W.E. CUNDIFF ELEMENTARY SCHOOL

ARCHITECTURAL

W.E. Cundiff Elementary School was built in 1972, and is approximately 61,759 SF. The building is not sprinkled and is a two-story structure, designed as the 70's open classroom floor plan. Throughout the years, the classrooms have been sectioned off by utilizing wood framing and paneling on the second level. The combustible wood framing and paneling is not acceptable for non-combustible building. The boiler mechanical room / boiler room access is located off of a corridor located behind the kitchen. This corridor behind the kitchen also has access to the dirt crawl space under the second level floor. This area is currently being used as storage which is not advisable per state and local building code. The building loosely complies with the accessibility requirements of the time in which the work was performed; however, some spaces do not comply with current standards and yet others have been adapted to comply. The front entrance went through a renovation in 2014 by RCPS. The renovation provided handicap accessibility as well as security for the building.

Exterior Finishes

Exterior Cladding:

Exterior wall material is brick. The brick shows signs of moisture and vertical mold streaking. The gymnasium walls show tie rods penetrating through the brick. (This could be anchor solution for items mounted on the interior wall within the gymnasium space or the walls may be showing signs of stress and the brick ties have rusted and the tie rods are holding the brick to the block). Mold and blistered paint was detected inside the corridor near the gymnasium space showing signs of moisture problems within this area.

Some brick cracks are on the back side of the building and there is evidence of some brick cracks being repaired. Most cracks, particularly vertical cracks at building corners, are indicative of no provisions for expansion (control joints) built into the brick walls and can be repaired (see Structural Narrative).

Other exterior materials include metal mansard panels, gravel stops and trim.

Roof:

The building roof has a black EPDM flat roof with metal coping and membrane flashing. The roof appears to be in poor to good shape; it should be consistently monitored for issues and maintained. Several areas of the roof have membrane bubbles and areas of debris that needs to be removed. Sealants along coping, roof edges, etc. should be regularly monitored and replaced as needed. Several joints have experienced sealant degradation and cracking and should be resealed.

Windows:

Windows in the building appear to be the original hollow metal windows with (non-insulated) glass. The current window systems are in poor condition, are not energy efficient, and allow significant air infiltration. The windows are equipped with shades in some areas throughout the school. Window replacement is recommended during the next renovation.

Exterior Doors:

Exterior doors are hollow metal doors and frames with glass side lites and transoms. The main entrance provides adequate accessibility and security that allows visitors to be monitored prior to entering the building. All other exterior doors and frames are hollow metal. Glazing condition and door condition should be monitored. Rusting doors and frames should be replaced as required. Glazing can be replaced to improve overall energy efficiency of the system. Hollow metal door and frame replacement is recommended during the next renovation.

Interior Finishes, Fixtures & Equipment

(See assessment tabulations for interior finish conditions).

Vinyl Composition Tile, Terrazzo and Ceramic Tile are the predominant floor finishes. Other floor finishes include carpet, painted and unpainted concrete, and parquet wood flooring. Carpet is present in limited locations.

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

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

Ceilings are generally 2'x4' suspended acoustical tile (lay-in) with some gypsum wall board ceilings. Exposed roof structure is present in the multi-purpose area. Water damage is present in some of the suspended acoustical 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 would be replaced during a substantial renovation. Some door frames would be replaced to achieve handicap accessibility, or because of reconfigured spaces. Other door frames may be salvaged, patched, and painted.

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 building. All are in poor condition and many would be displaced during renovations because of the need to enlarge and reconfigure spaces.

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

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

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

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

General school storage is scattered throughout the building and consumes spaces intended for other functions. The addition of casework in classrooms will alleviate some of this. But, as part of renovation plans, general school storage should be planned in several strategic areas serving administration, faculty, and staff along with gymnasium equipment. 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. The different floor levels are handicap accessible by elevator. Some doors lack clearances required to be handicap accessible and the existing signage or lack thereof do not meet ADA accessibility standards. Handicap accessibility requirements can be achieved throughout the building 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 vestibules at all schools. The vestibule at W.E. Cundiff provides visibility from the office and control over main entry. Door position sensors and locks are provided at all other exterior doors. Entry at these points is limited to staff members within appropriate keys/cards. 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 W.E. Cundiff Elementary School has almost only front visibility to the interior exterior of the building. It does have good visibility of the playgrounds and additional parking locations. Sight lines and distances are reasonably long in most areas of the building. A more transparent administration area should be considered as part of renovations and additions.

