VERONA AREA SCHOOL DISTRICT FACILITIES STUDY

Updated April 2023
EUA Project: 322693

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EXECUTIVE SUMMARY

INTRODUCTION

A Facilities Study is an important first step in the planning process which helps school districts and their communities to better understand the current state of its facilities and how well these components support educational goals. The Facilities Study provides an independent, objective analysis of the conditions and capabilities of the district's facilities and grounds. This study also serves as a foundational resource document to support immediate and long-range facilities planning.

This report represents an update to the 2015 and 2016 studies where the information was gathered through on-site visits of the sites and buildings and interviews with various building administrators and maintenance staff. Included in this report is an analysis of building envelope and Mechanical, Electrical and Plumbing (MEP) assessments and an overview of the sites occupied by the Verona Area School District (VASD).

This 2022-2023 Facilities Study Update, focused on the work in the projects of the 2017 referendum, which were completed in 2020, along with work that VASD has done outside of the referendum scope since 2016. The referendum projects consisted of a new Verona Area High School, converting the existing high school to Badger Ridge Middle School, converting the existing Badger Ridge Middle School to Sugar Creek Elementary School, and the renovation of the K-Wing. The old New Century School and Sugar Creek Elementary are no longer part of the VASD facilities. Anticipated work at Stoner Prairie Elementary School and Savanna Oaks Middle School with respect to the Secure Entrance Projects scheduled for 2023 have been reviewed for relevant information.

The focus of this study is to update the useful life charts found in the 2015-2016 report as well as to establish useful life expectancies for the new high school and upgrades to the renovated buildings in the 2017 referendum completed in the year 2020. As such the year 2020 is the baseline for those life expectancies.

The study team consists of EUA, IMEG and Findorff. Findorff's role is to create a ten-year spreadsheet of anticipated budgets that would reflect the life expectancy of the various components. The budgets and life expectancies are not absolute nor a guarantee, however, create budgets which may be used to manage potential needs on an annual basis.

A Capacity Study was conducted by EUA in May of 2022. This study is included in the Part 3for reference purposes.

BUILDING CONDITIONS

The following information is a brief explanation of the Building Conditions Assessments and American with Disabilities Act (ADA) observations completed for the facilities.

The Building Conditions Assessment includes a comprehensive review of the building's exterior shell (roof, wall systems, windows/doors, etc.); interior finishes and materials (flooring, casework, etc.); mechanical, electrical, and plumbing systems; and compliance with the Americans with Disabilities Act (ADA) relative to accepted industry standards.

It is important to note that the buildings within the District are generally well-maintained and maintenance needs have typically been prioritized based on safety concerns and severity of the need. While there are some findings within this report that demonstrate a more urgent need, many of the findings are items that are currently being addressed through ongoing scheduled maintenance, or could be in the future.

As of July, 2002 the building code in the State of Wisconsin changed to the International Building Code (IBC). One significant change requires facilities greater than 12,000 square feet to be protected by a fire sprinkler system. Although this requirement does not affect existing facilities that do not receive upgrades, significant remodeling or additions to an existing structure may trigger this requirement.

A building's compliance with Americans with Disabilities Act (ADA) is based on the review of the accessible routes to and through the building and site, as well as accessible features and accommodations inside the building as defined by ADA design guidelines and the International Building Code (IBC). Items identified in this report are not considered compliant with current standards. Designed in the mid-20th century under building codes that were less stringent relative to handicapped accessibility, some of the District's schools, like many schools of that era, now face code compliance issues. Although older buildings are legally "grandfathered" by the previous codes, some items may require correction should renovations or additions to these schools be initiated in the future.

The following Facilities Summary information provides building and site Statistics, Capacity and Building Condition Assessment findings that are specific to each school. Comprehensive findings and recommendations can be found within the full report. Supplemental data and other professional consultant reports provided to EUA by the District is located in the appendices.

COUNTRY VIEW ELEMENTARY SCHOOL

Below is a summary of the grade school as it relates to the Building Systems Assessment:

Initial construction in 2000 with reconstruction in 2014 due to tornado damage. Energy audit upgrade in 2014.

Positives:

- ADA parking spaces clearly marked with accessible route to front doors.
- All exterior wall systems constructed as 8" CMU back up, 2" rigid insulation, Vapor Barrier, air space and Utility masonry veneer and constructed according to current construction standards.
- All windows are insulated and in thermally broken aluminum frames and are in good condition.
- All doors aluminum and in good condition.
- All exterior walls are generally in good condition.
- The roof was replaced with a fully adhered roof during the 2014 reconstruction.
- All overhangs and canopies are in good condition.
- Gas fired De Dietrich hot water boilers are in good condition and would have some capacity.
- Building is air conditioned.
- Efficient thermal ice storage system installed to cool the building.
- Air handing units are original to building and in good condition.
- Electrical equipment in good condition.
- According to utility bills there is some capacity in the electrical system.
- Transformer panel boards have various levels of vacant positions for additional circuit breakers.
- Occupancy sensors in all rooms.
- LED lights in corridors and site.

Negatives:

- There is some differential cracking between the Split Faced CMU and the Bricks at the window accent sections predominantly on the North and east facades. This could be caused by the differential expansion and contraction of the materials. CMU is more porous than brick and expands and contracts more than brick. Secondly the tornado may have caused bowing of the wall on the suction side causing the cracking. VASD will need to tuck point and maintain these areas over the life of the building.
- The thermal ice system is sized for the current building only and has no capacity for additions.

GLACIER EDGE ELEMENTARY SCHOOL

Below is a summary of the grade school as it relates to the Building Systems Assessment:

Constructed in 2005.

Positives:

- General condition of the brick and mortar is good.
- VASD consistently inspects the roofs according to MFG standards. Roof in good condition and should be maintained according to VASD inspections.
- All aluminum windows, doors and frames.
- ADA spaces have clear path to front entry.
- Concrete in good condition with only some minor cracking.
- Exterior in good condition with proper masonry construction such as flashing at windows, foundation and control joints at building corners.
- Wall construction includes all proper insulation and water proofing.
- Energy audit upgrades performed in 2014
- The building is heated and cooled with a ground source heat pump system
- Two cast iron De Dietrich hot water boilers in good condition.
- Expected life of the energy recovery units is 20-25 years are currently in good working condition.
- The sanitary piping is likely original and expected to be in good working order.
- The storm piping is likely original and expected to be in good working order.
- The building is fully sprinkled.
- There is space available for additional electrical circuit breakers

Negatives:

- Little capacity in the roof mounted heat recovery units and building heat pump loop.
- Most panelboards have little space available for additional circuit breakers.
- All the storefront windows have condensation between the insulated glass. Upon further investigation this is due to the conductivity of the aluminum window spacers between the glass units. Metal is a good thermal conductor and heat/moisture is allowed to pass through and condense on the inside faces. This had been the condition since the building was completed. Only solution is to replace the storefront windows, but this is not recommended due to the cost of replacement and the windows generally are performing well. VASD will monitor.
- Parking lot to be replaced in next five years.

STONER PRAIRIE ELEMENTARY SCHOOL

Below is a summary of the grade school as it relates to the Building Systems Assessment:

Constructed in 1989. Addition in 2005.

Positives:

- VASD consistently inspects the roofs according to MFG standards. Roof in fair condition and should be maintained according to VASD inspections.
- ADA accessible entrance on the West side.
- ADA parking spaces clearly marked with accessible route to front doors.
- All areas of building are air conditioned.
- Building is fire sprinklered.
- Some capacity for electrical switches.
- Boilers are in good condition: the original building had two new boilers installed in 2014 and the addition has the original boiler from 2004
- Condition of the sanitary main us unknown and could be explored with a camera. Piping is original to the building and expected to be in good working order.
- Energy audit performed 2014.
- Air handlers that are original to each building typically have a lifespan of 30-35 years. The original air handling unit is 27 years old. In 2018 the AHU's were rebuilt.
- Scope of work from 2022-2023 provides a new Secure Entrance and Secure Vestibule 115 and a two-person Reception Station with Principal Office to include a conference area. Provide new doors and frames for Main Vestibule 114to exterior and interior.
- Scope of work from 2022-2023 provides new flooring, ceiling, lighting, and HVAC diffusers to remodeled areas.

Negatives:

- Sill of windows on the 2005 additions slope inward. Need to monitor and maintain sealant between the flashing and the window.
- Tile accents under the windows is in poor condition, missing or cracked and should be replaced with metal siding or material of equal cost and durability. Scheduled as part of work to be performed in 2023.
- Expansion joint should be cut into the existing masonry on the Southwest section of the building. Scheduled as part of work to be performed in 2023.
- Some boiler capacity but the added load will eliminate redundancy.
- All plumbing fixtures in good working order but some do not meet current conservation requirements.
- Interior of the wood windows should be cleaned and re- stained. Windows likely need replacement in next 5-10 years.

SUGAR CREEK ELEMENTARY SCHOOL

Below is a summary of the elementary school as it relates to the Building Systems Assessment:

Sugar Creek Elementary School was Badger Ridge Middle School until 2020 and repurposed during the referendum project.
Constructed in 1991. In the 2019 projects, cooling was added and electrical service and switchgear updated. VASD did playground updates as well.

Positives:

- ADA parking spaces clearly marked with accessible route to front doors.
- All exterior wall systems constructed as 8" CMU back up, 2" rigid insulation, Vapor Barrier, air space and Utility masonry veneer and constructed according to current construction standards.
- Sloping roofs are Standing Seam Metal Panel.
- Brick and mortar condition generally good.
- Building is heated with one high efficiency gas-fired De Dietrich hot water boiler installed in 2013 and is in good working condition. (Two gas fired, cast iron boiler original to the building are also in service.)
- The building is all air-conditioned as of a project done in 2019.
- Water service into the building was sized for possible future fire protection system for the building.
- All piping is likely original and expected to be in good working order.
- The building has three replacement water heaters that were installed in 2016, 2017, and 2021. Life expectancy is ten years.

Negatives:

- All windows need replacing.
- Some expansion cracking at Split Faced CMU areas will need to be repaired and monitored.
- Greenhouse windows are rusting/discolored. The building drawings indicate these are Aluminum windows.
- Some Alligator cracking along the edges of paths and by the main play area. The alligator cracking suggests poor subsurface conditions or overloading. Asphalt on north side may need work, west side has been replaced.
- Select areas of the brick mortar joints will need to be ground out and tuck pointed.
- The building is currently not sprinkled.
- There is little space available for additional electrical circuit breakers.
- Venting needs updating for boilers. 2023 work is planned to address this.

BADGER RIDGE MIDDLE SCHOOL

Below is a summary of Badger Ridge Middle School as it relates to the Building Systems Assessment:

The current Badger Ridge Middle School was VAHS until the referendum project adn was repurposed in 2020. Constructed in 1960 with additions in 1970 and 1992. Energy audit upgrade 2014.

Positives:

- Face brick and mortar generally in good condition.
- VASD maintains the roof according to MFG standards. At this time general repairs are made and the roof is in good condition. Replace as directed by roofing mfg.
- Clear ADA path to front doors of the school.
- Clear security sequence at the main entrance.
- De Dietrich boilers in both locations are in good condition. Added new Fulton Boiler on Heat Pump loop Summer 2022.
- Except for some areas of A level, all other areas of the building are air conditioned.
- Plumbing fixtures appear in working order and could remain.
- Switchboard is in good condition.
- Some capacity remains according to utility bills.
- Panelboards on the newer additions are in good condition and have vacant positions for additional circuits.
- Newer corridors have LED lighting.
- Scope of work from 2022-2023 improved Secure Entrance at B118.
- Scope of work from 2022-2023 segmented building doors for security added at B1, B2, C1, C2, C3, G1, H100 and H110.
- Scope of work from the 2017 referendum (2019 permit set) created Single Use Toilet Rooms at B119, B168, B185 and Special Education Toilet Room B136. Single use Toilet Rooms created at C114A, C122A, C155. Multi Fixture Boy's and Girl's Toilet Rooms created at C152 and C153.
- Scope of work from the 2017 referendum (2019 permit set) installed ADA compliant door in C142 north side.
- Scope of work from the 2017 referendum (2019 permit set) created 7th Grade, 8th Grade, and "Bubble" Science Rooms with new casework and plumbing in F123, F136 and F148.
- Scope of work from the 2017 referendum (2019 permit set) instelled new flooring in rooms B118, B119, B120, B136, B168, B169, B183, B185, C114, C114A, C122, C122A, C124, C125, C126, C135, C141, C142, C149, C150, C152, C153, E108, E109 and E110.
- Scope of work from the 2017 referendum (2019 permit set) installed new Ceiling tile and lighting installed in rooms B168, B169, B170, B183, B185, B186, C114, C114A, C119, C122, C124, C126, C135, C142, C149, C150, C152, C153, E108, E109 and E110.
- Scope of work from the 2017 referendum (2019 permit set) at Swimming Pool, top three courses of masonry insulated, and emergency exit door and frame replaced.
- Scope of work from the 2017 referendum (2019 permit set) rebuilt Air Handler for AHU -1,2,3,4,5,6,7 and 8 with new motors, shivs, and bearings.

Negatives:

- Asphalt parking lots may need to be replaced in the future. Scheduled as part of work to be performed in 2023.
- Additions to the existing buildings will be problematic due to lack of open space.
- Clean and paint rusting lintels.

- Single pane windows should be replaced.
- Some deterioration of steel doors and frames at grade. Doors 9, 10, 14 replaced with aluminum frames and doors January 2023.
- Concrete accent areas on the East face by loading are deteriorated and should be inspected. Exposed rebar.
- Tuck point cracking at the original masonry building.
- Warranty on roof has expired.

SAVANNAH OAKS MIDDLE SCHOOL

Below is a summary of the school as it relates to the Building Systems Assessment:

Constructed in 1995 with an addition in 1999. District roof replacement in XXXX. Window replacement XXXX. Miscellaneous tuck-pointing. Pavement replacement.
Secure Entrance Project Planned for 2023

Positives:

- Roof replaced with EPDM roof in 2016.
- ADA parking spaces clearly marked with accessible route to front doors
- Face brick and mortar generally in good condition.
- Clear ADA path to front doors of the school.
- Newer corridors have LED lighting.
- Energy audit upgrades performed in 2014.
- The building is heated with one high efficiency gas-fired De Dietrich boiler installed in 2014, one De Dietrich gas- fired cast iron boiler installed in 2011. AO Smith boiler needs replacement.
- The entire building is air-conditioned.
- A thermal ice storage system was installed in the summer of 2014 as part of the energy audit upgrades.
- Scope of work from 2022-2023 provided a new Secure Entrance and Secure Vestibule 086, and remodels two Art Rooms with middle Storage to a Reception 088, Office 087, Art 124, Kiln 125A and Storage 125B. Provides new main Vestibule 089. Both Vestibules receive new exterior and interior doors and frames and side lites. New Staff/Teacher Lounge 189 is created in existing space.
- Scope of work from 2022-2023 provided new flooring, ceiling, lighting, and mechanical systems in the remodeled areas.
- Scope of work from 2022-2023 had Art Room 124 receive new casework throughout the classroom.

Negatives:

- Some water staining on the interior wood window frames. Should inspect for deterioration, cleaned and stained accordingly.
- Bottom edges of the some steel door frames showing slight deterioration.
- There would be some additional spare boiler capacity on this system but the partial system redundancy would be lost as all three boilers would need to operate to provide the additional capacity needed to support an expansion.
- The ventilation unit that provides outside air to the classrooms has had a frozen coil a few times in extreme cold and trips frequently from nuisance trips when temperatures are below freezing.
- All existing plumbing fixtures appear to be in acceptable working order but would not meet current water conservation requirements.
- Most panelboards have little space available for additional circuit breakers.

VERONA AREA HIGH SCHOOL

Below is a summary of the Verona Area High School as it relates to the Building Systems Assessment:

Constructed in 2020

Positives:

- Given that VAHS was occupied only several years ago, the building and grounds are very new and in excellent condition.
- The building features various parking areas for visitors, staff and students.
- Bus and drop off areas are separated from parking and readily evident. Academic, athletic and performance venues are separated for traffic flow.
- The community pool is separated from the HS pool but adjoining.
- After hours events can be held without having to encroach into academic areas.
- Exterior walks are of brick and metal panels with insulated glass.
- Secure entrance sequence is designed at the main office so that after first bell visitors must be buzzed in.

Negatives:

- None

VAIS CHARTER SCHOOL K-WING

Below is a summary of the VAIS Charter School K-wing as it relates to the Building Systems Assessment:

Constructed in 1960 with additions in 1970 and renovations in 2000, 2020.

Positives:

- Face brick and mortar generally in good condition.
- De Dietrich boiler is in good condition. Second boiler installed in 2020.
- Some capacity remains in the electrical system.
- Water fixtures are in acceptable working order.
- Newer electrical fused disconnect was installed to replace the original.
- Some electrical capacity in the system.
- Scope of work completed from the 2017 referendum (2019 permit set) improved Secure Entrance to building by creating a new Entrance/Vestibule at K100 and Vestibule and new Reception/Waiting at K120A.
- Scope of work completed from the 2017 referendum (2019 permit set) segmented building doors for security added at K202, K204-1, K205-1, K206-1, and K148-2 with direct access to District Registration K147 via door K147-1. Exit door K148-3 added to as not to have to open K148-2 during the school day for student discharge to playground areas. Courtyard doors K180-1, K180-2, and K180-3, changed to exit direction of travel into building per IBC Codes which treat a Courtyard as occupied space needing to be exited in an emergency with doors swinging in the direction of travel to a building exit.
- Scope of work completed from the 2017 referendum (2019 permit set) provided new exit doors and frames at K100-1, K100-2, K204-2, K205-2, K206-2, K300-1, K300-2, K148-1, K148-2, and K148-3.
- Scope of work completed from the 2017 referendum (2019 permit set) added single use Toilet Room at K203A, K176 and K177. Multi fixture Toilet Rooms added ad K174 and K178.
- Scope of work completed from the 2017 referendum (2019 permit set) added art casework and sinks to K158. Casework and sinks added to VAIS Classrooms K173 and K175.
- Scope of work completed from the 2017 referendum (2019 permit set) provided new flooring in all corridors as well as Reception/Waiting/Administration areas: new Reception/Waiting area K100 and K120A received new flooring along with K120B, K122 and K124 and District Registration K147, Art K158, K158A and K159. Music K157 received new flooring. New toilet rooms K174, K176, K177 and K178 received new ceramic tile flooring. Classrooms K130, K131, K133, K134, K135, K139, K140, K142, K143, K165, K166, K167, Teacher Storage V168, K169, K170, K171, K172 K173, K175 and Charter Storage K179 received new carpet.
- Scope of work completed from the 2017 referendum (2019 permit set) provided new ceiling and lighting in rooms K157 and K158. New lighting provided in K145, K146 and K147. New Reception/Waiting area K100 and K120A received new ceiling and lighting along with K120B, K122 and K124.
- Scope of work completed from the 2017 referendum (2019 permit set) added chiller and new unit ventilators to provide air conditioning as well as heating.
- Scope of work completed from the 2017 referendum (2019 permit set) added new Boiler in Boiler Room K160. Three pumps provided in K160 Boiler Room.
- Sanitary mains test sections cut and found to be in good condition - have examples.

Negatives:

- Asphalt parking lots may need to be replaced.
- Replace single pane windows.
- Repair deteriorated wood siding.

- Paint peeling metal.
- Repair mortar at thru wall vents.
- Repair gaps between wood trim and masonry.

DISTRICT CENTRAL OFFICE

Below is a summary of the VASD District Central Office as it relates to the Building Systems Assessment:

Constructed in 1992.

Positives:

- Central office is well situated near Badger Ridge MS and Sugar Creek Elementary.
- Built in 1992, it has been well maintained.
- The building overall appears in good condition.

Negatives:

- Windows need to be all replaced.
- The building needs an elevator for accessibility.
- The mechanical system evaluation is noted in the IMEG portion of the study.
- Building expansion is not easy to do given the location of outdoor mechanical and site grades.
- All VASD IT Servers and Switchgear located in this building.

CONCLUSION

As stated, the Executive Summary provides summary highlights and key findings of the complete Verona Area School District Wide Facilities Study. It is not intended to provide specific solutions to identified needs at this point; rather, it is a "current snapshot" of the existing buildings and sites as of February 2023. The report is based on the 2015-16 study with updates from the work accomplished in the 2017 Referendum as well as smaller projects and upgrades that Verona Area School District has completed.

The district's buildings and sites are generally well maintained and operating appropriately. Space needs identified in the 2016 report were accommodated as a function of the 2017 referendum which included a new 590,000 Gross Square Foot High School on a 150 acre site, the repurposing of the "old high school" to become the new Badger Ridge Middle School, the repurposing of the "old Badger Ridge Middle School" to become the new Sugar Creek Elementary School, and divesting of the old Sugar Creek/New Century Elementary School buildings and site. VASD continues to monitor population growth, and the capacity study performed by EUA in 2022 (included in this report for convenience) identifies the latest capacity of the facilities post the 2017 Referendum project scopes and added square footage of 590,000 Gross Square Feet to the district's available instructional and co-curricular space.

RECOMMENDED NEXT STEPS

It is our recommendation that the School Board, District Leadership team and community review the Districtwide Facilities Study to understand the observations and key findings to support the long-range Facilities Plan. There are a variety of options that can be explored through the planning process including building additions and new sites/buildings of various educational configurations such as Elementary or Middle School facilities as student population increases. It should be remembered that most planning cycles involve multi year efforts, from planning to referendum resolution, to design and construction, so that a 4-to-5-year window should be considered with capacity needs. It is prudent not to wait until building capacity has been reached, rather to plan for when that is likely to occur.

A critical next step should include closely reviewing and prioritizing the existing facilities needs as the district gathers additional data on community growth and enrollment projections. As this vital information comes together, additional dialogue with the Board and broader community will help the district find the balance between managing significant student enrollment growth, meeting student learning needs, and the taxpayers' willingness to support facility expansion and improvements as part of the long-range Facility Plan process. One key feature of the 2023 report update is that the Useful Life Expectancy charts of the various buildings and key components are being used to create a ten-year master spreadsheet of budgets for planning purposes. As stated earlier in this Executive Summary, the budgets and life expectancies are not absolute nor a guarantee, however, create budgets which may be used to manage potential needs on an annual basis.

Thank you,

Abie Khatchadourian, AIA, LEED AP BD+C, NCARB
Sr. Project Manager: Principal

two:

FACILITY ASSESSMENTS BY FACILITY

INTRODUCTION

This section includes site and building information including Site Plan, Floor Plans, Building System Lifespan Comparison, and Building Exterior Inspection Report with selected photos of various systems and conditions and Recommendations as may be appropriate.

The assessment of site and building systems identifies the condition of categorized elements observed during inspection and graded for relative fitness by the following criteria for expected service.

Good: The reviewed element has been observed to have the following characteristics.

- Is between the beginning and middle of its expected service life.
- Meets optimum functional and / or performance requirements.
- Requires routine maintenance or minor repair.
- Less than 25% of the element is in substandard condition or has failed.

Fair: The reviewed element has been observed to have the following characteristics.

- Is between the middle and end of its expected service life.
- Meets minimum acceptable functional and / or performance requirements.
- Requires attention to repair beyond routine maintenance.
- 25 - 50% of the element is in substandard condition or has failed.

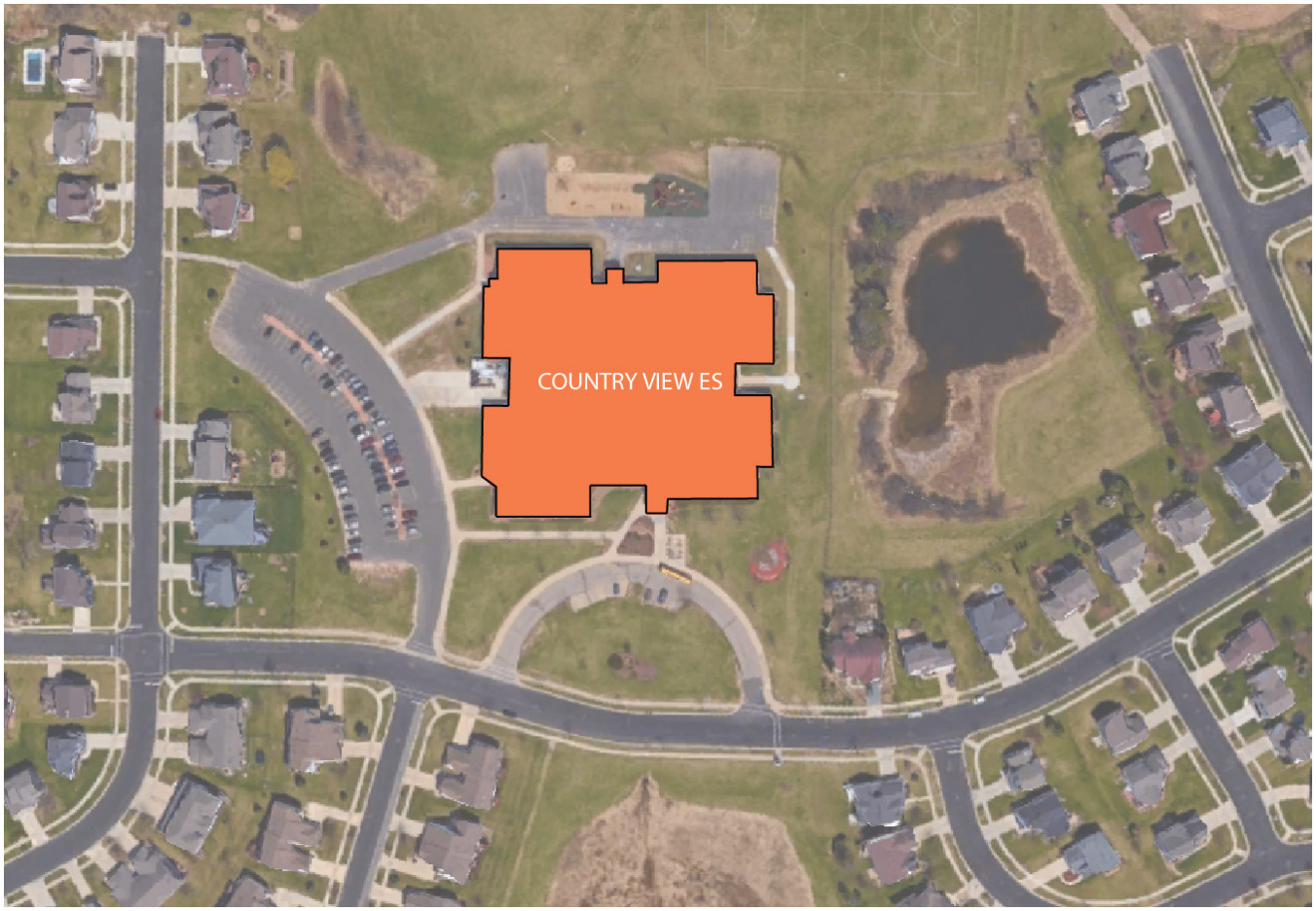
Poor: The reviewed element has been observed to have the following characteristics.

- Is at or has passed the end of its expected service life.
- Fails to meet functional and / or performance requirements.
- Requires excessive and constant attention, and major corrective repair.
- More that 50 percent of the element is in substandard condition or has failed.

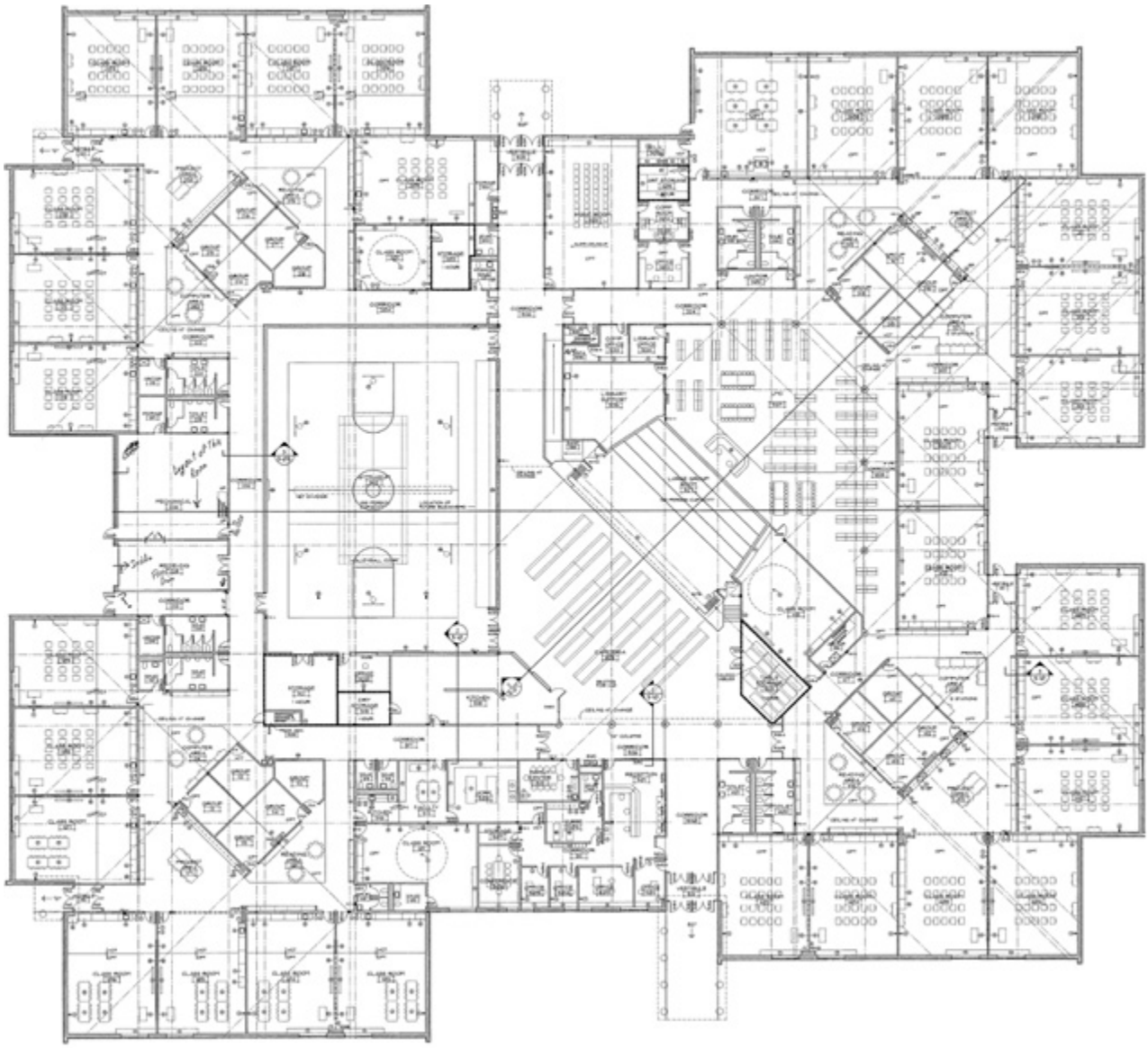
COUNTRY VIEW ELEMENTARY SCHOOL

School: Country View Elementary
Construction: Initial construction date 2000, Reconstruction of the North sections 2014 due to tornado damage
Date of Assessment: December 12, 2014
Evaluator(s): Paul Raisleger (EUA)

SITE



FLOOR PLANS



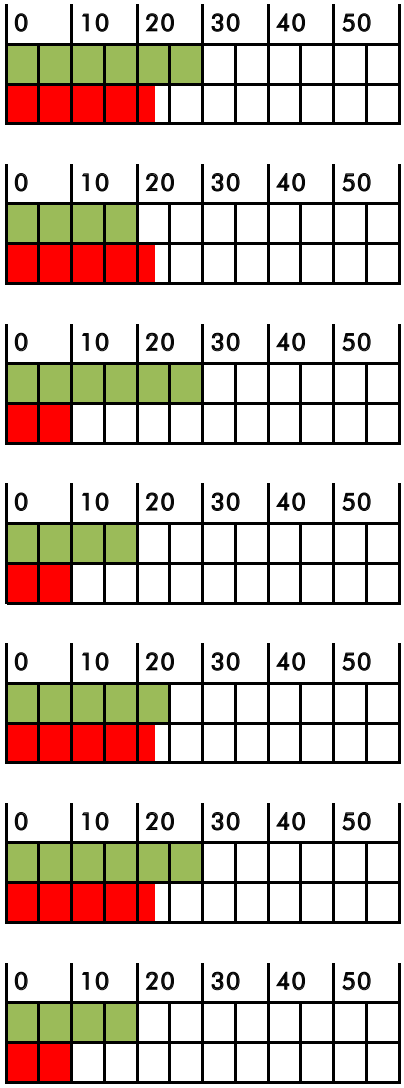
BUILDING SYSTEM LIFESPAN COMPARISON

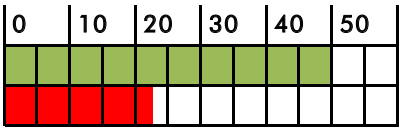
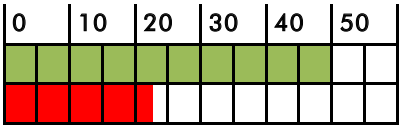
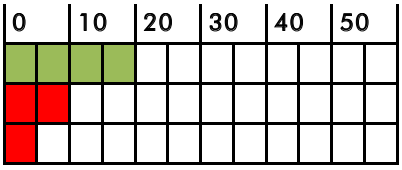
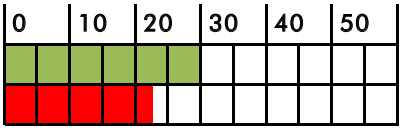
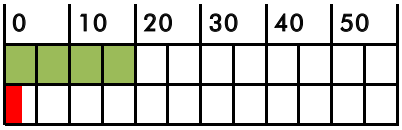
Anticipated Lifespan of Building Components

* Data from Institutional Facilities Manager Resources, ASHRAE research, and School District Facility Manager client information.

Component or System	Typical Use Lifespan	
EXTERIOR		
	Years	0 10 20 30 40 50 60
Windows	25-30yr	2000 New 2014 Partial Reconstruction
Roofing	Years	0 10 20 30 40 50 60
PVC	20-30yr	All reroofed 2014. Fully adhered PVC
	Years	0 10 20 30 40 50 60
Steel Doors / Frames	20yr Steel, 30yr Alum	2000
Exterior Closure	Years	0 10 20 30 40 50 60
Exterior Wall (Masonry)	50-100yr w/ Maint.	2000 Original Building 2014 Rebuild
	Years	0 10 20 30 40 50 60
Entry Canopies / Overhangs / Fascia	20yr	2000 Original Building 2014 Rebuild
	Years	0 10 20 30 40 50 60
Walkways / Asphalt / Drainage	10-15yr	2000 Original, New parking lot 2014

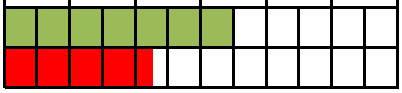
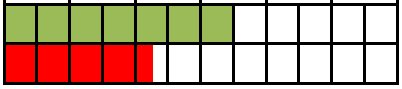
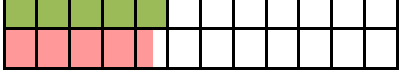
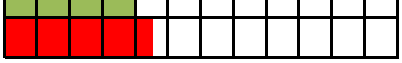
Component or System	Typical Use Lifespan	
HVAC		
Hot Water Boilers	30	2000
Hot Water Pumps	20	2000
Air Cooled Chiller	30	2000 Building, Installed 2014
Chilled Water Pumps	20	2000 Building, Installed 2014
Temperature Controls	25	2000
Air Handling Units	30	2000
Terminal Air Units	20	2000 Building, Installed 2014



Component or System	Typical Use Lifespan		
Plumbing	Years		
Sanitary & Storm Piping	50		2000
	Years		
Copper Water Piping	50		2000
	Years		
Water Heater	20		140 Degree WH: Replaced 2012 General Building: Replaced 2018
Plumbing Fixtures	Years		
Toilets, Urinals, Sinks	30		2000
	Years		
Electric Water Coolers	20		Replaced 2020

NOTES:

1. All Electric Water Coolers replaced in 2020. Bottle fillers added at all locations.

Component or System	Typical Use Lifespan		
Power & Distribution	**Years**	**0 10 20 30 40 50 60**	
Service Distribution	35		2000
	Years	**0 10 20 30 40 50 60**	
Distribution Panels	35		2000
	Years	**0 10 20 30 40 50 60**	
Interior Lighting	25		2000, Some replaced by 2014 energy project
	Years	**0 10 20 30 40 50 60**	
Exterior Lighting	25		2000, Replacements 2023 (1)
	Years	**0 10 20 30 40 50 60**	
Fire alarm	20		2000

NOTES:

1. Parking lot lighting replaced in 2023, building lighting not replaced.

BUILDING EXTERIOR INSPECTION REPORT

1. Exterior Windows
- Expected Life Span: 25-30 years
- Current Condition: Good
- The windows are double pane thermally broken aluminum windows with an operable hopper section.
- Glass is tinted to reduce/block UV rays and reduce glare.
- Interior sun control, (blinds, and shades). Blinds are integral in the original windows.
- Window sill flashing on various west facing widows do not have slope/draft to shed water away from the window as seen by the residue of sitting water. VASD to monitor.

SLOPE OF WINDOW SILL

RECOMMENDATION
- None at this time. All windows and frames in good condition.
- Monitor window sill flashing that does not slope away from the windows in particular the windows on the western side of the building.

2. Roof
- Expected Life Span: 20 years for rubber EPDM, 30 years for Thermoplastic, 40 years for built-up asphalt systems
- Current Condition: Refer to Roof Report Manuals at the Facility Office
- Initially the building was constructed with a ballast system. Upon reconstruction from the tornado damage the entire building was re-roofed with a fully adhered PVC roof, TPA Tremco JF roof system.
- Coping and fascia in good condition.

RUST STEEL AT OVERHEAD DOOR IN LOADING AREA

RECOMMENDATION
- None at this time. Maintain according to MFG standards.

3. Exterior Doors
- Expected Life Span: 20 years for steel, 30 years for aluminum/ FRP systems.
- Current Condition: Good
- Steel door and frame at service entry areas. Bottom edges of the door frames showing slight deterioration. Steel door for deliveries needs replacement.
- Aluminum door and frames at main entry, west and north entry.
- Insulated glass units in all the entry doors and side lites.

- Aluminum doors appear in good condition.

RECOMMENDATION

- Monitor the condition of the steel doors for deterioration and maintain as required.

4. Exterior Walls

- Expected Life Span of Masonry: 50-100 years with periodic maintenance.
- Current Condition: Good at the sections of wall containing clay masonry units, Fair at the sections where 8" Split Face CMU is used as an accent material above and adjacent to windows.
- Wall construction 8" CMU back up, 2" Rigid Insulation, Vapor Barrier, Air Space and Utility Masonry exterior/8" split face CMU.
- Brick condition: Good
- Accent areas of 8" spit face CMU will be an ongoing source of maintenance for VASD. The rates of expansion and contraction for CMU vary greatly from that of clay masonry units, resulting in cracking of the mortar joints.
- Wall detail on north face of building creates a ledge between the CMU and Brick.
- Steel lintels above windows are in good condition
- Building control joints are in place and in good condition.
- Flashing condition location and condition

RECOMMENDATION

- Continue routine maintenance

5. Entry Canopy / Overhangs / Fascia

- Life Expectancy: Same as building depending on the materials used and detailing.
- Current Condition: Good
- Canopies are steel construction with sloping roof and metal deck roofing. All steel is in good condition.
- Concrete column bases are in good condition.

RECOMMENDATION

- The draft/slope at the concrete to steel column intersection appears to be light weight concrete surface applied. Monitor for deterioration over time.

6. Walkways / Asphalt / Drainage

- Expected Life Span: 20 years.
- Current Condition: Good. (Fair at the north and west entry locations)
- Main concrete walk areas in good overall condition.
- Asphalt play area in good condition.

RECOMMENDATION

- Grind areas of concrete that exceed 1/2" height differential from adjacent slabs.
- Monitor concrete pad located at the north entry due for continued differential settlement. Consider future replacement.
- The draft/slope at the concrete to steel column intersection appears to be light weight concrete surface applied. Monitor for deterioration over time.

BUILDING SYSTEM REPORT (PREPARED BY IMEG)

1. Building summary
- Original construction 2000 with an air conditioning upgrade and energy audit upgrade in 2014.
- Approximate building square footage is 85,265 square feet.

