff indicates there are no current issues.

Adjacent Roadways: The adjacent roadway is a two lane local road that is not heavily travelled. Sight distance is good.

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

## ADA Accessibility

Parking: There are three spaces designated as ADA parking at the front of the school. One space is designated as van accessible. There is one space at the faculty parking lot which is van accessible, and one space at the parking lot adjacent to the service area.

Signage: Signage is in good condition and code compliant.

Ramps: Curb ramps are located appropriately and in good condition.

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

## Parking Areas, Driveways, and Sidewalks

Asphalt Pavement: Some minor cracking. Striping faded.

Recommendation: Plan for future sealing cracks and re-striping pavement.

Asphalt Walks: Path to paved play area at northeast side of building is broken and in poor condition. Asphalt track in good condition.

Recommendation: Replace asphalt path.

Concrete Pavement: Relatively new concrete pavement at service area in good condition.

Concrete Walks: Some minor cracking. Some areas (particularly at curb inlets) have settled significantly creating potential tripping hazards.

Recommendation: Remove and replace sections of settled concrete that are tripping hazards.

Stairs, Ramps, and Railings: One railing on the east side of school has paint chipping and peeling.

Recommendation: Sand, prime, and paint railing.

Concrete Curb and Gutter: Some areas are older and showing signs of cracks and wear.

Guardrail, Parking Bumpers, and Miscellaneous: Many parking bumpers have been displaced from their proper locations. Cable guardrail along road frontage is in fair condition.

Recommendation: Replace damaged parking bumpers and re-install in proper locations. Monitor cable guardrail for eventual removal or replacement.

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 as necessary. Ensure that fire lane signs are turned toward oncoming traffic.

## Utilities

Fire Lines and Hydrants: Sufficient fire hydrant coverage and spacing with two fire hydrants located around the site. No paved fire lane, but fire truck access around three of four sides of the building.

Domestic Water System: Water system is in fair condition, but functional. Staff indicated no pressure or water discoloration issues. Meter is located in a manhole along Overdale Road.

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

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

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

Recommendation: Contact gas company to inspect condition of meter.

Electric: Electric service to the school is provided via overhead poles to school property. Transformers are mounted on service pole. Service is taken underground into the building.

Site Lighting: Large site lights illuminate school parking lots and bus loop and building mounted lights and small site lights illuminate sidewalks and entrances. Site lighting is sufficient to ensure safety and security.

## Grading and Drainage

Storm Water System: Majority of runoff sheet flows to ditches or drop inlets and is conveyed to the adjacent creek. Structures are in good condition, but need flushing of sediment.

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

Stormwater Management BMPs: Bioretention area beside gym in good condition, but needs to be cleaned of trash and litter. Two filterras to treat parking lot runoff are in good condition, but one tree is dead and the other tree is dying. Replace trees.

Recommendation: Remove litter and debris from bioretention area. Replace trees in Filterra units.

Slopes, Ponding, and other Drainage Issues: Minor sediment accumulation in parking lot due to lack of positive drainage. Major erosion on slope at ball field exposing underground pipe.

Recommendation: Repair eroded slope. Utilize erosion control mat to establish grass.

**Site Features**

Vegetative Landscaping: Site is a mixture of original mature trees and shrubs and newer vegetation with 2010 renovation.

Recommendation: Stakes and guy tiedowns on newer trees need to be removed for plant health. Two trees in rear parking lot are in damaged due to tie downs. Recommend having a specialist review removal. Newer vegetation from 2010 renovation needs to have stakes and guy tiedowns removed. Older vegetation in need of pruning to keep it away from building. Replace dead tree in Filterra unit. Continue general maintenance of pruning and mulching.

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

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

Fencing and Gates: Perimeter chain link fence on west and north sides is in good condition. However, adjacent trees and invasive ivy will reduce life span of fence. Pipe gate to PE field has a broken arm, so access is uncontrolled.

Recommendation: Replace or repair broken arm on pipe gate. Clear invasive trees and vines from perimeter fencing.

Signage: ADA signage is not to code. Fire lane signage is faded and damaged. No directional signage provided. Many poles are rusting, leaning, or lack 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: Excellent condition.

Site Furnishings: Site furnishing limited to vinyl coated benches at play grounds. Good condition.

Awnings / Canopies: Minor canopies over door exits to bus loop. One canopy has a broken off downspout.

Recommendation: Recommend immediate replacement or repair of downspout to avoid ice on sidewalk during winter weather.

Site Retaining Walls: 4' high wall at loading dock. Adequate railing provided per code. 2' segmental block wall at play ground. Railing not required. Good condition.