End of W.E. Cundiff Elementary School Architectural Narrative

STRUCTURAL

During the Architectural investigation of the W.E. Cundiff Elementary School, horizontal mortar joints in the face brick were observed with mortar being pushed out of the joint. As with other schools in the district, this is occurring due to rusted joint reinforcing "delaminating" and expanding, causing the mortar to be pushed out of the joint. This condition does not pose a threat to the structural system of the building but it should be repaired to help slow the deterioration of the joint reinforcement and keep the brick face solidly attached to the face of the building. It is suggested that the joints be cleaned out and repointed.

End of W.E. Cundiff Elementary School Structural Narrative

PLUMBING/FIRE PROTECTION

Plumbing Fixtures:

Water Closets: Water closets observed were floor mounted vitreous china with manual type flush valves. There were just a couple 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 no ADA compliant urinals observed. The condition of the urinals and flush valves was 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. Lavatories observed did not have hot water supply or any 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; others were noted to have swing spout kitchen type faucets. Most sinks did not have hot water supplies or an ASSE 1070 mixing valve as required by today's code. The condition of the sinks varied from fair to very good in accordance to their age.

Showers: No showers were observed.

Laboratory Fixtures: No laboratory fixtures observed.

Emergency Fixtures: No emergency fixtures observed.

Electric Water Coolers: There were several different styles of water coolers noted: single wall hung, single semi-recessed and several ADA compliant high/low models. The condition of the water coolers ranged from good to very good.

Water Heaters:

Water heating is done by a Rudd/Rheem model E S 120-54-G electric water heater, 54 kW, 120 gal, 480 volt. Water heater was manufactured in 2009; no indication when it was installed. Hot water system has a recirculation system with two return lines. A mixing valve for the school was not detected and no thermometer on hot water output.

Piping:

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

Pipe Insulation:

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

Kitchen:

The Kitchen is an older type with mostly direct waste connections. No sanitary floor sinks were observed. No grease interceptor was found. All kitchen equipment is electric with no gas-fired equipment.

Sprinklers:

The building was not sprinkled.

Recommendations:

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

End of W.E. Cundiff Elementary School Plumbing/Fire Protection Narrative

MECHANICAL (HVAC)

Heating:

The building is primarily heated by water source heat pumps. The heat pumps were installed in 1992. The heat pumps are 24 years old and have passed their expected useful life of 18 years. There is an electric boiler and a gas-fired flexible tube boiler that were both installed in 1987. The boilers provide heat to the building condenser water circulation system. Condenser water is circulated to the buildings heating coils with base mounted pumps that were also installed in 1987. The boilers and pumps are 29 years old. The electric and gas boilers have passed their useful life expectancies of 15 and 25 years respectively. The pumps have 1 year left in their expected useful life of 30 years. The gymnasium is served by a DX Trane Voyager rooftop unit with electric heat that is 4 years old and has an expected useful life of 18 years.

Ventilation:

Ventilation is provided to the building by rooftop air handling units and louvered penthouse ventilators on the roof. Kitchen hood and dishwasher have dedicated exhaust fans on roof.

Air Conditioning:

There is a closed-circuit cooling tower which is used to reject heat during cooling season. The cooling tower is believed 8 years old and has a useful life expectancy of 18 years. The building is primarily cooled by water source heat pumps which are 24 years old and are at the end of their useful life expectancy of 25 years. The gymnasium is serviced by a DX Trane Voyager rooftop unit, the same unit that provided heat.

Piping:

There is hot water piping, black steel, insulated. There is refrigerant piping for split condensing units. The hot water piping insulation was in very rough shape. There were a few leaks and looked like some other leaks has recently been repaired or temporarily fixed.

Controls: The building automation controls are digital type (DDC).

Recommendations:

Piping was in rough shape and needs some attention. The water source heat pumps are functioning but are passed their expected useful life and will need to be replaced. The boilers and pumps will need to be replaced due to age as well.

End of W.E. Cundiff Elementary School Mechanical Narrative

ELECTRICAL

Main Switch Gear:

Main Switchboard: The main switchboard is a 2000 Amp, 3 phase, 4 wire, 480Y/277 volt Westinghouse, service entrance rated switchboard. The existing switchboard is original to the building from 1972.