2. Heating, Ventilation, and Air Conditioning (HVAC)
- The building is heated with two gas-fired De Dietrich hot water boilers located in the mechanical room. These boilers are original to the building and installed during construction in 1998. They are both in good working condition with an expected life of 30-35 years. These boilers operate in a lead/lag function so typical operating condition is one boiler operating and the other boiler on standby. During peak heating conditions, both boilers will operate. There would be some additional spare capacity on this system but system redundancy would be lost if additional load is put on the system.
- The building does have air conditioning. A thermal ice storage system was installed in the summer of 2014. The system uses an air-cooled chiller to make ice that is stored for use during the day. Spare capacity is not expected for this system as it was sized to support current building only.
- The individual rooms are conditioned and ventilated with overhead air, conditioned at central air handling units located in mezzanine mechanical rooms. The air handling units are original to the building with an expected life of 25-30 years. Each room has its own temperature control using a hot deck/cold deck arrangement at the air handling units to control temperature of the air delivered to each space. As part of the energy audit performed at the school, variable air volume terminal units were added to each zone of the air handling units to modulate the airflow based on room load.

3. Plumbing
- Water service to the building is currently 4" and enters at the west side of the building.
- The existing sanitary main is 6"and exits the building along the south side of the building. The condition of this pipe is not known but could be explored further with a camera if necessary. The piping is likely original and expected to be in good working order.

- Hot water distribution is provided by two gas-fired tank type water heaters. Both water heaters are located in the boiler mechanical room. One water heater serves the building general hot water system at 120F°, last replaced in 2018, and one water heater serves the kitchen at 140F°, last replaced in 2012.
- All existing plumbing fixtures appear to be in acceptable working order.
- The existing natural gas service is located outside the boiler room.

4. Fire Protection
- The building is currently not sprinkled.

5. Electrical
- The building is currently served by a 1600 amp, 480/277 volt 3-phase switchboard located in the main mechanical room. The equipment is relatively new and in good condition.
- Utility bills were provided by the district for the period of October 2013 through November 2014. During that time, the maximum demand recorded was 282 KW. Based on a reasonable power factor, there is some additional capacity available.
- A 500 KVA transformer and 1600 amp, 208/120 volt 3-phase switchboard is located in the mechanical mezzanine about the main mechanical room. This is the distribution point for all 208/120 volt panelboards located throughout the building. Panelboards have a varying amount of vacant positions for additional circuit breakers.
- A 100 KW natural gas generator is installed outside the building to provide a source of backup power. A 150 amp 480/277 volt 4-pole automatic transfer switch is installed to serve emergency loads. A 225 amp 480/277 volt 4-pole automatic transfer switch is installed to serve non-legally required standby loads. A transformer and panelboard are installed to provide the 208/120 volt standby loads. The fire alarm system is also served from the non-legally required standby branch.
- A Simplex 4020 fire alarm system is installed in the building. Notification is by means of horn type audible devices. Device coverage appears to be code compliant.
- Classrooms are lit by recessed linear fluorescent troffers. Corridor and common areas are lit by newer Cree LED recessed fixtures. These spaces also have occupancy sensors to

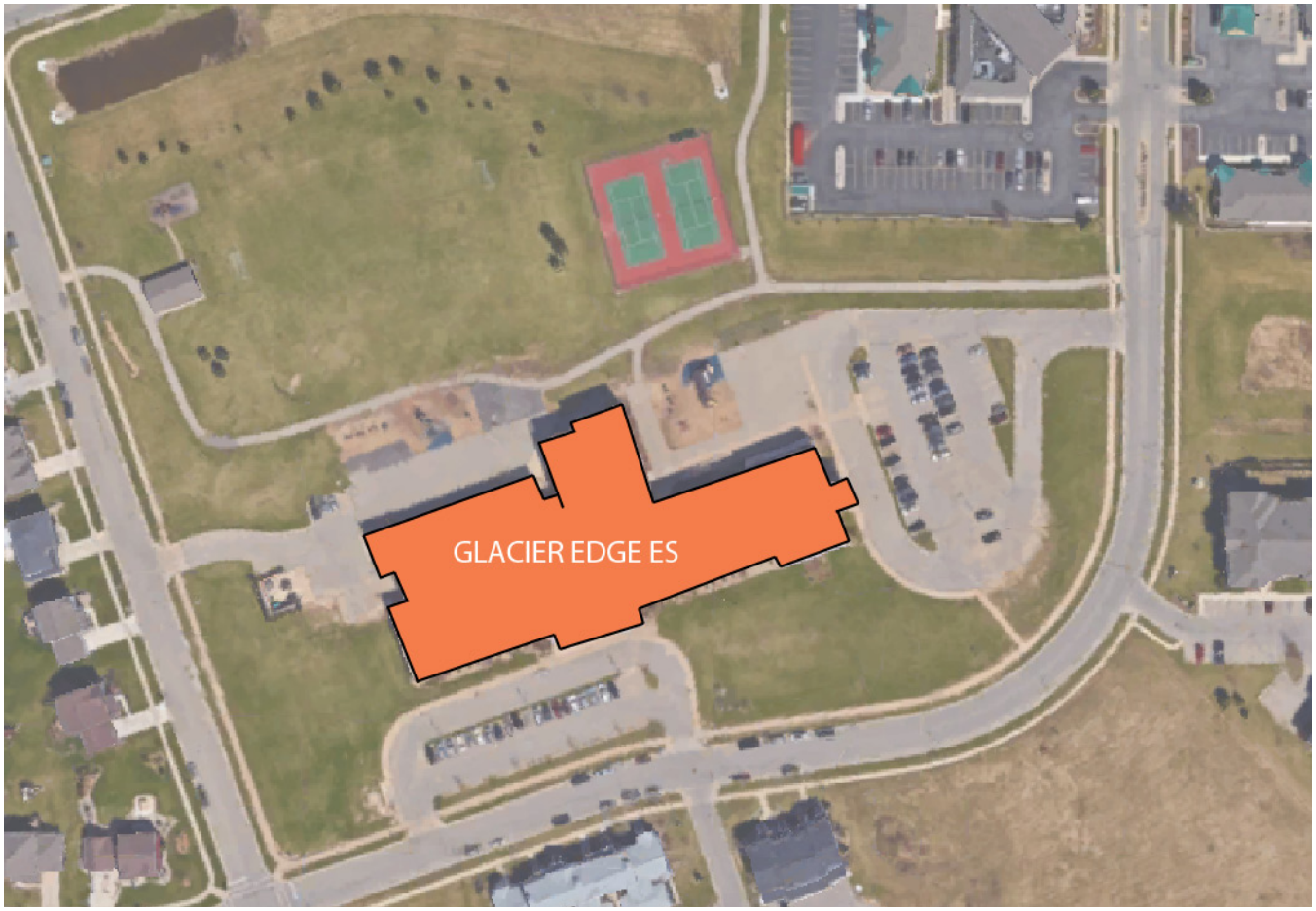
provide automatic shutoff. Light level sensors are also provided in area where use of daylight is possible. Exterior building-mounted lighting and parking lot pole-mounted lighting is LED type, and is controlled by the building automation system.

- A districtwide phone system replacement was completed in 2019.
- A new wireless synchronized central clock system has been installed as part of the 2019 referendum.
- Addition or relocation of paging speakers in renovated areas have been installed to the existing paging system as part of the 2019 referendum.
- New electronic access control proximity readers and control panels were added to the existing system as part of the 2019 referendum.
- New data cabling for wall outlets and ceiling wireless access points were installed in renovated areas as part of the 2019 referendum.

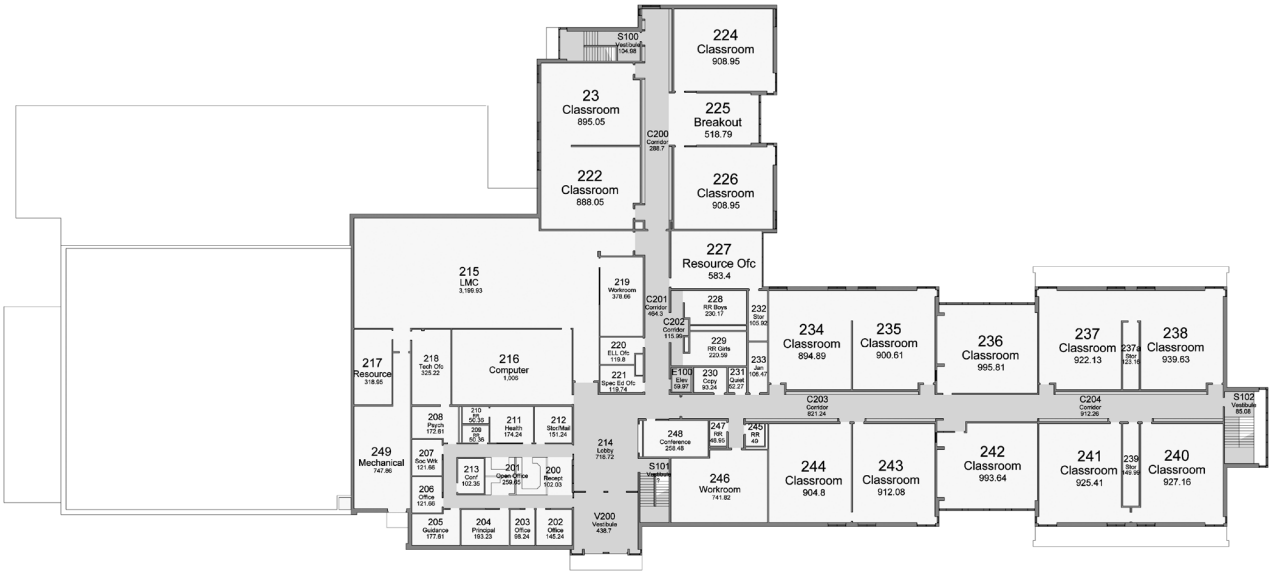
GLACIER EDGE ELEMENTARY SCHOOL

School: Glacier Edge Elementary School
Construction: 2005
Date of Assessment: November 14, 2015
Evaluator(s): Paul Raisleger (EUA)

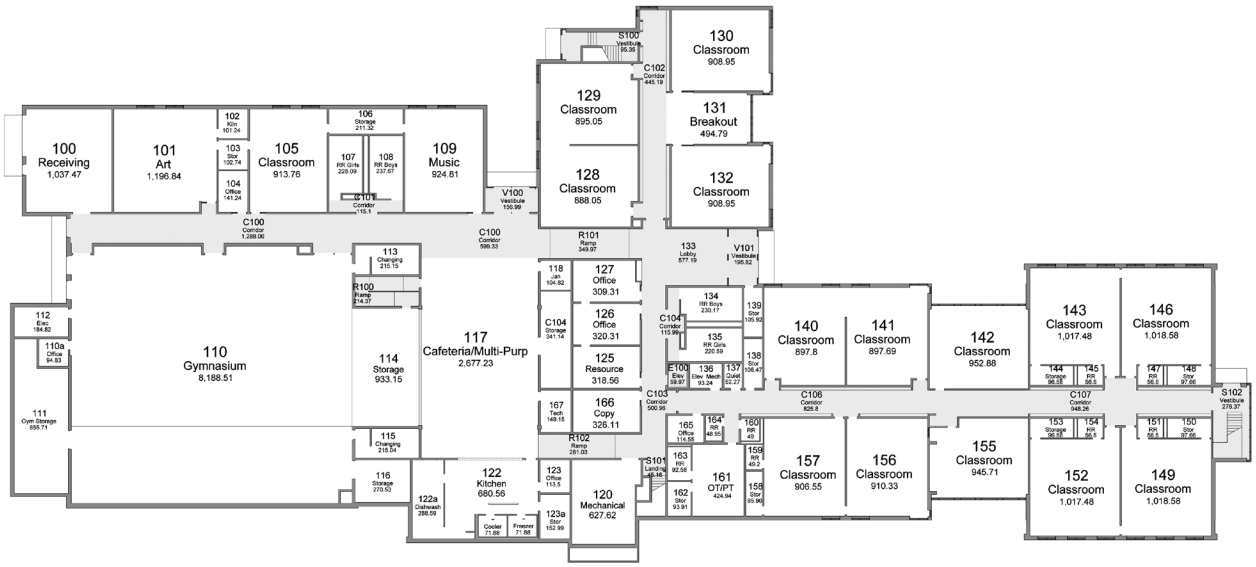
SITE



FLOOR PLANS



LEVEL 02

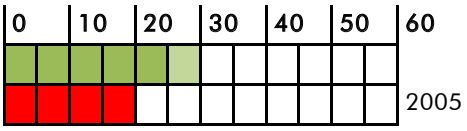
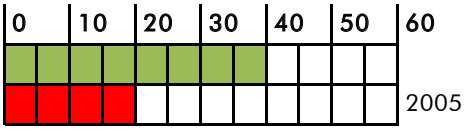
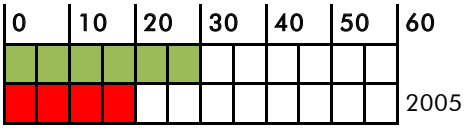
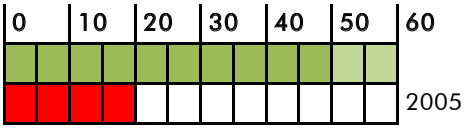
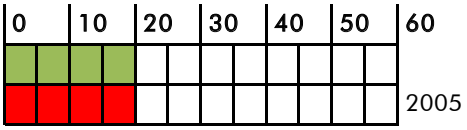
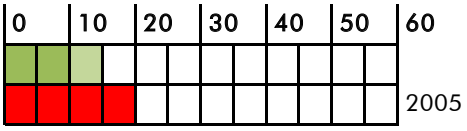


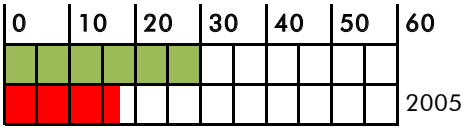
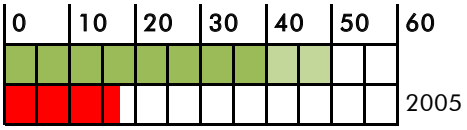
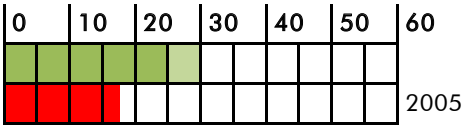
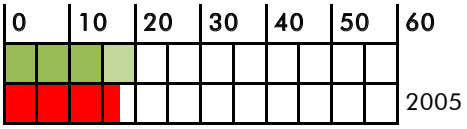
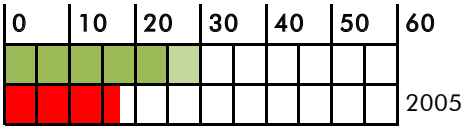
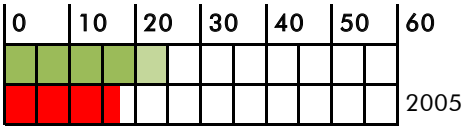
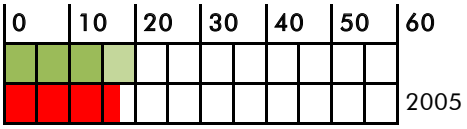
LEVEL 01

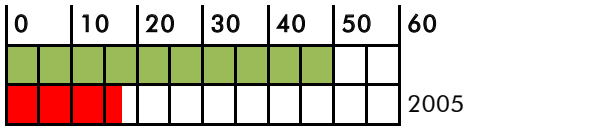
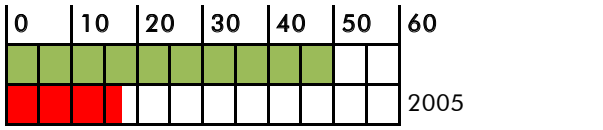
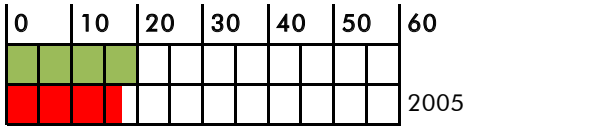
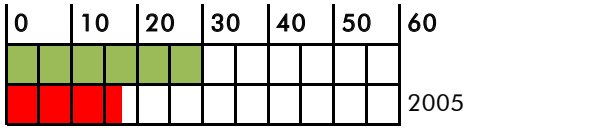
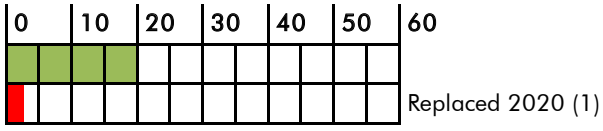
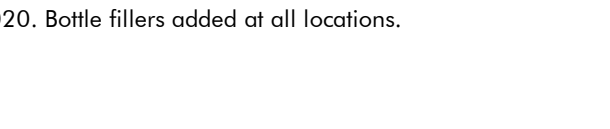
BUILDING SYSTEM LIFESPAN COMPARISON

Anticipated Lifespan of Building Components

* Data from Institutional Facilities Manager Resources, ASHRAE research, and School District Facility Manager client information.

Component or System	Typical Use Lifespan	
EXTERIOR		
Windows	Years 25-30yr	
Roofing Aggregate / Standing Seam Metal	Years 20yr EPDM, 30yr Termoplastic	
Steel Doors / Frames	Years 20yr Steel, 30yr Aluminum	
Exterior Closure Exterior Wall (Masonry)	Years 50-100yr with Maintenance	
Entry Canopies / Overhangs / Fascia	Years 20yr	
Walkways / Asphalt / Drainage	Years 10-15yr	

Component or System	Typical Use Lifespan	
HVAC		
Hot Water Boilers	0yr - De Dietrich	
Vertical Bore Field	40-50yr	
Water-Cooled Chiller	25-30yr	
Chilled Water Pumps	15-20yr	
Temperature Controls	25-30yr	
Outdoor Recovery Unit	20-25yr	
Heat Pumps	15-20yr	

Component or System	Typical Use Lifespan	
Plumbing	Years	
Sanitary & Storm Piping	50	
		
Copper Water Piping	50	
		
Water Heater	20	
		
Plumbing Fixtures	Years	
Toilets, Urinals, Sinks	30	
		
Electric Water Coolers	20	
		

NOTES:

1. All Electric Water Coolers replaced in 2020. Bottle fillers added at all locations.

Component or System	Typical Use Lifespan	
Power & Distribution	**Years**	**0 10 20 30 40 50 60**
Service Distribution	35	2005
	Years	**0 10 20 30 40 50 60**
Distribution Panels	35	2005
	Years	**0 10 20 30 40 50 60**
Interior Lighting	25	2005 - Some replaced 2014 energy project Gym lighting replaced with LEDs 2023
	Years	**0 10 20 30 40 50 60**
Exterior Lighting	25	2005 - Replaced 2014 energy project
	Years	**0 10 20 30 40 50 60**
Fire alarm	20	2005

BUILDING EXTERIOR INSPECTION REPORT

1. Exterior Windows
- Expected Life Span: 25-30 years
- Current Condition: Good
- Curtainwall at Main Entry and the north common areas.
- Glass is tinted to reduce/block UV rays and reduce glare.
- Interior sun control, (blinds, and shades).
- All the storefront windows have condensation between the insulated glass. Upon further investigation this is due to the conductivity of the aluminum window spacers between the glass units. Metal is a good thermal conductor and heat/ moisture is allowed to pass through and condense on the inside faces. This had been the condition since the building was completed.

RECOMMENDATION
- No fix for the condensation other than replacement. Recommend monitoring over the life of the building.

2. Roof
- Expected Life Span: 20 years for rubber EPDM, 30 years for Thermoplastic, 40 years for built-up asphalt systems
- Current Condition: refer to Roof Report Manuals at the Facility Office.
- Aggregate roof. Asphalt Them 100 membrane, 3 plys Fiberglass, Hot adhered, 1 ply composite Hot adhered, ½" Fiberboard cold adhered, 2" Polyisocyanurate mechanically attached.
- Coping and fascia in good condition.

RECOMMENDATION
- None at this time. Maintain according to MFG standards.

3. Exterior Doors
- Expected life span 20 years for steel, 30 years for aluminum/ FRP systems.
- Current Condition: Good
- Aluminum door and frames at main entry, west and north entry.
- Insulated glass units in all the entry doors and side lites.
- Aluminum doors appear in good condition.


WINDOW CONDENSATION


ALUMINUM ENTRY DOORS

RECOMMENDATION
- None at this time. Maintain according to MFG standards.

4. Exterior Walls
- Expected Life Span of Masonry: 50-100 years with periodic maintenance.
- Current Condition: Good
- Wall construction 8" CMU back up, 2" Rigid Insulation, Vapor Barrier, Air Space and 4" face brick typical. In some locations a poured concrete wall is the backup system.
- Decorative precast in good condition.
- All windows have an aluminum head trim detail.
- Brick Condition: Good
- Select areas of the brick mortar joints will need to be ground out and tuck pointed.
- Some mortar missing at details intersections with aluminum headers.
- Steel lintels above windows are in good condition
- Building control joints are in place and in good condition.
- Flashing condition location and condition: good.


TUCK POINTING REUIRED IN SECTIONS


TUCK POINTING AT MASONRY

RECOMMENDATION
- Remove/grind deteriorated mortar joints and tuck point masonry areas.
- Continue routine maintenance


MISSING MORTAR AT BASE FLASHING

5. Entry Canopy / Overhangs / Fascia
- Expected Life Span: Same as building depending on the materials used and detailing.
- Current Condition: Good
- Canopies are steel construction with aluminum fascia and copings. All in good condition.

RECOMMENDATION
- None at this time. Monitor and maintain as required.

CANOPY

6. Walkways / Asphalt / Drainage
- Expected Life Span: 20 years
- Current Condition: Good
- Main concrete walk areas in good overall condition.
- Asphalt play area in good condition.
- Sidewalk to grade difference at door 2.

RECOMMENDATION

- Grind areas of concrete that exceed 1/2" height differential from adjacent slabs.

CRACKS IN ASPHALT

PAVING AT REAR AND PLAY AREAS IN GOOD CONDITION

BUILDING SYSTEM REPORT (PREPARED BY IMEG)

1. Building Summary
- Originally occupied in 2006.

2. Heating, Ventilation, and Air Conditioning (HVAC)
- The building is heated and cooled with a ground source heat pump system. The system has 60 vertical wells routed 300 ft., piped as 10 circuits and terminating in an exterior vault in the middle of the well field. 6" supply and return mains are routed from the vault to the building. The geothermal water is routed through a heat exchanger to condition the building loop system that serves the heat pumps. The system uses approximately 30% glycol mixture to protect against freezing. The system seems to be performing at full capacity during design conditions so does not have any additional capacity available. The heat pumps have limited ability to perform morning warmup so it is not possible to recover the building temperature to occupied setpoint temperatures if a night setback control strategy is used. This results in the building being maintained at occupied temperatures continuously.
- There are two high efficiency De Dietrich hot water boilers that provide heating water to the roof-mounted heat recovery ventilation units and select terminal heat units in the building. The boilers also provide supplemental heat to the building heat pump loop when water temperatures cannot be maintained. There is a multi-stack chiller that provides chilled water to the roof-mounted heat recovery ventilation units and supplemental cooling to the building heat pump loop when water temperatures cannot be maintained. Both of these systems are running at capacity during design conditions so spare capacity does not exist. With a multi-stack chiller, additional sections could be added to the chiller to provide more capacity. The expected life of the boilers is 15-20 years and are currently in good working condition. The expected life of the chiller is 25-30 years and is in good working condition.
- Individual heat pumps, mostly located above the ceiling, provide overhead air to condition the rooms with both heating and cooling. Return air filters are used at the grilles for each zone to limit the required access to the heat pumps for filter changes. Larger heat pumps that serve open areas like the gymnasium, LMC, and cafeteria are located in mechanical mezzanines.

- There are three heat recovery units located outside on the roof with hot water and chilled water coils that provide room neutral ventilation air directly to the rooms. Expected life of the energy recovery units is 20-25 years and are currently in good working conditions.
- Some rooms use electric radiant ceiling panels for additional heat to the room around the perimeter.
- A mix of hot water and electric heating only terminal units such as cabinet heaters and unit heaters serve parts of the building such as entry vestibules, loading dock, etc.
- The main IT room is cooled by a heat pump.
- Controls are DDC.

3. Plumbing
- Water service to the building enters the mechanical room along the south side of the building. The service size is an 8" pipe and is a combination domestic/fire protection system. The domestic water meter is a 3".
- The existing sanitary main is 6"and exits the building along the south side of the building. The condition of this pipe is not known but could be explored further with a camera if necessary. The piping is likely original and expected to be in good working order.
- The existing storm main is 16"and exits the building along the north side of the building. The condition of this pipe is not known but could be explored further with a camera if necessary. The piping is likely original and expected to be in good working order.
- Hot water distribution is provided by one gas-fired tank type water heater with 200 gallon storage capacity. The water heater is original to the building and has an expected life of 15-20 years. The domestic water is distributed through the building at 120F°.
- All hot water is softened.
- All existing plumbing fixtures appear to be in acceptable working order.
- The existing natural gas service is located along the west side of the building.

4. Fire Protection
- The building is fully sprinkled.

5. Electrical
- The building is served by a 1600 amp, 480/277 volt 3-phase

service. The service switchboard is located in the main electrical room, and is manufactured by Square D. There is space available for additional circuit breakers.

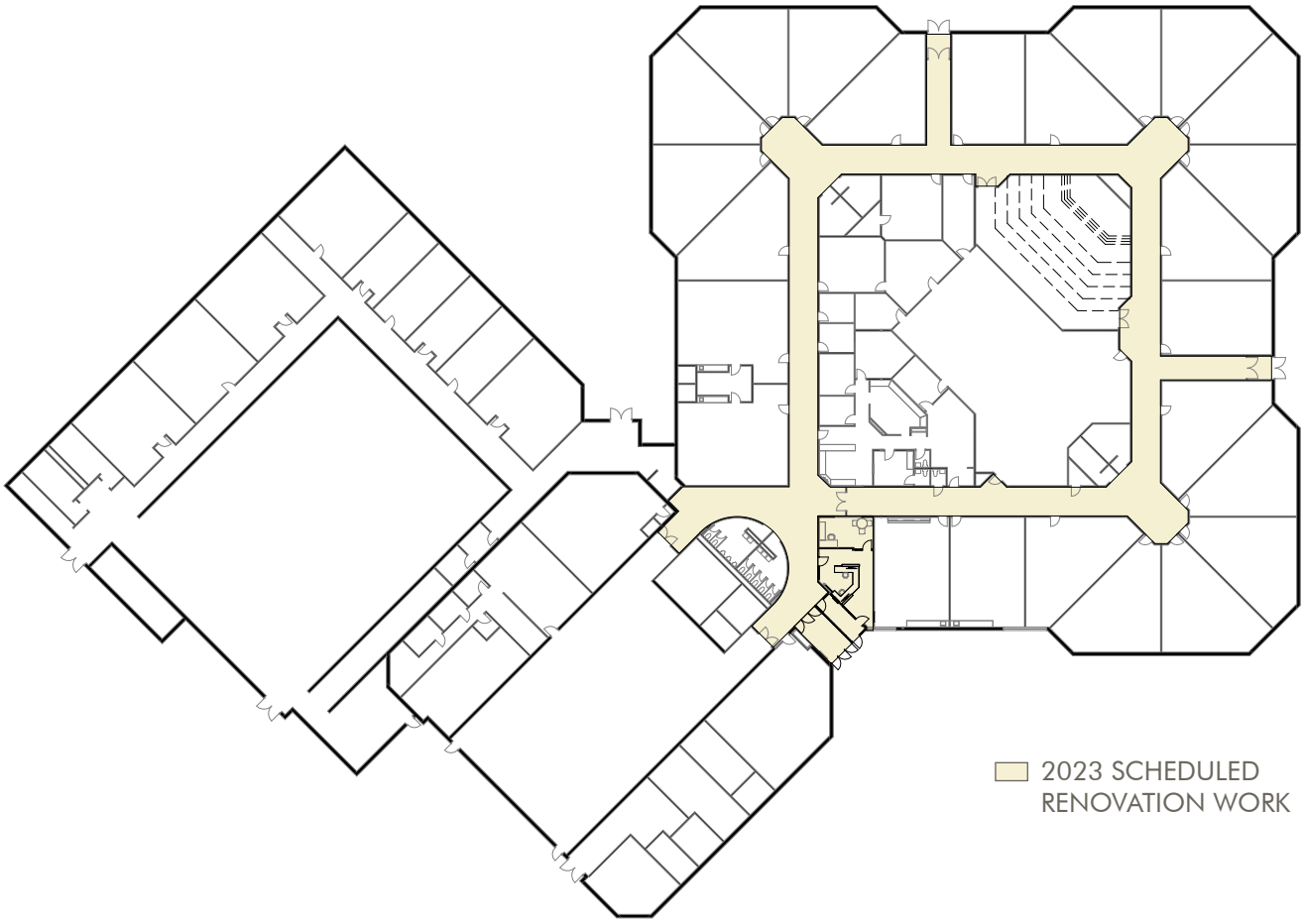
- Branch panelboards are distributed throughout the building. Most panelboards have little space available for additional circuit breakers.
- A natural gas generator is installed outside the building in a weatherproof enclosure. There are two 70 amp transfer switches in the electrical room. One serves emergency loads and the other standby loads.
- A Simplex 4100U fire alarm system is installed in the building. Notification is by means of horn type audible devices. Notification appears to be code compliant.
- Classrooms are lit by linear fluorescent troffers. Corridor and common areas are lit by newer Cree LED fixtures. These spaces also have occupancy sensors to provide automatic shutoff. Exterior building-mounted lighting and parking lot pole-mounted lighting is LED type.
- A districtwide phone system replacement was completed in 2019.
- A new wireless synchronized central clock system has been installed as part of the 2019 referendum.
- Addition or relocation of paging speakers in renovated areas have been installed to the existing paging system as part of the 2019 referendum.
- New electronic access control proximity readers and control panels were added to the existing system as part of the 2019 referendum.
- New data cabling for wall outlets and ceiling wireless access points were installed in renovated areas as part of the 2019 referendum.

STONER PRAIRIE ELEMENTARY SCHOOL

School: Stoner Prairie Elementary School
Construction 2005
Date of Assessment: November 14, 2015
Evaluator(s): Paul Raisleger (EUA)

SITE

FLOOR PLANS



LEVEL 01

BUILDING SYSTEM LIFESPAN COMPARISON

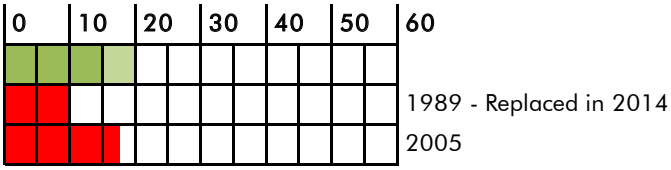
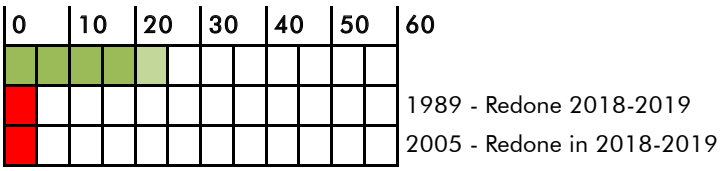
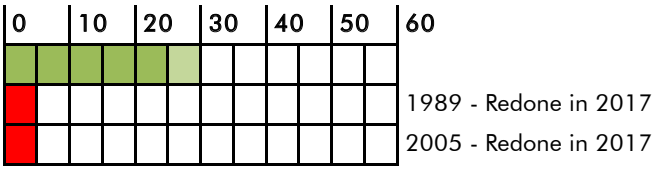
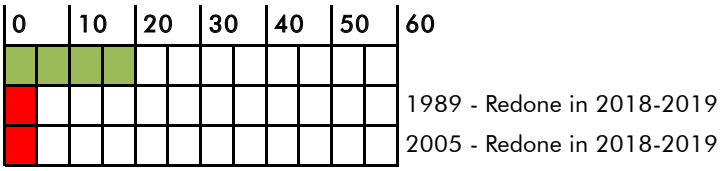
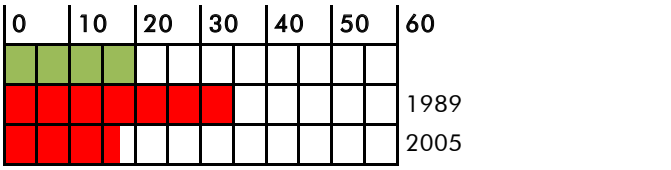
Anticipated Lifespan of Building Components

* Data from Institutional Facilities Manager Resources, ASHRAE research, and School District Facility Manager client information.

Component or System	Typical Use Lifespan	
EXTERIOR		
Windows	Years 0 10 20 30 40 50 60 25-30yr	1989 2005 - Issues with sill slope
Roofing Aggregate	Years 0 10 20 30 40 50 60 20yr EPDM, 30yr Termoplastic	1989 - Re-Roofed in 2007 2005
Steel Doors / Frames	Years 0 10 20 30 40 50 60 20yr Steel, 30yr Aluminum	1989 2005
Exterior Closure (1) Exterior Wall (Masonry)	Years 0 10 20 30 40 50 60 50-100yr with Maintenance	1989 2005
Entry Canopies / Overhangs / Fascia	Years 0 10 20 30 40 50 60 20yr	1989 2005
Walkways / Asphalt / Drainage (1)	Years 0 10 20 30 40 50 60 10-15yr	Entire Site

NOTE:

1. Work scheduled for 2023.

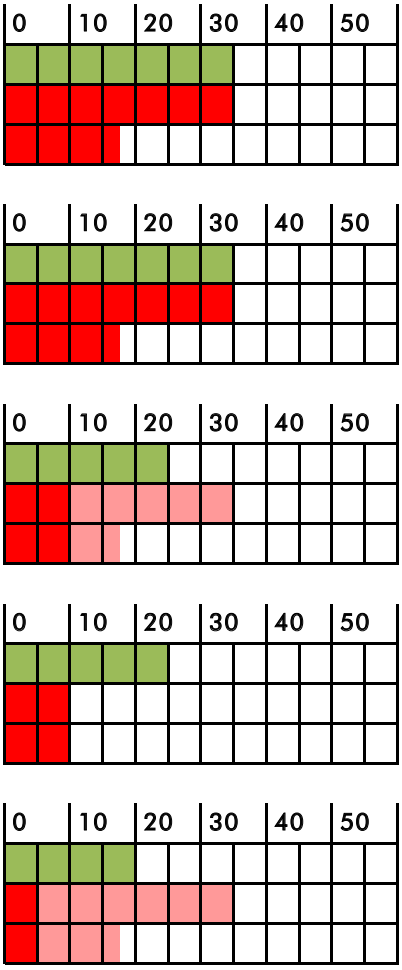
Component or System	Typical Use Lifespan	
HVAC		
Hot Water Boilers	15-20yr - De Dietrich	
DX Condensing Units	20-25yr	
Temperature Controls	25-30yr	
Air Handling Units	30-35yr	
Terminal Air Units	20	

Component or System	Typical Use Lifespan	
Plumbing	Years	0 10 20 30 40 50 60
Sanitary & Storm Piping	50	1989 / 2005
	Years	0 10 20 30 40 50 60
Copper Water Piping	50	1989 / 2005
	Years	0 10 20 30 40 50 60
Water Heater	20	1989 - Replaced in 2014 / 2005
Plumbing Fixtures	Years	0 10 20 30 40 50 60
Toilets, Urinals, Sinks	30	1989 / 2005
	Years	0 10 20 30 40 50 60
Electric Water Coolers	20	1989 - Replaced in 2020 (1) / 2005 - Replaced in 2020 (1)

NOTES:

1. All Electric Water Coolers replaced in 2020. Bottle fillers added at all locations.

Component or System	Typical Use Lifespan	
Power & Distribution	**Years**	**0 10 20 30 40 50 60**
Service Distribution	35	1989 2005
	Years	**0 10 20 30 40 50 60**
Distribution Panels	35	1989 2005
	Years	**0 10 20 30 40 50 60**
Interior Lighting	25	1989 Original, Replaced 2012-2014 (1) 2005 Addition, Replaced 2012-2014 (1)
	Years	**0 10 20 30 40 50 60**
Exterior Lighting	25	1989 - Replaced 2014 energy project 2005 - Replaced 2014 energy project
	Years	**0 10 20 30 40 50 60**
Fire alarm	20	1989, 2019 (2) 2005, 2019 (2)



NOTE:

1. All lighting in corridors changed to LED through Energy Projects, 2012-2014
2. New Head End unit installed in 2019

BUILDING EXTERIOR INSPECTION REPORT

1. Exterior Windows
- Expected Life Span: 25-30 years
- Current Condition: Good/Fair
- The windows are double pane thermally broken aluminum clad wood windows.
- Glass is tinted to reduce/block UV rays and reduce glare.
- Interior sun control, (blinds, and shades). Blinds are integral in the original windows.
- Window sill flashing on many of the 2005 addition do not have slope/draft to shed water away from the window as seen by the residue of sitting water. VASD to monitor.

RECOMMENDATION
- Seem serviceable but are showing signs of wear on the original building.
- Monitor window sill flashing that does not slope away from the windows.

2. Roof
- Expected Life Span: 20 years for rubber EPDM, 30 years for Thermoplastic, 40 years for built-up asphalt systems
- Aggregate system with Asphalt membrane on 3 plys of composite cold applied, on 1 ply composite cold adhered on 25/32" Fiberboard mechanically attached.
- Coping and fascia in good condition.
- Scratches in the metal fascia at the main entry.

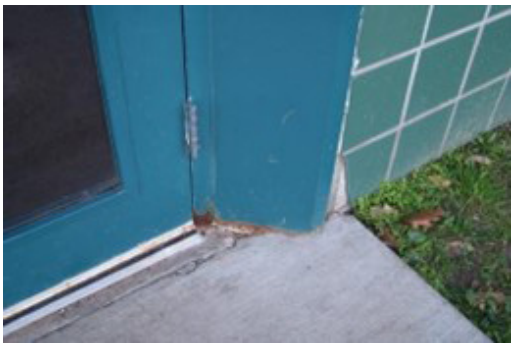
RECOMMENDATION
- None at this time. Maintain according to MFG standards.

3. Exterior Doors
- Expected Life Span: 20 years for steel, 30 years for aluminum/ FRP systems.
- Current Condition: Good
- Steel doors and frames at all entries showing signs of deterioration at the base.
- Insulated glass units in all the entry doors and side lites.

RECOMMENDATION
- VASD to monitor doors and frames and repair/replace as required. Long term fix to rusting door frames would be to replace with Aluminum doors and frames.

WINDOW CONDITION

SILL SLOPES INWARD ON THE 2005 ADDITION



STEEL DOORS AND FRAMES DETERIORATING

4. Exterior Walls
- Expected Life Span of Masonry: 50-100 years with periodic maintenance.
- Current Condition: Good at the brick sections of wall containing clay masonry units, Fair-Poor at the tile sections
- Wall construction 8" CMU back up, 2" Rigid Insulation, Vapor Barrier, Minimal Air Space and 4" face brick in a running bond and soldier coursing. Tile accents below all windows.
- Brick condition: Good
- Expansion cracks at jambs on the original 1989 building.
- Wall detail on north face of building creates a ledge between the CMU and Brick.
- Steel lintels above windows are in good condition but are showing some rusting.
- Building control joints are in place and showing wear.

RECOMMENDATION
- Clean and paint all lintels.
- Continue routine maintenance.

TUCK POINTING REQUIRED IN SECTIONS, SUMMER 2023 PROJECT

CRACKS AT TILE AREAS, SUMMER 23 PROJECT

5. Entry Canopy / Overhangs / Fascia
- Expected Life Span: Same as building depending on the materials used and detailing.
- Current Condition: Good
- Large fascia all metal panel. Some scratches at main entry.
- EIFS soffits in good condition. Original sections are not ventilated. Soffits are vented on the 2005 addition.
- Some detached conduit at main entry.

RECOMMENDATION
- Monitor and maintain as required.
- Repair the loose conduit at main entry.

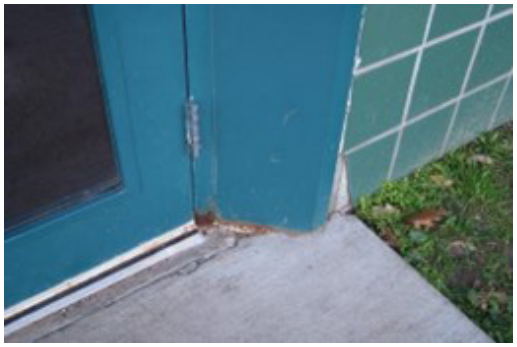
EXPANSION CRACK

6. Walkways / Asphalt / Drainage
- Expected Life Span: 20 years
- Current Condition: Good. Some asphalt areas are fair.
- Main concrete walk areas in good overall condition.
- Concrete sections appear in good condition but showing signs of wear.
- Asphalt drive and parking areas has cracking and deterioration.
- Play area in good condition.
- Some erosion where landscaping meets the drive aisles this

SOME RUST ON LINTELS

VENTED SOFFIT AT NEW ADDITION

LOOSE CONDUIT AT MAIN ENTRY



RUSTED STEEL DOORS AND FRAMES

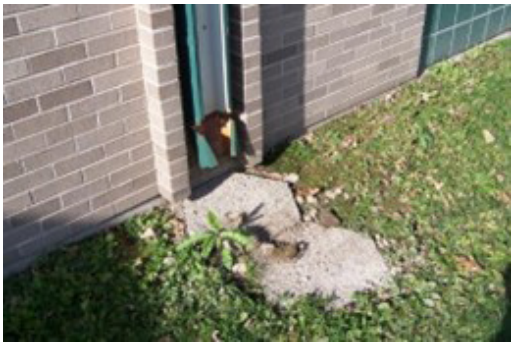
SCRATCHES ON METAL FASCIA

can remove material under the asphalt and increase edge deterioration.