Accessory Structures: Wood dumpster enclosure is in poor condition. Two storage structures with wood framing and vinyl coating are in good condition. One storage building of CMU construction is in good condition.

Recommendation: Replace wooden dumpster enclosure with composite PVC boards.

**Play Areas and Physical Education**

Play / PE Areas (General):

Playgrounds / Stationary Play Equipment: Year PreK-1 equipment in good condition. Year 2-5 equipment in excellent condition. Mulch in play areas is in good condition.

Paved Play Areas: Asphalt play area is in fair condition, but shows age and signs of fatigue. Access to area has failed. Paved walking track is in fair condition with edges of the asphalt showing failure.

Recommendation: Monitor paved areas for safety concerns. Replace paved play area and access when needed.

Play / PE Fields: Multipurpose games field provided on campus. Turf condition is good. Infield condition is good. Fencing in good condition. Wood benches in poor condition. Large PE field provided with fair turf

Recommendation: Repair or replace wood benches with aluminum benches.

*End of Green Valley Elementary School Civil Narrative*

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# Notes

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| **Project Name: RCPS Facilities Assessment** | **Comm. #: 1637** |

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| **Subject: Green Valley Elementary School** | **Total Pages:** |
| **Date: 9/22/2016** | **Location: Roanoke, VA** |
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**General:**

Original Building: 1964. Gym added in 1970. Library added in 1993/94.
Renovation/Addition 2010.
Roof was replaced during the renovation over most of the building. A single section was left with a coal-tar pitch type roof. Peeling layers reveal suspect asbestos materials.
Hollow metal frames with wood doors.
Wing of building with coal-tar pitch roof appears to have had minimal interior renovation.
Elevator on this wing is keyed operation, only. No buttons for use.

**Roof:**

White membrane roof system over most of building.
Cafeteria clerestory: Glue-lam structure and tectum decking extend to the exterior of the building. Boards have been installed to cover the glue lams. These have rotted and cracked. The tectum, in the presence of moisture is growing mold/mildew and disintegrating. Neither of these materials should be exposed to the elements without some form of protection.
Overflow drains are missing strainer baskets. Baskets aren't anywhere on the roof.
Minor areas of ponding near drains.
Remove leaves from gutters at entry canopies.
Standing seam at entry canopies in good condition.
Lap over steep slope portion of roof, near top is gapping. This faces downhill, but wind-blown water could be forced into the lap.
There is a broken PVC conduit lying on the roof membrane near the chimney/cafeteria clerestory. Determine if line within conduit is active and if so, replace conduit. Install pedestals to protect membrane. If it's not active, remove it.
Standing water in gutter over classroom wing with steep-slope roof.
Coal tar pitch roof:
Shows some evidence of standing water at roof top unit. This may simply due to excessive drainage from condensate drains on the unit. Water did appear to be migrating in the direction of a roof drain.
Existing pipes through roof have lead flashing in good condition.
Gravel chips have detached and exposed bituminous layer in several areas. Some UV degradation has occurred as a result.

In limited areas, felt layers have been totally exposed, with no bituminous coating or gravel. Some spots are peeling upward. Felts have a fibrous material that may be asbestos. No testing was performed. Based on assumed era of construction, no asbestos should be present.
One strainer basket is heavily silted by bituminous material. Clean the basket to ensure proper roof drainage.

**Cafeteria:**

Parquet flooring. Maple. Finish is good condition. There are missing parquet strips in some locations.
Painted brick and block walls in good condition.
Tectum ceilings in good condition.
Glue-lam beams in good condition.
Stage has pine board flooring in good condition
No ramp for access to stage.
Roof access door is at stage area.
There is a seclusion room on the stage. It has signage labeling it as a “Closet”. Closet ventilation rates are not the same as those for occupied spaces. It should be confirmed that adequate air changes are taking place if the room is occupied. There is a vision lite on the door.

**Kitchen:**

Textured floor tile. Glazed Ceramic wall tile wainscot to approximately 7’-0”. CMU above. SATC with a facing layer on ceiling. All in good condition.

**Exterior door 3:**

Has electric operator. Pad non-functional due to security.

**102, 103, 104, 106:**

VCT Good. SATC Good. Casework good. No pulls on sliders at base cabinets. There are holes drilled in the doors. Base cabs are a mix of sliders and standard doors.
Aluminum storefront windows w/ 1” glazing.
Toilet rooms have sheet good flooring.

**Corridors:**

Fritztile. Patterned Ceramic Wall tile wainscot and decorative GWB above on one wall.
Exposed brick on the other. SATC w/ GWB bulkheads.
Some GWB damage on corridor skylights.