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

Transformers:

Transformers: The majority of the transformers are original Westinghouse 480/277V to 240/120V single phase. There are also a few newer Eaton 480/277V to 208Y/120V transformers. They are currently in good working condition; however, over time transformers become less energy efficient.

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

Panelboards:

Distribution and Branch Circuit Panelboards: The majority of panelboards are original Westinghouse. There are a few newer Eaton and Siemens panels throughout the building to accommodate Activeboards and updates. The original panels have exceeded their expected useful life and many have no space or spares.

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 receptacles. 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 replaced if the building were renovated. Conduit would be salvaged where practical.

Light Fixtures:

Light Fixtures: The light fixtures consist of primarily 2x4 flat lens fixtures with T8 lamps, 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 light fixtures are also utilized and many 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 and motion controlled switches throughout corridors.

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 a Rauland headend system with older speakers located throughout the school. Each classroom has a PA speaker, clock, and an unused push-to-talk switch. 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. It appears to have been updated at some point, although the remainder of the system appears to be original. The current system consists of limited area manual pull stations, smoke detectors, and horn/strobe alarms.

Recommendation: If renovations and additions are pursued, expand existing fire alarm system with audible and visual notification devices throughout the school. 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 only a few pole mounted lights for parking areas, wall packs around the building, and canopy lighting. These lamps are likely changed as lamps burn out; however, the ballasts and optics have likely not been changed and have exceeded their useful life.

Recommendation: To accommodate a new addition or renovations, replace light fixtures around exit doors or lighting 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. 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. 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 W.E. Cundiff Elementary School Electrical Narrative

CIVIL

Traffic Circulation

Buses: School is served by 8 regular buses, 2 special needs buses and 2 daycare vans. There is a designated bus loop with its own entrance.

Morning: Buses enter the bus loop by the designated bus entrance, proceed to the sidewalk adjacent to the gym, and drop off students two buses at a time. Drop off works well.

Afternoon: Buses enter the bus loop by the designated bus entrance, and park in the bus loop to load students. After students are loaded, buses leave the site simultaneously.

Cars: There is a stacking drop off / pick up loop around the main parking area west of the bus loop.

Morning: Cars enter the site and drop off students at the main entrance. Staff assists students exiting cars to keep it moving quickly. Traffic still will back up down the entrance road and out onto Hardy Road, particularly left turns into the site.

Afternoon: Cars enter the site and wait until the buses are loaded and exit the site. Then cars will move into the bus loop to park and parents will enter the building to sign out their students. Cars then can exit from either the bus entrance or the main entrance. Traffic will back up down the entrance road and out onto Hardy Road.

Parking: 76 striped parking spaces are provided with 2 designated ADA spaces. Day to day parking is not 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 occasionally used as overflow parking, and the adjacent church will allow parking for events.

Service: The service area is located on the west side of the school. Access is shared with the parking lot and parent drop off area. Maneuvering is difficult for larger delivery vehicles.

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

Separation: Separation is relatively good since the bus loop has its own designated entrance. The service area shared with the main parking lot is poor due to the small size.

Adjacent Roadways: Hardy Road is a four lane road that his heavily travelled. There are left and right turn lanes into the site which assist in stacking. Sight distance at both entrances is adequate.

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

ADA Accessibility

Parking: There are 2 spaces designated as ADA parking with 1 designated as van accessible. 4 ADA parking spaces are required.

Recommendation: Provide striping and signage to convert existing parking spaces into 2 additional ADA parking spaces.

Signage: Signs are faded but code compliant and in fair condition.

Ramps: Curb ramps are appropriately located and in fair condition. There is a relatively new ADA ramp at the main entrance that is 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: Poor condition with cracking and spalling throughout.

Recommendation: Replace all asphalt pavement.

Asphalt Walks: Asphalt track is fair condition with grass encroaching on edges and in cracks.

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

Concrete Pavement: Concrete pavement at dumpster is aged, but functional.

Concrete Walks: Concrete walks are aged, with spalling, cracking, and broken areas throughout.

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

Stairs, Ramps, and Railings: Stairs at loading dock, and front entrance are aged but functional. Railing at loading dock area does not meet code, is only on one side of the stairs, and has paint faded.

Recommendation: Replace existing railings with code compliant railings.

Concrete Curb and Gutter: Concrete curb is aged, cracked, broken, and settled in some areas.