RECOMMENDATION

- Monitor sections of concrete showing signs of wear and repair/replace as required. Freeze thaw cycles will increase deterioration.
- Landscape the eroded sections next to drive aisles to reduce the amount of erosion which is causing the sides of the drives to crack.
- Repair asphalt sections next to eroded landscape areas.
- Asphalt at drive and parking needs to be replaced.
- Consider placing a gravel mow strip around the back of the building.

ASPHALT PARKING LOT CONDITION



DOWNSPOUT AND SPLASH BLOCK CONDITION

ASPHALT CONDITION GOOD

BUILDING SYSTEM REPORT (PREPARED BY IMEG)

1. Building Summary

- Originally occupied in 1989 with a gymnasium addition in 2005.
- Energy audit upgrades performed in 2014.

2. Heating, Ventilation, and Air Conditioning (HVAC)

- The original building is served by one De Dietrich high efficiency boiler and one cast iron De Dietrich boiler installed in 2014 as part of the energy audit upgrades. These boilers are located in the original building mechanical room near the old gym. The addition is heated with two gas- fired cast iron De Dietrich boilers installed in 2004. The boilers for the addition are located in a mechanical room installed within the addition. For both pairs of boilers, they operate in a lead lag function except under extreme conditions, when both boilers may run to meet the building demand. The boilers are all in good working order. The De Dietrich boilers have an expected life of 15-20 years. There would be some additional spare capacity on these heating systems but system redundancy would be further lost if additional load is put on the systems.
- The individual rooms are conditioned and ventilated with overhead air. Central air handling units, located in mezzanine mechanical rooms, condition the mix of outside air (ventilation) and return air and deliver to the zones. For the air handling units serving multiple zones, the air is heated using duct-mounted coils for temperature control to the zones. For the single zone air handling units, the air is heated with a hot water coil at the unit. The air handling units are original to the building with an expected life of 30-35 years. Each room has its own temperature control. Air handling units 1, 2, 3, 4 and 6 were replaced as part of the 2019-2020 referendum scope and include DX cooling.

- The building does have air conditioning for all areas including the computer lab, office, and library. Air conditioning is provided with direct expansion (DX) coils in two of the air handling units serving the office and LMC. Outdoor air-cooled condensing units provide the cooling.

3. Plumbing

- An 8" combination domestic and fire protection water service enters the boiler room along the west side the building.
- The existing sanitary main is 6" and exits the building at the southeast corner of the building. The condition of this pipe is not known but could be explored further with a camera, if necessary. The piping is likely original and expected to be in good working order.
- The existing storm main is 10"and exits the building along the east side of the building. The condition of this pipe is not known but could be explored further with a camera, if necessary. The piping is likely original and expected to be in good working order.
- Domestic hot water for the original building is provided by one gas-fired tank type water heater located in the mechanical room and one gas-fired water heater that serves the kitchen. One gas- fired tank type water heater serves the addition. The domestic water heaters serve the building at 120F°.
- All hot water is softened.
- The existing natural gas service is located outside along the southwest side of the original building.

4. Fire Protection

- The building is fully sprinkled.

5. Electrical

- The building is served by a 1600 amp, 208/120 volt 3-phase service. The service switchboard is located in the main electrical room, is manufactured by Westinghouse, and is fusible switch type instead of circuit breaker type. There is some space available for additional fused switches.
- When a new switch was added to the existing switchboard, presumably when the addition was constructed, a new blank-off plate was not provided. As a result, there is a gap between the bottom of that switch and the top of the blank-off plate below it. This gap provides direct access to the switchboard main bus. There is evidence that a partial short-circuit has already occurred based on the mark visible on the bus. It is not clear when this happened though. It is possible it happened when the building was originally built. It should not have a long term negative effect on the switchboard. Staff has contacted a contractor to review the situation and provide new blank-off plates as needed to close the gap, as it is a safety concern. At the time of this report, this has been repaired.
- Branch panelboards are distributed throughout the building. Most panelboards have little space available for additional circuit breakers. The original building has Westinghouse panelboards while the addition has Cutler Hammer panelboards. Cutler Hammer (Eaton) circuit breakers are acceptable for use in Westinghouse labeled panelboards.
- There is not a generator installed in this building. Battery-powered emergency lighting units and exit signs are installed for egress. The units require manual testing, which is required to occur monthly.
- A Simplex 4002 fire alarm system is installed in the building. This is a zoned system as opposed to the more common addressable system. Zoned systems are typically less costly, but do not provide information on the exact device that causing a system alarm or trouble. Notification is by means of horn type audible devices. Notification appears to be mostly code compliant. The classrooms in the original building do not have notification devices installed in them, but the classrooms of the addition do. Typically, a classroom is required to have at least a strobe installed as it is a “common space.” This appears to be a condition that is acceptable to the local code officials since it has not been identified as a deficiency in their inspections.
- Classrooms are lit by linear fluorescent troffers. Corridor and common areas are lit by newer Cree LED fixtures. These spaces

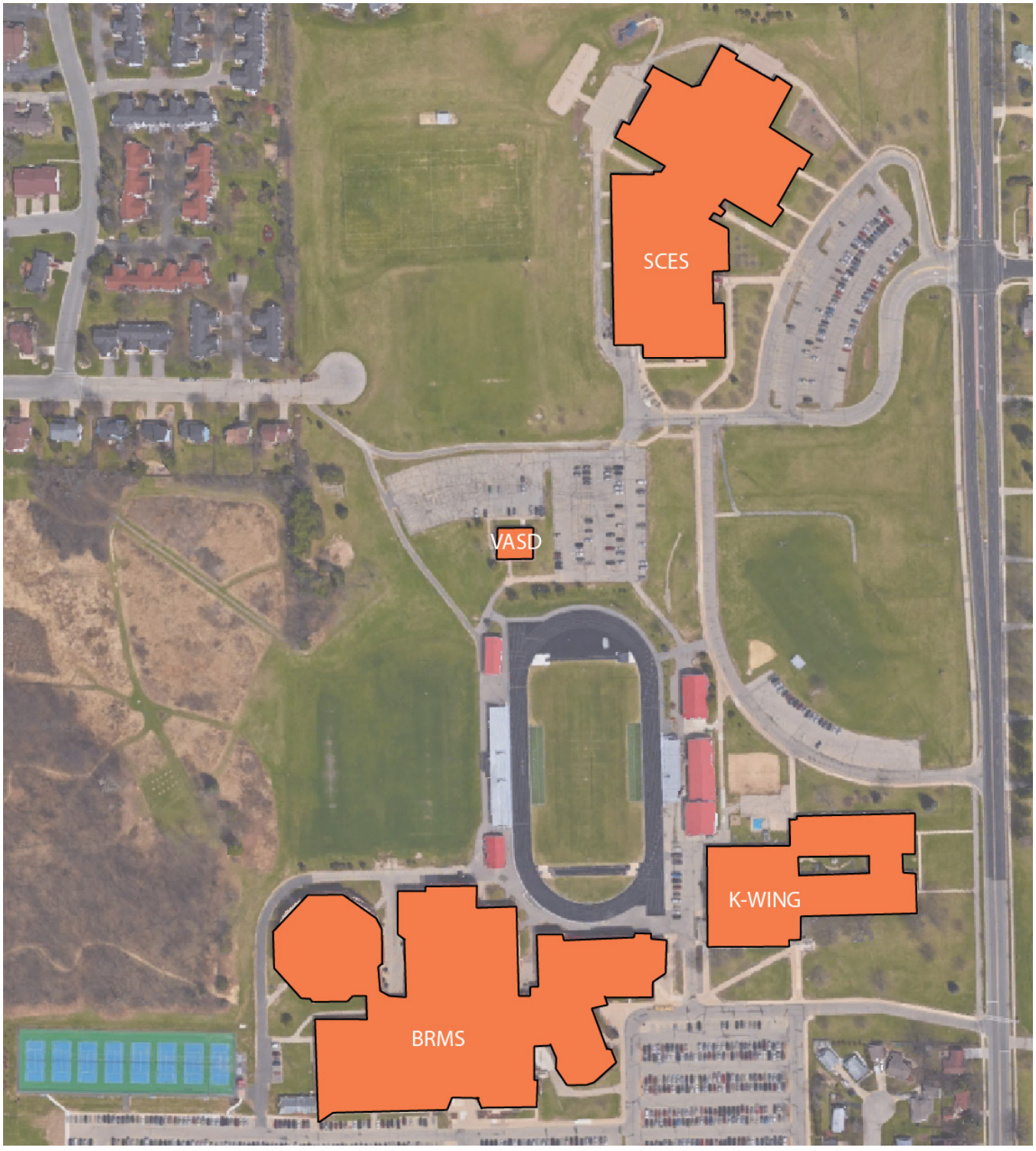
also have occupancy sensors to provide automatic shutoff. Exterior building-mounted lighting and parking lot pole-mounted lighting is LED type.

- A districtwide phone system replacement was completed in 2019.
- A new wireless synchronized central clock system has been installed as part of the 2019 referendum.
- Addition or relocation of paging speakers in renovated areas have been installed to the existing paging system as part of the 2019 referendum.
- New electronic access control proximity readers and control panels were added to the existing system as part of the 2019 referendum.
- New data cabling for wall outlets and ceiling wireless access points were installed in renovated areas as part of the 2019 referendum.

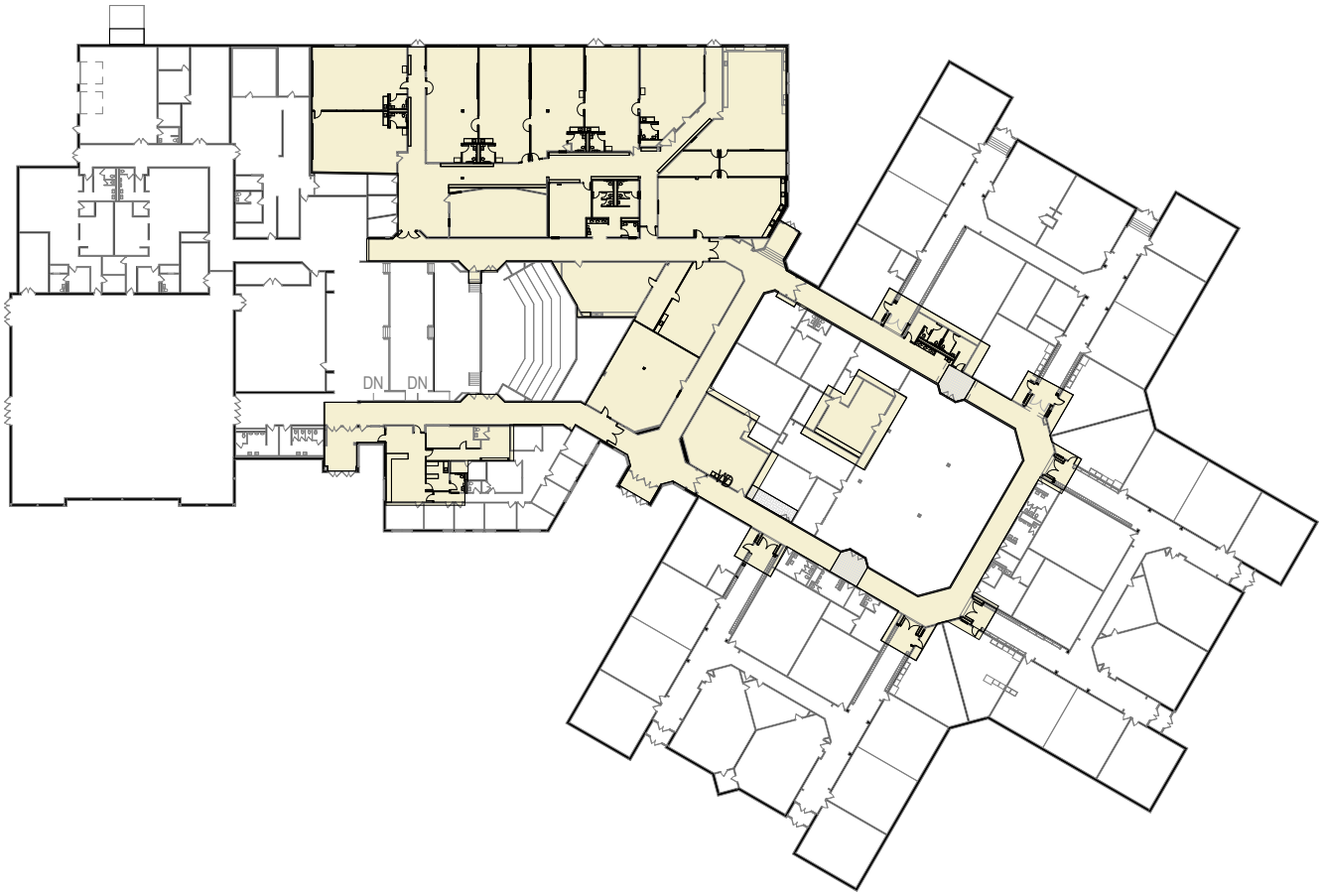
SUGAR CREEK ELEMENTARY SCHOOL

School: Sugar Creek Elementary School
Construction date: 1991
Date of Assessment: November 14, 2015
Evaluator(s): Paul Raisleger (EUA)

SITE



FLOOR PLANS

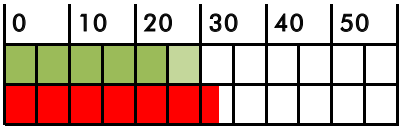
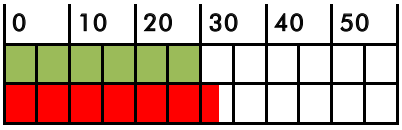
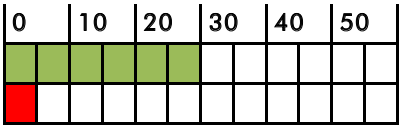
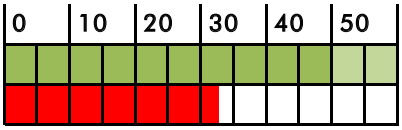
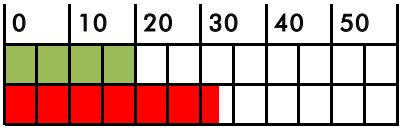
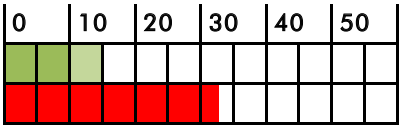


LEVEL 01

BUILDING SYSTEM LIFESPAN COMPARISON

Anticipated Lifespan of Building Components

* Data from Institutional Facilities Manager Resources, ASHRAE research, and School District Facility Manager client information.

Component or System	Typical Use Lifespan		
EXTERIOR			
Windows	Years 25-30yr		1991
Roofing Aggregate	Years 20yr EPDM, 30yr Termoplastic, 40yr Ashpalt		1991
Steel Doors / Frames	Years 20yr Steel, 30yr Aluminum		1991 Original, Replaced in 2019
Exterior Closure Exterior Wall (Masonry)	Years 50-100yr with Maintenance		1991
Entry Canopies / Overhangs / Fascia	Years 20yr		1991
Walkways / Asphalt / Drainage	Years 10-15yr		Entire Site (1)

NOTE:

1. Sealcoated last in 2019. Crack fill and Sealcoating needed again.

Component or System	Typical Use Lifespan		
HVAC			
	Years	0 10 20 30 40 50 60	
Hot Water Boilers	30-35yr - Original Boiler		1991
	15-20yr - De Dietrich		1991 Original, Replaced in 2012
	Years	0 10 20 30 40 50 60	
Chiller	20-25yr		2020
	Years	0 10 20 30 40 50 60	
Temperature Controls	25-30yr		1991 Original, Updated 2017 (1)
	Years	0 10 20 30 40 50 60	
Air Handling Units	30-35yr		1991 Original, Rebuilt 2020
	Years	0 10 20 30 40 50 60	
Terminal Air Units	20		1991

NOTES:

1. New Temperature Controls completed in 2017

Component or System	Typical Use Lifespan		
Plumbing	Years	0 10 20 30 40 50 60	
Sanitary & Storm Piping	50		1991
	Years	0 10 20 30 40 50 60	
Copper Water Piping	50		1991
	Years	0 10 20 30 40 50 60	
Water Heater	20		1991 Original, Replaced in 2016
			1991 Original, Replaced in 2017
			1991 Original, Replaced in 2021
Plumbing Fixtures	Years	0 10 20 30 40 50 60	
Toilets, Urinals, Sinks	30		2005
	Years	0 10 20 30 40 50 60	
Electric Water Coolers	20		2020 (1)

NOTES:

1. All Electric Water Coolers replaced in 2020. Bottle fillers added at all locations.

Component or System	Typical Use Lifespan	0 10 20 30 40 50 60	
Power & Distribution	**Years**		
Service Distribution	35		1991
	Years		
Distribution Panels	35		1991
	Years		
Interior Lighting	25		1991 Original, replacements 2014, 2019(1)
	Years		
Exterior Lighting	25		1991 Original, Replaced 2014 (2)
	Years		
Fire alarm	20		1991 Original (3)

NOTES:

1. Some interior lighting replaced by 2014 energy project and 2019 remodel.
2. All exterior lighting replaced by 2014 energy project.
3. Head end unit only was replaced in 2014, all other components are original.

BUILDING EXTERIOR INSPECTION REPORT

1. Exterior Windows
- Expected Life Span: 25-30 years
- Current Condition: Fair Windows on Solarium are bad
- The windows are double pane thermally broken aluminum clad wood windows.
- Glass is tinted to reduce/block UV rays and reduce glare.
- Interior sun control, (blinds, and shades). Blinds are integral in the original windows.
- Sills all aluminum and in good condition.
- Some windows on the east face appear to have wear on the inside wood window frame.
- Greenhouse windows are rusting/discolored. The building drawings indicate these are aluminum windows.

RECOMMENDATION
- Windows need replacement.
- Monitor interior of windows for water intrusion due to staining. Clean and stain inside window frames.
- Replace all window sealant.
- Monitor Greenhouse windows for failure. Clean and paint the Greenhouse windows to prevent further corrosion. A long term solution is to replace the Greenhouse windows.

2. Roof
- Northeast section of flat roof needs replacing.
- Expected Life Span: 20 years for rubber EPDM, 30 years for Thermoplastic, 40 years for built-up asphalt systems
- Current Condition: Refer to Roof Report Manuals at the Facility Office.
- Flat roofs are ballasted on 3 ply cold adhered. 1 ply fas-n-free, 2 1/2:" Fiberboard hot adhered, ½" gypsum mechanically fastened and 4" Polyisocyanurate.
- Sloping roofs are Standing Seam Metal Panel.
- Coping and fascia in good condition.
- Coping and fascia at the gym high roof pulling away from the wall.

RECOMMENDATION
- None at this time. Maintain according to MFG standards.


SEALANT REPAIRS NEEDED


GREENHOUSE WINDOW FRAMES WEARING


WINDOW INEGRITY


FADING WINDOW SILL FINISH

3. Exterior Doors
- Expected Life Span: 20 years for steel, 30 years for aluminum/ FRP systems.
- Current Condition: Good
- Insulated glass units in all the entry doors and side lites.

RECOMMENDATION
- None at this time. Maintain according to MFG standards and VASD inspections.

4. Exterior Walls
- Expected Life Span of Masonry: 50-100 years with periodic maintenance.
- Current Condition: Good at the sections of wall containing clay masonry units, Good at the sections where 8" Split Face CMU is used as an accent material above and adjacent to windows. Fair at tile sections.
- Wall construction 8" CMU back up, 2" Rigid Insulation, Vapor Barrier, Air Space and Utility Masonry exterior/8" split face CMU.
- Brick condition: Good
- Select areas of the brick mortar joints will need to be ground out and tuck pointed.
- Accent areas of 8" spit face CMU will be an ongoing source of maintenance for VASD. The rates of expansion and contraction for CMU vary greatly from that of clay masonry units, resulting in cracking of the mortar joints.
- Steel lintels above windows are in good condition
- Building control joints are in place and sealant should be replaced
- Cracking of the bricks at the doors on the West side of the building by the service doors.

RECOMMENDATION
- Cover tile areas with metal.
- Remove/grind deteriorated mortar joints and tuck point masonry and CMU areas. Due to the apparent movement of bricks at the door jamb recommend a structural engineer evaluate for movement of the supporting structure.
- Tuck point all tile areas. Consider covering the tile material with metal panel.
- Continue routine maintenance


TUCK POINTING AT TILE


REPLACE SEALANT


SOFFIT CONDITION GOOD VENTED


ASPHALT CONDITION AND ADJACENT LANDSCAPE

5. Entry Canopy / Overhangs / Fascia

- Expected Life Span: Same as building depending on the materials used and detailing.
- Current Condition: Good
- Canopies are masonry construction with sloping roof and metal deck roofing. All masonry is in good condition.
- All EIFS soffits vented. Efflorescence evident on one masonry column.

RECOMMENDATION

- Clean the efflorescence and monitor for reoccurrence which will indicate moisture in the wall pushing the salts out through the face of the brick.

6. Walkways / Asphalt / Drainage

- Expected Life Span: 20 years.
- Current Condition: Good (Fair at the north and west entry locations)
- Main concrete walk areas in good overall condition. Some sections have settled and should be maintained or repaired to avoid tripping hazards.
- Some concrete stoops/pads have settled and created a tripping hazard.
- Asphalt areas and drives generally in fair condition and have been maintained. Some Alligator cracking along the edges of paths and by the main play area. The alligator cracking is suggests poor subsurface conditions or overloading.
- Asphalt play area in fair condition.

RECOMMENDATION

- Continue VASD's Slips and Falls program to identify and correct areas of uneven concrete and ashpalt.
- Grind areas of concrete that exceed 1/2" height differential from adjacent slabs.
- Monitor concrete pads at entries.
- Plan for future replacement/repair of asphalt areas next to the play area.
- Fill in the landscape next to sidewalks where there is a difference of ½". This will prevent the erosion of support material under the paved surfaces.

CONCRETE TO LANDSCAPE HEIGHT DIFFERENCE

ASPHALT PATH CONDITION

ASPHALT CONDITION AT PLAY AREA POOR CONDITION

BUILDING SYSTEM REPORT (PREPARED BY IMEG)

1. Building Summary
- Originally occupied in 1992.
- Energy audit upgrades performed in 2014.
- Remodeling performed in 2019-2020.

2. Heating, Ventilation, and Air Conditioning (HVAC)
- The building is heated with one high efficiency gas-fired De Dietrich hot water boiler installed in 2012 and two gas-fired cast iron boilers original to the building. The De Dietrich is the primary boiler, and one of the cast iron boilers operates on design days to provide sufficient heat to the building. The other cast-iron boiler is a standby boiler. All boilers are located in the main mechanical room adjacent to the loading dock. The De Dietrich boiler is in good working order and has an expected life of 15-20 years. The cast iron boilers are in fair working order but are far less efficient than the De Dietrich and other boilers available today. These boilers have an expected life of 30-35 years. There would be some additional spare capacity on this system but system redundancy would be reduced since all three boilers may need to operate to meet building load.
- The individual rooms are conditioned and ventilated with overhead air. Central air handling units, located in mezzanine mechanical rooms, condition the mix of outside air (ventilation) and return air and deliver to the building. The air handling units are original to the building with an expected life of 30-35 years. Each room has its own temperature control. As part of the energy audit performed at the school, the air handling units received variable speed drives to modulate the total air flow from the unit based on the highest demand needed to satisfy the zones. Each zone damper had the original pneumatic actuator replaced with a new electronic DDC controlled actuator for better zone control.
- Air handling units 1, 2, 3, 4, 7, 8, 9, 10, 11, 12, and 13 were replaced along with adding cooling via air-cooled chiller as part of the 2019-2020 referendum work. AHU-5 had a retrofit coil added as part of this work as well.
- The building IT room is conditioned with a wall-mounted refrigerant split system with exterior air- cooled condensing unit.
- Controls have been converted to DDC.

- Hot water booster coils and ductwork revisions were included in the 2019-2020 referendum scope.

3. Plumbing

- Water service to the building enters the boiler room along the west side of the building, underfloor. The service size is an 8" pipe with the building system pipe sized at 4" with a 3" meter. It appears as though the water service into the building was sized for possible future fire protection system for the building.
- The existing sanitary main is 8"and exits the building along the south side of the building near the loading dock. The condition of this pipe is not known but could be explored further with a camera if necessary. The piping is likely original and expected to be in good working order.
- The existing storm main is 15"and exits the building along the south side of the building near the loading dock. The condition of this pipe is not known but could be explored further with a camera, if necessary. The piping is likely original and expected to be in good working order.
- Hot water distribution is provided by three gas-fired tank type water heaters. All water heaters are located in the boiler mechanical room and have an expected life of 15-20 years. The three domestic water heaters have been installed since the building originally opened. The heaters were installed in 2016, 2017, and 2021. The water heaters installed in 2017 and 2021 are siamesed for redundancy. The domestic water heaters serve the building at 120F° and utilize a storage tank to meet demand.
- All hot water is softened.
- The existing natural gas service is located outside the boiler room along the west side of the building.
- The 2019-2020 referendum scope included the replacement of 13 drinking fountains with bottle fillers and renovated restroom groups with new plumbing fixtures.

4. Fire Protection

- The building is currently not sprinkled.

5. Electrical

- The building is served by a 2500 amp, 480/277 volt 3-phase service. The service switchboard is located in the main electrical room, and is manufactured by Square D. There is little space available for additional circuit breakers.

- Branch panelboards are distributed throughout the building. Most panelboards have little space available for additional circuit breakers. Panel 'HM' was discovered to have had breakers removed, but not replaced or blank-offs installed. This allows the bus to be accessible. Staff has indicated the responsible contractor will be contacted to address the issue, as it is a safety concern.
- A 30 KW diesel generator is installed in a room designed for it. The cooling air is discharged through the exterior wall with ductwork. It is in good shape, and the controller shows it has run for 152 hours. There is a single 70 amp transfer switch that serves both emergency and non- emergency loads. This does not meet code for separation of circuits.
- A Fike 10-066 series fire alarm system is installed in the building. Notification is by means of horn type audible devices. Notification appears to be mostly code compliant. The classrooms do not have notification devices installed in them. Typically, a classroom is required to have at least a strobe installed as it is a "common space." This appears to be a condition that is acceptable to the local code officials since it has not been identified as a deficiency in their inspections. It is a condition that exists in some of the other schools, but not all. Notification devices are installed at 70" above floor. This does not meet the code requirement of 80" minimum height. This is the only school where the lower height exists. Spaces included in the 2019-2020 remodeling had devices installed to meet current code.
- Classrooms are lit by linear fluorescent troffers. Corridor and common areas are lit by newer Cree LED fixtures. These spaces also have occupancy sensors to provide automatic shutoff. Exterior building-mounted lighting and parking lot pole-mounted lighting is LED type. Spaces included in the 2019-2020 remodeling had LED light fixtures installed. Occupancy sensors were installed in remodeled spaces, and dimmers were included in most remodeled spaces.
- A districtwide phone system replacement was completed in 2019.
- A new wireless synchronized central clock system has been installed as part of the 2019 referendum.
- Addition or relocation of paging speakers in renovated areas have been installed to the existing paging system as part of the 2019 referendum.
- New electronic access control proximity readers and control panels were added to the existing system as part of the 2019

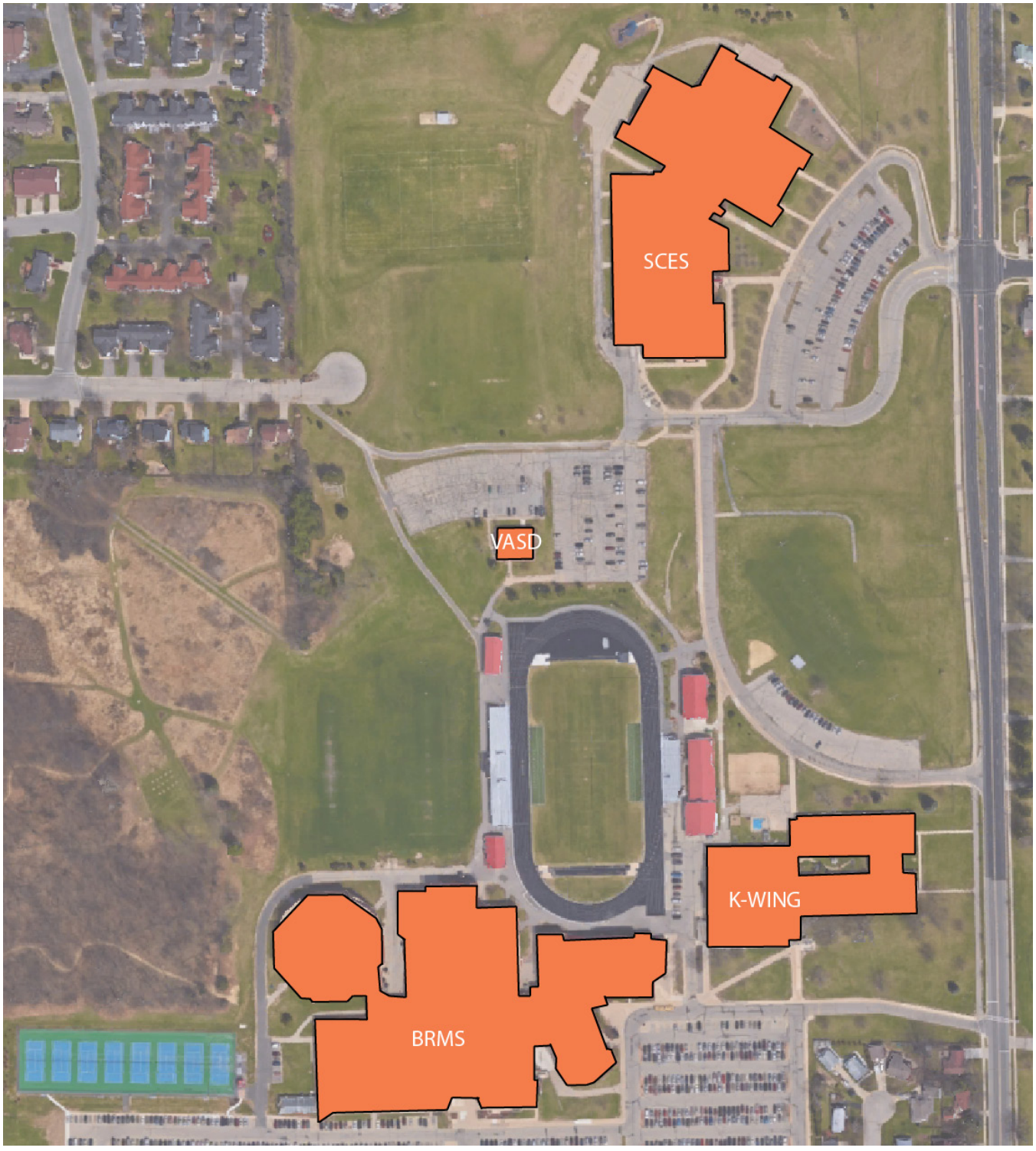
referendum.

- New data cabling for wall outlets and ceiling wireless access points were installed in renovated areas as part of the 2019 referendum.

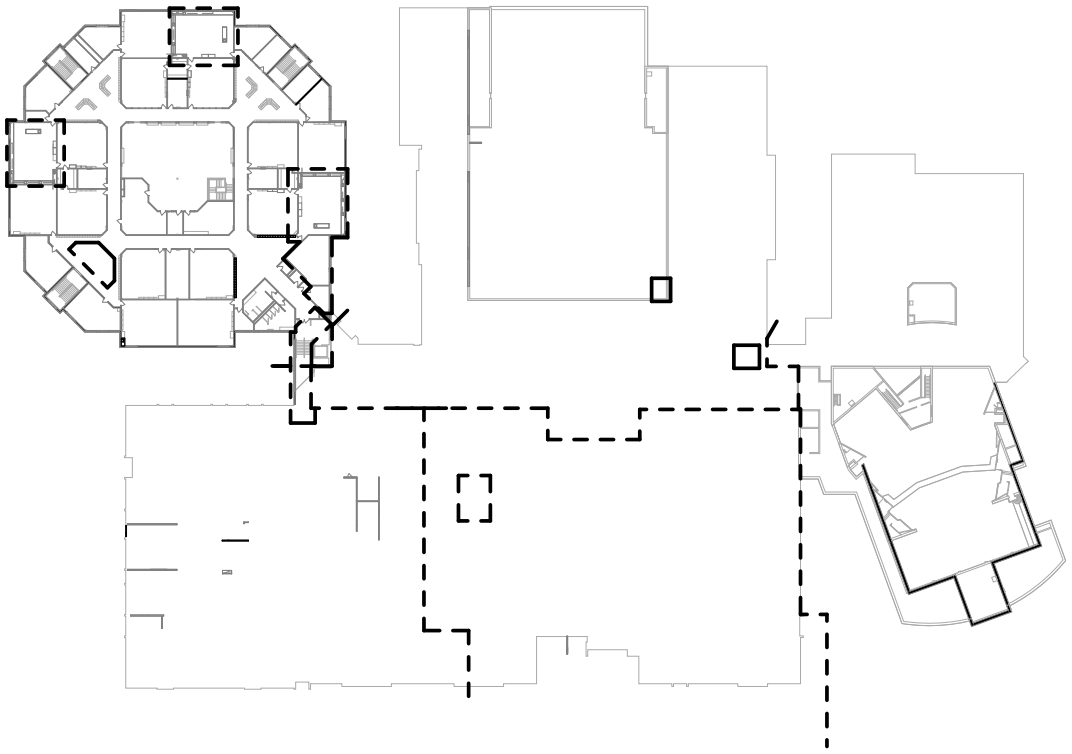
BADGER RIDGE MIDDLE SCHOOL

School: Badger Ridge Middle School
Construction dates 1960, 1970, 1992, 2020
Date of Assessment: December 12, 2014
Evaluator(s): Paul Raisleger (EUA)

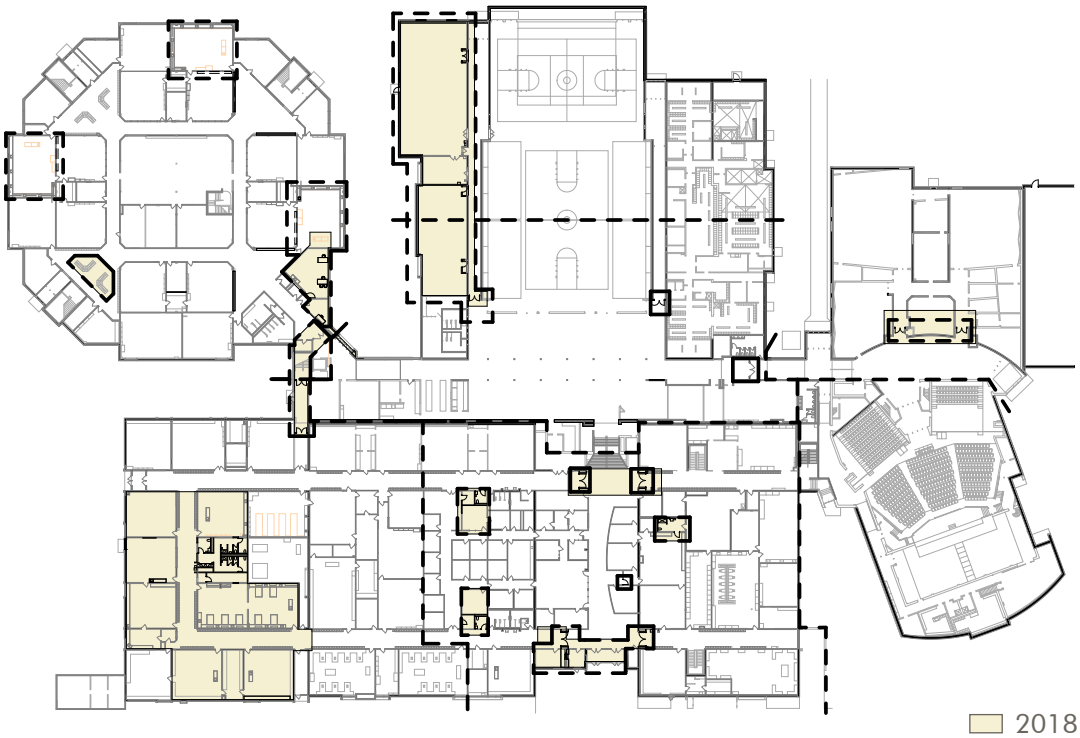
SITE



FLOOR PLANS



LEVEL 02



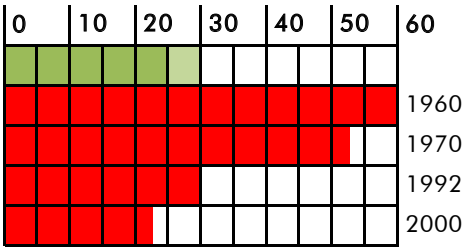
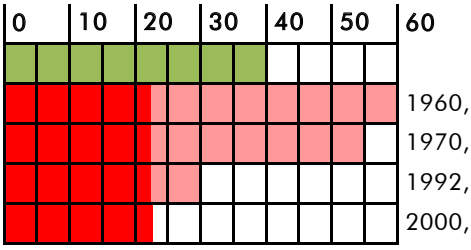
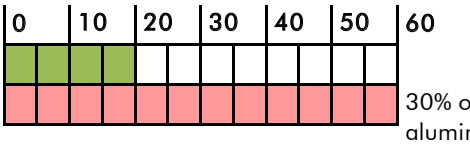
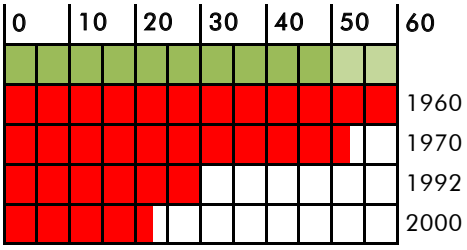
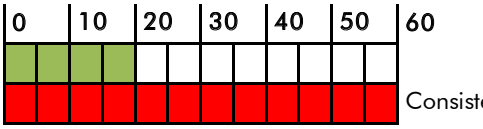
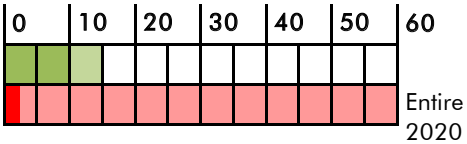
2018 RENOVATION

LEVEL 01

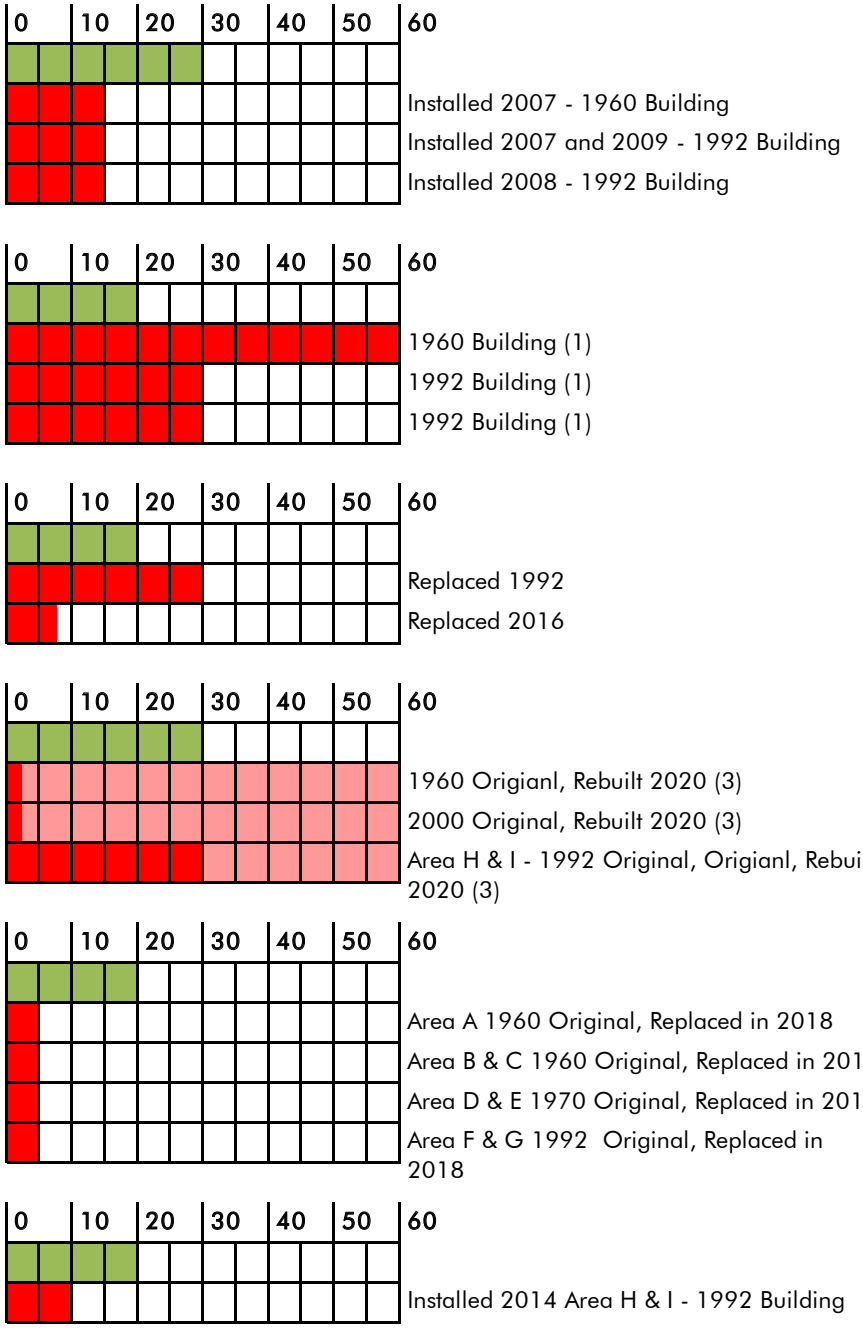
BUILDING SYSTEM LIFESPAN COMPARISON

Anticipated Lifespan of Building Components

* Data from Institutional Facilities Manager Resources, ASHRAE research, and School District Facility Manager client information.

