



Verona Area School District Facilities Study

Report Summary

May 4, 2015

Presented by Eppstein Uhen Architects
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Paul Raisleger, Senior, Design Architect
Jill Huskisson, Public Outreach Specialist
Kris Cotharn, Project Executive, KJWW

Phase 1: Facilities Study



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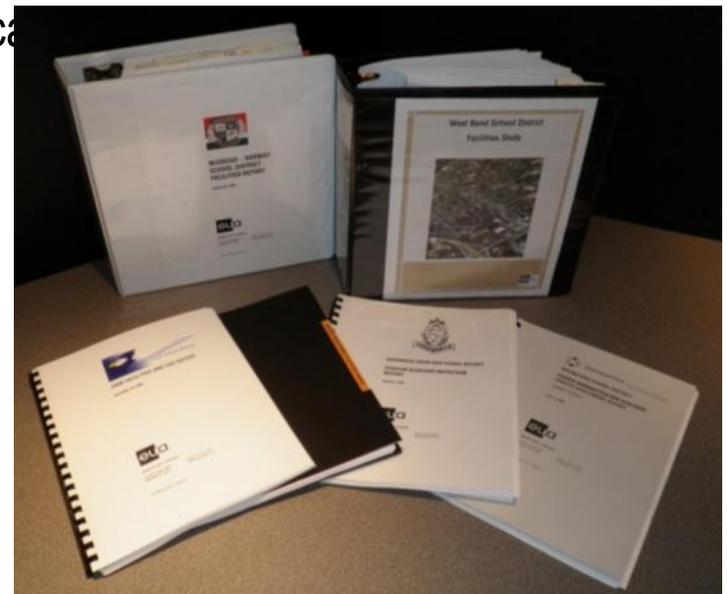
Agenda

- Why a Facilities Study?
- Focused School & Site Findings
 - New Century Elementary Findings
 - Sugar Creek Elementary Findings
 - Country View Elementary Findings
 - Verona Area High School Findings
- Next Steps



Why a Facilities Study?

- **Objective analysis of present condition and capabilities of district buildings.**
- **Focused study report with detailed analysis for:**
 - Site Size
 - Building exterior (roof, walls, windows, doors)
 - Infrastructure systems (mechanical, electrical)
 - Building Utilization
 - Space Analysis / Capacity



Professional Expertise

Eppstein Uhen Architects:

Architectural building review and capacity assessments



eppstein uhen : architects

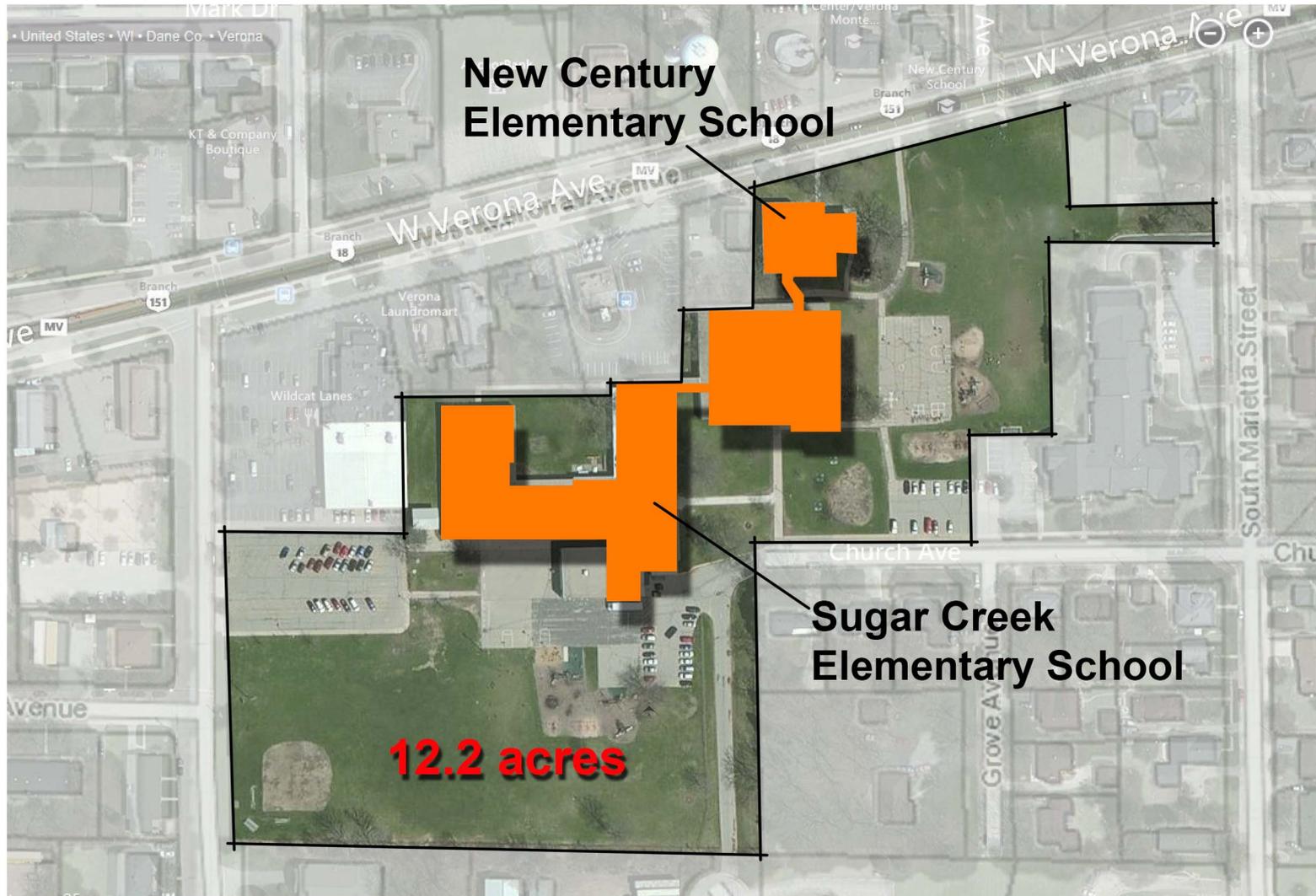
KJWW Engineering:

Electrical, plumbing, mechanical, and fire protection system assessments



The **FUTURE.**
Built **SMARTER.**®

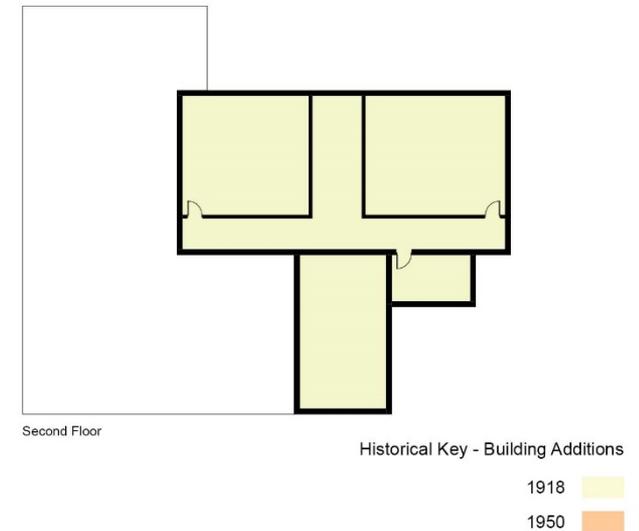
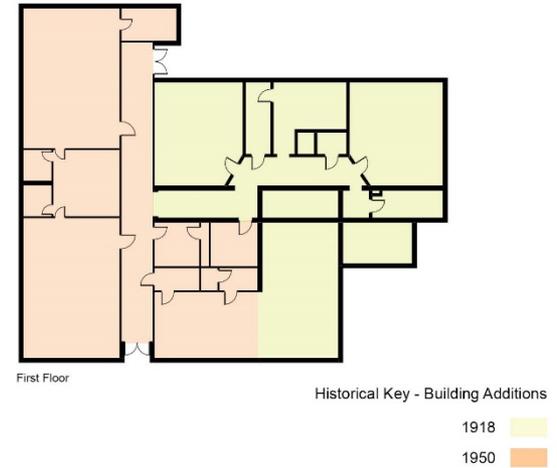
New Century & Sugar Creek Elementary Schools



New Century Elementary School

General

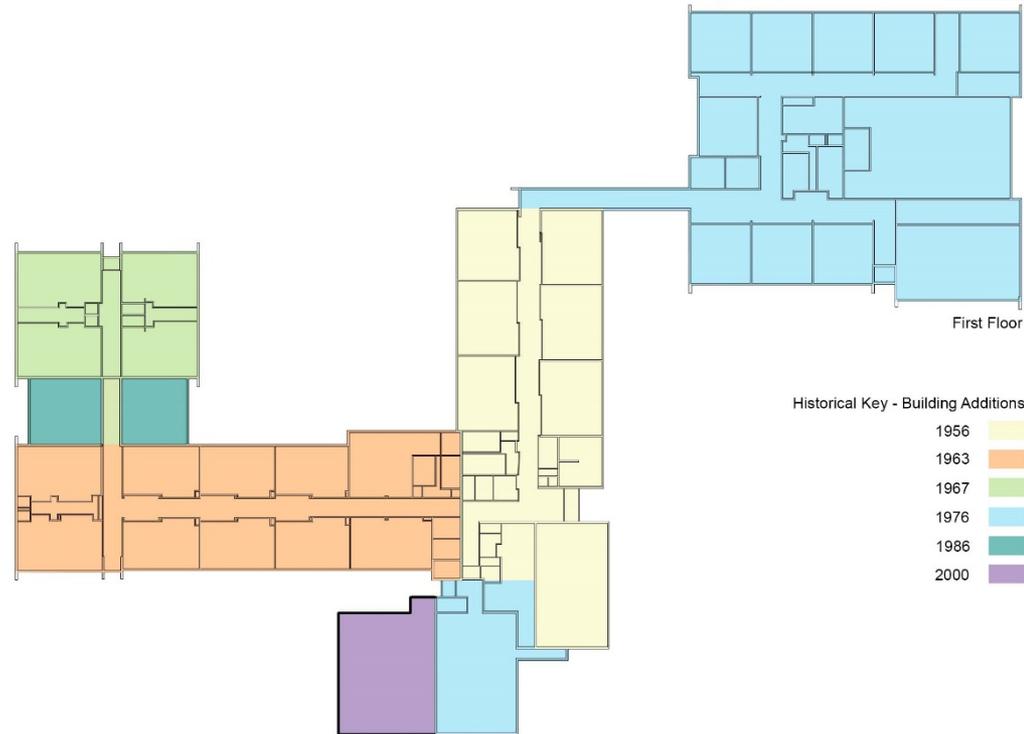
- New Century was built in 1918 with an addition built in 1950.
- New Century is a charter school that serves all district students from K5 thru 5th Grade.
- Total Area :12,190 sq. ft.
- 2014-2015 Student Enrollment: 119



Sugar Creek Elementary School

General

- Sugar Creek was built in 1956 with addition built in 1963, 1967, 1976, 1986, and 2000.
- Sugar Creek serves all district students from K5 thru 5th Grade.
- Total Area: 64,040 sq. ft.
- 2014-2015 Student Enrollment: 499
- Sugar Creek Elementary is a SAGE school; K-3 class size is limited to 18 students.



New Century & Sugar Creek Site Findings

Site Layout

New Century and Sugar Creek share one site:

- **New Century** is a charter school that serves students in K-5 grades.
 - Limited traffic circulation.
 - Pick up & drop off on congested residual street, pedestrian crossing across busy street
 - One playground
- **Sugar Creek** is a SAGE school that serves students in grades K-5
 - Limited traffic circulation.
 - Pick up & drop off not secure-students cross between buses in parking lot.
 - One baseball field & two playgrounds



New Century & Sugar Creek Site Findings

Size

- **New Century & Sugar Creek Site is 12.2 Total Acres**
 - 11.2 acres recommended for New Century's student population
 - 15 acres recommended for Sugar Creek's student population
 - Total acreage for combined schools is insufficient. Recommended total acreage for two schools 26 total acres.



New Century Findings

Exterior Systems Lifespan Comparison

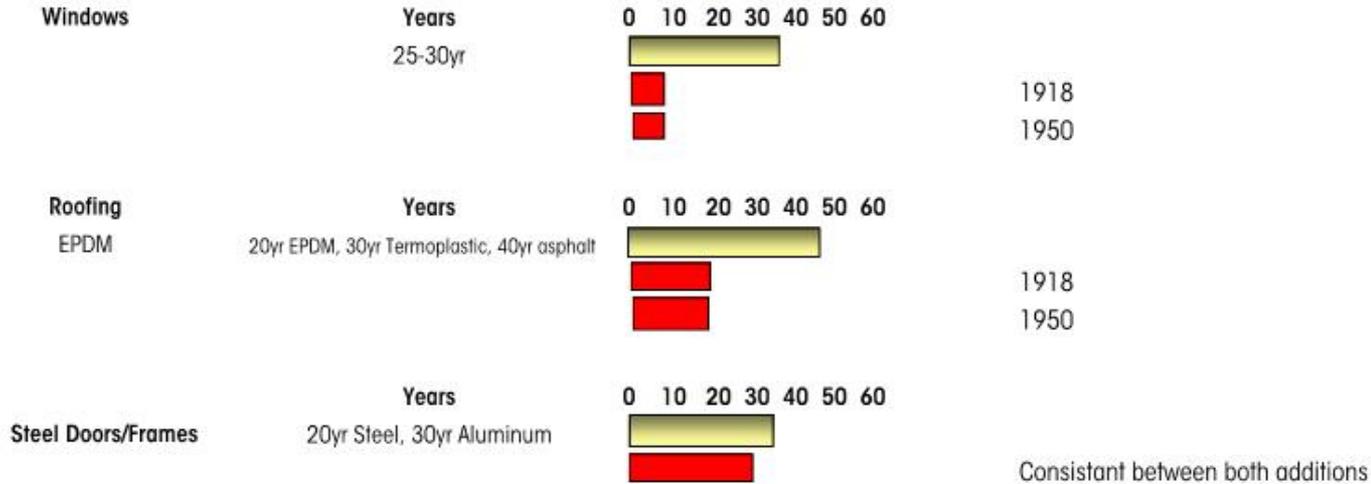
Anticipated Lifespan of Building Components

*Data from Institutional Facilities Manager resources, ASHRE research, and School District Facility Manager client information.