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

Concrete / Brick Pavers: Some sections are in fair condition, some sections mortar is broken out and bricks are broken.

Recommendation: Remove and replace broken sections of brick paving.

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

Recommendation: Re-paint curbs and asphalt at fire lanes. Replace fire lane signs and 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. No fire hydrant on site, but one at Hardy Road. No paved fire lane around building or fire department connection, but fire truck access is present.

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

Domestic Water System: The water system is in fair condition. Staff indicates when building sites for extended period of time, water runs brown and cloudy which could indicate rusty pipes. Water meter is located in a vault at Hardy Road.

Recommendation: Water quality should be tested and monitored regularly.

Sewer System: The sanitary sewer system consists of manholes and pipes in fair condition and functional, although manholes are starting to deteriorate. Staff indicated no issues with stoppages and observations show correct inlet shaping and consistent flow, but also signs of stagnant waste.

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

Natural Gas System: Gas meter is located at the north east side of the school and out of vehicular traffic areas. The meter is in fair condition and functional, but shows signs of deterioration and rust.

Recommendation: Contact gas company to inspect condition of meter.

Electric: Electric service provided via overhead poles to school property. Service is taken underground to a transformer in the loading dock area and then into the building.

The meter is mounted on the building wall behind the transformer. Transformer is not protected from loading/unloading traffic and is in fair condition.

Recommendation: Provide bollards to protect transformer in loading dock area.

Site Lighting: Site lights illuminate school parking lots, bus loop and front entrance. No lighting for sidewalks at sides or rear of school. Lighting is minimal of safety and security.

Grading and Drainage

Storm Water System: Internal roof drains are piped underground into school storm water network. Runoff from the parking lot and islands sheet flows into curb and drop inlets and conveyed to the County network at Hardy Road. Inlets, manholes and pipes are in fair condition and functional, but full of sediment.

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

Slopes, Ponding, and other Drainage Issues: Minor erosion at side of building near playground and minor sediment accumulation in bus loop and parking lot.

Site Features

Vegetative Landscaping: Vegetation, including trees and shrubs, are generally healthy. One tree at entrance requires removal and heavy pruning needed at southwest corner of parking lot.

Recommendation: Provide general maintenance and pruning as indicated.

Lawns: Generally fair condition. Some areas require more attention than normal seed and mulch techniques.

Recommendation: Areas on east side of school and parking lot require scarifying ground prior to reseeding due to age and compaction due to heavy foot traffic. Provide fencing and erosion control mat to protect seed in high traffic areas.

Fencing and Gates: No site fencing present as vegetation acts as perimeter limits.

Recommendation: Recommend immediate placement of 4' vinyl coated CLF between eastern grade 2-5 playground from staff parking and bus loop.

Signage: Signage is legible. Many posts lack foundations and are leaning. Minimal directional signage on site.

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

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

Recommendation: Monitor condition to replace flag poles in future.

Site Furnishings: Site furnishings limited to benches at playground and are in good condition.

Site Retaining Walls: Short 2' wall near main entrance is solid but showing signs of aging. 6' wall at service dock shows signs of initial failure. 6' wall extends approximately 4' above grade to prevent falls.

Recommendation: Structural analysis of large wall and appropriate repairs are recommended.

Accessory Structures: Three storage structures with wood framing and vinyl coating. Roofs are in good condition.

Play Areas and Physical Education

Play / PE Areas (General):

Playgrounds / Stationary Play Equipment: One area of grade PreK-1 equipment is provided. Two areas of grade 2-5 equipment are provided. All equipment is in good condition. Mulch in fair condition.

Recommendation: All areas require fresh mulch.

Paved Play Areas: The only paved play area provided is located in the bus staging area. No fence or gates are provided to separate vehicular traffic from students. Paved walking track in fair condition.

Recommendation: Provide CLF between playground and bus staging as indicated in Fencing and Gates section. Recommend to provide gates at entrances to bus staging area to prevent traffic entering during use.

Play / PE Fields: Large PE field provided east of school. However, in relative elevation it is approximately 40 feet above the school with no defined access.

Recommendation: Access to field is not ADA compliant and difficult due to elevation differences. However, remediation is likely a too great of a capital cost unless an entire new facility is planned.