Component or System	Typical Use Lifespan	
EXTERIOR		
Windows	Years 25-30yr	
Roofing Aggregate	Years 20yr EPDM, 30yr Termoplastic	
Steel Doors / Frames	Years 20yr Steel, 30yr Aluminum	
Exterior Closure Exterior Wall (Masonry)	Years 50-100yr with Maintenance	
Entry Canopies / Overhangs / Fascia	Years 20yr	
Walkways / Asphalt / Drainage	Years 10-15yr	

Component or System	Typical Use Lifespan	
HVAC		
Hot Water Boilers	30	Installed 2007 - 1960 Building Installed 2007 and 2009 - 1992 Building Installed 2008 - 1992 Building
Hot Water Pumps	20	1960 Building (1) 1992 Building (1) 1992 Building (1)
Temperature Controls	20	Replaced 1992 Replaced 2016
Air Handling Units	30	1960 Origianl, Rebuilt 2020 (3) 2000 Original, Rebuilt 2020 (3) Area H & I - 1992 Original, Origianl, Rebuilt 2020 (3)
Water Source Heat Pum	20	Area A 1960 Original, Replaced in 2018 Area B & C 1960 Original, Replaced in 2018 Area D & E 1970 Original, Replaced in 2018 Area F & G 1992 Original, Replaced in 2018
Terminal Air Units	20	Installed 2014 Area H & I - 1992 Building



NOTES:

1. Over the years, Hot Water Pumps have been replaced / rebuilt as part of regular VASD maintenance.
2. Temperature Controls were updated to DDC, but will need upgrade to ALC system like HS.
3. Five Make Up Air Units need to be replaced.

Component or System	Typical Use Lifespan	
Plumbing	Years	0 10 20 30 40 50 60
Sanitary & Storm Piping	50	Area A, B, C 1960 Area D & E 1970 Area F & G 1992
	Years	0 10 20 30 40 50 60
Copper Water Piping	50	Area A, B, C 1960 Area D & E 1970 Area F & G 1992
	Years	0 10 20 30 40 50 60
Water Heater	20	Area A, Replaced 2019 and 2023 Area B, Replaced 2019 Area F & G, Replaced 2021
Plumbing Fixtures	Years	0 10 20 30 40 50 60
Toilets, Urinals, Sinks	30	Area A, B, C 1960 Area D & E 1970 Area F & G 1992
	Years	0 10 20 30 40 50 60
Drinking Fountains	20	Replaced 2020

Component or System	Typical Use Lifespan	
Power & Distribution	**Years**	**0 10 20 30 40 50 60**
Service Distribution	35	1960 Origianl, Replaced 2019 1992 Additions, Replaced 2019
	Years	**0 10 20 30 40 50 60**
Distribution Panels	35	1960 Original, Replaced 2019 1992 Building (Area F & G)
	Years	**0 10 20 30 40 50 60**
Interior Lighting	25	1960 Building, Some replaced 2014 (1) 1992 Building (Area F&G), Some replaced 2014 (1)
	Years	**0 10 20 30 40 50 60**
Exterior Lighting	25	1960 Building, Replaced by 2014 energy project
	Years	**0 10 20 30 40 50 60**
Fire alarm	20	1960 Building, Replaced 2019 1992 Building (Area F&G), Replaced by 2019

NOTES:

1. Some lighting in corridors changed to LED through Energy Projects, 2012-2014

BUILDING EXTERIOR INSPECTION REPORT

1. Exterior Windows

- Expected Life span: 25-30 years
- Current Condition: Fair
- Windows in the 1968 original building are a combination of single glaze and 1" insulated glazing.
- Window frames are a mix of aluminum and steel in some areas of the 1968 building and aluminum in the 1993 addition areas.
- Most of the entry doors are steel frames with single glazed glass.
- Older window frames are usually not thermally broken or do not contain high performance insulated glass. Glass performance has improved dramatically over the past 10-15 years and glass is designed to much better sun shading co-efficient (ability to block UV rays) and overall better R-value. (Quality of thermal conductivity). Single pane or clear glass does not block UV rays or have any insulating value. Insulated glass does not block UV rays or have any insulating value. Insulated glass that is tinted is also recommended.
- Gaskets and weather stripping in the older windows is deteriorating.
- Interior sun control, (blinds, and shades). Blinds are integral in the original windows in the 1993 addition windows.
- Greenhouse Polycarbonate in Aluminum Frame. Condition appears good, but performance of the Polycarbonate may vary according to age of the material.

RECOMMENDATION

- Although the physical condition of the windows in the original 1963 building is fair, recommend budgeting for window replacements to benefit from the thermal and daylight performance of new products.
- Replace original window frames with thermally broken aluminum frames.
- Monitor the windows and frames in the 1993 addition areas as they are approaching the end of their life expectancy.
- Remove the existing sealant at window to wall conditions and replace with new backer rod and sealant.

WINDOW GASKETS DETERIORATED

SINGLE PANE GLASS AND GLASS BLOCK

SINGLE PANE GLASS

2. Roof

- Expected Life Span: 20 years for rubber EPDM, 30 years for Thermoplastic, 40 years for built-up asphalt systems
- Current Condition: Refer to Roof Report Manuals at the Facility Office for inspections, recommendations and maintenance according to Manufactures standards.
- Roof composition typically 3ply Fiberglass hot adhered, I ply Fiberglass adhered, "3/4" Perlite hot adhered, 1 ½" Polyisocyanurate hot adhered ¾" Perlite mechanically attached.
- Coping and fascia in good condition.
- Gutters and downspouts appear in good condition and drain at splash blocks at grade where applicable.

RECOMMENDATION

- None at this time. Maintain according to MFG standards and VASD inspections. Replace as directed by roofing mfg.

3. Exterior Doors

- Expected Life Span: 20 years for steel, 30 years for aluminum/ FRP systems.
- Current Condition: good/Fair
- Steel door and frame at service entry areas. Bottom edges of the door frames showing slight deterioration.
- Steel doors with single pane glazing at main entry of the original 1968 building. Deterioration of the frames at grade.
- Steel entry doors with insulated glass typical at other entry areas. Generally in good condition with some deterioration at grade and deterioration of window gaskets particularly in the original 1968 building.
- Doorways causing security issues by not closing easily (doors 9 and 14) were replaced in 2023. District is continuing work to replaces remaining doors.
- Insulated glass units in all the entry doors and sidelites.
- Aluminum doors appear in good condition.
- Weather stripping at some exterior doors damaged or missing.

RECOMMENDATION

- Monitor the condition of the steel doors for deterioration and maintain as required.
- Remove and replace main entry doors with thermally broken aluminum frames with 1" insulated tinted glass.
- Repair or replace weather stripping as required.
- Budget for replacement of remaining exterior doors and frames with thermally broken aluminum systems.

SINGLE PANE GLASS

4. Exterior Walls

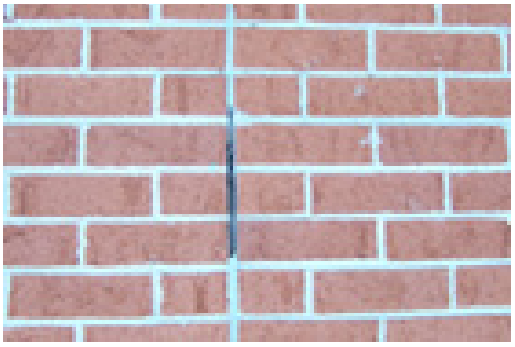
- Expected Life Span of Masonry and Concrete: 50-100 years with periodic maintenance
- Current Condition: Good at the sections of wall containing clay masonry units. Fair in some sections of the original building.
- Wall construction 8" CMU back up, 2" Rigid Insulation, Vapor Barrier, Air Space and Masonry.
- Original 1968 building 8" CMU grouted solid with unit masonry veneer. No weeps or control joints.
- Metal panel overhang fascia.
- Precast concrete sills in the Original 1968 building.
- Brick condition: Good
- No expansion or control joints in the original building. Some repair work required at exterior corners.
- Concrete sections at the original building will require maintenance to address the face deterioration and rusting of rebar.
- Select areas of the brick mortar joints will need to be ground out and tuck pointed.
- Retaining wall and cap adjacent to the generator is in poor condition and will need maintenance to repair failing cap and wall.
- Some joint degradation at the Performing Arts exterior and the School at the east entry.
- Painted exterior at the Performing Arts Building peeling. Potential for the paint to trap water behind causing deterioration of the mortar joints.
- Some limited rust on steel lintels.
- Some control joint sealant is beginning to deteriorate.
- Some joint wear and the original building precast sills.
- The masonry wing details at the original 1968 building are deteriorating.
- No weeps or flashing in the wall of the original 1968 building.

RECOMMENDATION

- Remove/grind deteriorated mortar joints and tuck point masonry.
- Remove old sealant at window to wall conditions and replace with backer rod and sealant.
- Remove and replace sealant at building control joints.
- Inspect and repair site cast concrete sections.
- Remove rust from steel lintels and paint with high quality enamel.
- Verify the masonry joint condition at the exterior of the

NO CONTROL JOINTS

NO CONTROL JOINTS



SEALANT JOINTS

SLIGHT RUST ON SOME LINTELS

Performing Arts Center.
- Continue routine maintenance.

5. Entry Canopy / Overhangs / Fascia
- Expected Life Span: Same as building depending on the materials used and detailing.
- Current Condition of the Fascia: Good
- Current Condition of the Soffits: Fair/Poor
- The original 1968 building has a metal panel fascia approx. 3′ in depth and 6″ coping. The remaining sections of the buildings have a 1′ +/- fascia with 6″ coping.
- Soffits are painted wood veneer plywood with minimal venting.
- Soffit condition ranges from good to poor. Areas of minimal to moderate delamination of the wood.

RECOMMENDATION
- Recommend removing the existing painted plywood soffit and replacing with an appropriate vented soffit material such as aluminum or EIFS.


SOFFIT DETERIORATION


SOFFIT DETERIORATION

6. Walkways / Asphalt / Drainage
- Expected Life Span: 20 years
- Current Condition: Bad
- Main concrete walk areas in good overall condition.
- Asphalt drive and parking areas are aged but in good condition due to routine maintenance and patching.
- Most of the asphalt joining the concrete pads/stoops has settled creating a differential of up to 1″ or more in some cases.
- Concrete on the north side of the Greenhouse has heaved, cracked and settled towards the building.

7. Track and Tennis Courts
- The Track will need to be resurfaced in the next 3 to 5 years.
- The Tennis Courts will need to be resurfaced in the next 1 to years.

8. Interior Floors
- There are rooms in the building that will need flooring in the 2 to 5 years.

RECOMMENDATION

- Grind areas of concrete that exceed 1/2" height differential from adjacent slabs.
- Monitor concrete pads outside the Natatorium for differential settlement.
- Remove settled asphalt at locations where it has settled below the finish face of the concrete stoops and replace with concrete or asphalt.

NOTE:
Although the Natatorium is not part of this study, the poor condition of this building should be noted.

Severe degradation of the exterior CMU wall is seen due to the high interior moisture content in the pool along with the freeze thaw cycles of our climate. Moisture penetrating the wall is evident on the exterior. Multiple locations of failing masonry are evident along with delamination and corrosion of all steel lintels. Masonry units on the North upper corner of the exterior appear to be loose.

VASD will be required to assess and repair all exterior deficiencies as expediently as possible to limit further degradation of the exterior. The condition of the Natatorium will be an ongoing annual maintenance issue for VASD.

BUILDING SYSTEM REPORT (PREPARED BY IMEG)

1. Building summary

- Original construction is 1960 with additions in 1970, 1992, 2000, an energy audit equipment upgrade in 2014, and referendum remodeling in 2019-2020.
- Approximate building square footage is 313,437 square feet.

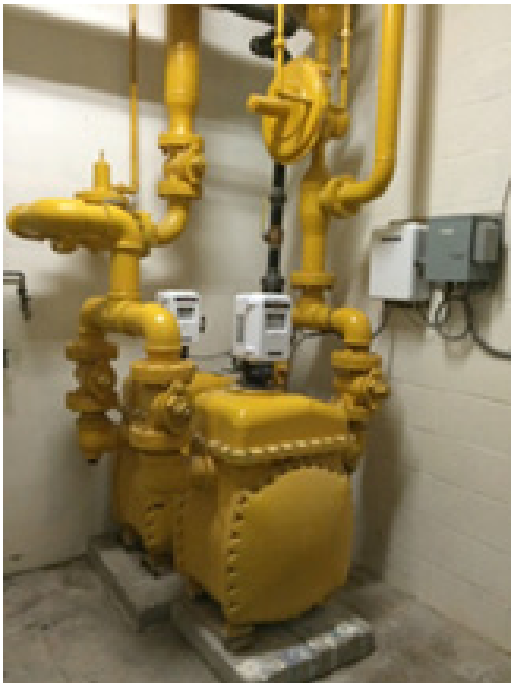
2. Heating, Ventilation, and Air Conditioning (HVAC)

- Multiple hot water boilers serve the building, located in three primary locations. One pair of De Dietrich boilers are located in an exterior accessed mechanical room at grade with one boiler installed in 2007 and one in 2009. Both these boilers appear to be in good working condition with a life expectancy of 20 years. These boilers operate in a lead/lag operation to provide some system redundancy. One De Dietrich hot water boiler is located near the commons area. This boiler was installed in 2007 and is in good working condition. There are two boilers located in the classroom wing located on the 2nd floor.
- The individual rooms are conditioned and ventilated with overhead air, conditioned at central air handling units located in mezzanine mechanical rooms. The air handling units vary in age based on the building addition date but are original to the building with an expected life of 25-30 years. Each room has its own temperature control using a hot deck/cold deck arrangement at the air handling units to control temperature of the air delivered to each space. As part of the energy audit performed at the school, variable air volume terminal units were added to each zone of the air handling units to modulate the airflow based on room load.
- The gymnasium is served by gas-fired roof top units.
- The woodshop and maker space areas are served by a gas-fired makeup air unit. These areas are not air conditioned.
- Air conditioning of larger areas like the auditorium and commons area is provided at the air handling unit with an outside air-cooled condensing unit. For the classrooms, air conditioning is provided through the use of two pipe heat pumps with indoor fluid coolers rejecting the heat at the roof.
- The 2017 referendum work included replacing the heat pumps in the 1993 wing, unit heater replacement (four), entrance cabinet heater replacement, replacement of seven AHU's with units that include chilled water cooling, replacement of two

roof-mounted exhaust fans and adding A/C to the commons area air handling unit.

3. Plumbing

- There are two water services to the building. One enters the building at the front entrance and one is 4" combined fire protection and domestic water service that enters the building between the natatorium and performing art addition.
- There are several different sanitary mains that exits the building. There is a 6" main the exits along the west side of the building that was part of the 1995 addition. There is an 8" sanitary main the exits along the east side of the building, between area D and the natatorium, that may be the original sanitary for the building. The condition of these pipes is not known but could be explored further with a camera, if necessary.
- Area A has two siamesed Bach water heaters that were installed in 2019 and 2023. Area B has two siamesed HTPS water heaters that were installed in 2019. Area F and G have an HTP water heater with storage tank with extra capacity that was installed in 2021.
- The natural gas service enters the building along the south side, near the building entrance with the meter and regulator located inside the building in the lower level.
- The 2019-2020 referendum work included the addition of restroom groups with new water closets, lavatories, and drinking fountains throughout the facility. Existing drinking fountains throughout the facility were replaced (26). The water heater and domestic hot water storage tank were also replaced.



4. Fire Protection

- The building is currently not sprinkled but does have a Deluge system serving the performing arts stage.

5. Electrical

- The building is currently served by a 3000 amp, 480/277 volt 3-phase switchboard located in a storage room off the metal shop. The switchboard is relatively new and in good condition.
- Utility bills were provided by the district for the period of October 2013 through November 2014. During that time, the maximum demand recorded was 647 KW. Based on a reasonable power factor, there is some additional capacity available.

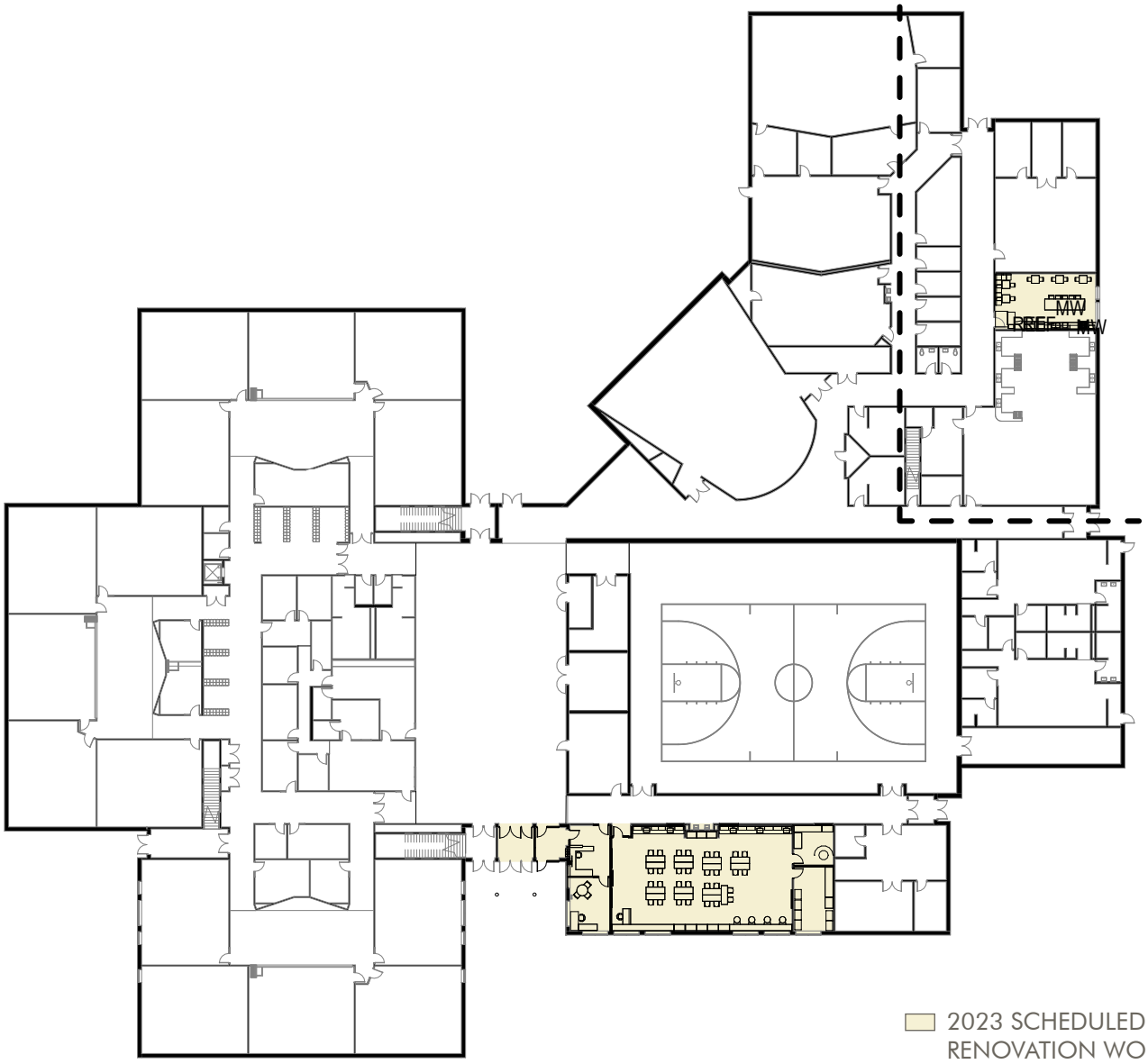
- A 500 KVA transformer and 2000 amp 208/120 volt 3-phase switchboard provide the 208 volt distribution for the building. The panelboards installed in the newer additions are in good condition and appear to have some vacant positions for additional circuit breakers. The panelboards in the older portions of the building were replaced during the 2019-2020 referendum project.
- A natural gas generator is installed outside the building to provide backup power. A 200 amp 3-pole automatic transfer switch is installed to serve emergency loads. A new automatic transfer switch was installed during the 2019-2020 referendum project to serve optional loads. Non-emergency loads were moved to the new transfer switch to correct the code violation.
- A Fike CyberCat 1016 fire alarm panel with voice-based notification was installed during the 2019-2020 referendum project to replace the existing obsolete Pyrotronics system. New devices were installed to replace the existing throughout, and to bring the building up to current code.
- Corridors and common areas are lit with LED lighting. These also have occupancy sensors installed for automatic shutoff. Other spaces are lit with linear fluorescent lighting. Spaces included in the 2019-2020 remodeling had LED light fixtures installed. Occupancy sensors were installed in remodeled spaces, and dimmers were included in most remodeled spaces.
- A districtwide phone system replacement was completed in 2019.
- A new wireless synchronized central clock system has been installed as part of the 2019 referendum.
- Addition or relocation of paging speakers in renovated areas have been installed to the existing paging system as part of the 2019 referendum.
- New electronic access control proximity readers and control panels were added to the existing system as part of the 2019 referendum.
- New data cabling for wall outlets and ceiling wireless access points were installed in renovated areas as part of the 2019 referendum.

SAVANNA OAKS MIDDLE SCHOOL

School: Savanna Oaks Middle School
Construction: 2005
Date of Assessment: November 14, 2015
Evaluator(s): Paul Raisleger (EUA)

SITE

FLOOR PLANS

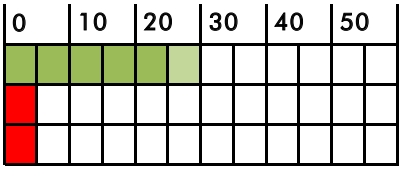
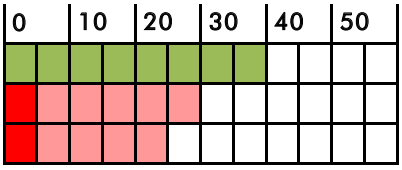
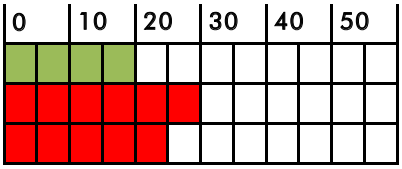
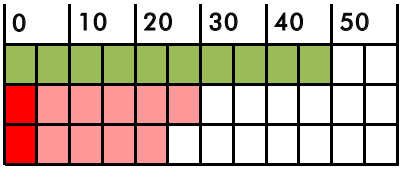
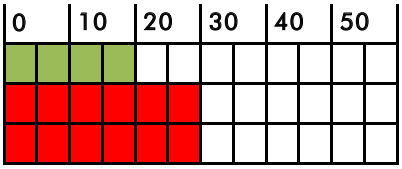
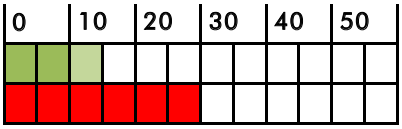


LEVEL 01

BUILDING SYSTEM LIFESPAN COMPARISON

Anticipated Lifespan of Building Components

* Data from Institutional Facilities Manager Resources, ASHRAE research, and School District Facility Manager client information.

Component or System	Typical Use Lifespan	
EXTERIOR		
Windows	Years 0 10 20 30 40 50 60 25-30yr	 1995, Replaced in 2018 1999, Replaced in 2018
Roofing PVC with Fully Welded Joints and Seams	Years 0 10 20 30 40 50 20yr EPDM, 30yr Termoplastic, 40yr Ashpalt	 1995 Original roof, Replaced 2018 1999 Original roof, Replaced 2018
Steel Doors / Frames	Years 0 10 20 30 40 50 20yr Steel, 30yr Aluminum	 1995 (1) 1999
Exterior Closure Exterior Wall (Masonry)	Years 0 10 20 30 40 50 50-100yr with Maintenance	 1995, 2018 (2) 1999, 2018 (2)
Entry Canopies / Overhangs / Fascia	Years 0 10 20 30 40 50 20yr	 1995 1995
Walkways / Asphalt / Drainage	Years 0 10 20 30 40 50 10-15yr	 Entire Site

NOTES:

1. Front doors scheduled to be replaced in 2023.
2. Building enclosure was repaired with tuckpointing and caulking in 2018.

Component or System	Typical Use Lifespan	
HVAC		
Hot Water Boilers	Years	0 10 20 30 40 50 60
	25-30yr - Original Boiler	1995
	15-20yr - De Dietrich	2011 - De Dietrich
		Energy Audit 2014 - De Dietrich
Air Cooled Chiller	Years	0 10 20 30 40 50 60
	20-25yr	Energy Audit 2014
Chilled Water Pumps	Years	0 10 20 30 40 50 60
	15-20yr	Energy Audit 2014
Temperature Controls	Years	0 10 20 30 40 50 60
	25-30yr	1995
		1999
Air Handling Units	Years	0 10 20 30 40 50 60
	30-35yr	1995
		1999
Terminal Air Units	Years	0 10 20 30 40 50 60
	20	1995
		1999

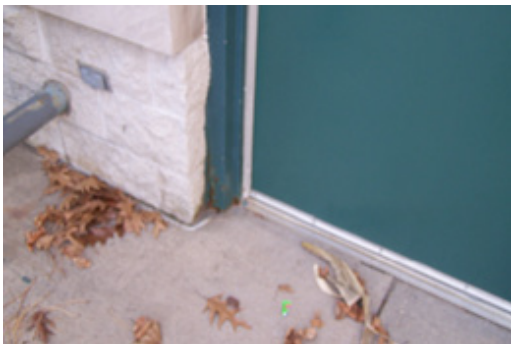
Component or System	Typical Use Lifespan		
Plumbing	Years	0 10 20 30 40 50 60	
Sanitary & Storm Piping	50		1995
			1999
	Years	0 10 20 30 40 50 60	
Copper Water Piping	50		1995
			1999
	Years	0 10 20 30 40 50 60	
Sewage Ejectors	15-20yr		1995, Pumps replaced in Dec. 2015
			1999
	Years	0 10 20 30 40 50 60	
Water Heater	20		1995
Plumbing Fixtures	Years	0 10 20 30 40 50 60	
Toilets, Urinals, Sinks	30		1995
			1999
	Years	0 10 20 30 40 50 60	
Electric Water Coolers	20		1995, Replaced in 2020 (1)
			1999, Replaced in 2020 (1)

NOTES:

1. All Electric Water Coolers replaced in 2020. Bottle fillers added at all locations.

Component or System	Typical Use Lifespan	
Power & Distribution	**Years**	**0 10 20 30 40 50 60**
Service Distribution	35	1995 1999
	Years	**0 10 20 30 40 50 60**
Distribution Panels	35	1995 1999
	Years	**0 10 20 30 40 50 60**
Interior Lighting	25	1995, Some replaced 2014 energy project 1999, Some replaced 2014 energy project
	Years	**0 10 20 30 40 50 60**
Exterior Lighting	25	1995, Replaced 2014 energy project 1999, Replaced 2014 energy project
	Years	**0 10 20 30 40 50 60**
Fire alarm	20	1995 1999

BUILDING EXTERIOR INSPECTION REPORT



STEEL OVERHEAD DOOR AT LOADING
SOME RUST

1. Exterior Windows
- Expected Life Span: 25-30 years
- Current Condition: Good
- The windows are double pane thermally broken aluminum windows with aluminum exterior.
- Glass is tinted to reduce/block UV rays and reduce glare.
- Interior sun control, (blinds, and shades). Blinds are integral in the original windows.

RECOMMENDATION
- All exterior windows and frames in good condition.

2. Roof
- Expected Life Span: 20 years for rubber EPDM, 30 years for Thermoplastic, 40 years for built-up asphalt systems
- Current Condition: Refer to Roof Report Manuals at the Facility Office for all roof types, maintenance records and condition reports. Original to building scheduled to be replaced.
- Standing Seam Metal roof at entry.
- General construction is TPA Tremco JF roof system.
- Extruded Polystyrene loose and ½" Gypsum Board
- Coping and fascia in good condition.

RECOMMENDATION
- None at this time. Maintain according to MFG standards.

3. Exterior Doors
- Expected Life Span: 20 years for steel, 30 years for aluminum/ FRP systems.
- Current Condition: Good
- Bottom edges of the some steel door frames showing slight deterioration.
- Aluminum door and frames at Main entry look good.

RECOMMENDATION
- None at this time. Clean and paint as required. A long term fix would be to replace steel doors and frames with aluminum for durability.

4. Exterior Walls

- Expected Life Span of Masonry: 50-100 years with periodic maintenance
- Current Condition: Good
- Wall construction 1995 building 8" or 12" CMU back up, 2" Rigid Insulation, Vapor Barrier, Air Space and Modular Masonry exterior, 8" split face CMU at base and Cut Stone lintels and trim.
- Brick condition: Generally Good
- Steel lintels above windows are in good condition in general some corrosion at the west entry.
- Slight efflorescence on west façade was reported in 2015 facilities report. There is not evidence of efflorescence since it was power-washed.
- Cut Stone sills on the east face are showing signs of surface wear.
- Flashing condition location and condition: good.

LINTEL CONDITION

CUT STONE FACE DETERIORATION

RECOMMENDATION

- Continue routine maintenance

5. Entry Canopy / Overhangs / Fascia

- Expected Life Span: Same as building depending on the materials used and detailing.
- Current Condition: Good
- Overhangs are EIFS and in good condition.
- EIFS soffits.
- Some steel column base deterioration at main entry.

RECOMMENDATION

- Monitor and maintain as required.
- Clean and paint lintels as required.
- Clean and paint rusted steel column bases.

6. Walkways / Asphalt / Drainage

- Life Expectancy: 20 years.
- Current Condition: Good. (Fair at the North and West entry locations)
- Main concrete walk areas in good overall condition.
- Asphalt play area in good condition.
- Monitor concrete sections at the main drop off and level as required.

RECOMMENDATION

- Monitor concrete for settlement and repair as required.
- Maintain asphalt around the West side of the building. Consider future replacement.
- Monitor the landscape sections close to drive aisles and repair to minimize undercutting of asphalt areas.

STEEL COLUMN BASE DETERIORATION

ASPHALT AND CONCRETE AT ENTRY

CRACKED ASPHALT

ASPHALT AT PLAY AREA

BUILDING SYSTEM REPORT (PREPARED BY IMEG)

1. Building Summary

- Originally occupied in 1995. Addition was completed in 1999.
- Energy audit upgrades performed in 2014.

2. Heating, Ventilation, and Air Conditioning (HVAC)

- The building is heated with one high efficiency gas-fired De Dietrich boiler installed in 2014, one De Dietrich gas-fired cast iron boiler installed in 2011, and one AO Smith boiler that is original to the building. Two boilers need to run to maintain building temperature. There would be some additional spare capacity on this system but the partial system redundancy would be lost as all three boilers would need to operate to provide the additional capacity needed to support an expansion.
- The entire building is air conditioned. A thermal ice storage system was installed in the summer of 2014 as part of the energy audit upgrades. Only issue with performance is if something malfunctions on the unit and ice is not made overnight, there is no ice to use for air conditioning the following day. This has happened a few times. Depending on cooling conditions, the system can generally provide sufficient cooling for one day when this happens but if the issue is not addressed within 24 hours, two days without ice results in the cooling load not being addressed for the building. The system uses an air-cooled chiller located on the roof to make ice that is stored in thermal storage containers located at grade near the loading dock.
- The individual rooms are conditioned and ventilated with overhead air. The classrooms are provided with ducted ventilation air that is dehumidified at the air handling unit and then ducted to a blower coil that mixes with room return air and reheats the air as needed before delivering it to the room. Each blower coil has its own filter return air grill. The ventilation unit that provides outside air to the classrooms has had a frozen coil a few times in extreme cold and trips frequently from nuisance trips when temperatures are below freezing. Each room has its own temperature control. Larger spaces such as the gymnasium, LMC and Agora commons area are conditioned by single zone air handling units located in mezzanine mechanical rooms. The air handling units are all original to the building and addition with an expected life

of 30-35 years. As part of the energy audit performed at the school, variable speed drives were added to the single zone units to modulate the airflow based on room load.
- The building IT room is conditioned with a wall-mounted refrigerant split system with exterior air- cooled condensing unit.
- Controls are DDC.

3. Plumbing
- Water service to the building enters the mechanical room along the east side of the building. The service size is a 6" pipe and service meter is a 3".
- The building floor elevation is lower than the City sanitary main, so the building sanitary is pumped through two duplex sewage ejectors. One for the original building and one for the addition. The original building sewage ejector is located in the receiving area and the sewage ejector for the addition is located in the gym storage. The sewage ejectors are not connected to emergency power. On a loss of power, the building would lose sanitary service. There have been multiple repairs and maintenance done to both these units to keep them operational. The original building sanitary exits the building as a 2½" pressure pipe along the east side of the building.
- The building storm main is 15" and exits the building along the south side. The condition of this pipe is not known but could be explored further with a camera if necessary. The piping is likely original and expected to be in good working order.
- Hot water distribution is provided by one gas-fired tank type water heaters, 100 gallon AO Smith Cyclone water heater.
- All hot water is softened.
- All existing plumbing fixtures appear to be in acceptable working order but would not meet current water conservation requirements.
- The existing natural gas service is located outside the boiler room along the east side of the building.
- The 2019-2020 referendum work included replacing all drinking fountains with new that include bottle fillers.

4. Fire Protection
- The building is fully sprinkled.

5. Electrical

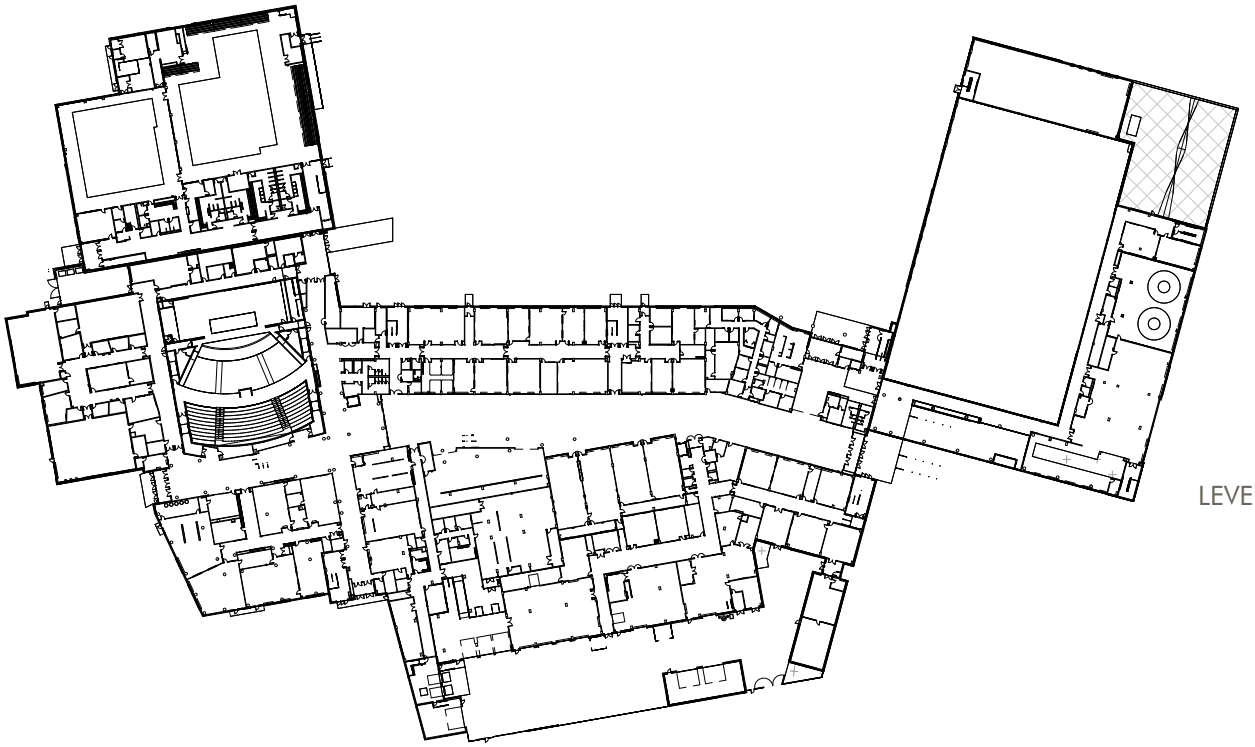
- The building is served by a 3000 amp, 208/120 volt 3-phase service. The service switchboard is located in the main electrical room, and is manufactured by Square D. There is some space available for additional circuit breakers.
- The wall between the electrical room and mechanical room is not sealed where several overhead conduits pass through it.
- Branch panelboards are distributed throughout the building. Most panelboards have little space available for additional circuit breakers.
- The building is on generator backup that was installed in 2019.
- A Simplex 4020 fire alarm system is installed in the building. Notification is by means of horn type audible devices. Notification appears to be code compliant.
- Classrooms are lit by linear fluorescent troffers. Corridor and common areas are lit by newer Cree LED fixtures. These spaces also have occupancy sensors to provide automatic shutoff. Exterior building-mounted lighting and parking lot pole-mounted lighting is LED type. The exterior light located at the door from the mezzanine to the roof where the chiller is located did not have a lamp installed, nor was it changed to LED as part of that project.
- A districtwide phone system replacement was completed in 2019.