New Century

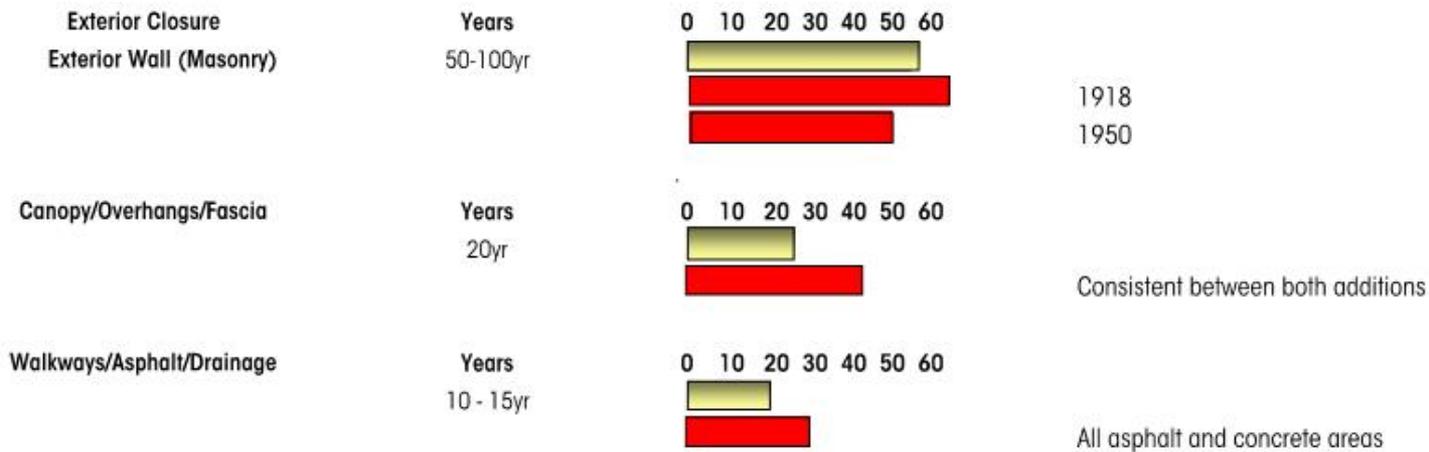
EXTERIOR
Component or System

Typical Use Lifespan



New Century Findings

Exterior Systems Lifespan Comparison (Continued)

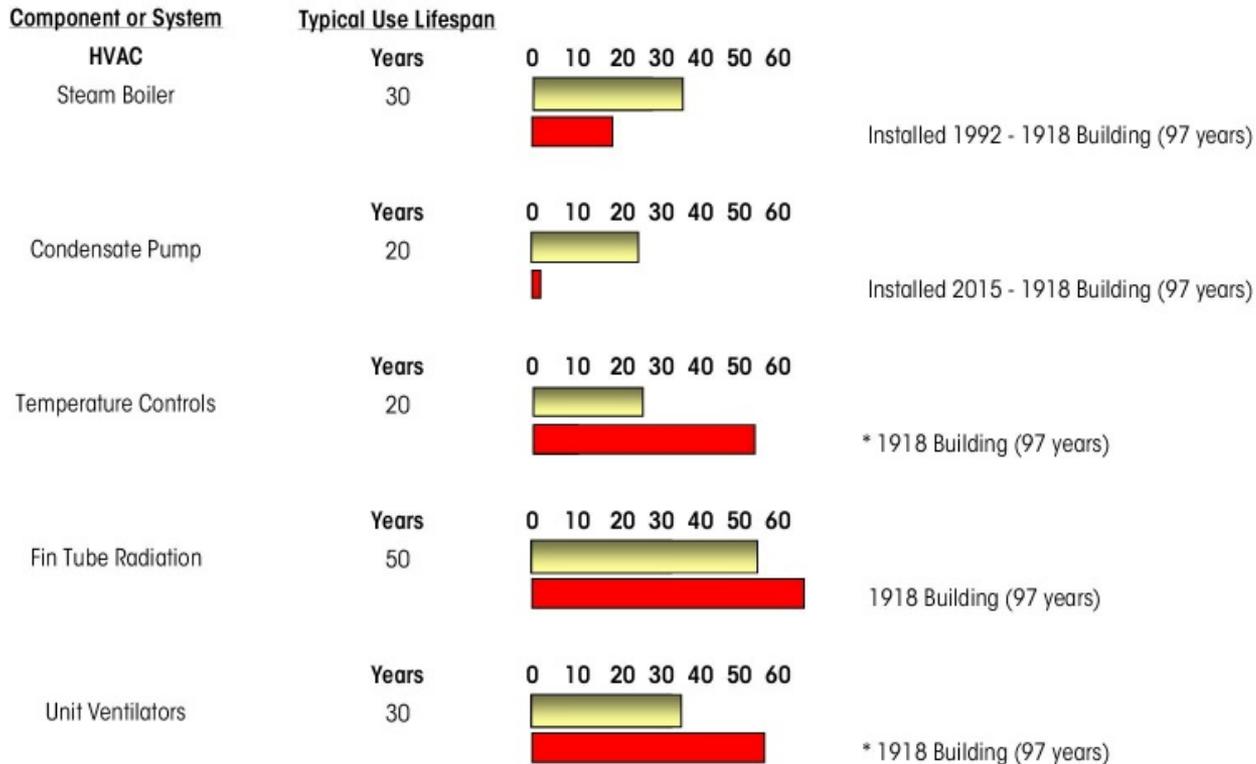


New Century Findings

HVAC Systems Lifespan Comparison

Anticipated Lifespan of Building Components

**Data from Institutional Facilities Manager resources, ASHRE research, and School District Facility Manager client information.*



* Assumed installation in 1950 renovation

New Century Findings

Plumbing Systems Lifespan Comparison

Anticipated Lifespan of Building Components

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* Assumed installation in 1950 renovation