End of W.E. Cundiff Elementary School Civil Narrative

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Notes

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

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General:

The brick and masonry two story facility with Metal Fascia panels along the top of the flat roof was constructed in 1972. The existing facility has been updated to provide adequate accessibility and Security at the Main Entrance. The facility is not sprinkled, it was designed as the open classroom design of the 70's. The existing classrooms have been sectioned off by utilizing wood construction and paneling on the upper level.

Entry Vestibule:

Terrazzo Flooring, Suspended Acoustic Tile Ceiling (SATC). Walls are painted CMU and Alum Storefront. The existing Main Entrance Vestibule meets security and accessibility requirements with power assist doors and Security locks.

Main Office:

The flooring is carpeted the walls are Gypsum Wallboard and Painted CMU
The ceiling is Suspended Acoustical Tile Ceiling (SATC).
The Doors are HM Doors and Frames with single pane glass.
The door hardware is lever handle hardware.
A closet in the Main Office Area is being used as an Office Space (No Ventilation)

Corridor:

The flooring is Terrazzo with vinyl wall base. (Flooring Cracks at Music Room)
The Walls are painted CMU.
The ceiling is SATC.

Kitchen:

Quarry Tile Flooring and base
Moisture Resist SATC
Painted CMU Walls
HM Door and Frame

Kitchen Storage Room:

Concrete Floor
Painted CMU Walls
Exposed Ceiling Structure
HM Door and Frame with louver

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Notes

Kitchen Service Entrance:
- Concrete Flooring
- Painted CMU Walls
- Gypsum Wallboard Ceiling
- HM Door and Frame (Knob Hardware needs replacing)

Cafeteria:
- The floors are VCT with Vinyl Base.
- The ceiling is SATC and the walls are painted CMU.
- The Exterior Windows are HM Frame and single pane Windows
- Handicap Accessible Water Fountain

Janitor:
- Off of Kitchen with concrete floors
- Painted CMU Walls
- Exposed Ceiling Structure
- HM Door and Frame (Doors with Lever Hardware)
- Janitor Floor Sink and Washing Machine

Women's Restroom:
- Off of Mechanical and Kitchen
- The flooring is ceramic tile,
- SATC
- Painted CMU walls
- Not Handicap Accessible
- Metal Partitions, Soap, Paper Towel Dispenser

Mechanical Room:
- Concrete Floors
- Exposed Ceiling
- Painted CMU
- Fiberglass Insulation on Piping
- Service Sink

Crawl Space:
- Off of Mechanical and Kitchen Corridor
- CMU walls
- Styrofoam Insulation panels at the Ceiling
- No Flooring (Vapor Barrier over dirt and sloping upward)
- The space is being used as Storage

Boy's Toilet:
- Not Handicap Accessible
- Two low mounted wall lavatories
- Two low mounted urinals
- 1 floor mounted flush valve water closet with metal partitions
- Ceramic Tile Flooring with Tile Base
- Painted CMU walls
- SATC
- HM Frame with Wood Door (Louver in Door)

Toilet off Music Room:
- 6'-0"x 6'-8" Toilet Room with Low Lavatory and Low Water closet
- Ceramic Tile Flooring
- Painted CMU Walls
- SATC
- Soap and Paper Towel Dispenser

Music Room:
- VCT Flooring with Vinyl Base
- Painted CMU Walls with GWB divider wall separating the classroom
- SATC
- Plastic Laminate Casework and countertop with sink
- HM Frame with Transom
- Wood Door
- Marker Boards, Bulletin Board

Kindergarten Workroom:
- VCT Flooring with vinyl base
- SATC
- Painted CMU walls
- HM Frame with Wood Door (Door w/Louver)

Elevator:
- 4'-3 ½"x 5'-9 ½" Elevator Compartment
- Marked Handicap Accessible
- Off Corridor near Gymnasium

Elevator Room:
- Concrete flooring
- Exposed Ceiling
- Brick and CMU Walls

Lower Level Gymnasium Corridor:
- Terrazzo Flooring (Cracks in many places)
- Painted CMU Walls
- SATC

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Notes

Lower Level Storage:
- Exposed Ceiling
- Concrete Flooring
- Painted CMU Walls
- Roof Access
- Room is located across from the Gymnasium

Gymnasium Storage:
- VCT Flooring
- Painted CMU Walls
- SATC
- This room has a small room within the space called a “Seclusion Room” This room consist of Padded Walls and Padded Floor. The room can be close off with a wood door that has a vision panel. The vision panel has paper taped over it. The door is wood with a HM Frame and the Hardware is Knob with lock.