VERONA AREA HIGH SCHOOL

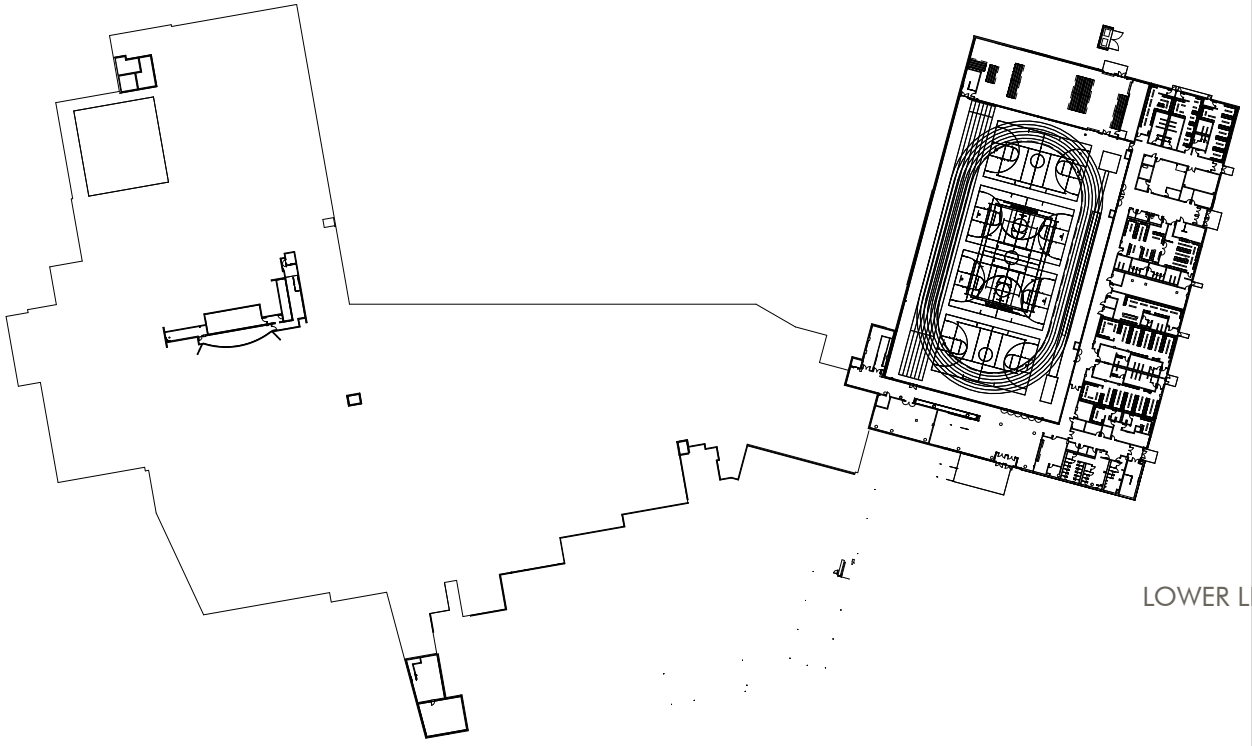
School: Verona Area High School
Construction: 2020
Date of Assessment: February 17, 2023
Evaluator(s): Abie Khatchadourian (EUA)

SITE PLAN

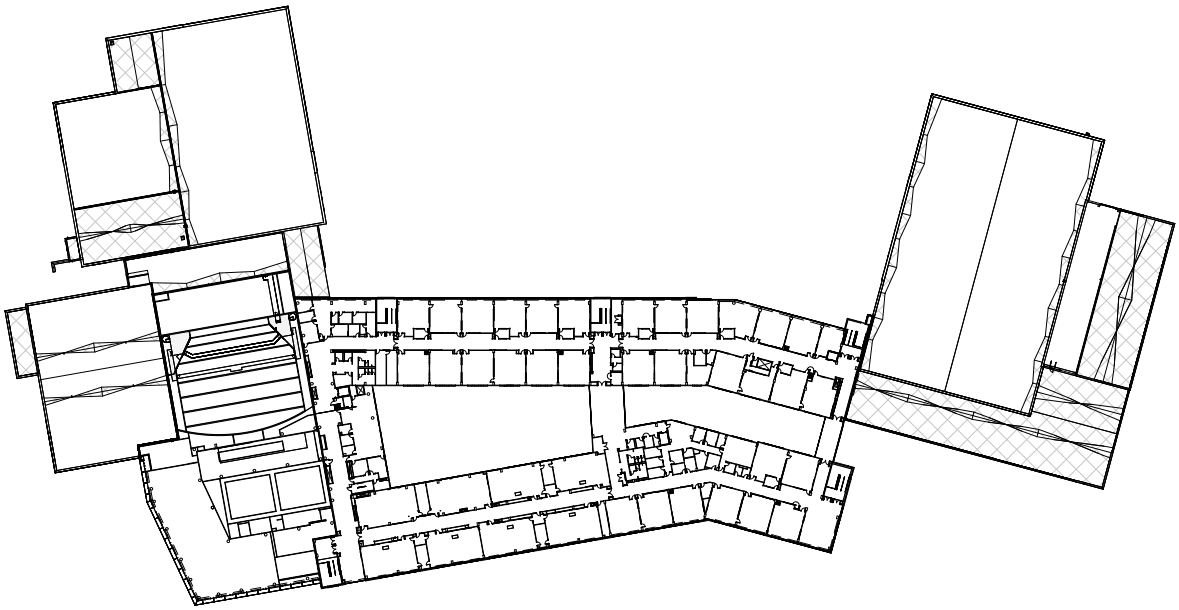
FLOOR PLANS



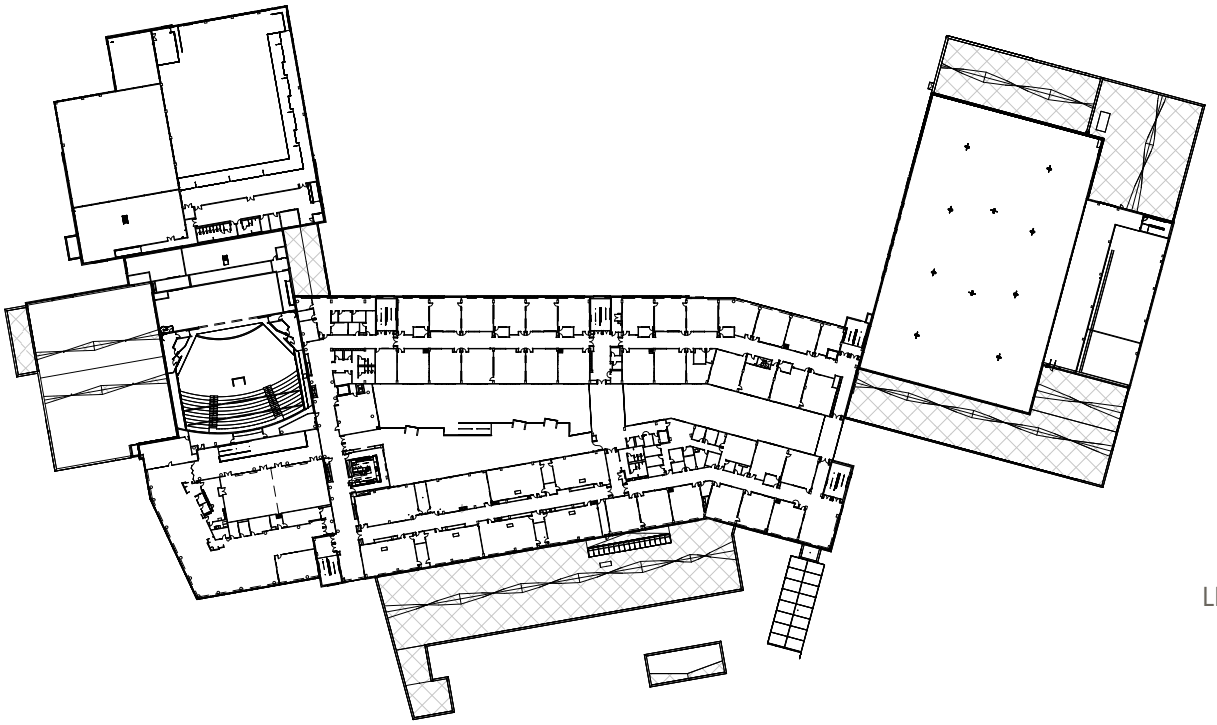
LEVEL 01



LOWER LEVEL



LEVEL 03



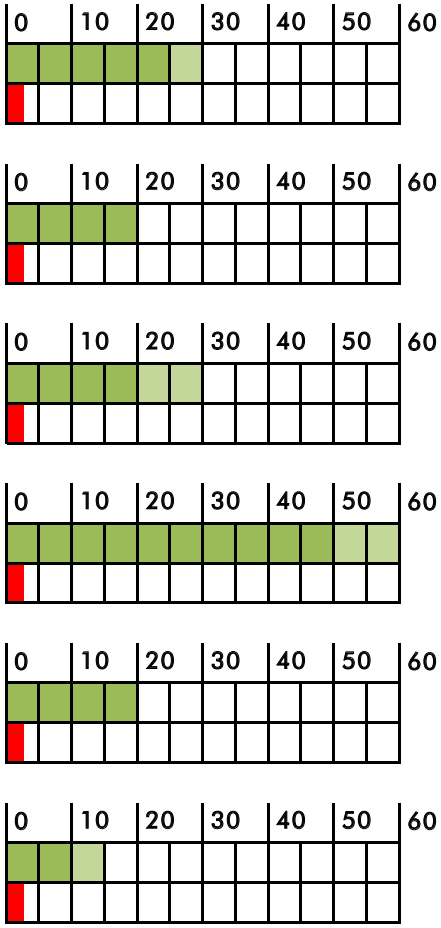
LEVEL 02

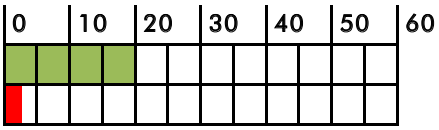
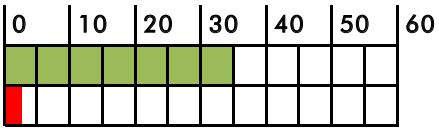
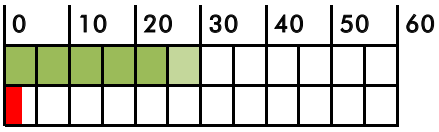
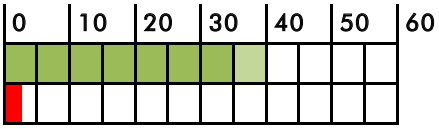
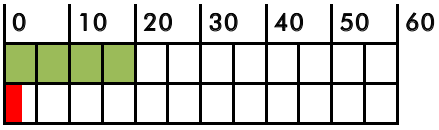
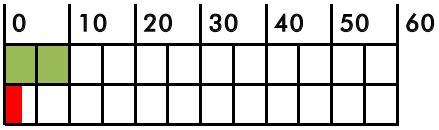
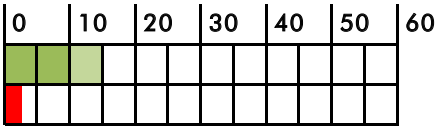
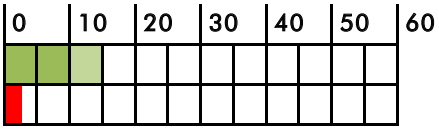
BUILDING SYSTEM LIFESPAN COMPARISON

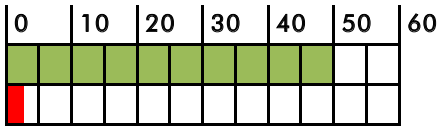
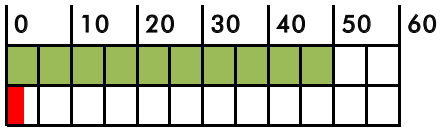
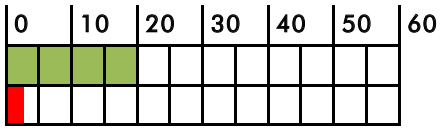
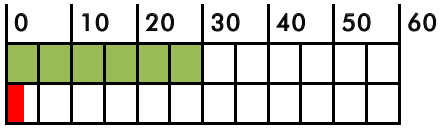
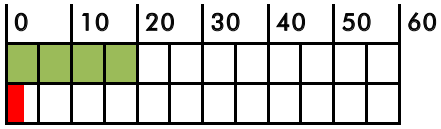
Anticipated Lifespan of Building Components

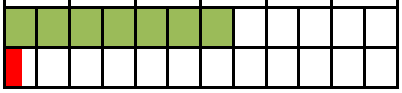
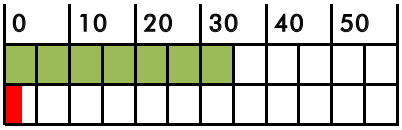
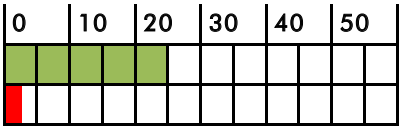
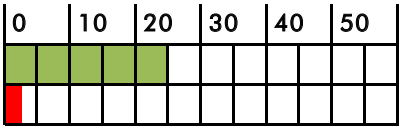
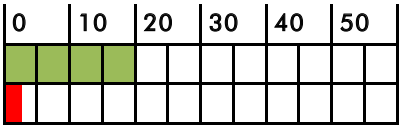
* Data from Institutional Facilities Manager Resources, ASHRAE research, and School District Facility Manager client information.

Component or System	Typical Use Lifespan
EXTERIOR	
Windows	25-30yr
Roofing	
EPDM	20yr EPDM, 30yr Termoplastic
Steel Doors / Frames	20yr Steel, 30yr Aluminum
Exterior Closure	
Exterior Wall (Masonry)	50-100yr with Maintenance
Entry Canopies / Overhangs / Fascia	20yr
Walkways / Asphalt / Drainage	10-15yr



Component or System	Typical Use Lifespan	
HVAC		
Heat Pumps	Years 20yr - Climate Master	
Make-up Air Units	Years 35	
Temperature Controls	Years 25-30yr	
Air Handling Units	Years 35-40yr	
Terminal Air Units	Years 20	
Supply/Exhaust Fans	Years 10	
Split Systems/Cabinet Heater/Unit Heaters	Years 10-15yr	
Pumps	Years 10-15yr	

Component or System	Typical Use Lifespan	
Plumbing	Years	
Sanitary & Storm Piping	50	
	Years	
Copper Water Piping	50	
	Years	
Water Heater	20	
Plumbing Fixtures	Years	
Toilets, Urinals, Sinks	30	
	Years	
Electric Water Coolers	20	

Component or System	Typical Use Lifespan	
Power & Distribution	**Years**	**0 10 20 30 40 50 60**
Service Distribution	35	
	Years	**0 10 20 30 40 50 60**
Distribution Panels	35	
	Years	**0 10 20 30 40 50 60**
Interior Lighting	25	
	Years	**0 10 20 30 40 50 60**
Exterior Lighting	25	
	Years	**0 10 20 30 40 50 60**
Fire alarm	20	

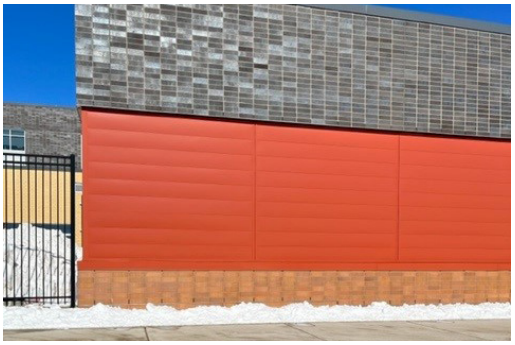
BUILDING EXTERIOR INSPECTION REPORT

1. Exterior Windows
- Expected Life Span: 25-30 years
- Current Condition: Good
- Windows are fixed units in openings with curtain wall at main entrance.

RECOMMENDATION
- None at this time. Monitor for general maintenance.

2. Roof
- Expected Life Span: 20 years for rubber EPDM
- Current Condition: Good
- North section reported by VASD issues being discussed with manufacturer.
- Fully adhered 60 mil EPDM at all areas except over Theater/ Stage which is ballasted 60 mil EPDM.

RECOMMENDATION
- None at this time. Monitor for general maintenance.



3. Exterior Doors
- Expected Life Span: 20 years for steel, 30 years for aluminum/ FRP systems.
- Current Condition: Good
- Doors and storefront are aluminum, typical except for more utilitarian areas which are Fiberglas Reinforced (FRP). Glazing in aluminum doors is insulated tinted.

RECOMMENDATION
- None currently. Monitor for general maintenance.

4. Exterior Walls
- Expected Life Span of Masonry and Concrete: 50-100 years with periodic maintenance.
- Current Condition: Good.

RECOMMENDATION
- None currently. Monitor for general maintenance.

5. Entry Canopy / Overhangs
- Expected Life Span: Same as other exterior building materials.
- Current Condition: Good

RECOMMENDATION
- None currently. Monitor for general maintenance.

6. Walkways / Asphalt / Drainage
- Expected Life Span: 20 years
- Current Condition: Good

RECOMMENDATION
- None Currently. Monitor for general maintenance.

NOTES:
- Planning should be made for repair and/or replacement of synthetic use due additional use by outside groups and organizations.
- Areas for future parking lots may need to be utilized sooner than expected due to high demand for parking.
- Due to extremely large size of high school, system wide maintenance and repairs require more long range planning.


OFF
DROP

BUILDING SYSTEM REPORT (PREPARED BY IMEG)

1. Introduction

- This documents the installed MEP equipment as part of the new High School building construction completed in 2020.
- Buildings are maintained using the following setpoints when occupied:
    - Heating: 68F – 72°F.
    - Cooling: 76F – 80°F.

2. Building Summary

- Originally occupied in June of 2020.

3. Heating, Ventilation and Air Conditioning (HVAC)

- The majority of the building is served by a geothermal bore field consisting of 220 bores at 500 feet deep. The geothermal system routes 30% propylene glycol throughout the field located south of the building and throughout the building to DOAS units in mechanical rooms and heat pumps located near the zones that they serve. The heat pump systems serve classrooms throughout the building including the music rooms, LMC, Administrative Wing, and Culinary spaces. Larger single zone spaces including the Main Street Commons, Pool Lockers, and Large Group instruction are served by single-zone packaged air handling units with water-source heat pump modules utilizing the building geothermal loop.
- The larger spaces that are used to capacity for infrequent events are served by more traditional single-zone gas-fired DX Cooling indoor air handling units. These include the Fieldhouse, Gymnastics, Pre-function Fieldhouse space, and Auditorium. The limited number of hours that these spaces are fully occupied led to a long payback if placed on the geothermal system resulting in the traditional more cost effective system selection. The kitchen, culinary and live animals lab are served by DX/Gas Fired makeup air units for the hood and general exhaust required for those spaces.
- The two pool spaces are served by three large single zone gas/electric dehumidification units. The competition pool has two units to accommodate occupants during large events in addition to utilizing it for practice.
- Exhaust fans are provided throughout the facility for the following functions:
    - General laboratory exhaust.
    - Laboratory hood exhaust.

  - Pool mechanical/storage exhaust.
  - General building exhaust.
  - Wood/Metal/Engine lab exhaust.
  - Clean Room exhaust.
  - Laundry exhaust.
  - Garbage exhaust.
  - Elevator exhaust.
  - Concessions exhaust.
  - Atrium smoke control.
  - Art/Kiln exhaust.
- DX cooling split systems were provided for the electrical rooms.
- Dust collectors serve the technology lab exhaust functions.
- Terminal heating for vestibules, stairs, alcoves, storage, loading docks, technology labs, and mechanical rooms is provided by electric cabinet heaters and gas-fired unit heaters.

RECOMMENDATION

- None Currently. Monitor for general maintenance.

4. Plumbing

- The incoming water is an 8" combined fire protection/domestic water main. A pressure booster is included in the main water room to boost the pressure to meet the building requirements. The heating water is softened by three softeners located in the main water room. Softened cold water is routed throughout the facility to serve water heaters located near the spaces they serve including the pool, fieldhouse and central water room.
- Domestic hot and cold water are routed throughout the facility to serve plumbing fixtures. Hot water circulation is routed throughout the building on four separate loops, each with its own circulation pump. Mixing valves are provided for emergency fixtures.
- An oil water separator serves the trench drains in the garage. Neutralization tanks serve acid waste from labs in areas J and K. Sump pumps are provided throughout for the drain tile system.

RECOMMENDATION

- None Currently. Monitor for general maintenance.

5. Fire Protection

- The building is fully sprinkled with standpipes and hose valves located in the stairwells. Dry pipe sprinklers are provided off of the wet system to serve the main entry overhang. A dry pipe

system is provided for the greenhouse.

RECOMMENDATION

- None Currently. Monitor for general maintenance.

6. Electrical

- There are two 3000 amp 480/277 volt 3-phase 4-wire utility services for the main building. One is located in an electrical room in the northwest section of the building, near the pool and auditorium, and serves primarily the northern and western sections of the building. The other is located in an electrical in the southeast section of building, near the CATE labs and greenhouse, and serves primarily the southern and eastern sections of the building. Switchboards and panelboards are manufactured by Eaton.
- A 600 KW diesel generator provides backup power to the building. The generator is connected to the southern service, and power is distributed throughout the entire building. Three transfer switches are provided to split loads as required by code – emergency (egress lighting, fire alarm), legally required (smoke control), and optional (kitchen cooler and freezer, one elevator, IT racks). Generator and transfer switches are manufactured by Caterpillar.
- All lighting is LED. Control of most student areas is a Wattstopper distributed digital lighting control system which allows controls to be modified in the future via reprogramming. Smaller spaces are controlled using individual wired occupancy sensors and dimmers. Most spaces included 0-10V dimming. The auditorium has a dedicated theater lighting control system due to the special use of that area.
- The fire alarm system is an addressable system, and uses speakers for the audible portion of the notification system. The fire alarm panel is located in the fire operations room off the main entry vestibule. The system is a Fike CyberCat 1016.

RECOMMENDATION

- None Currently. Monitor for general maintenance.

7. Technology

- There are (15) Telecom Rooms (TR) located in the building. Incoming fiber optic and copper service provider cabling are routed to the Main Server Room 1392 (MC-1). From MC-1, 12 strands of OM3 fiber optic cabling and 25-pair Category 3 copper cabling are connecting to each Telecom Room.

- Each TR contains 2-post equipment racks, a telecom grounding and bonding system, vertical and horizontal cable management, and data cabling patch panels.
- The structured cabling system includes Category 6 cabling for general data applications, and Category 6A cabling for wireless access point applications.
- There is an Area of Recue Assistance – Two-way communication system including a master station and call stations per code requirements.
- There is a wireless clock system served by a rooftop antenna. Synchronization transmitters are located in MC-1, TR-3, Tr-9, and TR-13.
- The paging system is a 70V system with head end equipment located in MC-1. Amplifiers are located in all TR with audio cabling routed to paging speakers throughout the facility.

RECOMMENDATION

- None Currently. Monitor for general maintenance.

8. Security

- The electronic access control system is Lenel. HID card readers, electronic door release buttons, and automatic door openers are located throughout the facility. Lenel security panels are located in MC-1, TR-1, TR-3, TR-7, and TR-8.
- Axis video surveillance cameras are located throughout the facility. Cameras are served by Category 6 cabling to their respective TR.

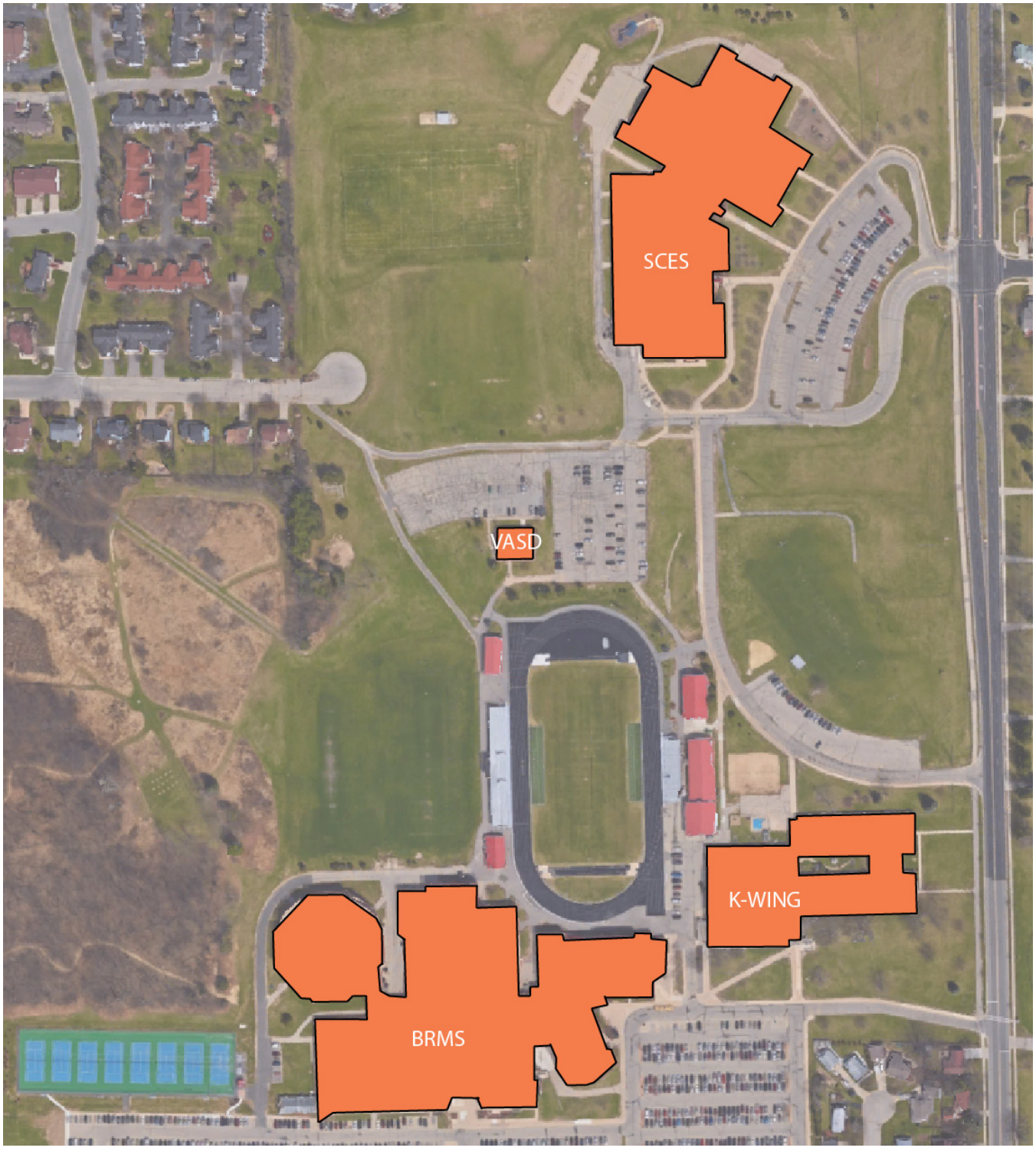
RECOMMENDATION

- None Currently. Monitor for general maintenance.

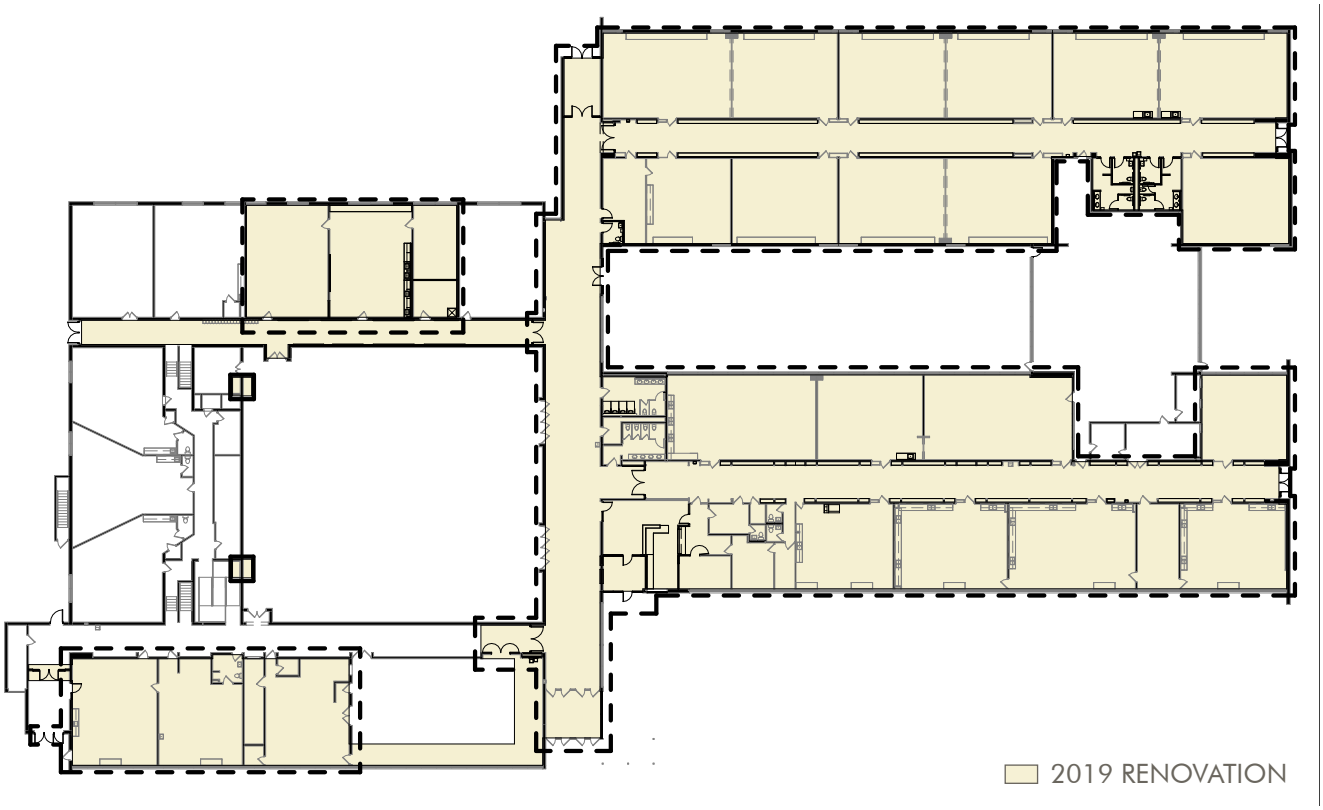
VAIS CHARTER SCHOOL K-WING

School: VAIS Charter School K-Wing
Construction: 1960, Addition 1970. Renovations 2000, 2020
Date of Assessment: December 12, 2014
Evaluator(s): Paul Raisleger (EUA)

SITE



FLOOR PLANS



BUILDING SYSTEM LIFESPAN COMPARISON

Anticipated Lifespan of Building Components

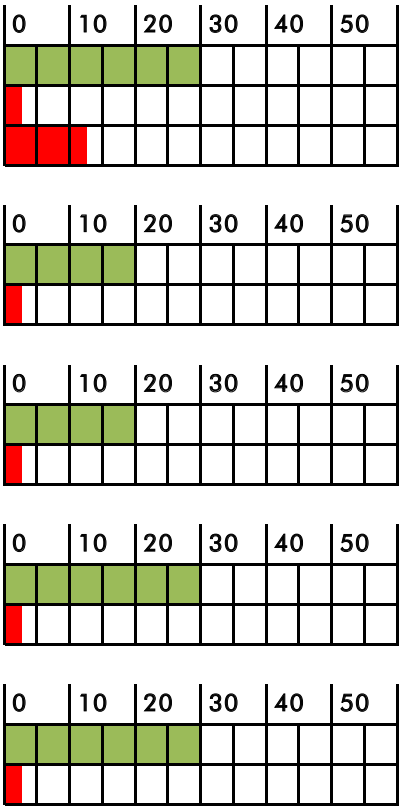
* Data from Institutional Facilities Manager Resources, ASHRAE research, and School District Facility Manager client information.

Component or System	Typical Use Lifespan	Years 0 10 20 30 40 50 60
EXTERIOR		
Windows	25-30yr	1960 (1) 1970 (1)
Roofing EPDM	20yr EPDM, 30yr Thermoplastic, 40yr Ashpalt	1960 (2) 1970 (2)
Steel Doors / Frames	20yr Steel, 30yr Aluminum	All replaced in 2020
Exterior Closure Exterior Wall (Masonry)	50-100yr with Maintenance	1960 1970
Exterior Wall (Wood)		1960, 2020 (3) 1970, 2020 (3)
Entry Canopies / Overhangs / Fascia	20yr	Consistent between all additions no venting
Walkways / Asphalt / Drainage	10-15yr	Entire site

NOTES:

1. Approximately 50% of windows were replaced between the years 1996-2004.
2. Built-up roof scheduled to be replaced in 2023. Standing seam metal roof over west gym and kitchen not part of that scope.
3. Some areas of wood exterior were cladded with synthetic product in 2020.

Component or System	Typical Use Lifespan	
HVAC		
Hot Water Boilers	30	1960 Original, Replaced 2020 1960 Origianl, Replaced 2010
Hot Water Pumps	20	1960 Original, Replaced 2020
Temperature Controls	20	1960 Original, Replaced 2020
Air Handling Units	30	1970 Original, Replaced 2020
Unit Ventilators	30	1970 Original, Replaced 2020



Component or System	Typical Use Lifespan	
Plumbing	Years	0 10 20 30 40 50 60
Sanitary & Storm Piping	50	1960 Building, Replaced 2020
		1970 Addition, Replaced 2020
	Years	0 10 20 30 40 50 60
Copper Water Piping	50	1960 Building, Replaced 2020
		1970 Addition, Replaced 2020
	Years	0 10 20 30 40 50 60
Water Heater	20	Replaced 2010
Plumbing Fixtures	Years	0 10 20 30 40 50 60
Toilets, Urinals, Sinks	30	1960 Building, Replaced 2020
		1970 Addition, Replaced 2020
	Years	0 10 20 30 40 50 60
Drinking Fountains	20	1960 Building, Replaced 2020 (1)
		1970 Addition, Replaced 2020 (1)

NOTES:

1. All Electric Water Coolers replaced in 2020. Bottle fillers added at all locations.

Component or System	Typical Use Lifespan	
Power & Distribution	**Years**	**0 10 20 30 40 50 60**
Service Distribution	35	1960 Building, Replaced 2020
	Years	**0 10 20 30 40 50 60**
Distribution Panels	35	1960 Building, Replaced 2020 1970 Addition, Replaced 2020
	Years	**0 10 20 30 40 50 60**
Interior Lighting	25	1960 Building, Partially Replaced 2014 (1) 1970 Addition, Partially Replaced 2014 (1)
	Years	**0 10 20 30 40 50 60**
Exterior Lighting	25	Replaced as part of 2014 Energy Project Replaced as part of 2014 Energy Project
	Years	**0 10 20 30 40 50 60**
Fire alarm	20	1960 Building, New Head Unit 2018 (2) 1970 Addition, New Head Unit 2018 (2)

NOTES:

1. 2014 Energy Project replaced corridor lighting with LED fixtures. Classrooms still have fluorescent fixtures.
2. In 2018, new Fykes Head Unit installed and all smoke detectors replaced. All other components are original.

BUILDING EXTERIOR INSPECTION REPORT

1. Exterior Windows

- Expected Life Span: 25-30 years
- Current Condition: Good
- Windows aluminum clad wood windows with operable casement.
- Older window frames are usually not thermally broken or do not contain high performance insulated glass. Glass performance has improved dramatically over the past 10-15 years and glass is designed to much better sun shading co-efficient (ability to block UV rays) and overall better R-value. (Quality of thermal conductivity). Single pane or clear glass does not block UV rays or have any insulating value. Insulated glass does not block UV rays or have any insulating value. Insulated glass that is tinted is also recommended.
- Aluminum window frames with insulated glass at the southeast entry.
- Brick row lock sill doesn't slope ¼":1' away from frames.
- Windows at the east and north entry are single glazed.
- Slight corrosion of the steel window frames at the east entry.
- Gaskets and weather stripping in the older windows is deteriorating.

RECOMMENDATION

- Replace original window frames that reamin with thermally broken aluminum frames.
- Remove the existing sealant at window to wall conditions and replace with new backer rod and sealant where needed.
- Consider inserting aluminum window sill over the existing brick sill. Monitor for water intrusion into the building at this location.

2. Roof

- Expected Life Span: 20 years for rubber EPDM, 30 years for Thermoplastic, 40 years for built-up asphalt systems
- Current Condition: Refer to Roof Report Manuals at the Facility Office for inspections, recommendations and maintenance according to Manufactures standards.
- 1960 section is a standing seam metal roof.
- Coping and fascia in good condition.
- Scuppers appear in good condition and drain at splash blocks at grade where applicable.
- Gravel serves as splash blocks in most locations.

- Water sheet drains off the standing seam metal roof to grade. Some depressions in grade from roof drainage.

RECOMMENDATION
- None at this time. Maintain according to MFG standards and VASD inspections. Replace as directed by roofing mfg.
- Place 3'-4' gravel strip around building to minimize landscape wash out.

3. Exterior Doors
- Expected Life Span: 20 years for steel, 30 years for aluminum/ FRP systems.
- Current Condition: Good
- Entry doors at the southeast entry have been replaced with aluminum doors with insulated glass.

RECOMMENDATION
- None at this time. Monitor for general maintenance.

4. Exterior Walls
- Expected Life Span of Masonry and Concrete: 50-100 years with periodic maintenance
- Expected Life Span of Wood: 30-40 years with periodic maintenance
- Current Condition: Good at the sections of wall containing clay masonry units.
- Brick Condition: Good
- Vertical 2x4 wood trim condition: Good.
- Original 1960 building 8" CMU grouted solid with unit masonry veneer. No weeps or control joints.
- No expansion, control joints or weeps in the original building.
- Concrete footing at steel window frames cracked.
- Some areas of loose brick mortar and expansion cracks at through wall vents.
- Hole in wall on north face of building at the mechanical room location.
- Some gaps between the 2x4 Wood trim and brick.
- Some rust on steel lintels.
- Paint on wood surfaces peeling.

RECOMMENDATION
- Remove/grind deteriorated mortar joints and tuck point masonry.


WOOD TRIM CONDITION


TUCK POINTING

- Remove rust from steel lintels and paint with high quality enamel.
- Strip and repaint all wood surfaces with high quality exterior paint. Inspect all wood trim and siding replace as needed.
- Where brick is set back from the exterior building plane tuck point or consider grinding and inserting backer rod and sealant.
- Patch hole in wall at mechanical space with brick and mortar.
- Continue routine maintenance.


LINTEL RUST AND SEALANT

5. Entry Canopy / Overhangs / Fascia
- Expected Life Span: Same as building depending on the materials used and detailing.
- Current Condition of the Fascia: Good
- Current Condition of the Soffits: Good
- The Original 1960 building has a metal panel fascia approx. 18" in depth.
- Soffits are painted wood veneer plywood with minimal venting.
- Eastern section of the building has vented aluminum soffits.

RECOMMENDATION
- Maintain as required.

6. Walkways / Asphalt / Drainage
- Expected Life Span: 20 years
- Current Condition: Good/Fair
- Main concrete walk areas in good overall condition.
- Asphalt area adjacent to play area serviceable due to routine maintenance but nearing the end of its life expectancy. Some alligator cracking next to the side walk which is an indication of subsurface failure, poor drainage, or overloading.
- Some cracking and differential settlement of concrete slabs at entry doors.
- Current grade in some locations slopes to the building.

RECOMMENDATION
- Grind areas of concrete that exceed 1/2" height differential from adjacent slabs.
- Monitor concrete pads for differential settlement.
- Consider plan to replace aged asphalt.
- Grade landscape areas to slope away from the building.

BUILDING SYSTEM REPORT (PREPARED BY IMEG)

1. Building summary
- Original construction is 1960 with an addition in 1970 and renovations in 2000. Remodeling and equipment replacement was done as part of the 2019-2020 referendum.

2. Heating, Ventilation, and Air Conditioning (HVAC)
- The building is heated with two De Dietrich hot water boilers. They are in good working order with an expected life of 30-35 years. One was installed in 2010. The other replaced the original Kewanee boiler in 2020. This work also replaced the associated hot water pump.
- The piping that serves the building is routed concealed in a tunnel system below the floor. All piping in the tunnels was replaced as part of the 2019-2020 referendum work.
- The individual rooms are conditioned and ventilated with unit ventilators located in the rooms. All unit ventilators were replaced as part of the 2019-2020 referendum work.
- The gymnasium is conditioned with two air handling units located in the mezzanine level.
- The 2019-2020 referendum work also included a new packaged air cooled water chiller and associated dry cooler and pumps, replacement roof-mounted exhaust fans (two), new cabinet unit heaters (three) and three new fan coil units.

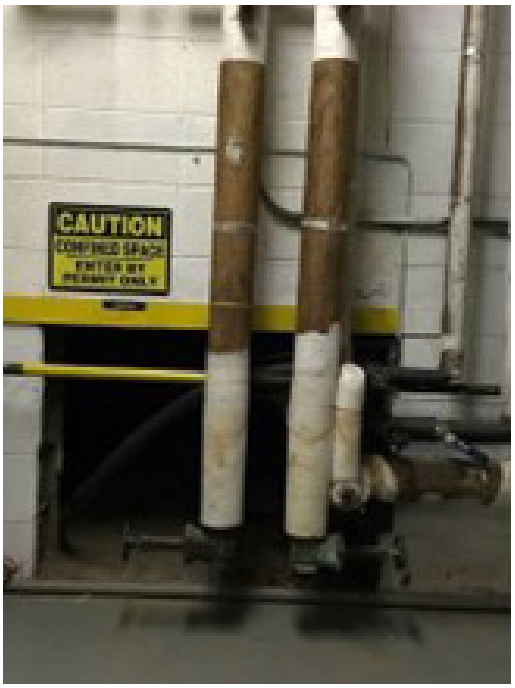
3. Plumbing
- Water service to the building enters in the boiler room and appears to be a 3" service. The piping, insulation, and supports were replaced as part of the 2019-2020 referendum work.
- Hot water distribution is provided by one gas-fired tank type water heater located in the mechanical room with the boilers
- All existing plumbing fixtures appear to be in acceptable working order.
- The 2019-2020 referendum work included fixture replacement for remodeled restroom groups, potable water system replacement and replacement of drinking fountains (six).