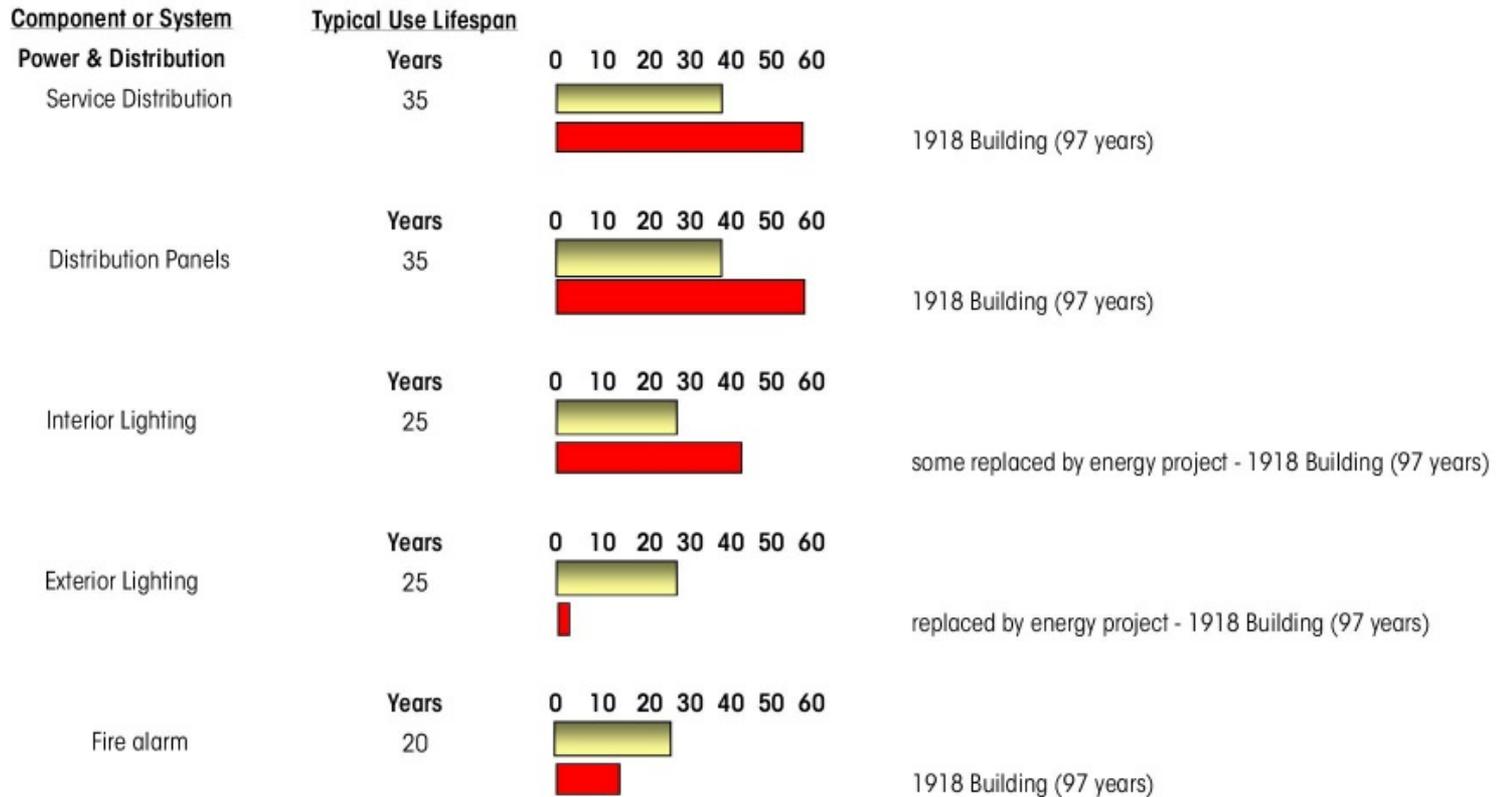
** New sanitary installation with 1950 addition

New Century Findings

Electrical Systems Lifespan Comparison

Anticipated Lifespan of Building Components

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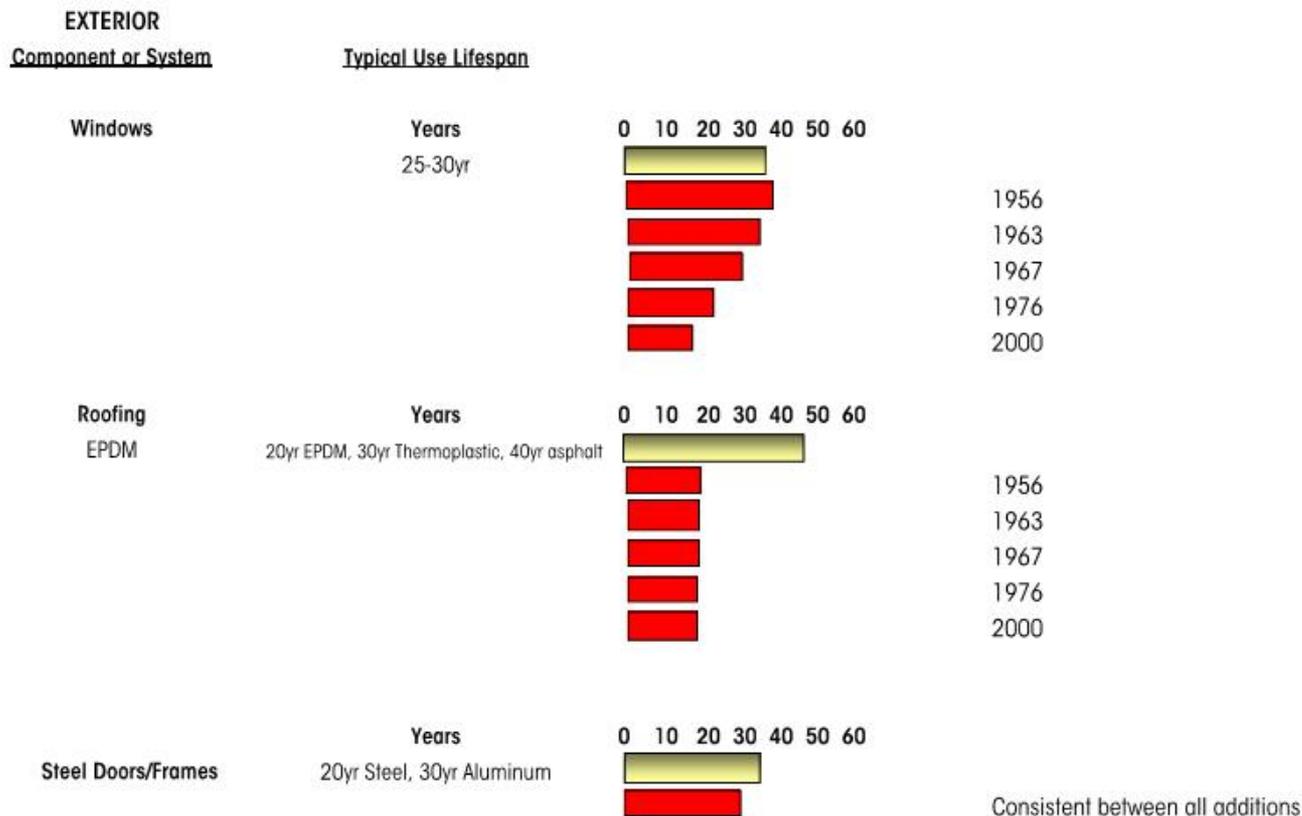
Sugar Creek Findings