Gymnasium:
- Parquet flooring, Stage has wood flooring
- Painted CMU Walls
- Exposed Structure
- High steel windows

Gymnasium Walls:
- The exterior brick of the Gymnasium has some mold and moisture issues. The brick also has tie rods throughout the brick. (This could be anchor solution for items mounted on the wall within the gym space or the walls may be showing signs of stress and that brick ties have rusted and that the tie rods are holding the brick to the block.)
- Mold and paint blistering has been painted over in the corridor near the Gymnasium showing signs of moisture problems within this area.

Upper Level Stair:
- Terrazzo Treads and Landing with slip resistance strips
- Painted CMU Walls
- SATC with Slope Glass Window at landing (Fogged up, signs of leaking). It needs to be replaced.
- Pre-engineer Metal stairs with Metal Balusters and Wood Railings

Upper Level Corridor:
- Terrazzo Flooring
- Painted CMU Walls
- SATC
- HI/LO drinking fountain located in Corridor
- Open area of Corridor closed off by construction of wood and Paneling. (Paneling has been used throughout the upper area.)

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Notes

Classrooms:

VCT flooring
Painted CMU Walls
SATC
Classroom original design was "Open Concept" of the 70's. The school division has separated the classrooms using wood framing and gypsum wallboard in some spaces, wood framing and wood paneling in other areas.
Wood casework with Plastic Laminate Countertops (Need to Replace or Refinish)
Marker Boards, Bulletin Boards.

Media Center:

Carpeted flooring
Painted CMU Walls and wood frame walls with wood paneling
SATC
Wood casework with Plastic Laminate Countertops (Need to Replace or Refinish)
Wood Shelving (Need to Replace or Refinish)

Roof:

EPDM roofing
Ponding of water from Mechanical Unit Condensate drain.
Roof Insulation Anchors are telegraphing through roof membrane.
Noticed a note at each Roof drains stating the roof drain has been tighten down.

Exterior Windows:

Windows are Hollow Metal Frames with single pane glazing.

Exterior Doors:

Doors are Hollow Metal Frames with Hollow Metal Doors. (Need Seal Kit)

Building Exterior:

Brick with cracks on the back side of the building.
Some evident of brick repair from past cracking.
Mold and moisture problem on the Gymnasium brick wall.
Metal fascia trim around perimeter of building (need cleaning).

Conclusion:

The facility is in good shape and the main entrance meet accessibility and security requirements; however some maintenance work is needed.
After talking to some staff members, several items were mentioned.

1. Intercom System not wired at Gymnasium and Principals Office.
2. Insects seem to enter in the building from the 2nd floor.
3. Poles, lights not working properly in the parking lot.
4. Mold issues outside of the Gymnasium and Moisture on wall just outside of the Gymnasium in the Corridor.
5. Air Conditioning not consistent in spots of the building.
6. Alarm system – sounds off repeatedly.

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Notes

Conclusion Cont.:

Cundiff Elementary School has several unique features; however several items need to be addressed.

The facility is not sprinkled and all wood framing and paneling should be removed immediately. Elementary schools should not have combustible materials and the current building code stresses this.

The facility need to have the Gymnasium brick examined due to the moisture and mold issue.

Not sure when roof was installed and looked ok just noticeable of the insulation anchors telegraphing through the membrane.

The facility is equipped with a Handicap Accessible Elevator however the facility need updated Handicap Accessible Toilet rooms based on today building and accessible codes.

The facility will need to replace the door hardware with new accessible hardware such as lever, push bar, closers, etc and required by Local and State Building Code.