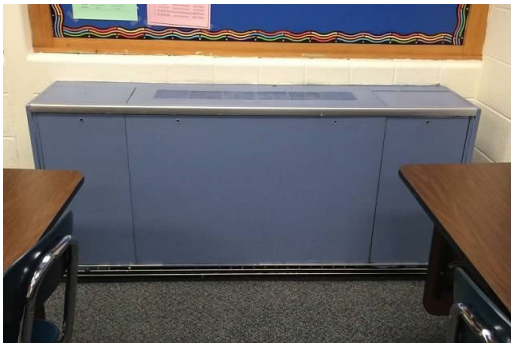
4. Fire Protection
- The building is currently not sprinkled.

5. Electrical
- The building is currently served by a 208/120 volt 3-phase

switchboard located in the main mechanical room. A new switchboard was installed as part of the 2019-2020 referendum project.

- 208/120 volt is distributed throughout the building to various branch panelboards. Panelboards were replaced as part of the 2019-2020 referendum project.
- An emergency feeder is provided from the high school to serve emergency loads in the building.
- A Fike CyberCat fire alarm system was installed in 2000, and is in good condition. Some coverage appears to have been upgraded during system replacement. Spaces included in the 2019-2020 remodeling had devices installed to meet current code.
- Corridors and common areas are lit with LED lighting. These also have occupancy sensors installed for automatic shutoff. Other spaces are lit with linear fluorescent lighting. Spaces included in the 2019-2020 remodeling had LED light fixtures installed. Occupancy sensors were installed in remodeled spaces, and dimmers were included in most remodeled spaces.
- All wiring was replaced throughout the building as part of the 2019-2020 referendum project in order to address the ground current that was being observed by staff.
- A districtwide phone system replacement was completed in 2019.

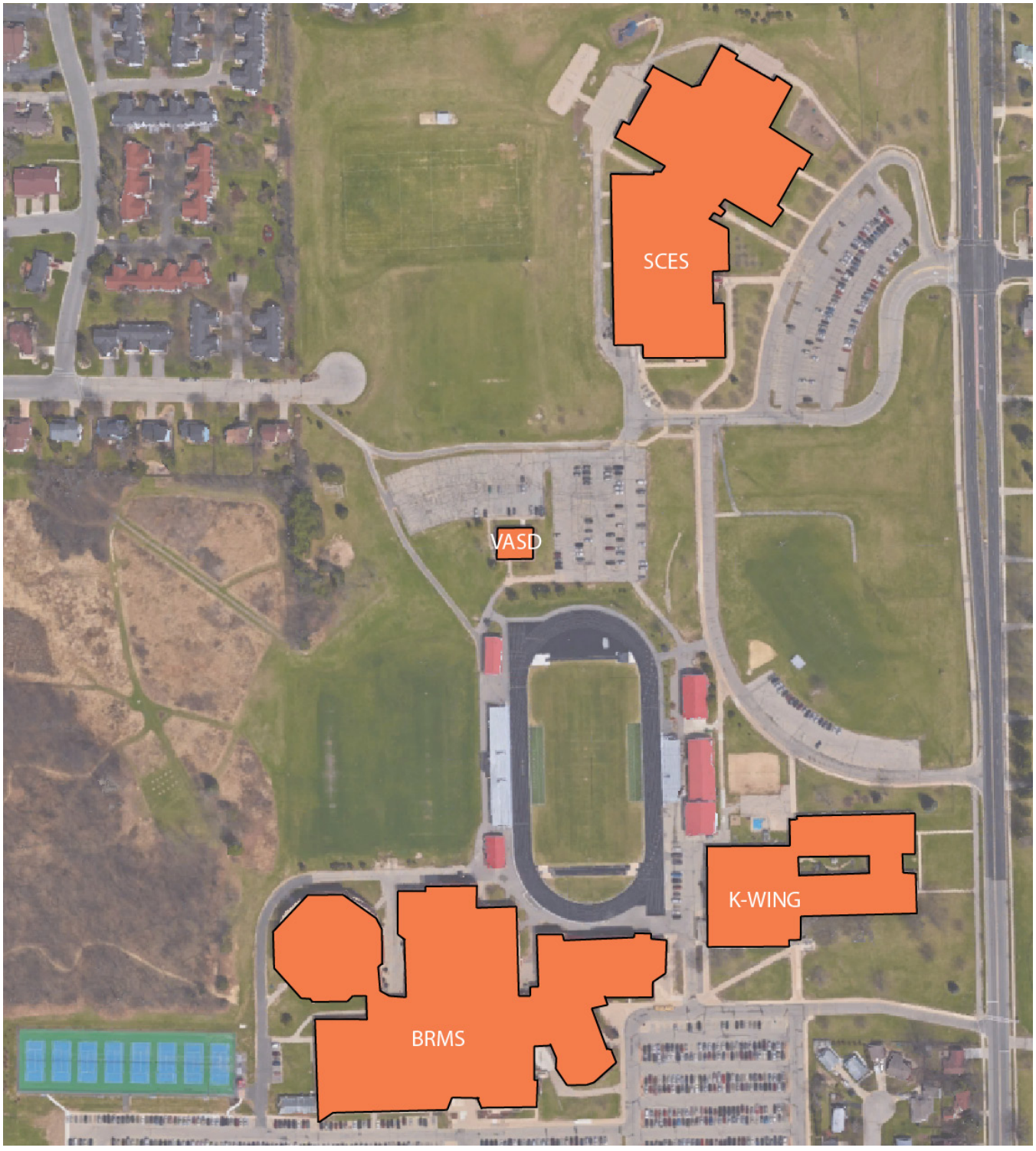




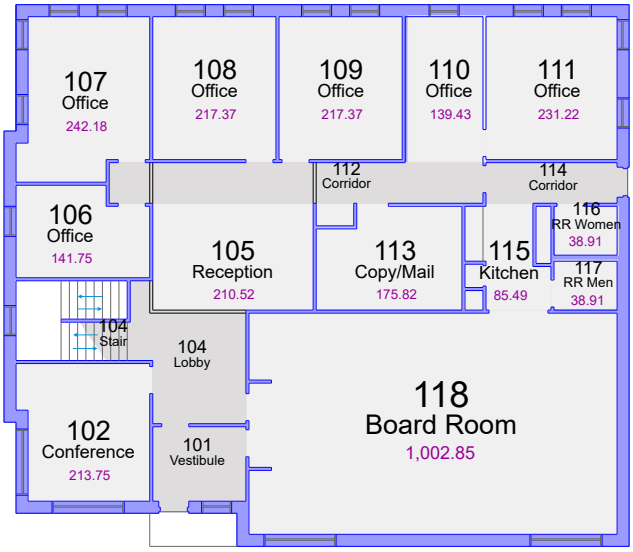
DISTRICT CENTRAL OFFICE

Building: District Central Office
Construction: 1992
Date of Assessment: February 17, 2023
Evaluator(s): Abie Khatchadourian (EUA)

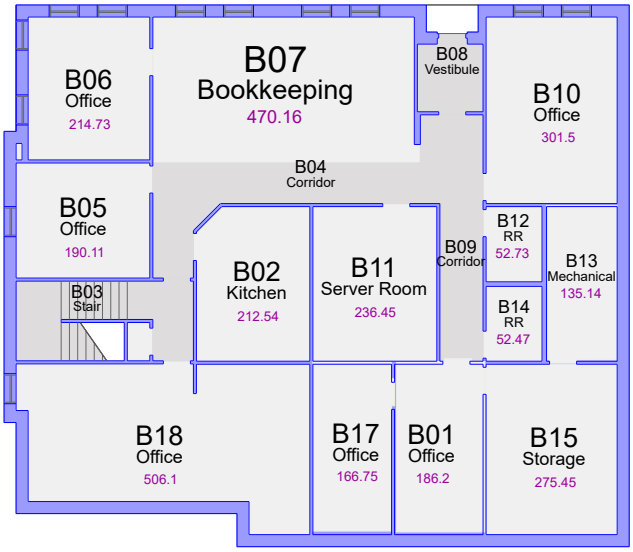
SITE



FLOOR PLANS



LEVEL 02



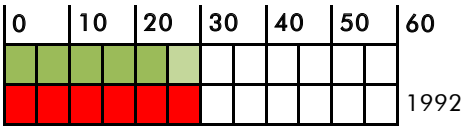
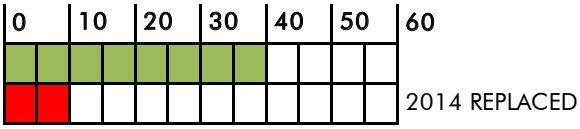
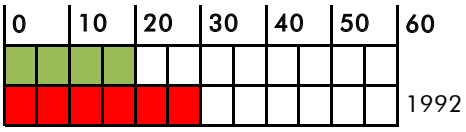
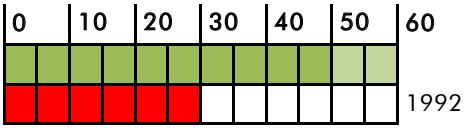
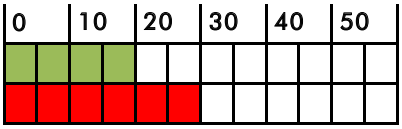
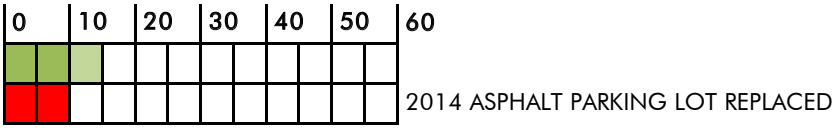
LEVEL 01

BUILDING SYSTEM LIFESPAN COMPARISON

Anticipated Lifespan of Building Components

* Data from Institutional Facilities Manager Resources, ASHRAE research, and School District Facility Manager client information.

DISTRICT CENTRAL OFFICE

Component or System	Typical Use Lifespan	
EXTERIOR		
Windows	Years 25-30yr	
Roofing Fiberglass Asphalt Shingle Roof	Years 40yr Ashpalt	
Steel Doors / Frames	Years 20yr Steel, 30yr Aluminum	
Exterior Closure Exterior Wall (Masonry)	Years 50-100yr with Maintenance	
Entry Canopies / Overhangs / Fascia	Years 20yr	
Walkways / Asphalt / Drainage	Years 10-15yr	

Component or System	Typical Use Lifespan	
HVAC		
	Years	0 10 20 30 40 50 60
Furnaces	15-20	
	Two Carrier Units	2016
	One Trane Unit	2015

Component or System	Typical Use Lifespan	
Plumbing	Years	
Sanitary & Storm Piping	50	0 10 20 30 40 50 60
		1992
	Years	
Copper Water Piping	50	0 10 20 30 40 50 60
		1992 (1)
	Years	0 10 20 30 40 50 60
Water Heater	20	
		2005
Plumbing Fixtures	Years	0 10 20 30 40 50 60
Toilets, Urinals, Sinks	30	
		1992
	Years	0 10 20 30 40 50 60
Electric Water Coolers	20	
		2020 (2)

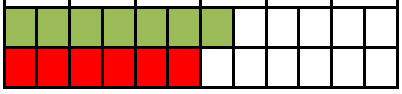
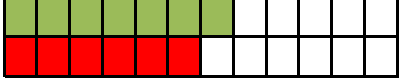
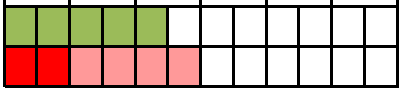
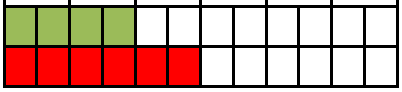
NOTES:

1. Only one copper line replaced in 2005, all other copper water piping is original.
2. All Electric Water Coolers replaced in 2020. Bottle fillers added at all locations.

Component or System	Typical Use Lifespan	
Power & Distribution	**Years**	**0 10 20 30 40 50 60**
Service Distribution	35	1992
	Years	**0 10 20 30 40 50 60**
Distribution Panels	35	1992
	Years	**0 10 20 30 40 50 60**
Interior Lighting	25	1992, 2014 (1)
	Years	**0 10 20 30 40 50 60**
Exterior Lighting	25	2014 (2)
	Years	**0 10 20 30 40 50 60**
Fire alarm	20	1992

NOTES:

1. Some interior lighting replaced by 2014 energy project. Some are still original.
2. All exterior lighting replaced by 2014 energy project.

Component or System	Typical Use Lifespan		
Power & Distribution	**Years**	**0 10 20 30 40 50 60**	
Service Distribution	35		1992
	Years	**0 10 20 30 40 50 60**	
Distribution Panels	35		1992
	Years	**0 10 20 30 40 50 60**	
Interior Lighting	25		1992, 2014 (1)
	Years	**0 10 20 30 40 50 60**	
Exterior Lighting	25		2014 (2)
	Years	**0 10 20 30 40 50 60**	
Fire alarm	20		1992

NOTES:

1. Some interior lighting replaced by 2014 energy project. Some are still original.
2. All exterior lighting replaced by 2014 energy project.

BUILDING EXTERIOR INSPECTION REPORT

1. Exterior Windows
- Expected Life Span: 25-30 years
- Anodized aluminum exterior finish with wood interior trim. Casement style operation. 1" insulated double glazed insulated glass.
- Current Condition: Poor
- Windows are operable windows with screens and wood sash. The seals show some failure and some evidence of condensation. The neoprene gaskets are work from sun exposure over many years.
- Windows have sheet metal flashing at sills.

RECOMMENDATION
- A window replacement project should be considered using operable Low-E double glazed windows with screens.

2. Roof
- Expected Life Span: 20 years for fiberglass shingle roof.
- Roof has ridge and continuous soffit vents.
- Gutters and downspouts provided over aluminum fascia.
- R-38 Roof insulation.
- Current Condition: Good

RECOMMENDATION
- None at this time. Monitor for general maintenance. Budget for a roof replacement in the 10-year Facility Plan.

3. Exterior Doors
- Expected Life Span: 20 years for steel, 30 years for aluminum systems.
- Current Condition: Good.
- Doors and storefront are aluminum, typical except for more utilitarian areas which are Fiberglas Reinforced (FRP). Glazing in aluminum doors is insulated tinted.

RECOMMENDATION
- None currently. Monitor for general maintenance.

4. Exterior Walls
- Expected Life Span of Masonry and Concrete: 50-100 years with periodic maintenance.
- Current Condition: Good

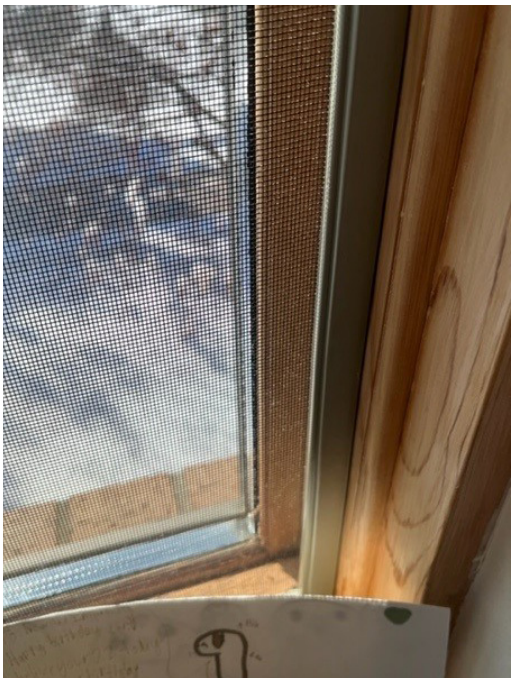
RECOMMENDATION
- None currently. Monitor for general maintenance.

5. Entry Canopy / Overhangs
- Expected Life Span: Same as other exterior building materials
- Current Condition: Good

RECOMMENDATION
- None currently. Monitor for general maintenance.

6. Walkways / Asphalt / Drainage
- Expected Life Span: 20 years
- Current Condition: Good

RECOMMENDATION
- None Currently. Monitor for general maintenance.




MAIN
ENTRANCE

BUILDING SYSTEM REPORT (PREPARED BY IMEG)

1. Introduction
- This documents the installed MEP equipment for the district administrative offices.
- Buildings are maintained using the following setpoints when occupied:
    - Heating: 68F – 72°F.
    - Cooling: 76F – 80°F.

2. Building Summary
- Drawings dated 1992. Photos reviewed from EUA 2022.

3. Heating, Ventilation and Air Conditioning (HVAC)
- The building is served by three furnaces and a split system. Two of the furnaces are Carrier and were installed in 2016 and the other is a Trane that was installed in 2015. These units should have useful life remaining.
- The boardroom was converted into six offices and a conference room. The air distribution was not updated so there is a single thermostat that controls the space as a whole with the thermostat located in one of the offices. Supply and return grille locations from the original boardroom use are not suitable for providing comfort through the new separated spaces. The office partitions not going to the ceiling helps somewhat allow air to move.

4. Plumbing
- The plumbing system is original to the building.
- The water heater is leaking and is planned to be replaced soon.

5. Fire Protection
- The building does not have fire protection service.

6. Electrical

- The building is served by two 200 amp 208/120 volt 3-phase 4-wire panelboards, with a third panelboard fed from one of them. All panelboards are manufactured by Square D.
- Panelboards have very few available circuits.
- Wiring is nonmetallic sheathed cable (Romex) instead of separate conductors pulled through conduit.
- The boardroom was converted to offices and a conference room. No additional receptacles were added, so there is only a single receptacle per office. This requires the use of plug-strips to provide the necessary quantity of plugins just for the computer.
- Building lighting was changed to LED as part of the 2014 energy project.
- The fire alarm system is a Simplex 4001 zoned system. The panel does not report out to a monitoring agency, so any alarm must be called into 911 manually. The system is inspected and there has not been a requirement to make changes, so it appears to be deemed acceptable even though it does not meet current code.

7. Technology

- The district's data center is located on the lower level of the building. It is surrounded by office space instead of being in a more secure environment. Access is protected with a card reader.
- There are not redundant systems, which would typically be provided as part of a main data center, so a single point-of-failure can impact the entire district's network access.
- District-owned fiberoptic cable is used to connect to Country View Elementary School, Sugar Creek Elementary School, Badger Ridge Middle School, New Century Charter School, and the facilities building.
- District-leased fiberoptic cable is used to connect to Verona Area High School, Glacier Edge Elementary School, Stoner Prairie Elementary School, and Savannah Oaks Middle School.
- A districtwide phone system replacement was completed in 2019.

three:

2022 CAPACITY STUDY

VERONA AREA SCHOOL DISTRICT

2022 CAPACITY STUDY

REVISED MAY 12, 2022

EUA Project: 322364

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Verona Area School District
"School and Community–United for Excellence"

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TOTAL DISTRICT CAPACITY 38

one:

INTRODUCTION | METHODOLOGY

INTRODUCTION | METHODOLOGY

This report was generated to assist the Verona Area School District in assessing the capacity across all of its school facilities.

We have measured the capacity in multiple ways. The district's Recommended Functional Class Size reflects the most accurate capacity of the building based on current operational practices, while the other measures are used to validate this calculation in relation to maximum class sizes and actual physical space available. The totals for the first three measures of capacity show both a maximum and a functional capacity. The functional capacity is a multiplier which reduces the maximum capacity to provide flexibility in scheduling over time, as enrollment and programming may fluctuate. This can vary by district, but is typically a 90% multiplier at the elementary level and between 70-80% at the middle and high school levels to accommodate increased movement of students between class periods.

The first measure is based on the district's Maximum Class Sizes. For this particular study, the following ratios were used to calculate the total capacity of a building:

- Grades K-3 VAIS Charter: 21 students per instructor
- Grades K-3 CK Charter: 22 students per instructor
- Grades K-3 non-charter: 25 students per instructor
- Grades 4-5 (charter and non-charter): 25 students per instructor
- Grades 6-8 CK Charter: 25 students per instructor
- Grades 6-8 (non-charter): 30 students per instructor
- Grades 9-12: 30 students per instructor

The second measure of capacity is based on the district's Recommended Functional Class Sizes. Previously, the district class sizes were set based upon SAGE (Student Achievement Guarantee in Education) program ratios of 18 students to 1 teacher at the elementary level. While the SAGE program has been replaced with ESSA (Every Student Succeeds Act) which does not have the same requirements related to classroom size limits, research supports smaller class sizes contributing to higher student outcomes and testing scores in math and reading. The VASD Employee Handbook identifies maximum class sizes in relation to employee pay, but the district aims to support smaller class sizes where appropriately
allocated and needed.

Ideal (functional) class sizes are based on the needs and supports provided to students throughout in their education. Smaller or larger sizes, in relationship to the ideal class size will exist due to a variety of factors, including:

- Student and staff needs
- Staffing-based supports
- District strategic priorities
- Charter school guidelines

The district continually monitors class sizes and makes staffing-based decision based on student needs, ideal and functional capacity and maximum class sizes. Current recommendations are:

- Grades K-2: 21 students per instructor
- Grades 3-5: 23 students per instructor
- Grades 6-8: 27 students per instructor
- Grades 9-12: 30 students per instructor

The third measure, Functional Capacity by Area, is based on the maximum number of students recommended per the actual physical area of each educational (classroom/teaching) space. This capacity accounts for only typically scheduled classroom and lab spaces. We have used the following industry standard ratios:

- Kindergarten Classroom: 55 SF per student
- General Elementary (grade 1-5) Classroom: 35 SF per student
- General Middle / High School Classroom: 30 SF per student
- General Middle / High School Lab: 50 SF per student
- Middle / High School Tech Lab / Shop: 100 SF per student
- High School Auto Lab / Shop: 150 SF per student

The final measure takes into the overall gross square footage of the facility. There is not a recognized national standard set of recommendations for school planning. Building area standards are derived from historic data compilation, optimal planning models for space utilization, and are found through regional and national educational research and planning organizations. Gross square footage recommendatios per student can vary based on the types of auxilary spaces that are provided, but this measure provides a rough indication as to the scale of these shared spaces in concert with capacities calculated by other measures. Where the capacity calculated by gross square foot per student is significantly larger than calculated by other measures, it often indicates that there are a great deal of ancillary spaces provided. Conversely, when this measure is smaller than other capacity calculations, it may indicate that common or shared spaces are undersized or lacking. We have not included an additional functional capacity multiplier for this measure as we assume that is factored into the overall gross square footage allowance per student. This report utilizes the following ratios:

- 150 sq. ft. per student for Elementary School*
- 200 sq. ft. per student for Middle School*
- 250 sq. ft. per student for the High School

*We have used 175 sq. ft. per student for Badger Ridge Middle School / Core Knowledge Charter School due to the blended K-8 occupants of the building

Finally, there are a number of spaces listed below these capacity calculations which are occupied but do NOT contribute to capacity as they are not scheduled spaces. We have included them in our analysis for informational purposes.

The floor plans have been color coded to reference spaces that are included in capacity calculations and those which do not. “Yellow” spaces indicate typical classrooms and labs. “Blue” spaces indicate rooms which are not typically scheduled classroom spaces, but are occupied by students throughout the day and could potentially be counted as classrooms, but doing so would impact operational flexibility of the building. “Gray” spaces are those which may be occupied by students, but do not contribute to the capacity calculation.

two:

ELEMENTARY SCHOOL PROGRAMS / FLOOR PLANS

COUNTRY VIEW ELEMENTARY SCHOOL

Revised 5/9/2022

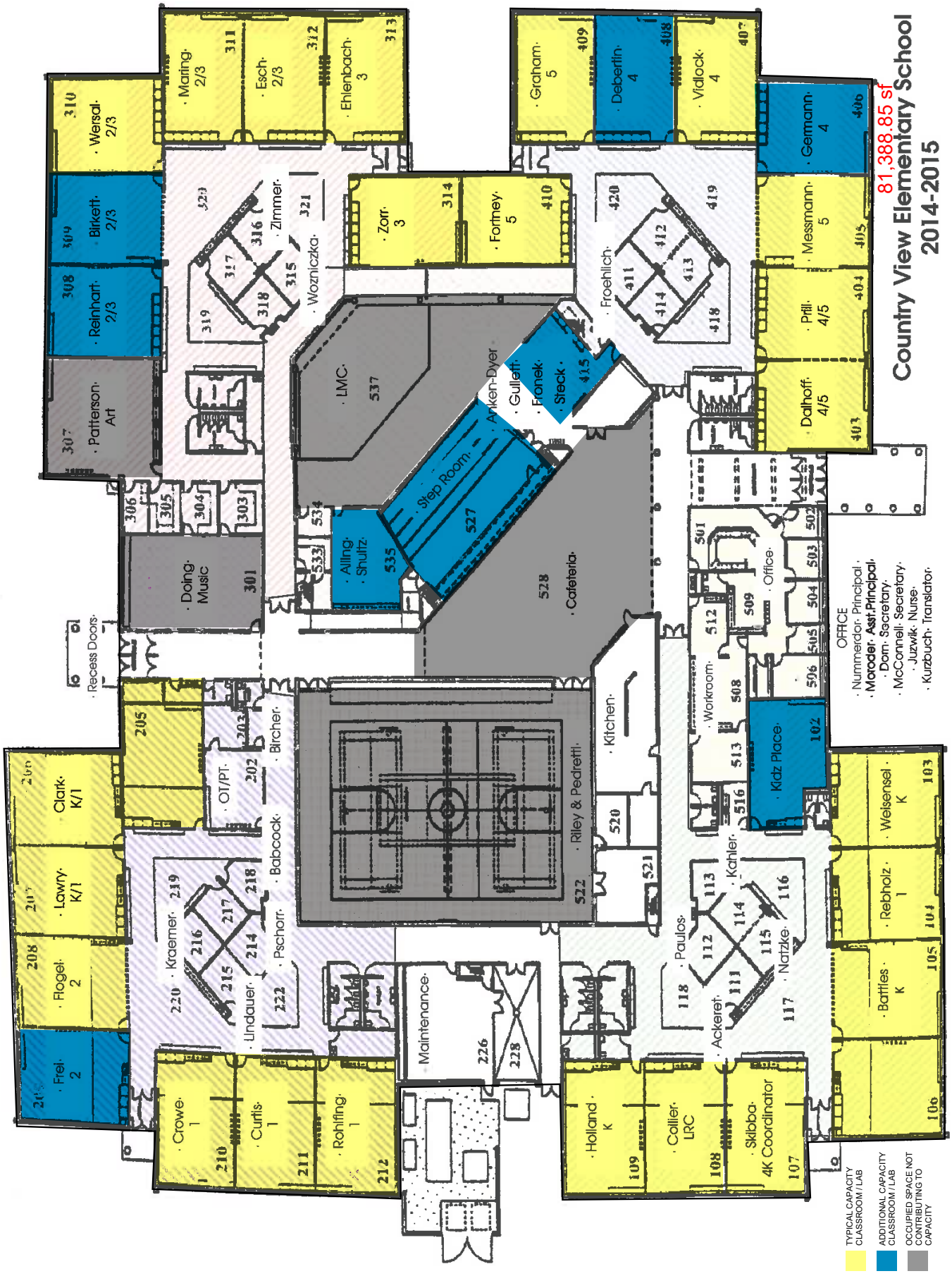
eppstein uhen : architects

Country View Elementary School - Capacity Study

Room No.	Primary Use of Room (Subject)	S.F. Area	Capacity			
			Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
103	Classroom - Kindergarten	962	25	21	17	
104	Classroom - Kindergarten	962	25	21	17	
105	Classroom - Kindergarten	947	25	21	17	
106	Classroom Kindergarten	962	25	21	17	
107	Classroom - First Grade	963	25	21	28	
108	Classroom - First Grade	963	25	21	28	
109	Classroom - Kindergarten	963	25	21	18	
205	Classroom - unassigned 2020-21	936	25	21	27	
206	Classroom - Second Grade	974	25	21	28	
207	Classroom - Second Grade	950	25	21	27	
208	Classroom - Second Grade	962	25	21	27	
210	Classroom - unassigned 2020-21	914	25	21	26	
211	Classroom - First Grade	963	25	21	28	
212	Classroom - First Grade	1,003	25	21	29	
310	Classroom - Fourth Grade	953	25	23	27	
311	Classroom - Third Grade	962	25	23	27	
312	Classroom - Third Grade	962	25	23	27	
313	Classroom - Third Grade	995	25	23	28	
314	Classroom - Third Grade	946	25	23	27	
403	Classroom - Fifth Grade	962	25	23	27	
404	Classroom - Fifth Grade	962	25	23	27	
405	Classroom - Fifth Grade	922	25	23	26	
407	Classroom - Fourth Grade	962	25	23	27	
409	Classroom - Fourth Grade	995	25	23	28	
410	Classroom - Fifth Grade	914	25	23	26	
	Max Capacity		625	547	635	**543**
	Functional Capacity (90%)		**563**	**492**	**571**	
	2021-22 Enroll.	389				
	Gross Building Area	81,388				
OCCUPIED SPACES NOT CONTRIBUTING TO CAPACITY						
102	Pre K Staff	861			16	
209	CLS/Conf Room	947			27	
301	Music Room	992			28	
307	Art Room	1,269			25	
308	PreK Staff Room	962			27	
309	Reading/Math Resource Room	956			27	
406	Reading/Math Resource Room	1,000			29	
408	ESL/BL	962			27	
415	Multipurpose Room	617			18	
527	Step Room	1,567			45	
528	Cafeteria	3,428			137	
535	LMC (Back Room)	562			11	
537	LMC (Main)	3,140			63	
522	Gymnasium	6,756			270	
	Max Occupants in Non-Capacity Spaces				751	

Country View Elementary Capacity Analysis.xlsx

COUNTRY VIEW ELEMENTARY SCHOOL



GLACIER EDGE ELEMENTARY SCHOOL

Revised 5/9/2022

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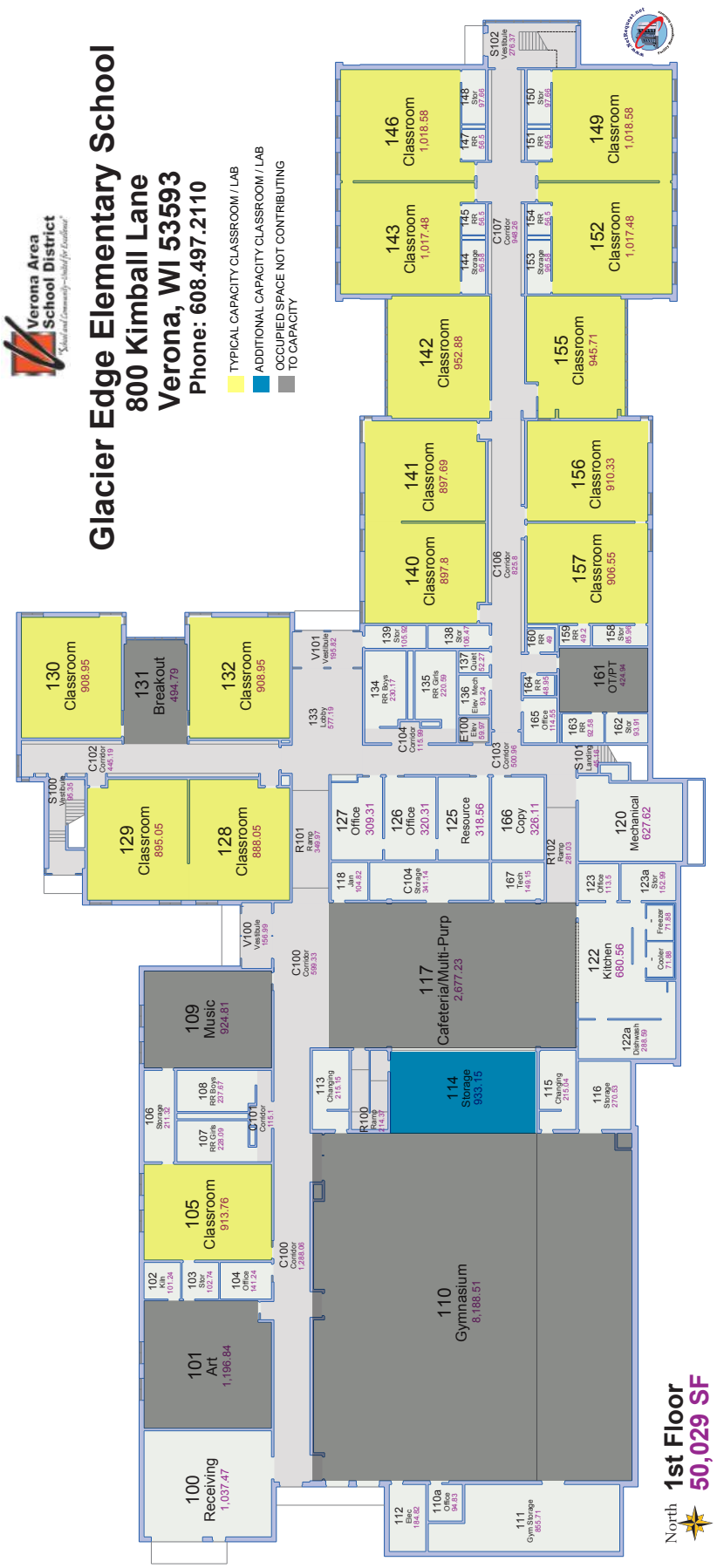
Glacier Edge Elementary - Capacity Study

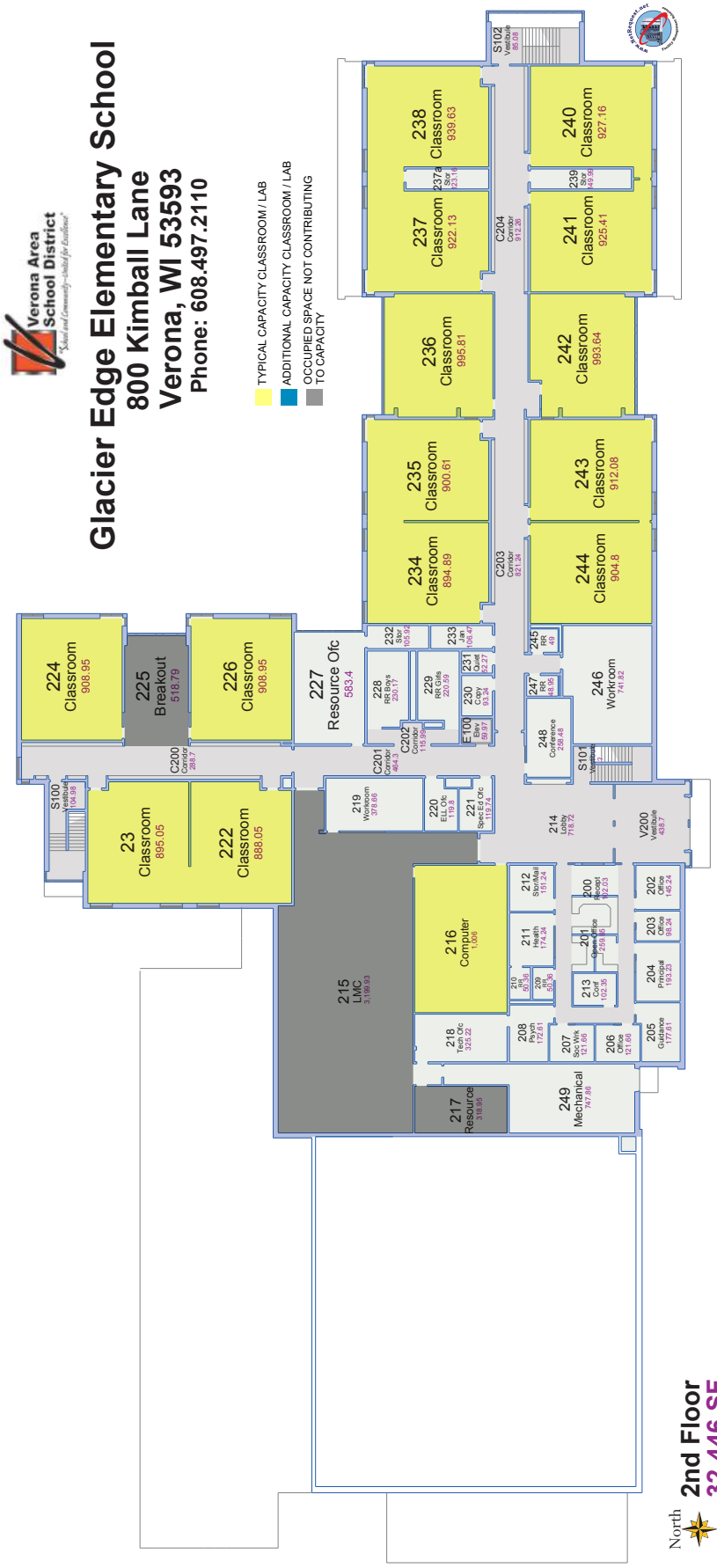
Room No.	Primary Use of Room (Subject)	S.F. Area	Capacity			
			Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
105	Bubble (Grade 1 & 2 Classroom)	914	25	21	26	
128	Grade 1 & 2 Classroom	888	25	21	25	
129	Grade 1 & 2 Classroom	895	25	21	26	
130	Grade 1 & 2 Classroom	909	25	21	26	
132	Grade 1 Classroom	909	25	21	26	
140	Grade 1 Classroom	898	25	21	26	
141	Grade 1 Classroom	898	25	21	26	
142	Breakout (First Grade Classroom)	953	25	21	27	
143	Kindergarten Classroom	1,017	25	21	18	
146	Kindergarten Classroom	1,019	25	21	19	
149	Kindergarten Classroom	1,019	25	21	19	
152	Kindergarten Classroom	1,017	25	21	18	
155	Classroom	946	25	21	27	
156	Kindergarten Classroom	910	25	21	17	
157	Classroom	907	25	21	26	
216	Grade 2 Classroom	1,006	25	21	29	
222	Grade 5 Classroom	888	25	23	25	
223	Grade 4 Classroom	895	25	23	26	
224	Grade 5 Classroom	908	25	23	26	
226	Grade 4 Classroom	909	25	23	26	
234	Grade 5 Classroom	895	25	23	26	
235	Grade 4 Classroom	901	25	23	26	
236	Breakout (Grade 5 Classroom)	996	25	23	28	
237	Grade 3 Classroom	922	25	23	26	
238	Grade 3 Classroom	940	25	23	27	
240	Grade 3 Classroom	927	25	23	26	
241	Grade 3 Classroom	925	25	23	26	
242	Breakout (Grade 3 Classroom)	994	25	23	28	
243	Grade 2 Classroom	912	25	21	26	
244	Grade 2 Classroom	905	25	21	26	
	Max Capacity		750	654	749	**550**
	Functional Capacity (90%)		**675**	**589**	**674**	
	2021-22 Enroll.	502				
	Gross Building Area	82,475				
OCCUPIED SPACES NOT CONTRIBUTING TO CAPACITY						
101	Art	1,197			24	
109	Music	925			26	
110	Gymnasium	8,189			328	
114	Stage	933			27	
117	Cafeteria	2,677			107	
131	Breakout	495			14	
161	OT/PT	425			9	
215	LMC	3,200			91	
217	Computer	319			6	
225	Breakout	519			15	
	Max Occupants in Non-Capacity Spaces				647	