Exterior Systems Lifespan Comparison

Anticipated Lifespan of Building Components

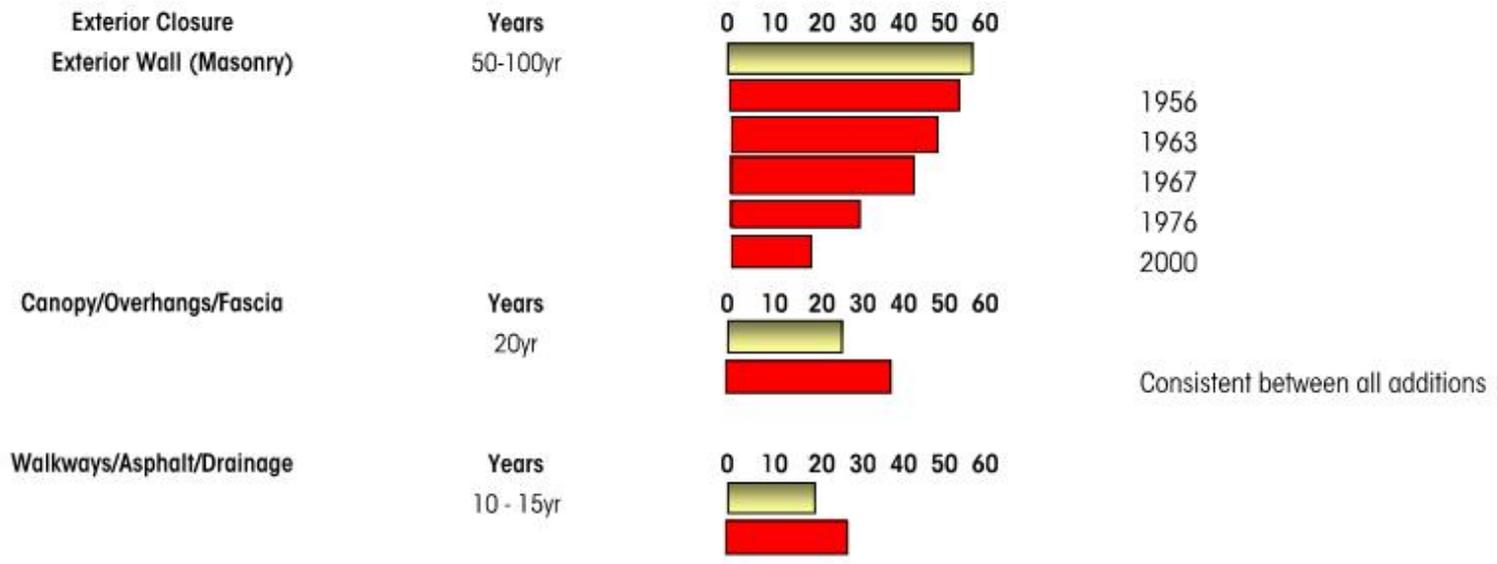
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Sugar Creek Elementary



Sugar Creek Findings

Exterior Systems Lifespan Comparison (Continued)