W.E. Cundiff 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 and Exterior Finishes	4	Life	44 years	Life	Badly Stained, Possible Moisture Problems
CMU walls	4	Life	44 years	Life	
Wood Framing and Paneling	1	Not Acceptable	44 years	Not Acceptable	Paneling Walls are combustible, Removal Required
Wood trim	2	15 years	44 years	0 years	Refinish or replace
Interior doors	4	20 years	44 years	0 years	
Exterior doors	3	50 years	44 years	6 years	HM doors
Door hardware	3	7 years	N/A	N/A	Door Hardware need replacing
Electronic door hardware	5	5 years	2 years	3 years	Entrance Security completed 2014
Carpet	5	5 years	2 years	3years	
Terrazzo	4	50 years	44 years	6 years	Flooring looks good, need vinyl base replaced
Vinyl floor tile	2	12 years	44 years	0 years	Need replacing in some areas
Ceramic/Porcelain floor tile	3	50 years	44 years	6 years	
Quarry floor tile	3	50 years	44 years	6 years	
Wood gym floor	3	10 years	N/A	0 years	Repairs and Refinishing required
Other wood floors	4	10 years	N/A	0 years	Repairs and Refinishing required
Exposed concrete floors	4	50 years	44 years	6 years	Painted concrete floors
Curtain Wall, Storefront	4	50 years	44 years	6 years	
Exterior windows	2	30 years	44 years	0 years	Fixed HM Windows need replacing
Interior windows	4	30 years	44 years	0 years	HM Frames, single pane glass, need replacing
Roof (Including flashings, coping, etc.)	3	20 years	N/A	N/A	Date of Roof N/A, Need some maintenance
Suspended acoustical tile ceilings (lay-in)	2	25 years	44 years	0 years	
Plaster/GWB ceilings	2	30 years	44 years	0 years	
Ceiling/exposed structure finish (paint)	5	5 years	N/A	N/A	Painting required
Interior wall finishes (paint)	5	5 years	N/A	N/A	Painting required
Marker boards, chalk boards, tack boards, projection screens	5	N/A	44 years	N/A	
Casework	4	N/A	44 years	N/A	Wood and Plastic Laminate Casework
Window treatments	4	N/A	44 years	N/A	Shades
Toilet partitions	2	20 years	44 years	0 years	Painted Metal Partitions
Toilet accessories	2	N/A	44 years	N/A	Need updating
Exterior and Interior railings	4	30 years	44 years	0 years	Repairs and Refinishing required
School Sign	4	N/A	44 years	N/A	Signage do not meet ADA Code Requirements
Sprinkler/No Sprinkler	5	N/A	44 years	N/A	Not sprinkled
ADA Code Compliant	1	N/A	44 years	N/A	Bldg is Accessible, but no Accessible Toilet Room

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

W.E. Cundiff 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					
Electric Boiler	2	15 years	24 years	0 years	
Gas Boiler	2	30 years	29 years	1 year	
Cooling tower	5	18 years	8 years	10 years	
Mechanical piping	5	30 years	24 years	6 years	
Refrigerant piping	5	30 years	4 years	26 years	
Duct	5	30 years	24 years	6 years	
Outdoor air units	N/A				
Terminal units	5	30 years	24 years	6 years	
Heat Pumps	2	18 years	24 years	0 years	
Package units	5	20 years	4 years	16 years	
Controls	2	20 years	24 years	0 years	
Exhaust fans	2	25 years	24 years	1 year	
Science fume hoods	N/A				
Kitchen hood	5	30 years	24 years	6 years	
Plumbing					
Plumbing fixtures and controls	2	30 years	44 years	0 years	
Floor drains	2	30 years	44 years	0 years	
Water heaters	2	25 years	44 years	0 years	
Pumps	2	15 years	44 years	0 years	
Potable water piping & valves	2	30 years	44 years	0 years	
Sprinkler system	N/A				
Back-flow preventer	N/A				
Service line & meter (size appropriate)	2	30 years	44 years	0 years	
Wall and yard hydrants	2	15 years	44 years	0 years	
Eye wash stations	N/A				
Emergency showers	N/A				
Condition Categories					
1 Immediate replacement required, life saftey concern					
2 System has reached it's useful life					
3 Major repair or modifications required, useful life remaining					
4 Minor repair required					
5 General maintenance required					

W.E. Cundiff Elementary 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	44	-4	2	
Transformers	30	44	-14	2	
Panelboards	30	44	-14	2	
Cabling	40	44	-4	2	
Conduit/raceway	40	44	-4	2	
Light fixtures	20	44	-24	2	
Lighting controls	30	44	-14	2	
Public address system	30	44	-14	2	
Security system	10	2	8	5	
Camera system	10	5	5	5	
Data system	15	5	10	5	
Fire alarm system	30	10	20	5	
Site lighting	20	44	-24	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					