Glacier Edge Capacity Analysis.xlsx

GLACIER EDGE ELEMENTARY SCHOOL



GLACIER EDGE ELEMENTARY SCHOOL



STONER PRAIRIE ELEMENTARY SCHOOL

Revised 5/12/2022

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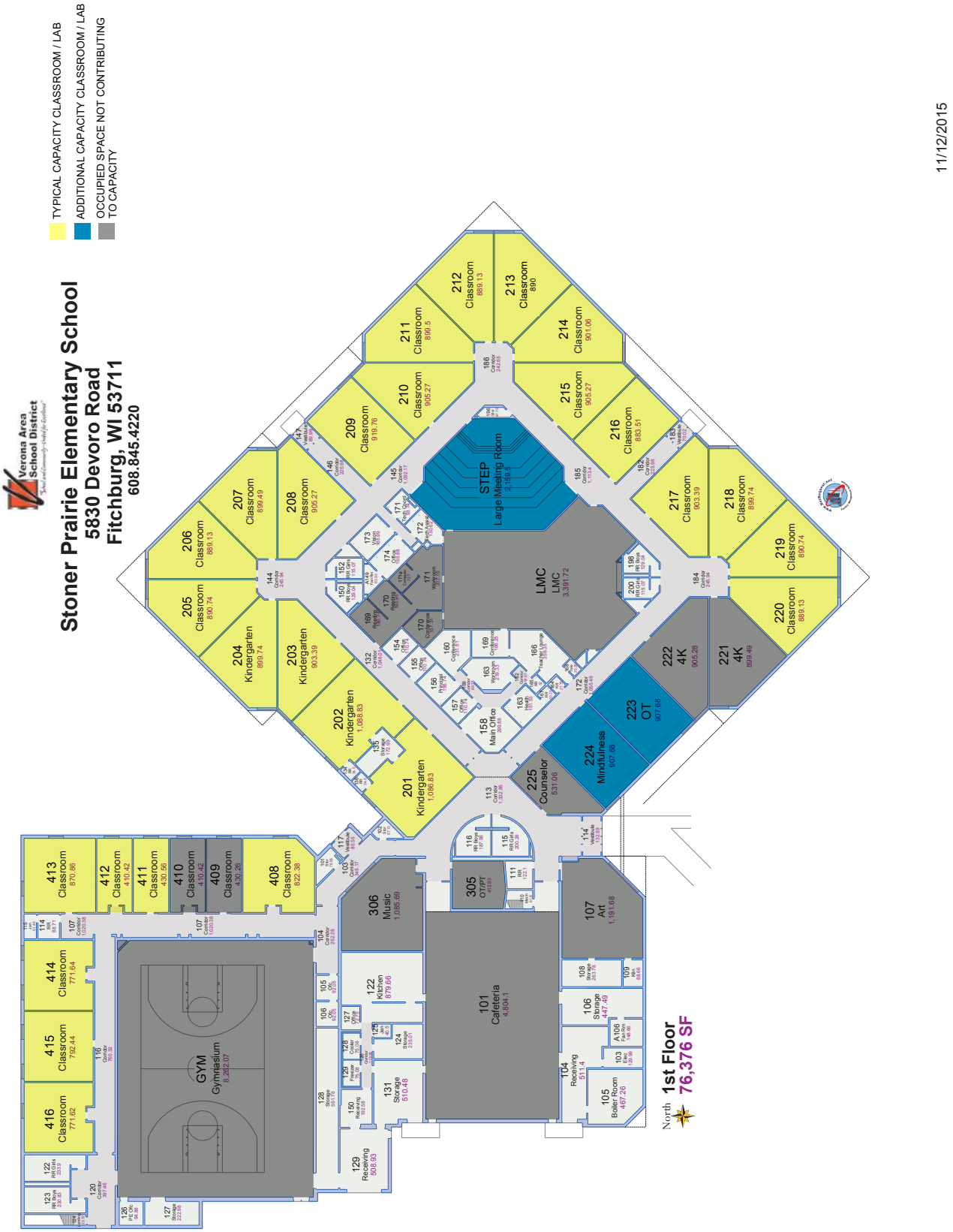
Stoner Prairie Elementary - Capacity Study

Room No.	Primary Use of Room (Subject)	S.F. Area	Capacity			
			Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
201	Kindergarten Classroom	1087	25	21	20	
202	Kindergarten Classroom	1089	25	21	20	
203	Kindergarten Classroom	903	25	21	16	
204	Kindergarten Classroom	900	25	21	16	
205	Grade 1 Classroom	891	25	21	25	
206	Grade 1 Classroom	899	25	21	26	
207	Grade 1 Classroom	899	25	21	26	
208	Grade 2 Classroom	905	25	21	26	
209	Grade 3 Classroom	920	25	23	26	
210	Classroom	905	25	21	26	
211	Classroom	900	25	21	26	
212	Classroom	899	25	21	26	
213	Classroom	900	25	23	26	
214	Classroom	901	25	23	26	
215	Classroom	905	25	23	26	
216	3rd Grade Classroom	884	25	23	25	
217	3rd Grade Classroom	903	25	23	26	
218	3rd Grade Classroom	900	25	23	26	
219	Classroom	891	25	23	25	
220	Classroom	899	25	23	26	
408	Grade 5 Classroom	822	25	23	23	
411/412	Grade 5 Classroom	841	25	23	24	
413	Grade 5 Classroom	871	25	23	25	
414	Grade 4 Classroom	772	25	23	22	
415	Grade 4 Classroom	792	25	23	23	
416	Grade 4 Classroom	772	25	23	22	
	Max Capacity		650	576	623	**509**
	Functional Capacity (90%)		**585**	**518**	**561**	
	2021-22 Enroll.	363				
	Gross Building Area	76,376				
OCCUPIED SPACES NOT CONTRIBUTING TO CAPACITY						
Step Room	Large Meeting Room	2160			62	
101	Cafeteria	4804			192	
107	Art	1192			24	
221	4K	899			16	
222	4K	905			16	
223	OT/PT	908			26	
224	Mindfulness	908			26	
225	Counselor	531			15	
305	Spec Ed	413			12	
306	Music	1086			31	
409	ELL	430			12	
410	Reading	410			12	
Gym	Gymnasium	8262			330	
LMC	LMC	3392			97	
	Max Occupants in Non-Capacity Spaces				872	

Stoner Prairie Capacity Analysis.xlsx

STONER PRAIRIE ELEMENTARY SCHOOL



SUGAR CREEK ELEMENTARY SCHOOL

Revised 5/9/2022

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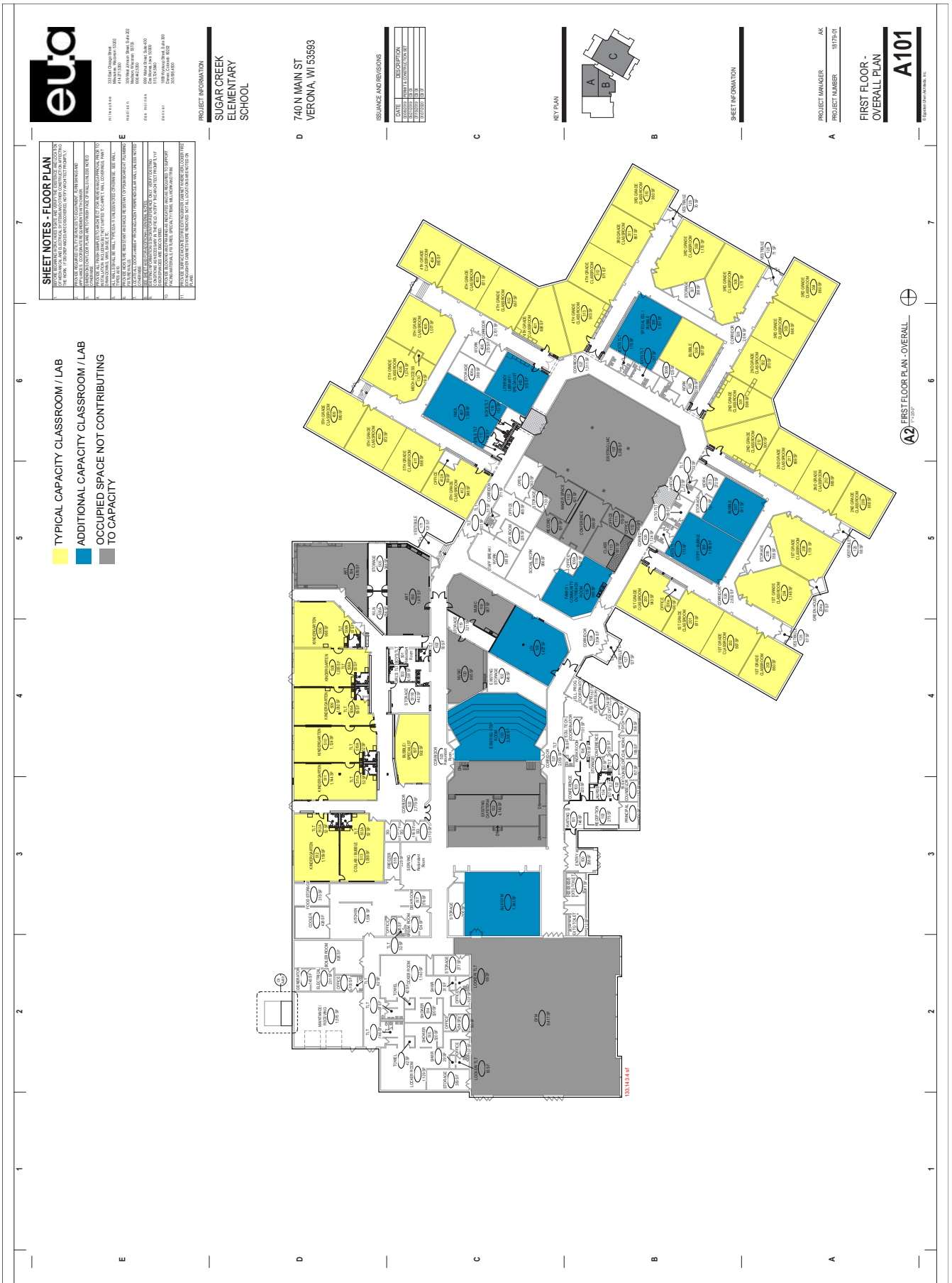
Sugar Creek Elementary

Room No.	Primary Use of Room (Subject)	S.F. Area	Capacity			
			Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
200	1ST GRADE CLASSROOM	943	25	21	27	
201	1ST GRADE CLASSROOM	871	25	21	25	
202	1ST GRADE CLASSROOM	867	25	21	25	
203	1ST GRADE CLASSROOM	860	25	21	25	
204	1ST GRADE CLASSROOM	1,148	25	21	33	
209	2ND GRADE CLASSROOM	858	25	21	25	
210	2ND GRADE CLASSROOM	865	25	21	25	
211	2ND GRADE CLASSROOM	869	25	21	25	
212	2ND GRADE CLASSROOM	900	25	21	26	
301	MULTIAGE CLASSROOM	898	25	23	26	
302	MULTIAGE CLASSROOM	870	25	23	25	
303	MULTIAGE CLASSROOM	866	25	23	25	
305	SCIENCE CLASSROOM	1,171	25	23	23	
306	BUBBLE	907	25	23	26	
309	3RD GRADE CLASSROOM	1,170	25	23	33	
310	3RD GRADE CLASSROOM	860	25	23	25	
311	3RD GRADE CLASSROOM	867	25	23	25	
312	4TH GRADE CLASSROOM	871	25	23	25	
313	BUBBLE	903	25	23	26	
401	4TH GRADE CLASSROOM	898	25	23	26	
402	4TH GRADE CLASSROOM	867	25	23	25	
403	4TH GRADE CLASSROOM	871	25	23	25	
404	4TH GRADE CLASSROOM	860	25	23	25	
405	5TH GRADE CLASSROOM	1,077	25	23	31	
408	5TH GRADE CLASSROOM	1,074	25	23	31	
409	5TH GRADE CLASSROOM	860	25	23	25	
410	5TH GRADE CLASSROOM	872	25	23	25	
411	5TH GRADE CLASSROOM	866	25	23	25	
412	5TH GRADE CLASSROOM	948	25	23	27	
506	KINDERGARTEN	988	25	21	18	
507	BUBBLE / SPECIALIST	902	25	21	26	
508	KINDERGARTEN	1,055	25	21	19	
509	KINDERGARTEN	1,082	25	21	20	
510	KINDERGARTEN	1,124	25	21	20	
511	KINDERGARTEN	1,144	25	21	21	
512	KINDERGARTEN	1,159	25	21	21	
513	COLLAB / BUBBLE	1,069	25	21	31	
	Max Capacity		925	817	899	**888**
	Functional Capacity (90%)		**833**	**735**	**809**	
	2021-22 Enroll.	672				
	Gross Building Area	133,143				
OCCUPIED SPACES NOT CONTRIBUTING TO CAPACITY						
	CONFERENCE	569			16	
100	EXISTING STEP ROOM	2,300			66	
107	EXISTING LMC	5,390			216	
108	LGI	1,427			41	
109	FAMILY / COMMUNITY OUTREACH	990			28	
110	CLASS	551			16	
113	MAKER SPACE	621			12	
118	MUSIC	967			28	
120	MUSIC	895			26	
122	EXISTING CAFETERIA	4,143			166	
205	SUGAR CREEK OT/PT	1,186			34	
207	VASD OT/PT	911			26	
208	EL DEPARTMENT	1,151			33	
304	DIISTRICT WIDE MENTOR CENTER	860			25	
308	SPECIAL EDUCATION DEPARTMEN	1,191			34	
400	LITERACY LIBRARY / SPECIALIST	913			26	
407	YMCA	1,338			38	
500	ART	1,477			30	
504	ART	1,479			30	
	AUX GYM	1,943			78	
	GYM	9,417			377	
	Max Occupants in Non-Capacity Spaces				1343	

Sugar Creek Capacity Analysis.xlsx

SUGAR CREEK ELEMENTARY SCHOOL



VAIS / NEW CENTURY CHARTER ELEMENTARY SCHOOLS

Revised 5/5/2022

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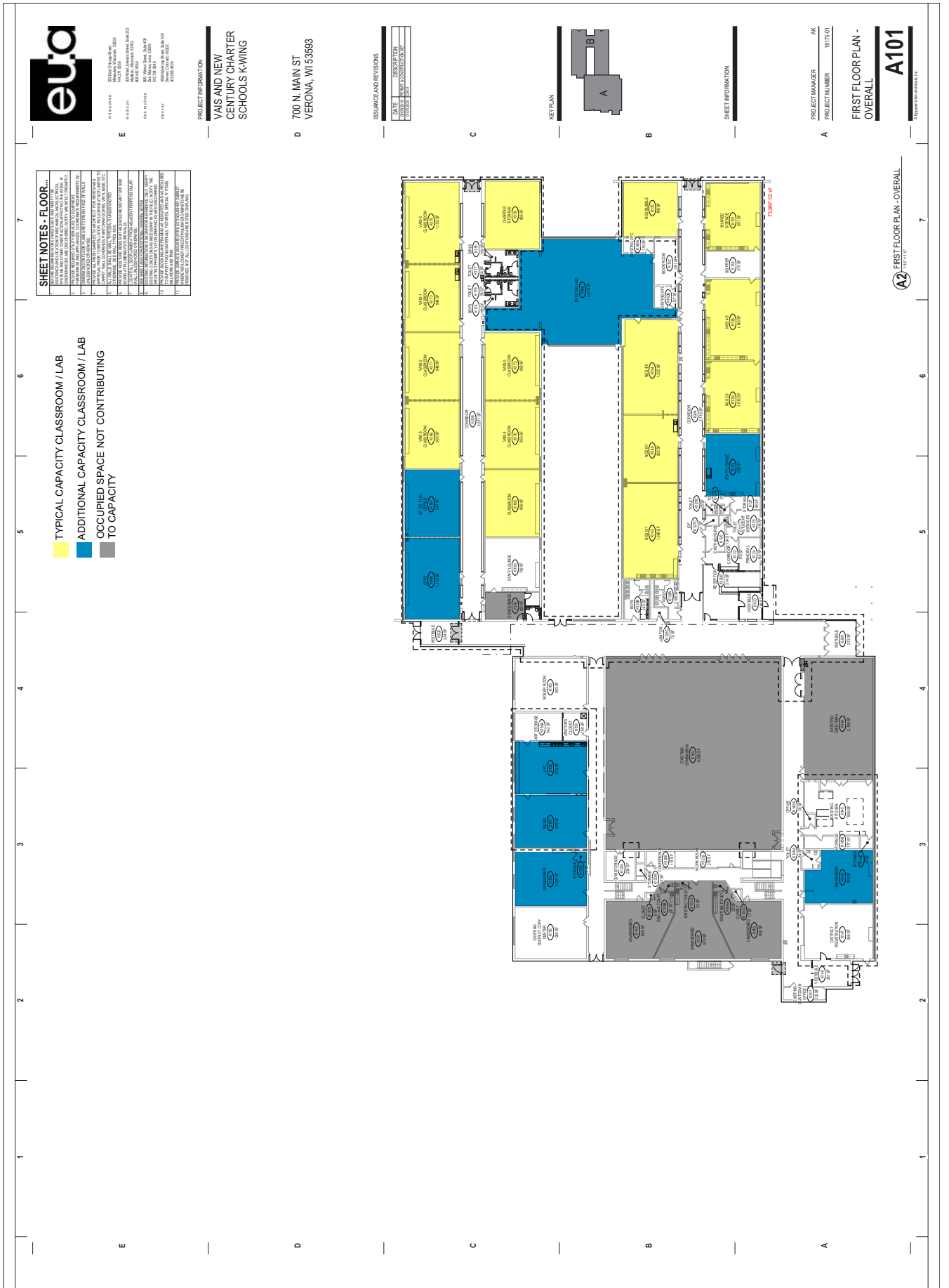
VAIS/New Century Elementary Schools

Room No.	Primary Use of Room (Subject)	S.F. Area	Capacity			
			Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
K130	NCS-BUBBLE	768	25	23	22	
K131	NCS 4/5	951	25	23	27	
K134	NCS 2/3	1,332	25	23	38	
K135	NCS 4/5	1145	25	23	33	
K139	NCS 2/3	1013	25	23	29	
K140	NCS K/1	952	25	21	27	
K142	NCS K/1	1346	25	21	38	
K168	CLASSROOM	956	25	23	27	
K169	VAIS-3 CLASSROOM	953	21	23	27	
K170	VAIS-4 CLASSROOM	953	25	23	27	
K171	VAIS-2 CLASSROOM	948	21	21	27	
K172	VAIS-5 CLASSROOM	953	25	23	27	
K173	VAIS-1 CLASSROOM	944	21	21	27	
K175	VAIS-K CLASSROOM	1,152	21	21	21	
	Max Capacity		334	312	398	**493**
	Functional Capacity (90%)		**301**	**281**	**359**	
	2021-22 Enroll.	244				
	Gross Building Area	73,997				
OCCUPIED SPACES NOT CONTRIBUTING TO CAPACITY						
K144	EXISTING CAFETERIA	2,198			88	
K146	UNASSIGNED	863			25	
K149	UNASSIGNED	958			27	
K151	UNASSIGNED	972			28	
K153	UNASSIGNED	959			27	
K156	UNASSIGNED	1,037			30	
K157	MUSIC	978			20	
K158	ART	972			19	
K162	EXISTING GYMNASIUM	8,689			348	
K164	CONFERENCE	280			8	
K165	OT/PT	1,153			33	
K167	SP. ED. FLEX OFFICE	947			27	
K179	CHARTER STORAGE	965			28	
K180	EXISTING LMC	3,479			139	
	Max Occupants in Non-Capacity Spaces				846	

VAIS_NC Capacity Analysis.xlsx

VAIS / NEW CENTURY CHARTER ELEMENTARY SCHOOLS



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MIDDLE SCHOOL PROGRAMS / FLOOR PLANS

Revised 5/5/2022

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Badger Ridge Middle School /
Core Knowledge Charter School - Capacity Study

Room No.	Primary Use of Room (Subject)	S.F. Area	Capacity			
			Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
A07	CLASSROOM	920	30	27	31	
A08	CLASSROOM	1653	30	27	55	
B105	BR/CK MS CLASSROOM	792	25	27	26	
B107	BRMS CLASSROOM	773	30	27	26	
B110	BRMS CLASSROOM	769	30	27	26	
B112	FCE CLASSROOM	1382	30	27	28	
B116	BR/CK MS WL CLASSROOM	762	25	27	25	
B120	7TH GRADE TWI SCIENCE CLASSROOM	761	30	27	15	
B125	2D MIDDLE SCHOOL ART	1000	30	27	20	
B128	3D ART	1324	30	27	26	
B131	CLASSROOM	1016	30	27	34	
B133	BR/CK MS WL CLASSROOM	715	25	27	24	
C104	BRMS CLASSROOM	764	30	27	25	
C106	8TH GRADE CLASSROOM	840	30	27	28	
C110	BRMS CLASSROOM	960	30	27	32	
C111	BRMS 7TH GRADE CLASSROOM	810	30	27	27	
C114	BRMS 7TH GRADE CLASSROOM	816	30	27	27	
C117	BRMS CLASSROOM	810	30	27	27	
C122	BRMS 7TH GRADE CLASSROOM	810	30	27	27	
C124	BRMS 7TH GRADE CLASSROOM	900	30	27	30	
C126	BRMS 7TH GRADE CLASSROOM	900	30	27	30	
C130	BRMS 8TH GRADE SCIENCE CLASSROOM	1085	30	27	22	
C131	BRMS 8TH GRADE SCIENCE	1142	30	27	23	
C135	BRMS 7TH GRADE CLASSROOM	816	30	27	27	
C136	BRMS ELL CLASSROOM	980	30	27	33	
C137	BRMS 7TH GRADE CLASSROOM	890	30	27	30	
C142	BRMS 8TH GRADE CLASSROOM	921	30	27	31	
C143	BRMS 8TH GRADE CLASSROOM	816	30	27	27	
C146	BRMS 8TH GRADE SCIENCE CLASSROOM	1192	30	27	24	
C149	FLEX SCIENCE CLASSROOM	807	30	27	16	
C150	FLEX SCIENCE CLASSROOM	807	30	27	16	
D1	GYMNASIUM (as PE classroom)	10524	60	54	60	
F106	CKCS KINDERGARTEN	845	22	21	15	
F109	CKCS KINDERGARTEN	827	22	21	15	
F112	CKCS 5TH GRADE CLASSROOM	1042	25	23	30	
F117	CKCS 5TH GRADE CLASSROOM	845	25	23	24	
F121	CKCS 4TH GRADE CLASSROOM	828	25	23	24	
F123	CKCS 4TH GRADE CLASSROOM	1047	25	23	30	
F130	CKCS 3RD GRADE CLASSROOM	854	22	23	24	
F132	CKCS 3RD GRADE CLASSROOM	828	22	23	24	
F134	CKCS 2ND GRADE CLASSROOM	826	22	21	24	
F136	CKCS 2ND GRADE CLASSROOM	1047	22	21	30	
F142	CKCS 1ST GRADE CLASSROOM	855	22	21	24	
F144	CKCS 1ST GRADE CLASSROOM	831	22	21	24	
F147	CKCS KINDERGARTEN	824	22	21	15	
F148	CKCS KINDERGARTEN	1059	22	21	19	
G106	ELL CLASSROOM	943	25	23	27	
G108	6TH GRADE TWI CLASSROOM	797	30	27	27	
G110	6TH GRADE CLASSROOM	797	30	27	27	
G111	6TH GRADE CLASSROOM	943	30	27	31	
G117	6TH GRADE CLASSROOM	831	30	27	28	
G120	6TH GRADE CLASSROOM	826	30	27	28	
G122	6TH GRADE SCIENCE CLASSROOM	1047	30	27	21	
G129	6TH GRADE CLASSROOM	854	30	27	28	
G131	6TH GRADE CLASSROOM	828	30	27	28	
G133	6TH GRADE CLASSROOM	826	30	27	28	
G135	BUBBLE CLASSROOM	1047	30	27	35	
G144	6TH GRADE CLASSROOM	833	30	27	28	
G146	6TH GRADE CLASSROOM	824	30	27	27	
G148	6TH GRADE CLASSROOM	1059	30	27	35	
G155	6TH GRADE CLASSROOM	847	30	27	28	
G178	BUBBLE CLASSROOM	845	30	27	28	
H106	CHOIR	1430	30	27	48	
H108	BAND	2799	30	27	56	
H112	ORCHESTRA	1970	30	27	39	

BRMS_CKCS Capacity Analysis.xlsx

Revised 5/5/2022

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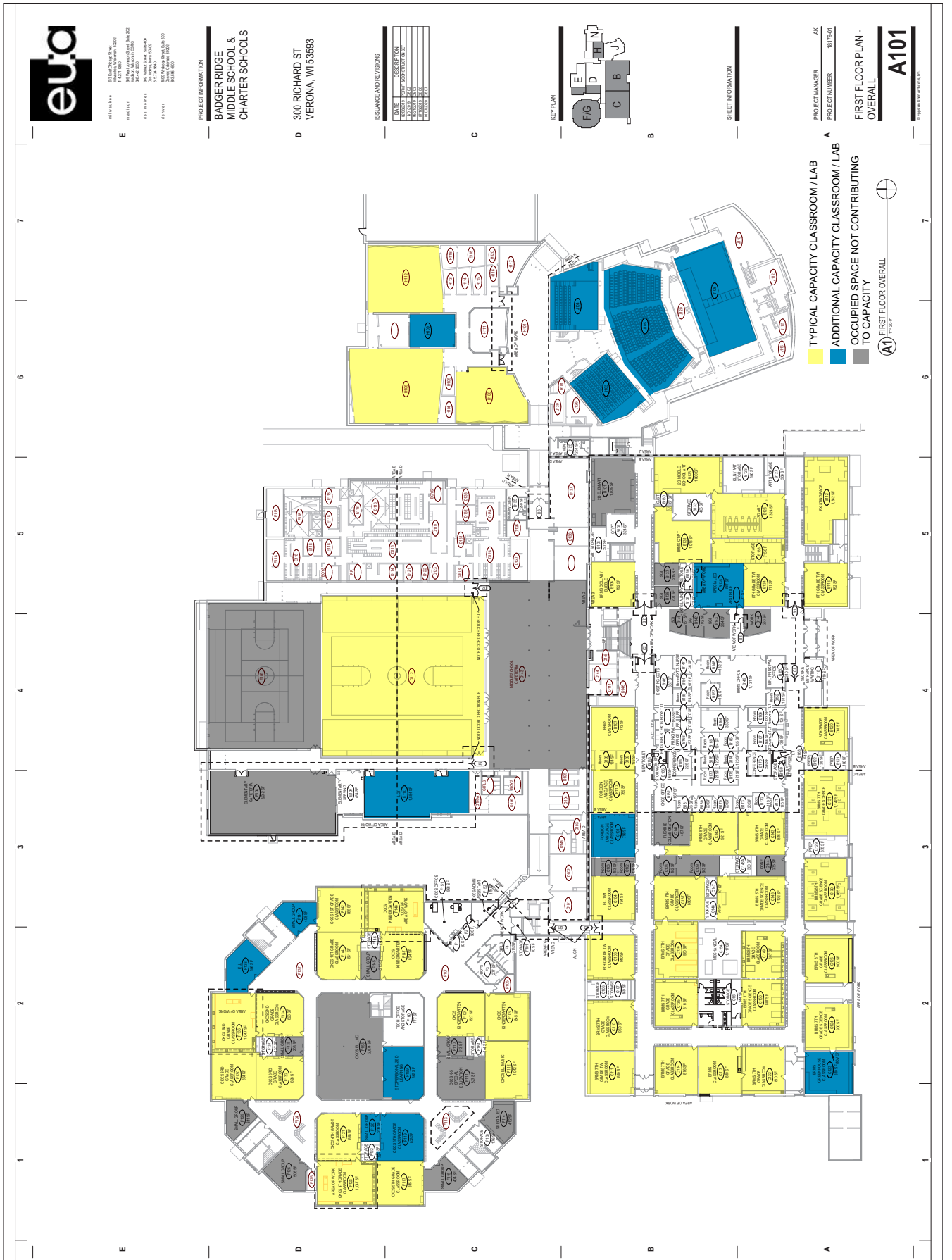
Badger Ridge Middle School / Core Knowledge Charter School - Capacity Study

Room No.	Primary Use of Room (Subject)	S.F. Area	Capacity			
			Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
	Max Capacity		1860	1706	1816	**1389**
	Functional Capacity (80%)		**1488**	**1365**	**1453**	
	2021-22 Enroll.	1,073				
	Gross Building Area	243,117				
OCCUPIED SPACES NOT CONTRIBUTING TO CAPACITY						
A01	CLASSROOM	758			25	
A02	WOOD SHOP	2141			21	
A06	CLASSROOM	759			25	
A04	METAL SHOP	2155			22	
B101	2D ELEM ART	1039			21	
B134	COLLABORATIVE SPACE	711			24	
B135	7th/8th GRADE RESOURCE ROOM	867			29	
B137	SGI	215			7	
C101	7TH GRADE SPEC. ED. RESOURCE ROOM	758			25	
C123	BRMS GREENHOUSE CLASSROOM	810			16	
C141	8TH SPECIAL ED. RESOURCE	467			16	
D143	CAFETERIA	7155			286	
E1	GYMNASIUM	7526			301	
D1	GYMNASIUM (as assembly)	10524			421	
E108	ELEMENTARY CAFETERIA	3242			130	
E110	LGI/WEIGHT ROOM	1884			38	
F111	CKCS K-5 MUSIC	827			17	
F114	SPECIAL ED	412			14	
F115	SMALL GROUP	404			13	
F119	CKCS CURRICULUM STORAGE/SMALL GROUP ROOM	833			28	
F120	SMALL GROUP	209			7	
F126	SMALL GROUP	506			17	
F129	SMALL GROUP	341			11	
F138	CKCS RESOURCE ROOM	606			20	
F141	CKCS EL ROOM	408			12	
F145	SMALL GROUP	213			7	
F153	CKCS EL. LMC	2874			115	
F159	ETC/PERSONALIZED LEARNING	863			25	
G119	SMALL GROUP	208			7	
G125	6TH GRADE RESOURCE ROOM	506			17	
G127	6TH GRADE SPEC ED ROOM	189			6	
G128	6TH GRADE SPECIAL ED ROOM	341			11	
G137	SMALL GROUP	341			11	
G138	SMALL GROUP	256			9	
G145	SMALL GROUP	213			7	
G153	MIDDLE SCHOOL LMC	3155			126	
G157	EL. MAKERSPACE	690			14	
H109	MIDI	606			12	
J103	PAC	1154			38	
J104	PAC	1187			40	
J105	PAC (SEATING ONLY + STAGE)	2861			95	
	Max Occupants in Non-Capacity Spaces				2061	

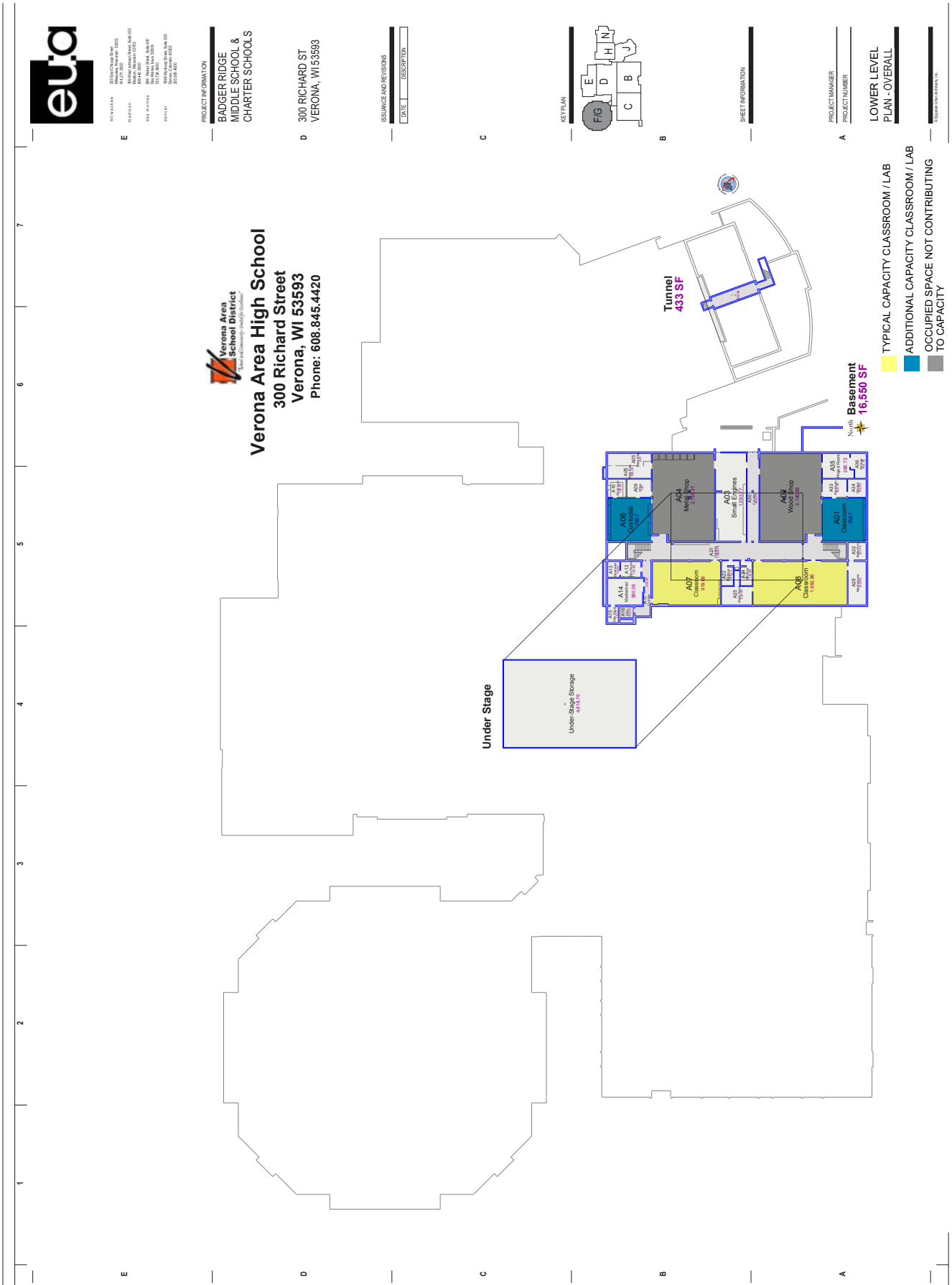
BRMS_CKCS Capacity Analysis.xlsx

BADGER RIDGE MIDDLE / CORE KNOWLEDGE CHARTER SCHOOLS



BADGER RIDGE MIDDLE / CORE KNOWLEDGE CHARTER SCHOOLS

BADGER RIDGE MIDDLE / CORE KNOWLEDGE CHARTER SCHOOLS



SAVANNA OAKS MIDDLE SCHOOL

Revised 5/5/2022

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Savanna Oaks Middle School - Capacity Study

Room No.	Primary Use of Room (Subject)	S.F. Area	Capacity			
			Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
103	Grade 6 Classroom - LA	941	30	27	31	
104	Grade 6 Classroom - Math	948	30	27	32	
105	Grade 6 Classroom - SS	944	30	27	31	
106	Grade 6 Classroom - Science	935	30	27	31	
107	Grade 6 Classroom - LA	921	30	27	31	
108	Grade 6 Classroom - Math	946	30	27	32	
111	Classroom - World Language	937	30	27	31	
113	8th Grade Classroom - SS	941	30	27	31	
114	8th Grade Classroom - Math	906	30	27	30	
115	*VAIS Classroom - 3rd/4th/5th*	*937*	25	23	31	
124	Art - Classroom	1208	30	27	24	
125	Art- Classroom	742	30	27	15	
128	Gymnasium (as PE class)	8271	60	54	60	
167	Choir	1055	30	27	35	
168	Orchestra	1133	30	27	23	
172	Band	1869	30	27	37	
190	FACE	2070	30	27	41	
202	7th Grade Classroom - SS	906	30	27	30	
203	7th Grade Classroom - Science	919	30	27	18	
204	7th Grade Classroom - LA	948	30	27	32	
205	7th Grade Classroom - LA	944	30	27	31	
206	Science Lab	1174	30	27	23	
207	Classroom - Math	921	30	27	31	
208	Classroom - Math	946	30	27	32	
210	8th Grade Classroom - Health	935	30	27	31	
211	7th Grade Classroom - Science	937	30	27	31	
212	8th Grade Classroom - Math	948	30	27	32	
213	8th Grade Classroom - LA	941	30	27	31	
214	8th Grade Classroom - LA	906	30	27	30	
215	Technology Instruction	937	30	27	31	
	Max Capacity		925	833	932	**524**
	Functional Capacity (80%)		**740**	**666**	**745**	
	2021-22 Enroll.	432				
	Gross Building Area	104,765				

Savanna Oaks Capacity Analysis.xlsx

SAVANNA OAKS MIDDLE SCHOOL

Revised 5/5/2022

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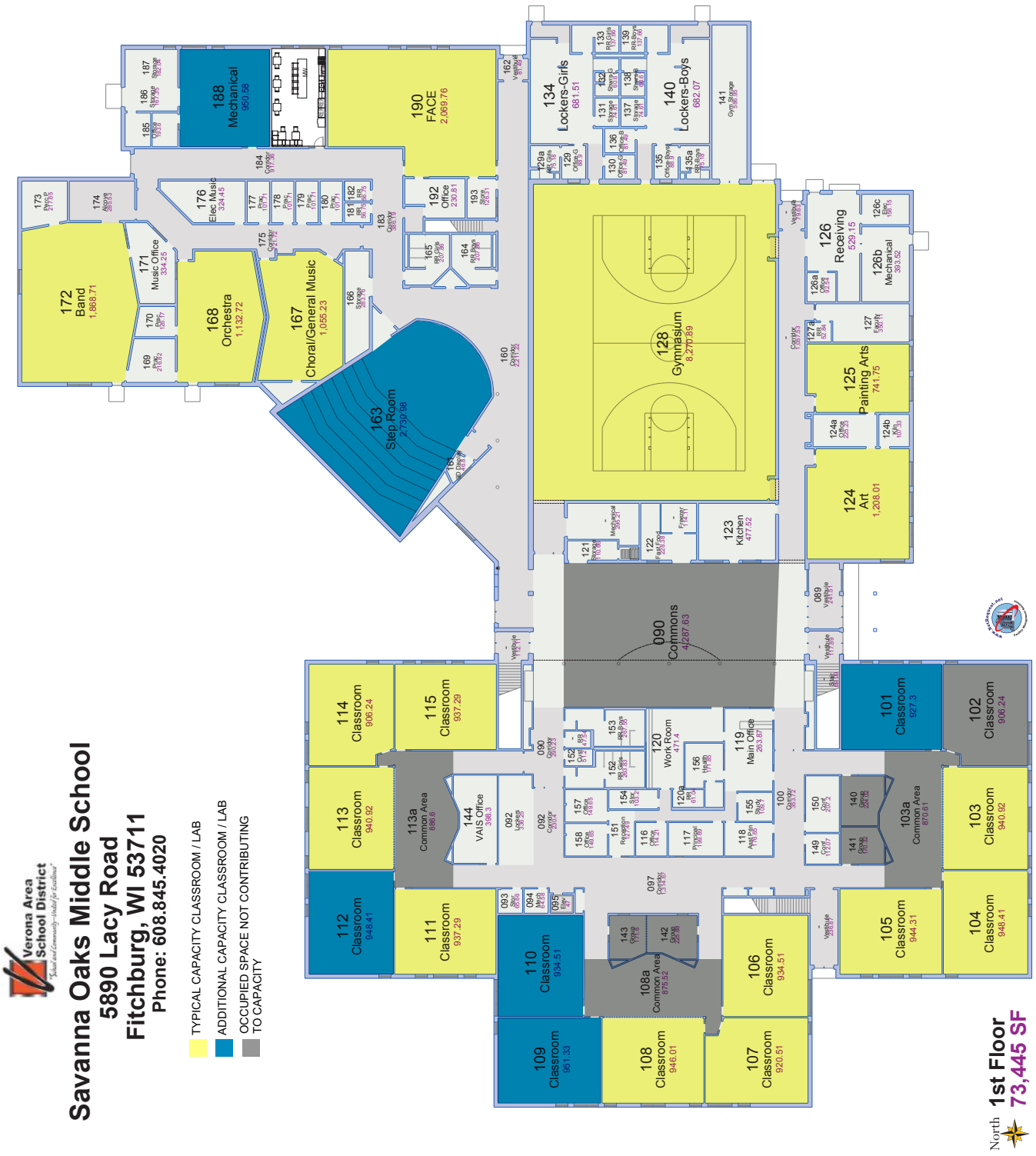
Savanna Oaks Middle School - Capacity Study