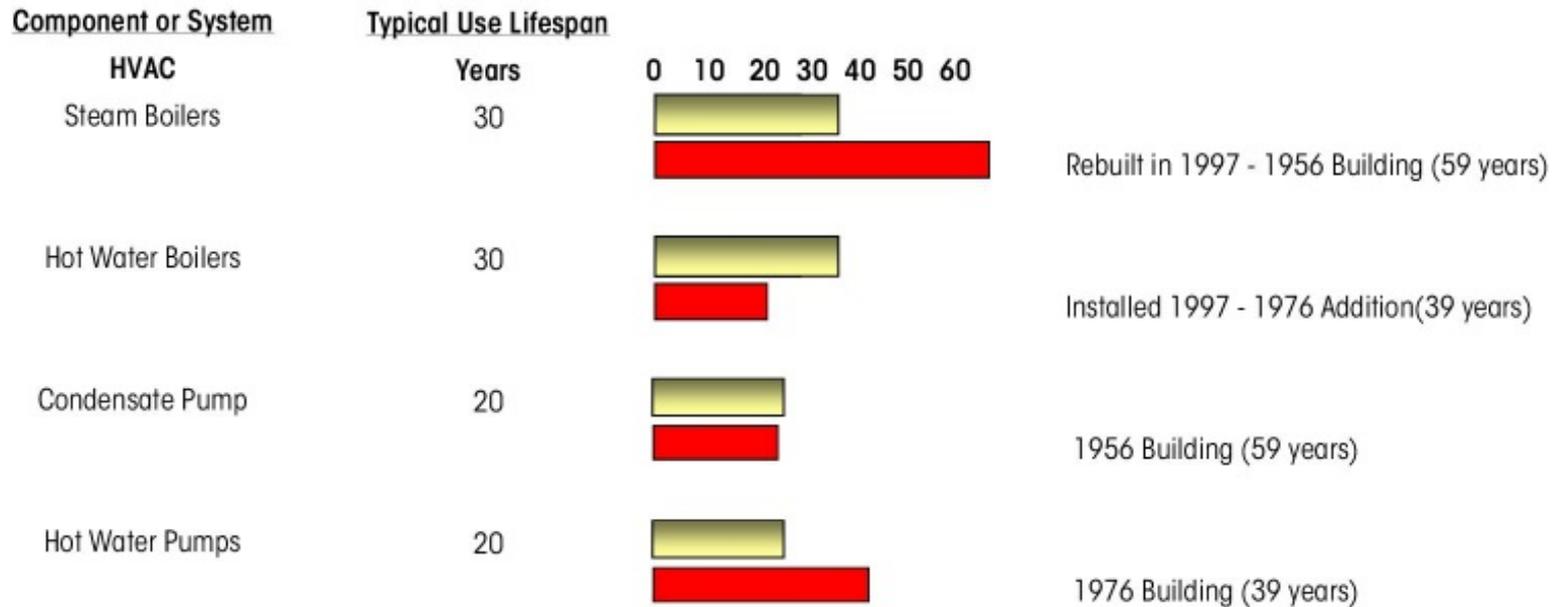


Sugar Creek Findings

HVAC Systems Lifespan Comparison

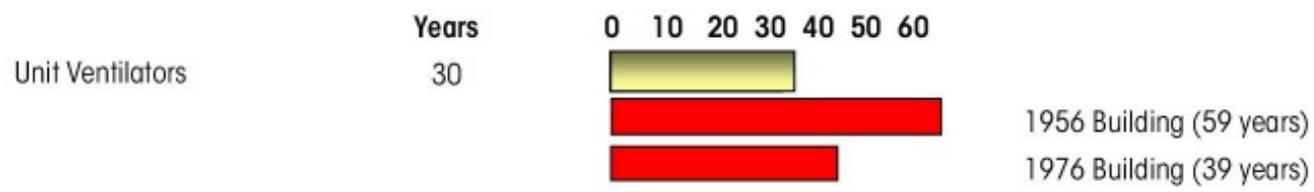
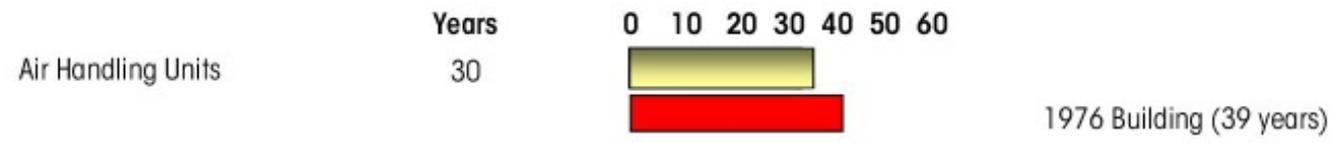
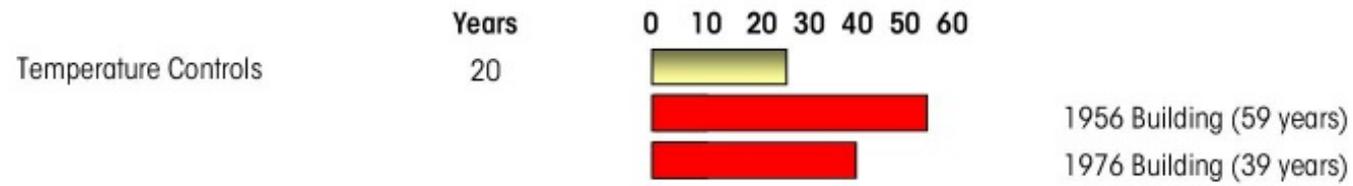
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Sugar Creek Findings

HVAC Systems Lifespan Comparison (Continued)