W.E. Cundiff Elementary School Civil Condition Assessment

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

System/Components	Condition Category	Expected Useful Life	Current Age	Expected Life Remaining	Notes
Civil					
Asphalt pavement	2	15 years	Unknown	0 years	
Asphalt walks	3/4	20 years	Unknown	5-10 years	
Concrete pavement	4	30 years	46 years	0 years	
Concrete walks	2/3	30 years	46 years	0 years	
Stairs	4	30 years	46 years	0 years	
Ramps	5	30 years	6 years	24 years	
Railings	2/5	15 years	6-46 years	0-9 years	
Concrete curb and gutter	3	30 years	46 years	0 years	
Concrete / Brick Pavers	3	30 years	46 years	0 years	
Guardrail, Parking Bumpers, Misc.	N/A	N/A	N/A	N/A	
Fire lane	4	Varies by Material	Unknown	0 years	
Fire lines and hydrants	3	40 years	Unknown	10-15 years	
Domestic Water system	4	40 years	44 years	0 years	
Sewer system	4	40 years	44 years	0 years	
Natural Gas system	4	40 years	44 years	0 years	
Electrical System	4	25 years	44 years	0 years	
Exterior Lighting	4	25 years	44 years	0 years	
Storm water system	4	40 years	44 years	0 years	
Detention / Retention ponds	N/A	N/A	N/A	N/A	
Stormwater Management BMP's	N/A	N/A	N/A	N/A	
Surface drainage and grading	4	N/A	N/A	N/A	
Vegetative landsaping	4	Life	44 years	Varies	
Lawns	4	Life	44 years	Life	
Fencing and gates	1	20 years	N/A	N/A	
Signage	4	10 years	Unknown	5+ years	
Flagpoles	5	50 years	44 years	6 years	
Site furnishings	5	15 years	Unknown	10+ years	
Awnings / Canopies	N/A	N/A	N/A	N/A	
Site retaining walls	3	50 years	44 years	6+ years	
Accessory structures	5	50 years	Unknown	10+ years	
Playgrounds	5	10 years	Unknown	5 years	
Paved play areas	1	20 years	Unknown	10+ years	
Play / PE fields	5	Life	44 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 **W.E. Cundiff Elementary School**
Client Name Roanoke County Schools

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Quantity	Description	Unit	Cost / unit	Total w/ OH&P
	ARCHITECTURAL			
3,600	Replace windows with energy efficient product	SF	$45.00	$194,400.00
	Includes removal of existing			
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
56,848	Replace suspended acoustical tile ceilings	SF	$5.50	$375,196.80
4,000	Remove existing wood framed walls	SF	$7.50	$39,000.00
	and paneling and replace with metal stud and			
	gyp bd partitions.			
56,848	Vinyl Flooring	SF	$2.50	$184,756.00
56,848	Interior Paint	SF	$0.75	$55,426.80
40	Toilet Partitions	EA	$1,215.00	$63,180.00
18	Toilet accessories-18 restrooms	EA	$1,500.00	$35,100.00
1	Treat mold and blistering paint in gym corridor	EA	$5,000.00	$5,000.00
	CIVIL			
100	Pavement restriping	LF	$0.20	$24.00
4	ADA signage	EA	$500.00	$2,400.00
6	Fire lane signage	EA	$500.00	$3,600.00
4	Directional signage	EA	$1,500.00	$7,200.00
90,000	Mill and overlay asphalt pavement	SF	$1.00	$108,000.00
20	Replace handrails	LF	$50.00	$1,200.00
600	Repaint curbs and fire lanes	LF	$0.10	$72.00
3	Install bollards	EA	$650.00	$2,340.00
1	6" Sprinkler System	LS	$20,000.00	$24,000.00
150	4' Chain link fencing	LF	$25.00	$4,500.00
1	Chain link fencing gates	EA	$250.00	$300.00
	MECHANICAL / PLUMBING			
69,759	Repair HVAC System	SF	$20.00	$1,395,180.00
69,759	Add Sprinkler System	SF	$3.00	$209,277.00
69,759	Repair Plumbing System	SF	$10.00	$697,590.00
	ELECTRICAL			
69,759	Repair HVAC system	SF	$1.00	$69,759.00
69,759	Ceiling Modifications	SF	$1.00	$69,759.00
69,759	Electrical Distribution System	SF	$7.00	$488,313.00
69,759	Electrical Lighting	SF	$4.00	$279,036.00
69,759	Electrical Branch Circuits	SF	$8.00	$558,072.00
	TOTAL Budgetary Cost			**$5,016,682**