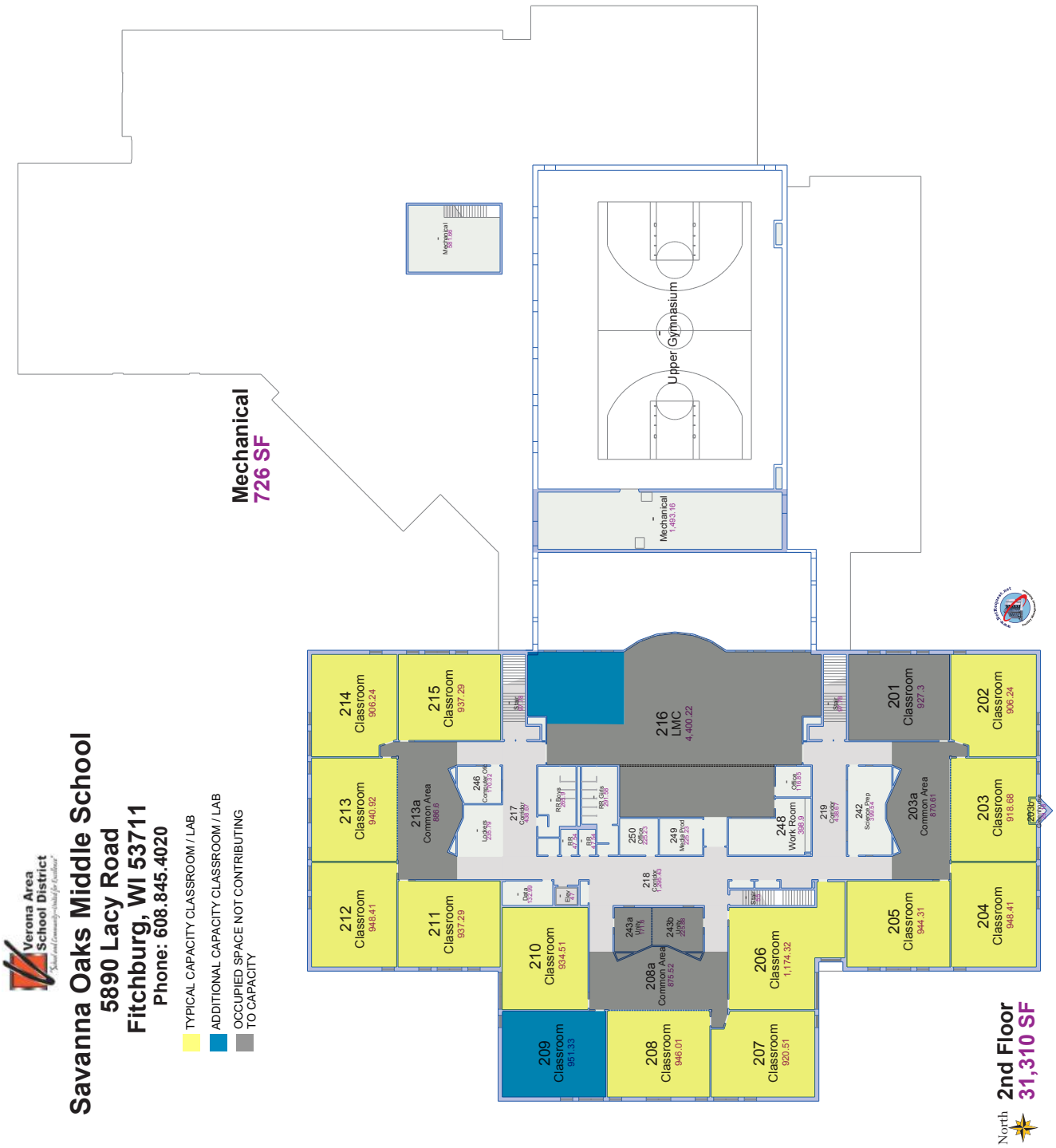
Room No.	Primary Use of Room (Subject)	S.F. Area	Capacity			
			Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
OCCUPIED SPACES NOT CONTRIBUTING TO CAPACITY						
90	Cafeteria	4287			171	
101	Resource - SE	927			31	
102	Resource - SE	906			30	
103a	Commons	871			29	
108a	Commons	876			29	
109	Resource - Reading	951			32	
110	Resource - ELL	935			31	
112	Resource - ELL	948			32	
113a	Commons	887			30	
128	Gymnasium (as assembly)	8271			331	
140	Small Group	224			7	
141	Small Group	170			6	
142	Small Group	226			8	
143	Small Group	172			6	
163	Step Room	2731			78	
188	Classroom	951			32	
201	Resource - SE	927			31	
203a	Commons	871			29	
209	Resource - SE	951			32	
208a	Common Area	876			29	
213a	Common Area	887			30	
216	LMC (classroom)	725			24	
216	LMC (excluding classroom)	3675			147	
249	Media Production	225			8	
	Max Occupants in Non-Capacity Spaces				1211	

Savanna Oaks Capacity Analysis.xlsx

SAVANNA OAKS MIDDLE SCHOOL



SAVANNA OAKS MIDDLE SCHOOL



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HIGH SCHOOL PROGRAM / FLOOR PLAN

VERONA AREA HIGH SCHOOL

Revised 5/5/2022

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VAHS - Capacity Study

Floor Level	Room Number	Architectural Room Number	Primary Use of Room (Subject)	S.F. Area	Capacity			
					Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
FIELDHOUSE	E0200	470	FIELDHOUSE (as PE classroom)	41,980	90	90	90	
FIELDHOUSE	E0210	480	GYMNASTICS (as PE classroom)	7,038	30	30	30	
FIRST FLOOR	E1800	1410	CARDIO	2,734	30	30	55	
FIRST FLOOR	E1802	1412	WEIGHT ROOM	3,644	30	30	73	
FIRST FLOOR	E1804	1418	CROSS TRAINING	2,068	30	30	41	
FIRST FLOOR	E1830	1430	CLASSROOM - HEALTH	774	30	30	26	
FIRST FLOOR	E1832	1432	CLASSROOM - HEALTH	772	30	30	26	
FIRST FLOOR	N1051	1361	COMPUTER SCIENCE - COMPUTER LAB	1,284	30	30	26	
FIRST FLOOR	N1054	1364	BUSINESS-CLASSROOM	886	30	30	30	
FIRST FLOOR	N1055	1365	BUSINESS-CLASSROOM	828	30	30	28	
FIRST FLOOR	N1057	1371	BUSINESS-CLASSROOM	829	30	30	28	
FIRST FLOOR	N1058	1372	BUSINESS-LAB	887	30	30	30	
FIRST FLOOR	N1059	1373	CNA LECTURE	492	16	16	16	
FIRST FLOOR	N1060	1374	MADISON TECH LAB	1,506	30	30	30	
FIRST FLOOR	S1402	1108	CATE - CULINARY ARTS	1,603	30	30	32	
FIRST FLOOR	S1408	1106	CULINARY HOME	1,386	30	30	28	
FIRST FLOOR	S1410	1104	FCS - HSCD	995	30	30	33	
FIRST FLOOR	S1500	1213	PLTW BIOMED	1,691	30	30	34	
FIRST FLOOR	S1502	1211	PLTW BIOMED	1,736	30	30	35	
FIRST FLOOR	S1506	1209	PLTW ENGINEERING	1,435	30	30	29	
FIRST FLOOR	S1508	1207	PLTW ENGINEERING	1,429	30	30	29	
FIRST FLOOR	S1515	1241	CATE - WOOD LAB	2,535	30	30	17	
FIRST FLOOR / CATE	S1525	1243	CATE - METALS LAB	2,720	30	30	27	
FIRST FLOOR / CATE	S1532	1252	AUTO LAB	3,917	30	30	39	
FIRST FLOOR	S1600	1238	AG CLASSROOM	843	30	30	28	
FIRST FLOOR	S1602	1236	AG CLASSROOM	863	30	30	29	
FIRST FLOOR	S1606	1232	AG CLASSROOM	856	30	30	29	
FIRST FLOOR	S1607	1233	AG CLASSROOM	932	30	30	31	
FIRST FLOOR	W1120	1052	POOL A (as PE classroom)	15,307	30	30	30	
FIRST FLOOR	W1130	1043	POOL B (as PE classroom)	9,126	30	30	30	
FIRST FLOOR	W1246	1173	CHORAL	1,890	30	30	38	
FIRST FLOOR	W1252	1165	ORCHESTRA	2,402	30	30	48	
FIRST FLOOR	W1264	1157	BAND	3,374	30	30	67	
FIRST FLOOR	W1301	1119	2D ART	1,619	30	30	32	
FIRST FLOOR	W1302	1121	CERAMICS	1,899	30	30	38	
FIRST FLOOR	W1305	1117	ART FOUNDATIONS	1,662	30	30	33	
FIRST FLOOR	W1309	1115	LAB	1,133	30	30	23	
FIRST FLOOR	W1310	1112	PHOTOGRAPHY	1,135	30	30	23	
FIRST FLOOR	W1316	1110	VIDEO	1,153	30	30	23	
SECOND FLOOR	N2001	2301	CLASSROOM - FLEX	899	30	30	30	
SECOND FLOOR	N2002	2302	CLASSROOM - WORLD LANG	875	30	30	29	
SECOND FLOOR	N2003	2303	CLASSROOM - FLEX	843	30	30	28	
SECOND FLOOR	N2004	2304	CLASSROOM - WORLD LANG	878	30	30	29	
SECOND FLOOR	N2006	2308	CLASSROOM - WORLD LANGUAG	967	30	30	32	
SECOND FLOOR	N2010	2310	CLASSROOM - ENGLISH	832	30	30	28	
SECOND FLOOR	N2011	2309	CLASSROOM - WORLD LANG	873	30	30	29	
SECOND FLOOR	N2012	2312	CLASSROOM - ENGLISH	856	30	30	29	
SECOND FLOOR	N2016	2314	CLASSROOM - ENGLISH	822	30	30	27	
SECOND FLOOR	N2019	2315	CLASSROOM - ENGLISH	873	30	30	29	
SECOND FLOOR	N2021	2317	CLASSROOM - ENGLISH	838	30	30	28	
SECOND FLOOR	N2040	2330	CLASSROOM - ENGLISH	816	30	30	27	
SECOND FLOOR	N2041	2331	CLASSROOM - ENGLISH	856	30	30	29	
SECOND FLOOR	N2043	2333	CLASSROOM - ENGLISH	856	30	30	29	
SECOND FLOOR	N2044	2332	CLASSROOM - ENGLISH	856	30	30	29	
SECOND FLOOR	N2045	2335	CLASSROOM - ENGLISH	844	30	30	28	
SECOND FLOOR	N2046	2334	CLASSROOM - ENGLISH	822	30	30	27	
SECOND FLOOR	N2047	2337	CLASSROOM - ENGLISH	850	30	30	28	
SECOND FLOOR	N2049	2339	CLASSROOM - ENGLISH	852	30	30	28	
SECOND FLOOR	N2050	2338	CLASSROOM - ENGLISH	856	30	30	29	
SECOND FLOOR	N2051	2341	CLASSROOM - ENGLISH	856	30	30	29	
SECOND FLOOR	N2052	2340	CLASSROOM - ENGLISH	856	30	30	29	
SECOND FLOOR	N2056	2342	CLASSROOM - ENGLISH	809	30	30	27	
SECOND FLOOR	S2403	2239	SCIENCE - ENV SCI	1,468	30	30	29	

VAHS Capacity Analysis.xlsx

VERONA AREA HIGH SCHOOL

Revised 5/5/2022

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VAHS - Capacity Study

Floor Level	Room Number	Architectural Room Number	Primary Use of Room (Subject)	S.F. Area	Capacity			
					Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
SECOND FLOOR	S2404	2232	CHEMISTRY	1,585	30	30	32	
SECOND FLOOR	S2408	2230	CHEMISTRY	1,607	30	30	32	
SECOND FLOOR	S2409	2235	SCIENCE - ENV SCI	1,471	30	30	29	
SECOND FLOOR	S2410	2228	SCIENCE - PHYSICS	1,411	30	30	28	
SECOND FLOOR	S2411	2233	SCIENCE - BIOLOGY	1,472	30	30	29	
SECOND FLOOR	S2416	2224	SCIENCE - PHYSICS	1,409	30	30	28	
SECOND FLOOR	S2417	2229	SCIENCE - BIOLOGY	1,444	30	30	29	
SECOND FLOOR	S2501	2225	CLASSROOM - MATH	879	30	30	29	
SECOND FLOOR	S2503	2223	CLASSROOM - MATH	873	30	30	29	
SECOND FLOOR	S2505	2221	CLASSROOM - MATH	888	30	30	30	
SECOND FLOOR	S2508	2212	CLASSROOM - MATH	820	30	30	27	
SECOND FLOOR	S2509	2217	CLASSROOM - MATH	875	30	30	29	
SECOND FLOOR	S2511	2215	CLASSROOM - MATH	876	30	30	29	
SECOND FLOOR	S2512	2210	CLASSROOM - MATH	852	30	30	28	
SECOND FLOOR	S2515	2213	CLASSROOM - MATH	863	30	30	29	
THIRD FLOOR	N3001	3301	CLASSROOM - WORLD LANG	880	30	30	29	
THIRD FLOOR	N3002	3302	CLASSROOM - EXPLORATION AC	878	30	30	29	
THIRD FLOOR	N3003	3303	CLASSROOM - WORLD LANG	843	30	30	28	
THIRD FLOOR	N3004	3304	CLASSROOM - EXPLORATION AC	878	30	30	29	
THIRD FLOOR	N3006	3308	CLASSROOM - EXPLORATION AC	966	30	30	32	
THIRD FLOOR	N3010	3310	CLASSROOM - WORLD LANG	828	30	30	28	
THIRD FLOOR	N3011	3309	CLASSROOM - WORLD LANG	872	30	30	29	
THIRD FLOOR	N3012	3312	CLASSROOM - SOCIAL STUDIES	856	30	30	29	
THIRD FLOOR	N3016	3314	CLASSROOM - SOCIAL STUDIES	822	30	30	27	
THIRD FLOOR	N3019	3315	CLASSROOM - WORLD LANG	852	30	30	28	
THIRD FLOOR	N3021	3317	CLASSROOM - WORLD LANG	860	30	30	29	
THIRD FLOOR	N3040	3330	CLASSROOM - SOCIAL STUDIES	819	30	30	27	
THIRD FLOOR	N3041	3331	CLASSROOM - SOCIAL STUDIES	856	30	30	29	
THIRD FLOOR	N3043	3333	CLASSROOM - SOCIAL STUDIES	856	30	30	29	
THIRD FLOOR	N3044	3332	CLASSROOM - SOCIAL STUDIES	856	30	30	29	
THIRD FLOOR	N3045	3335	CLASSROOM - SOCIAL STUDIES	844	30	30	28	
THIRD FLOOR	N3046	3334	CLASSROOM - SOCIAL STUDIES	822	30	30	27	
THIRD FLOOR	N3047	3337	CLASSROOM - SOCIAL STUDIES	850	30	30	28	
THIRD FLOOR	N3049	3339	CLASSROOM - SOCIAL STUDIES	852	30	30	28	
THIRD FLOOR	N3050	3338	CLASSROOM - SOCIAL STUDIES	856	30	30	29	
THIRD FLOOR	N3051	3341	CLASSROOM - SOCIAL STUDIES	856	30	30	29	
THIRD FLOOR	N3052	3340	CLASSROOM - SOCIAL STUDIES	856	30	30	29	
THIRD FLOOR	N3056	3342	CLASSROOM - SOCIAL STUDIES	819	30	30	27	
THIRD FLOOR	S3403	3239	SCIENCE - BIOLOGY	1,442	30	30	29	
THIRD FLOOR	S3404	3232	CHEMISTRY	1,609	30	30	32	
THIRD FLOOR	S3408	3230	CHEMISTRY	1,639	30	30	33	
THIRD FLOOR	S3409	3235	SCIENCE - BIOLOGY	1,455	30	30	29	
THIRD FLOOR	S3410	3228	SCIENCE - PHYSICS	1,440	30	30	29	
THIRD FLOOR	S3411	3233	SCIENCE - BIOLOGY	1,456	30	30	29	
THIRD FLOOR	S3416	3224	SCIENCE - PHYSICS	1,422	30	30	28	
THIRD FLOOR	S3417	3229	SCIENCE - EA	1,449	30	30	29	
THIRD FLOOR	S3501	3225	CLASSROOM - MATH	879	30	30	29	
THIRD FLOOR	S3503	3223	CLASSROOM - MATH	884	30	30	29	
THIRD FLOOR	S3505	3221	CLASSROOM - MATH	881	30	30	29	
THIRD FLOOR	S3508	3212	CLASSROOM - MATH	816	30	30	27	
THIRD FLOOR	S3509	3217	CLASSROOM - MATH	876	30	30	29	
THIRD FLOOR	S3511	3215	CLASSROOM - MATH	880	30	30	29	
THIRD FLOOR	S3512	3210	CLASSROOM - MATH	852	30	30	28	
THIRD FLOOR	S3515	3213	CLASSROOM - MATH	863	30	30	29	
			Max Capacity		3556	3556	3580	**2360**
			Functional Capacity (75%)		**2667**	**2667**	**2685**	
			2021-22 Enroll.	1,737				
			Gross Building Area	590,000				

VAHS Capacity Analysis.xlsx

VERONA AREA HIGH SCHOOL

Revised 5/5/2022

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VAHS - Capacity Study

Floor Level	Room Number	Architectural Room Number	Primary Use of Room (Subject)	S.F. Area	Capacity			
					Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
OCCUPIED SPACES NOT CONTRIBUTING TO CAPACITY								
FIELDHOUSE	E0200	470	FIELDHOUSE (as assembly space)	41,980			840	
FIELDHOUSE	E0210	480	GYMNASTICS (as assembly space)	7,038			141	
FIELDHOUSE		1401	SOCIAL STAIR	3,328			133	
FIRST FLOOR			ATRIUM SEATING (as classroom)	16,540			90	
FIRST FLOOR			AUDITORIUM PREFUNCTION	3,938			158	
FIRST FLOOR	N1030	1347	OT/PT - ACTIVITY	591			12	
FIRST FLOOR	N1033	1344	FUNC VOC	838			17	
FIRST FLOOR	N1034	1333	SENSORY	275			9	
FIRST FLOOR	N1035	1342	LIFE SKILLS	518			10	
FIRST FLOOR	N1036	1331	SENSORY	305			10	
FIRST FLOOR	N1047	1340	FUNC VOC	713			14	
FIRST FLOOR	N1050	1360	LEAP	573			19	
FIRST FLOOR	N1052	1362	LEAP	601			20	
FIRST FLOOR	N1056	1366	COLLAB	545			18	
FIRST FLOOR	N1061	1375	FCS - CNA LAB	822			16	
FIRST FLOOR	E1820	1426	WRESTLING	4,448			89	
FIRST FLOOR / CATE	S1520	1240	CATE - WOOD CLASSROOM	712			24	
FIRST FLOOR / CATE	S1522	1242	CATE - AUTO CLASSROOM	770			26	
FIRST FLOOR	S1528	1250	CATE - SMALL ENGINES LAB	825			17	
FIRST FLOOR	S1605	1235	LIVE ANIMAL LAB	785			16	
FIRST FLOOR	S1609	1231	HEAD HOUSE	879			29	
FIRST FLOOR	S1613	1274N	GREENHOUSE	1,096			22	
FIRST FLOOR	W1150	1031	MULTI PURPOSE ROOM	780			26	
FIRST FLOOR	W1201	1137	STAGE (as classroom)	3,757			30	
FIRST FLOOR	W1203	1134	AUDITORIUM (as classroom)	9,323			30	
FIRST FLOOR	W1240	1179	PRACTICE	152			5	
FIRST FLOOR	W1241	1170	MIDI	683			14	
FIRST FLOOR	W1242	1177	PRACTICE	166			6	
FIRST FLOOR	W1243	1170A	RECORDING	402			8	
FIRST FLOOR	W1244	1175	PRACTICE	152			5	
FIRST FLOOR	W1250	1171	SMALL ENSEMBLE	348			12	
FIRST FLOOR	W1258	1163	PRACTICE	242			8	
FIRST FLOOR	W1262	1159	PRACTICE	150			5	
FIRST FLOOR	W1266	1155	PRACTICE	150			5	
FIRST FLOOR	W1268	1153	PRACTICE	150			5	
FIRST FLOOR	W1270	1151	LARGE ENSEMBLE	543			11	
FIRST FLOOR	W1300	1132	GALLERY	552			18	
FIRST FLOOR	W1318	1110B	VIDEO	150			3	
SECOND FLOOR			CAFÉ SEATING	6,855			274	
SECOND FLOOR	N2000	2300	COLLAB	518			17	
SECOND FLOOR	N2005	2303A	SGI	102			3	
SECOND FLOOR	N2007	2305	WRITING RESOURCE ROOM	776			26	
SECOND FLOOR	N2008	2308A	SGI	111			4	
SECOND FLOOR	N2014	2312A	SGI	111			4	
SECOND FLOOR	N2017	2313	CURRICULUM LEARNING SPECIA	421			14	
SECOND FLOOR	N2042	2330A	SGI	111			4	
SECOND FLOOR	N2048	2334A	SGI	111			4	
SECOND FLOOR	N2054	2340A	SGI	111			4	
SECOND FLOOR	S2405	2237	SGI	95			3	
SECOND FLOOR	S2413	2231	SP ED RESOURCE	95			3	
SECOND FLOOR	S2414	2226	SGI	100			3	
SECOND FLOOR	S2502	2220	BEHAVIOR INTERVENT	114			4	
SECOND FLOOR	S2507	2219	SGI	120			4	
SECOND FLOOR	S2510	2210A	SGI	120			4	
SECOND FLOOR	S2517	2211	COLLAB	963			32	
SECOND FLOOR	W2300	2110	LARGE GROUP INSTRUCTIONAL	3,827			128	
SECOND FLOOR	W2302	2107	MAKER SPACE	1,015			34	
SECOND FLOOR	W2304	2101	LMC	7,547			252	
SECOND FLOOR	W2306	2101B	COLLAB	61			2	
SECOND FLOOR	W2308	2101C	COLLAB	61			2	
SECOND FLOOR	W2316	2101E	COLLAB	124			4	
SECOND FLOOR	W2318	2101F	COLLAB	119			4	
SECOND FLOOR	W2320	2101G	COLLAB	255			9	

VAHS Capacity Analysis.xlsx

VERONA AREA HIGH SCHOOL

Revised 5/5/2022

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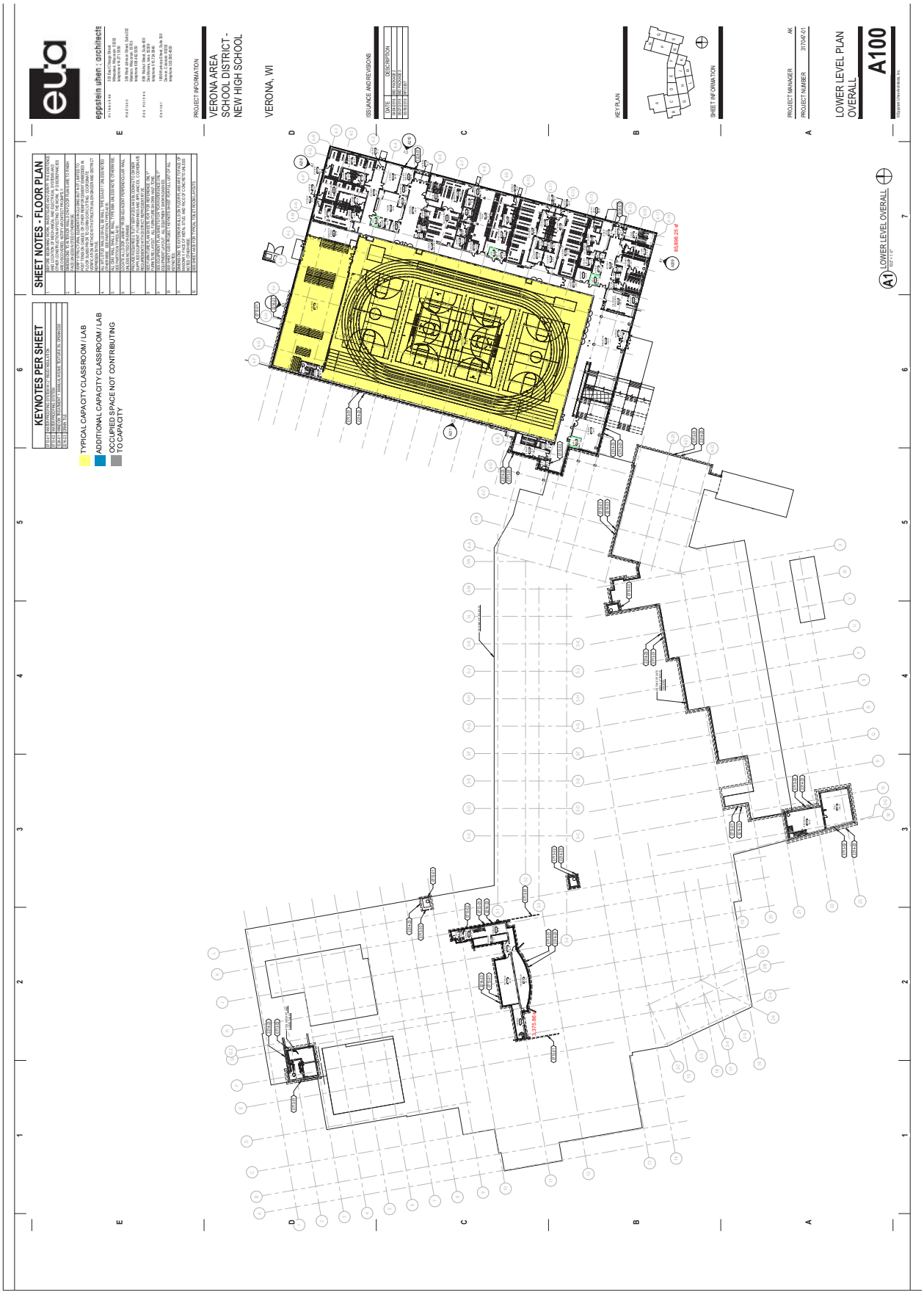
VAHS - Capacity Study

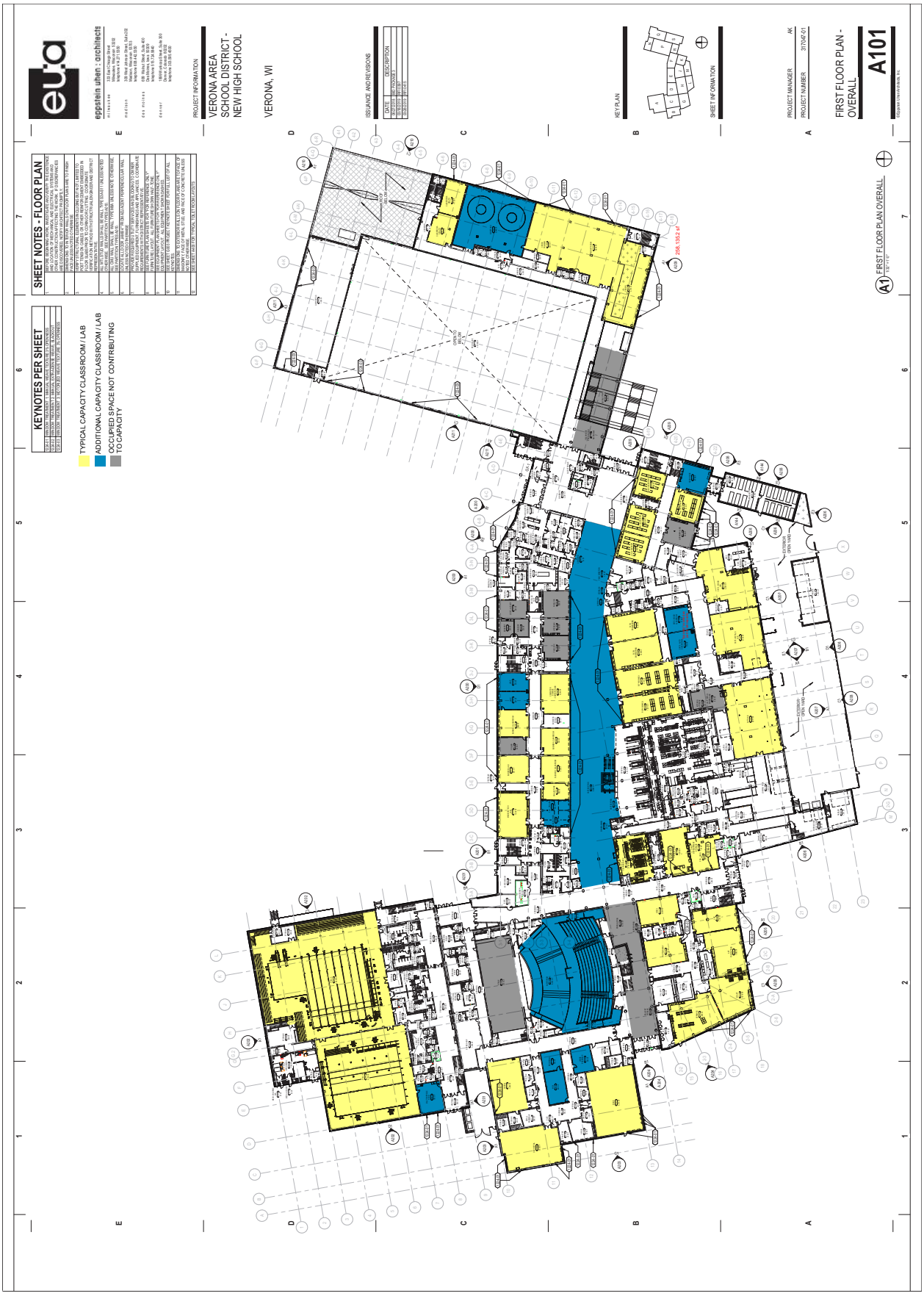
Floor Level	Room Number	Architectural Room Number	Primary Use of Room (Subject)	S.F. Area	Capacity			
					Based on Maximum Class Size	Based on Recommended Functional Class Size	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
SECOND FLOOR	W2326	2105	QUIET STUDY	932			31	
THIRD FLOOR	N3000	3300	SEMINAR ROOM - EA	518			17	
THIRD FLOOR	N3005	3303A	SGI	102			3	
THIRD FLOOR	N3007	3305	READING RESOURCE ROOM	660			22	
THIRD FLOOR	N3008	3308A	SGI	111			4	
THIRD FLOOR	N3014	3312A	SGI	111			4	
THIRD FLOOR	N3017	3313	ELL LARGE GROUP	420			14	
THIRD FLOOR	N3042	3330A	SGI	111			4	
THIRD FLOOR	N3048	3334-A	SGI	111			4	
THIRD FLOOR	N3054	3340A	SGI	111			4	
THIRD FLOOR	N3075	3108	CRS LARGE ROOM	1,526			51	
THIRD FLOOR	N3077	3108A	CRS SGI	63			2	
THIRD FLOOR	N3081	3108B	CRS SGI	89			3	
THIRD FLOOR	N3083	3108C	CRS SGI	106			4	
THIRD FLOOR	N3085	3108D	CRS SGI	88			3	
THIRD FLOOR	S3401	3234	COLLAB	3,932			131	
THIRD FLOOR	S3405	3237	SGI	95			3	
THIRD FLOOR	S3413	3231	SGI	95			3	
THIRD FLOOR	S3414	3226	SGI	100			3	
THIRD FLOOR	S3507	3219	SGI	123			4	
THIRD FLOOR	S3510	3210A	SGI	120			4	
THIRD FLOOR	S3517	3211	COLLAB	959			32	
			Max Occupants in Non-Capacity Spaces				3109	

VAHS Capacity Analysis.xlsx

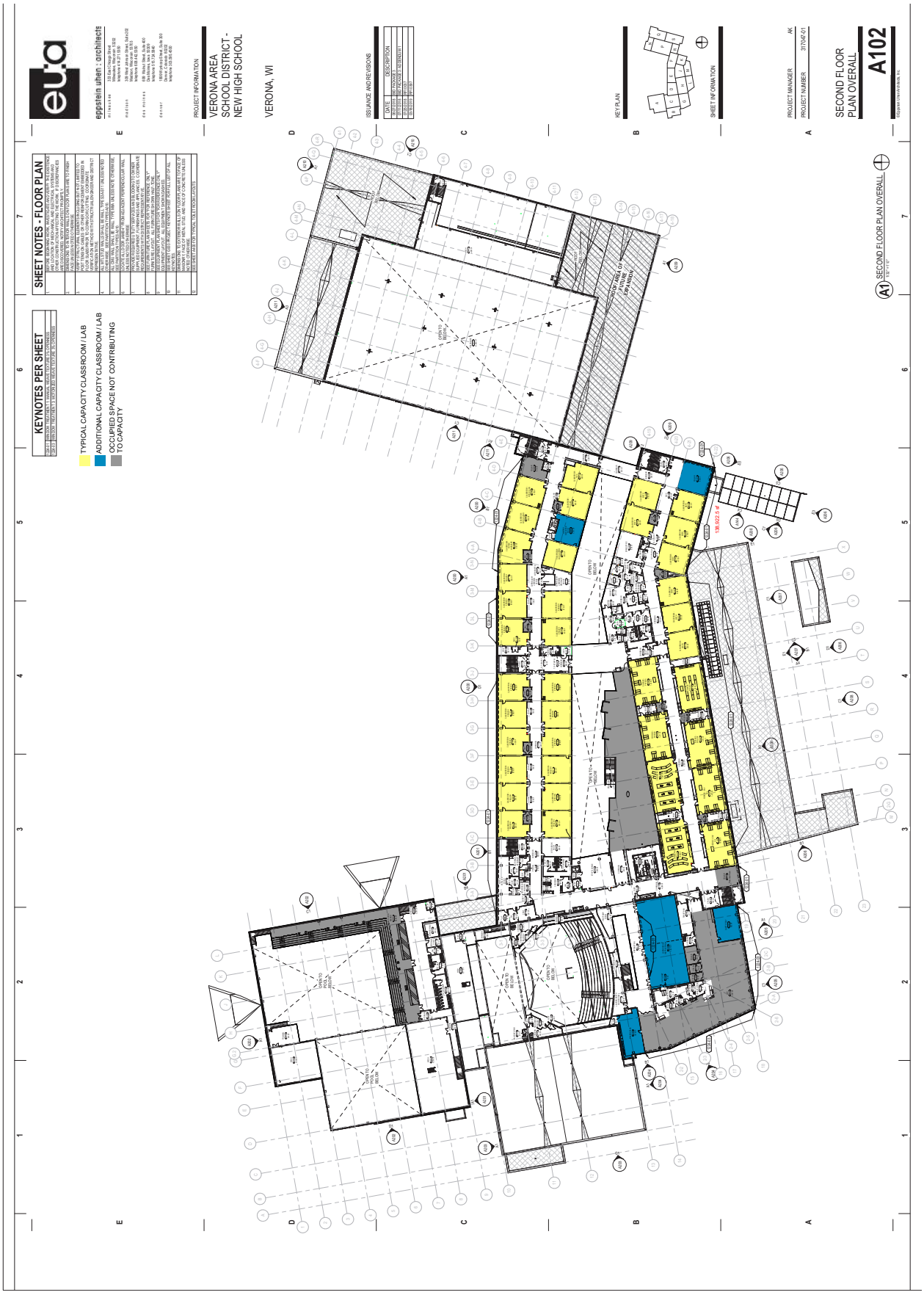
VERONA AREA HIGH SCHOOL



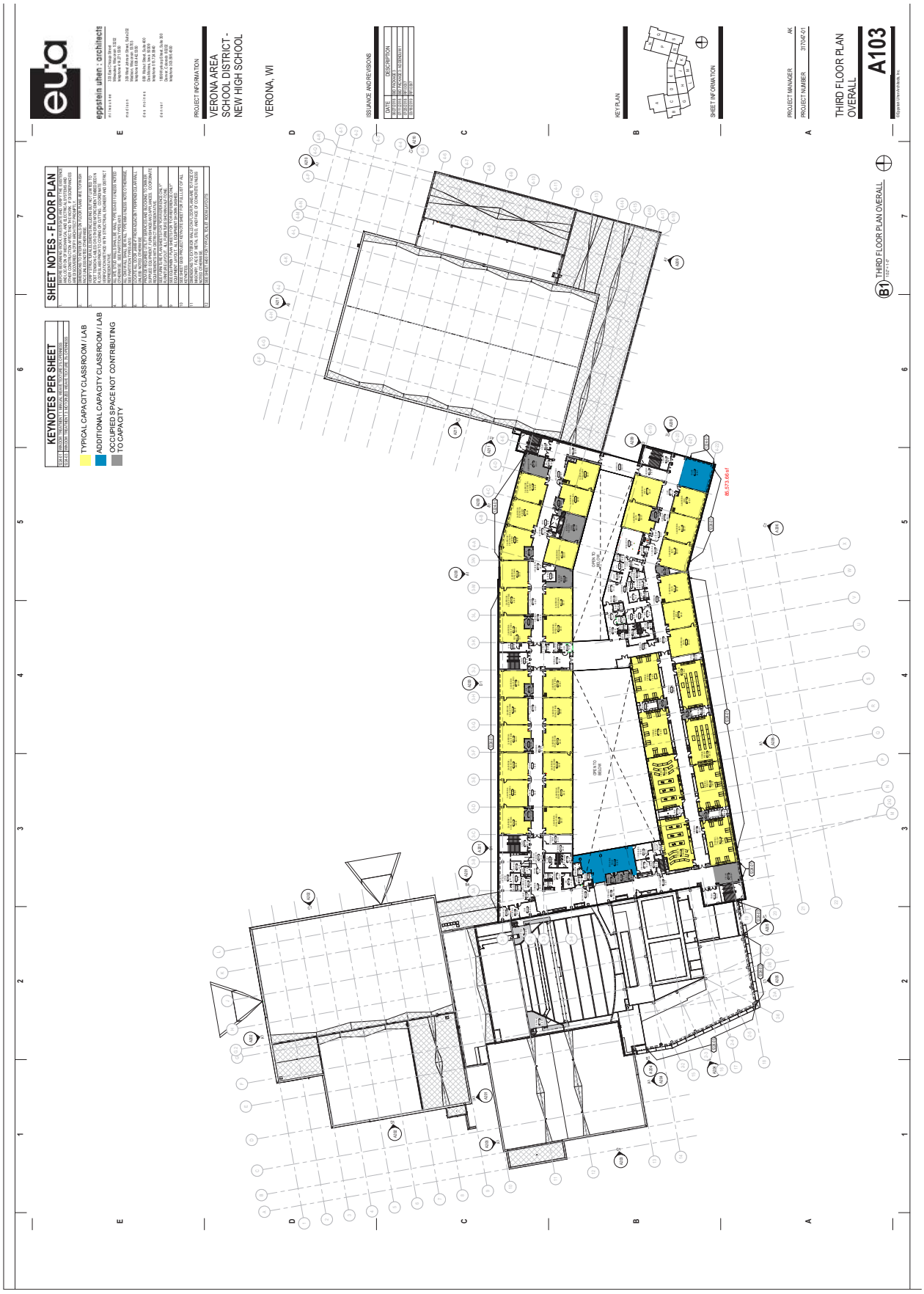
VERONA AREA HIGH SCHOOL



VERONA AREA HIGH SCHOOL



VERONA AREA HIGH SCHOOL



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TOTAL DISTRICT CAPACITY

Revised: 05/12/2022

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Verona Area School District - Capacity Study

Building	Functional Capacity			
	Based on Maximum Class Size	Based on Recommended Functional Class Size*	Based on Square Feet per Student of Space	Based on Overall Gross Square Footage
Country View Elementary School	563	492	571	543
Glacier Edge Elementary School	675	589	674	550
Stoner Prairie Elementary School	585	518	561	509
Sugar Creek Elementary School	833	735	809	888
VAIS/New Century Elementary Schools	301	281	359	493
Elementary Sub-Total	**2,956**	**2,615**	**2,974**	**2,983**
Badger Ridge Middle School / Core Knowledge Charter School	1,488	1,365	1,453	1,389
Savanna Oaks Middle School	740	666	745	524
Middle School Sub-Total	**2,228**	**2,031**	**2,198**	**1,913**
Verona Area High School	**2,667**	**2,667**	**2,685**	**2,360**
Overall Total	**7,851**	**7,313**	**7,856**	**7,256**

*Primary measure of operational capacity

_compiled District Capacity Analysis.xlsx

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VASD CENTRAL OFFICE SPACE PROGRAM STUDY

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Verona Area School District_New CO

Final Schematic Design Space Program

15-Mar-23

CAO SPACE	QTY	SF	TOTAL		SPACE DESCRIPTION
Vestibule	1	100	100		Dedicated entrance
Waiting/reception	1	200	200		Waiting for 6 people
Café	1	600	600		Kitchen, break area, casual meeting areas
Workroom	1	150	150		Includes office supply & mail
Storage	1	600	600		Record storage
Administrator Offices	4	250	1,000		Desk with return and 2 quest chairs (Superintendent, Business Manager, Flex Offices/ Sr Leaders and Directors) Offers space
Offices	16	180	2,880		Offices with 2 guest chairs
Support/Clerical Workstations wi	30	80	2,400		6x8 workstations (5 flex stations built in)
Enrollment room	1	120	120		Room for enrollments that require more privacy
Enrollment waiting area	1	180	180		Waiting area for families with children play area
Seasonal/Intern	8	48	384		6x8 workstations
Large Conference	0	350	-		Large room for 12-14 people
Committee Room	0	700	-		Functions would be scheduled in Board Rm
Conference	1	350	350		Room for 12 people
Enclaves	7	120	840		Small rooms for 4-6 people
Phone Room	2	60	120		Small private room for 1-2 people to make telephone calls
Board room / staff dev.	1	1,600	1,600		Divisible with flexible tables for multiple uses (50 people)
Restrooms	2	400	800		
Storage closet	1	64	64		8x8 room
Janitor closet	1	64	64		
Mothers room	1	85	85		
Coat closet	1	64	64		
Technology work/ storage	1	280	280		
Exterior storage room	1	100	100		Fire rated room for snow blower and other grounds storage
Elevator	1	100	100		
Elevator Equipment room	1	100	100		
Mechanical	1	400	400		
Plumbing	1	200	200		
Electrical	1	200	200		(Include exterior generator)
Sub Total				**13,981**	
Total Net Area				**13,981**	
Gross net-up factor (45% of net)				**6,291**	
Totals				**20,272**	

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