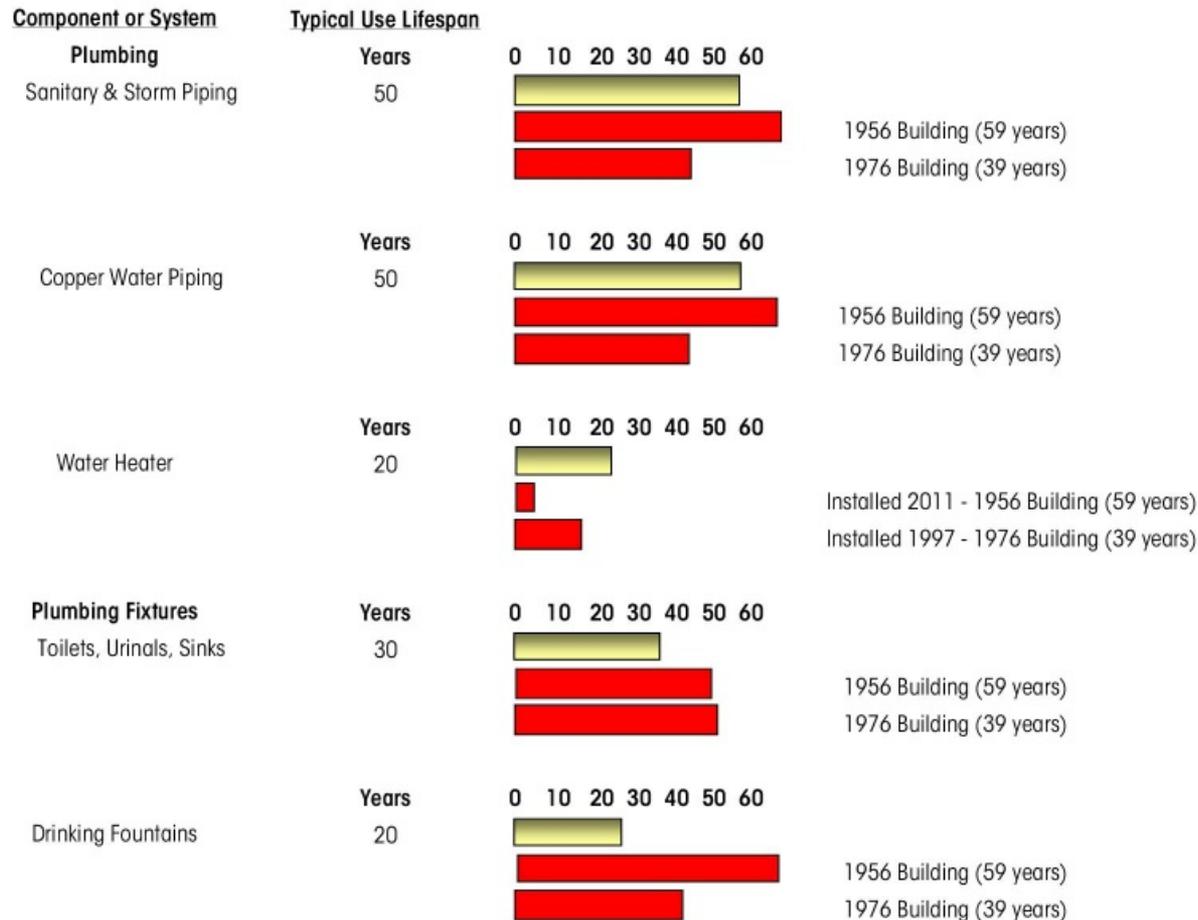


Sugar Creek Findings

Plumbing Systems Lifespan Comparison

Anticipated Lifespan of Building Components

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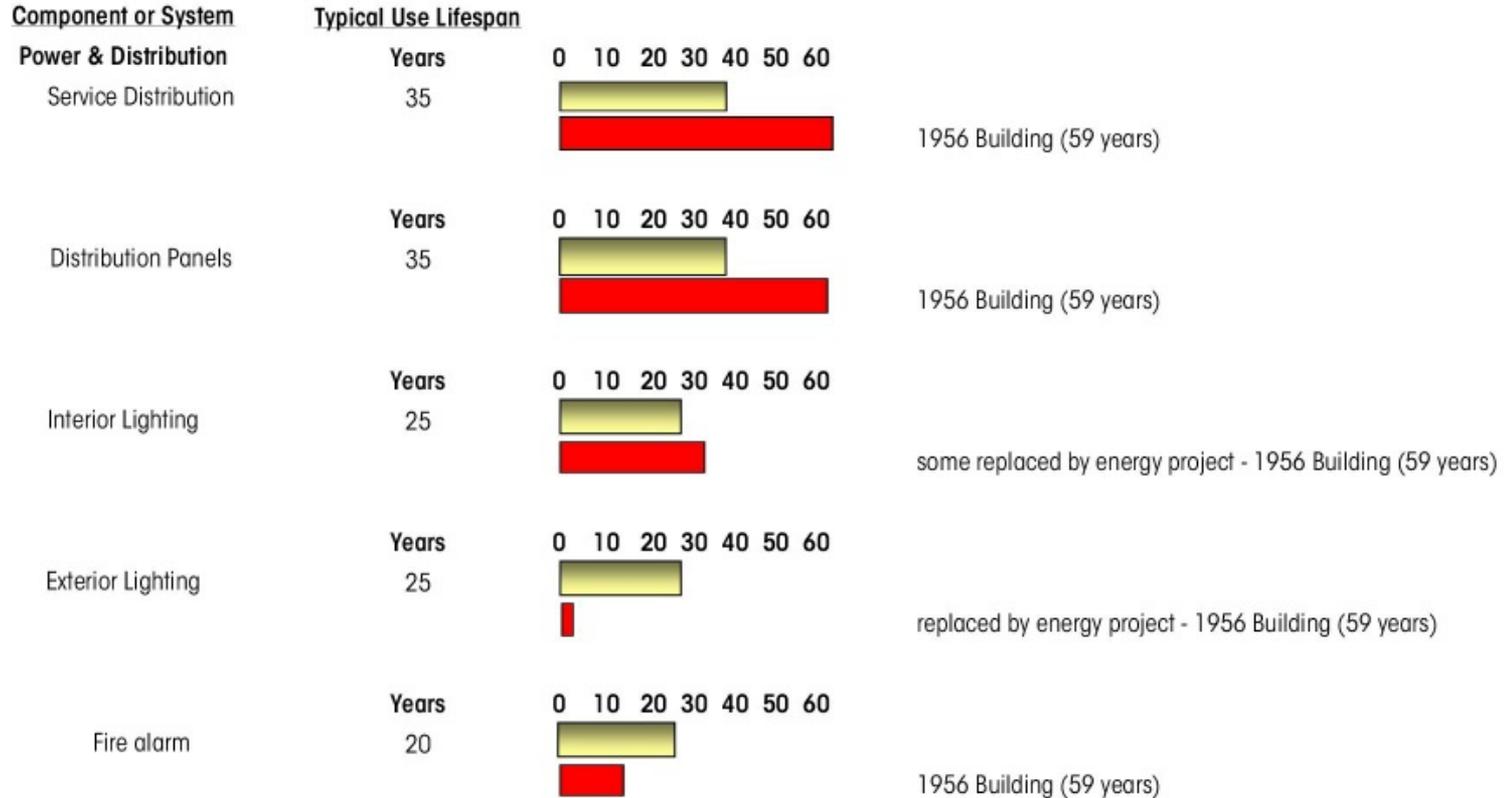


Sugar Creek Findings

Electrical Systems Lifespan Comparison

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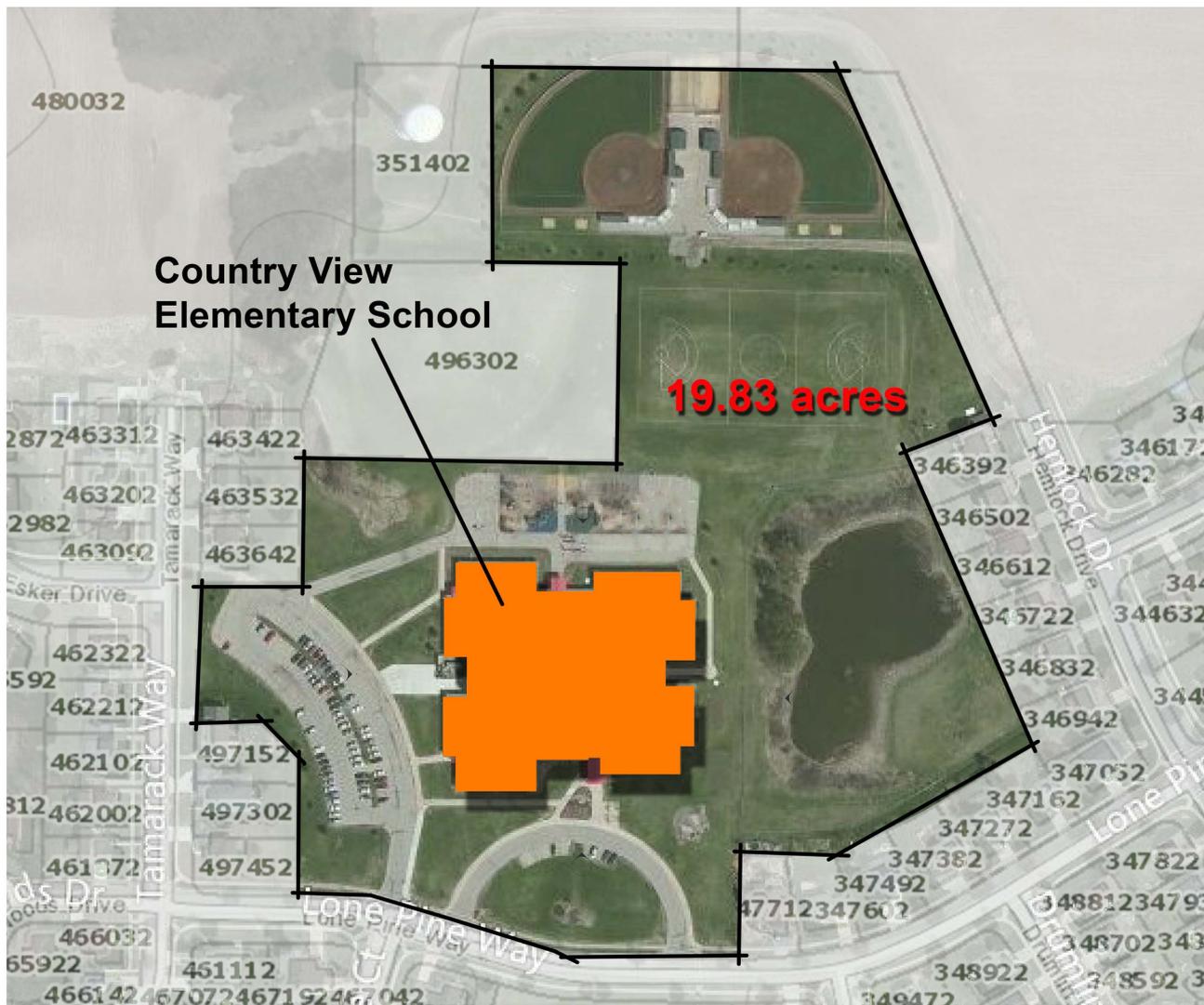


Sugar Creek Findings

Overall Assessment:

- Built in 1956, the facility is aging.
- Large footprint prohibits new additions due to travel distance.
- Facility has been well maintained but requires upgrades.
- Secure entry sequence not ideal; multiple morning entry points requires inefficient use of staff.
- Some exterior materials and windows need to be replaced.
- Roof is in fair condition and maintained according to VASD inspection.
- Piping in tunnel continues to provide challenges for maintenance staff.
- Some mechanical, plumbing, electrical systems need to be replaced.
- Return on investment of upgrading mechanical systems needs to be balanced against cost of renovation.
- There is no building expansion space available on site.