**Teacher’s Lounge:**

Typical materials, in good shape. PLAM Casework has sink. No accessible station.

**Boys Room:**

Has accessible stall
HDPE partitions
Glazed ceramic wall tile wainscot to approximately 6’-2” AFF. Mosaic floor tile. SATC.
All in good condition.

**R1 Resource:**

Typical materials.
Small area with leak stain on SATC. Staff member says the tile gets replaced every year. Staining happens over the summer. Probably condensate.

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# Notes

**Boys room near cafeteria:**
GWB Ceiling. All other materials typical. No accessible stall.

**Exterior Door 7:**
HM frame w/ 1" glazing.

**Interior Courtyard:**
A bit overgrown. Some plants are covering an intake louver on the wall.
Slight tripping hazard at door into the school. Concrete pavers are about 1" below threshold level.

**Media Center:**
Narrow broadloom strips of carpet?
Aged/Old SATC. Was not replaced during renovation.

**Library Office:**
VCT good. SATC good, but old. Painted CMU good.

**Library Wing, lower floor:**
SATC is different than that on the upper floor. May be newer.
Fritztile floor

**210:**
VCT. Older SATC. Painted Block. All in good condition. Toilet has a sign indicating it is accessible. It definitely is not, and cannot be.

**211:**
VCT. Older SATC. Painted Block. Some spotting on SATC.
Has shared toilets with room 212. Both toilet rooms are in good shape.

**R7 Resource:**
Light spotting on SATC. VCT in good condition. Marker board is lightly stained.

**Old Gym wing:**
Painted CMU walls. Terrazzo floors.

**Gym:**
Maple parquet flooring has crack across the court at mid-court.
Tectum in good condition.
Acoustic panels in good condition.
Wood base in fair condition.
Crash bar at exterior double doors has been swapped.

**Corridor near 201, Gym office:**
Wet spot on SATC above 201 gym office.

**Corridor opposite door to room 202:**
Crack in brick corner.

**Office areas:**
Broadloom carpet. SATC. GWB.
Sheet goods on floors of bathrooms.

**ADM-5 "Conference":**
Is being used as a storage room. Probably still ventilated as a conference room.

**Art Room:**
Light staining on ceiling panels.
Casework, VCT, and CMU in good condition.

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# Notes

**Exterior:**

Crack in brick, extending from soffit, above door #3, to the fascia above.
Crack propagating from door lintel (above door 3??) has been filled with caulk. Joints should be raked and repointed, as required. Remove any caulk installed at the lintel to allow for proper drainage from within cavity.
Abandoned conduit protrudes from one building corner. The brick is broken around this conduit. One mortar joint is loose.
EIFS material at soffit above door 12 has some water damage. Where material wraps to bottom side, it is peeling and stained.

**Green Valley 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 | 42 | Life | |
| CMU walls | 5 | Life | 42 | Life | |
| Interior doors | 5 | 20 | 42 | 0 | |
| Interior doors at Additions | 5 | 20 | 22 | 0 | |
| Exterior doors | 4 | 50 | 42 | 8 | |
| Exterior doors at Additions | 4 | 50 | 22 | 8 | |
| Door hardware | 5 | 7 | 7 | 0 | |
| Electronic door hardware | 2 | 5 | 7 | 0 | |
| Flexible Terrazzo Tile | 5 | 50 | 7 | 43 | |
| Vinyl floor tile | 4 | 12 | 22 | 0 | |
| Vinyl Sheet Flooring | 5 | 12 | 7 | 5 | |
| Ceramic/Porcelain floor tile | 5 | 50 | 36 | 14 | |
| Quarry floor tile | 5 | 50 | 42 | 8 | |
| Wood gym floor | 5 | 10 | 36 | 0 | |
| Other wood floors | 4 | 10 | 42 | 0 | |
| Carpet | 2 | 5 | 7 | 0 | |
| Exposed concrete floors | 5 | 50 | 42 | 8 | |
| Exterior windows | 5 | 30 | 7 | 23 | |
| Interior windows | 5 | 30 | 7 | 23 | |
| Roof (Including flashings, coping, etc.) | 5 | 20 | 7 | 13 | Remove debris from roof. Install Strainers. |
| Built Up Roof (Including flashings, coping, etc.) | 1 | 20 | 22 | 0 | |
| Suspended acoustical tile ceilings (lay-in) | 4 | 25 | 7 | 18 | |
| Suspended acoustical tile ceilings (lay-in) at additions | 3 | 25 | 22 | 3 | |
| Plaster/GWB ceilings | 5 | 30 | 7 | 23 | |
| Ceiling/exposed structure finish (paint) | 2 | 5 | 42 | 0 | |
| Interior wall finishes (paint) | 2 | 5 | 7 | 0 | |
| Marker boards or chalk boards | 5 | N/A | 7 | | |
| Tack boards | 5 | N/A | 7 | | |
| Projection screens | 5 | N/A | 7 | | |
| Casework | 4 | N/A | 7 | | |
| Window treatments | 5 | N/A | 7 | | |
| Toilet partitions | 5 | 20 | 7 | 13 | |
| Toilet accessories | 5 | N/A | 7 | | |
| Interior railings | 5 | 30 | 22 | 8 | |
| Exterior railings | 5 | 30 | 22 | 8 | |
| | | | | | |
| **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** | | | | | |

**Green Valley 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 | N/A | | | | |
| Cooling tower | 5 | 18 years | 6 years | 12 years | |
| Mechanical piping | 5 | 30 years | 6 years | 24 years | |
| Refrigerant piping | 5 | 30 years | 9 years | 21 years | |
| Duct | 5 | 30 years | 6-9 years | 21-24 years | |
| Outdoor air units | N/A | | | | |
| Terminal units (Portabel A/C units) | 5 | 18 years | 9 years | 9 years | |
| Package units (Heat Pumps) | 5 | 18 years | 6 years | 12 years | |
| Package units | 5 | 18 years | 9 years | 9 years | |
| Controls | 5 | 20 years | 9 years | 11 years | |
| Exhaust fans | 5 | 25 years | 9 years | 16 years | |
| | | | | | |
| | | | | | |
| | | | | | |
| **Plumbing** | | | | | |
| Plumbing fixtures and controls | 5 | 30 years | 6 years | 24 years | |
| Floor drains | 5 | 30 years | 6 years | 24 years | |
| Water heaters | 5 | 15 years | 11 years | 4 years | |
| Pumps | 5 | 15 years | 6 years | 9 years | |
| Potable water piping & valves | 5 | 30 years | 6 years | 24 years | |
| Sprinkler system | N/A | | | | |
| Back-flow preventer | 5 | 30 years | 6 years | 24 years | |
| Service line & meter (size appropriate) | 5 | 30 years | 6 years | 24 years | |
| Wall and yard hydrants | 5 | 15 years | 6 years | 9 years | |
| Eye wash stations | 5 | 20 years | 6 years | 14 years | |
| Emergency showers | 5 | 20 years | 6 years | 14 years | |
| Water softner system | 5 | 25 years | 6 years | 19 years | |
| | | | | | |
| | | | | | |
| **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** | | | | | |

**Green Valley 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 | 24 | 16 | 5 | |
| Panelboards | 30 | 24 | 6 | 5 | Newer panels have been installed within the last 7 years. |
| Cabling | 40 | 24 | 16 | 5 | Some newer installed 7 years ago |
| Conduit/raceway | 40 | 24 | 16 | 5 | |
| Light fixtures | 20 | 7 | 13 | 5 | Light fixtures have been updated to current T8 lamps |
| Lighting controls | 30 | 24 | 6 | 5 | |
| Public address system - Headend | 30 | 24 | 6 | 5 | |
| Public address system - Devices | 30 | 24 | 6 | 5 | |
| Security system | 10 | 5 | 5 | 5 | |
| Camera system | 10 | 5 | 5 | 5 | |
| Data system | 15 | 5 | 10 | 5 | |
| Fire alarm system - Headend | 30 | 24 | 6 | 5 | |
| Fire alarm system - Devices | 30 | 24 | 6 | 5 | |
| Site lighting | 20 | 7 | 13 | 2 | New LED lights installed |
| 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**

**Green Valley 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 | 6 years | 9 years | |
| Asphalt walks | 2/5 | 20 years | Unknown | 0-14 years | |
| Concrete pavement | 5 | 30 years | 6 years | 24 years | |
| Concrete walks | 1/4 | 30 years | 6 years | 24 years | |
| Stairs | 5 | 30 years | 6 years | 24 years | |
| Ramps | 5 | 30 years | 6 years | 24 years | |
| Railings | 4 | 15 years | 6 years | 9 years | |
| Concrete curb and gutter | 4 | 30 years | 6-52 years | 24 years | |
| Concrete / Brick Pavers | N/A | N/A | N/A | N/A | |
| Guardrail, Parking Bumpers, Misc. | 4 | Varies | Varies | 15 years | |
| Fire lane | 4 | Varies by Material | Unknown | 0 years | |
| Fire lines and hydrants | 5 | 40 years | Unknown | 25-30 years | |
| Domestic Water system | 4 | 40 years | 52 years | 0 years | |
| Sewer system | 4 | 40 years | 52 years | 0 years | |
| Natural Gas system | 4 | 40 years | 52 years | 0 years | |
| Electrical System | 4 | 25 years | 52 years | 0 years | |
| Exterior Lighting | 4 | 25 years | 6 years | 19 years | |
| Storm water system | 4 | 40 years | 6+ years | 0-34 years | |
| Detention / Retention ponds | 4 | Life | 6 years | 35 years | |
| Stormwater Management BMP's | 3 | Varies by BMP | 6 years | 35 years | |
| Surface drainage and grading | 4 | N/A | N/A | N/A | |
| Vegetative landsaping | 4 | Life | 6-52 years | Varies | |
| Lawns | 5 | Life | 6-52 years | Life | |
| Fencing and gates | 3/5 | 20 years | Unknown | 2-10+ years | |
| Signage | 4 | 10 years | Unknown | 2+ years | |
| Flagpoles | 5 | 50 years | 6 years | 44 years | |
| Site furnishings | 5 | 15 years | Unknown | 10+ years | |
| Awnings / Canopies | 4 | 50 years | Unknown | 15+ years | |
| Site retaining walls | 5 | 50 years | 6-52 years | 10+ years | |
| Accessory structures | 3/5 | 50 years | 6+ years | 3-25+ years | |
| Playgrounds | 5 | 10 years | Unknown | 8+ years | |
| Paved play areas | 3 | 20 years | Unknown | 5+ years | |
| Play / PE fields | 5 | Life | 6+ years | 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 **Green Valley Elementary School**
Client Name Roanoke County Schools

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| Quantity | Description | Unit | Cost / unit | Total w/ OH&P |
|---|---|---|---|---|
| | **ARCHITECTURAL** | | | |
| 4,500 | Replace suspended ceiling system @ Library | SF | $5.50 | $29,700.00 |
| 4,500 | Replace suspended ceiling system @ Gym | SF | $5.50 | $29,700.00 |
| 2,016 | Remove Roof built-up (Asbestos) over Library | SF | $5.25 | $12,700.80 |
| 3,092 | Remove Roof built-up (Asbestos) over Gym | SF | $5.25 | $19,479.60 |
| 2,016 | Single-ply EPDM roof membrane @ Library | SF | $7.00 | $16,934.40 |
| 2,016 | Roof Insulation | SF | $2.25 | $5,443.20 |
| 3,092 | Single-ply EPDM roof membrane @ Gym | SF | $7.00 | $25,972.80 |
| 3,092 | Roof Insulation | SF | $2.25 | $8,348.40 |
| 120 | New Interior Signage-adhesive back/braille | EA | $42.00 | $6,048.00 |
| | ADA Compliant | | | |
| 4,500 | Replace Carpet, broadloom 32 oz, glue down | SF | $4.00 | $21,600.00 |
| | | | | |
| | **CIVIL** | | | |
| 200 | Remove and repair asphalt pavement | SF | $3.00 | $720.00 |
| 1,000 | Replace concrete sidewalk | SF | $5.00 | $6,000.00 |
| 800 | Repaint curbs and fire lanes | LF | $0.10 | $96.00 |
| 8 | Fire lane signage | EA | $500.00 | $4,800.00 |
| 1 | Replant tree | EA | $500.00 | $600.00 |
| 1 | Erosion control mat | EA | $100.00 | $120.00 |
| 1 | 6" Sprinkler System | LS | $20,000.00 | $24,000.00 |
| 4 | Directional signage | EA | $1,500.00 | $7,200.00 |
| 1 | Demo/Replace dumpster enclosure | LS | $10,000.00 | $12,000.00 |
| 4 | Directional signage | EA | $1,500.00 | $7,200.00 |
| 2 | Replace benches at multipurpose field | EA | $1,000.00 | $2,400.00 |
| | | | | |
| | **MECHANICAL / PLUMBING** | | | |
| 9,000 | Replace HVAC for Media Center wing | SF | $37.00 | $333,000.00 |
| 70,376 | Add sprinkler system | SF | $3.00 | $211,128.00 |
| | **ELECTRICAL** | | | |
| 9,000 | Replace HVAC for Media Center wing | SF | $1.50 | $13,500.00 |
| 70,376 | Ceiling Modifications | SF | $1.00 | $70,376.00 |
| | **TOTAL Budgetary Cost** | | | **$869,067** |