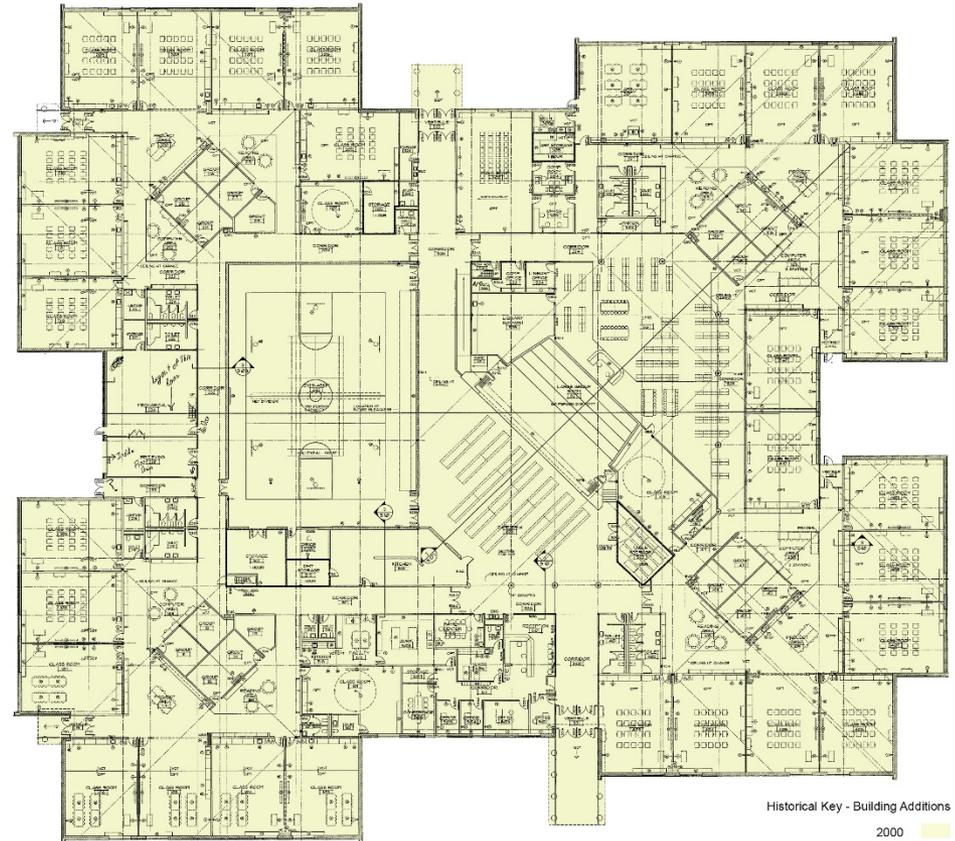
Country View Site Findings



Country View Findings

General

- Country View was built in 2000 with reconstruction of the North sections in 2014 due to tornado damage.
- Country View serves all district students from K5 thru 5th Grade.
- Total Area: 85,265 sq. ft.
- 2014-2015 Student Enrollment: 471
- Country View Elementary is a SAGE school; K-3 class size is limited to 18 students.



Country View Site Findings

Site Layout

Country View serves students in grades K-5.

- Playground
- Two Baseball fields at Northern most area of the property.
- Soccer field



No expansion space available on site.

Country View Site Findings

Site Size

- **Country View Site is 19.83 Total Acres**
 - 15 acres recommended for Country View's student population
 - This site is larger than the suggested acreage for a grade school, however the site holds baseball fields that are mainly used by the high school and a storm water retention pond.



Country View Site Findings

Site Observations

- Land is generally flat and usable
 - No obvious wetlands or unbuildable areas
- Grade School playgrounds are separated from parking lot traffic
- Issue with bus circulation and drop off when buses stack into the street.
- Parent drop off is adequate.



Country View Findings

Exterior Systems Lifespan Comparison

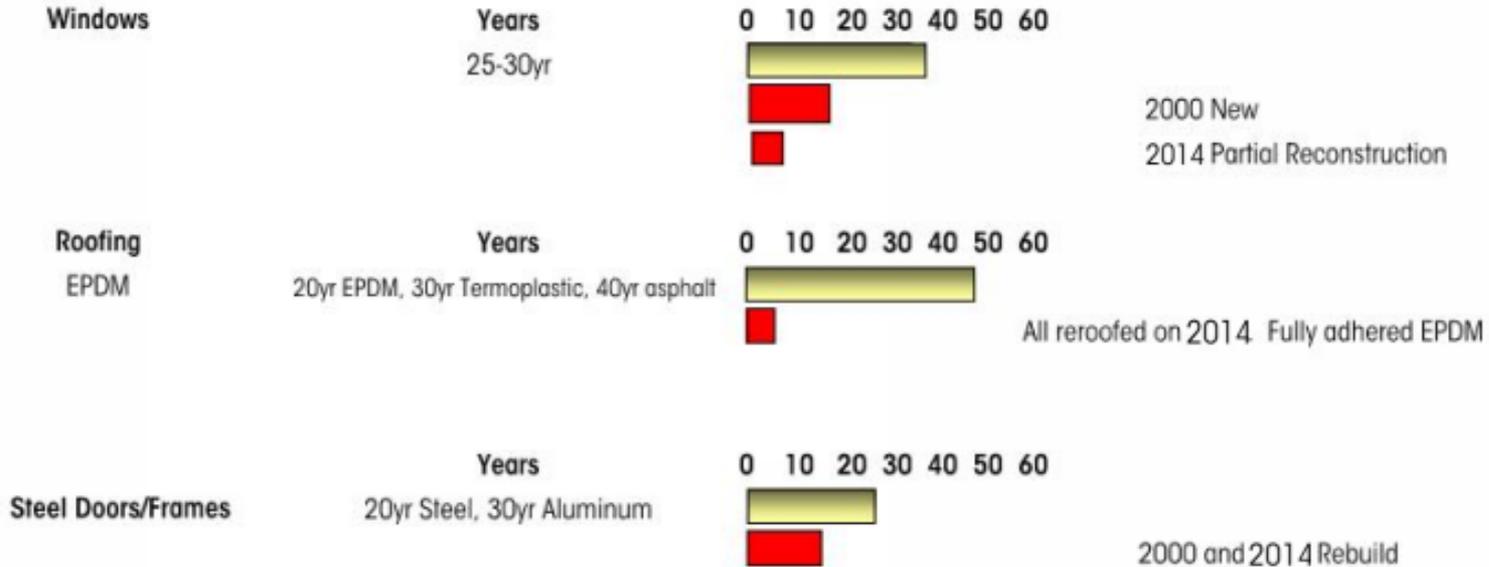
Anticipated Lifespan of Building Components

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Country View Elementary

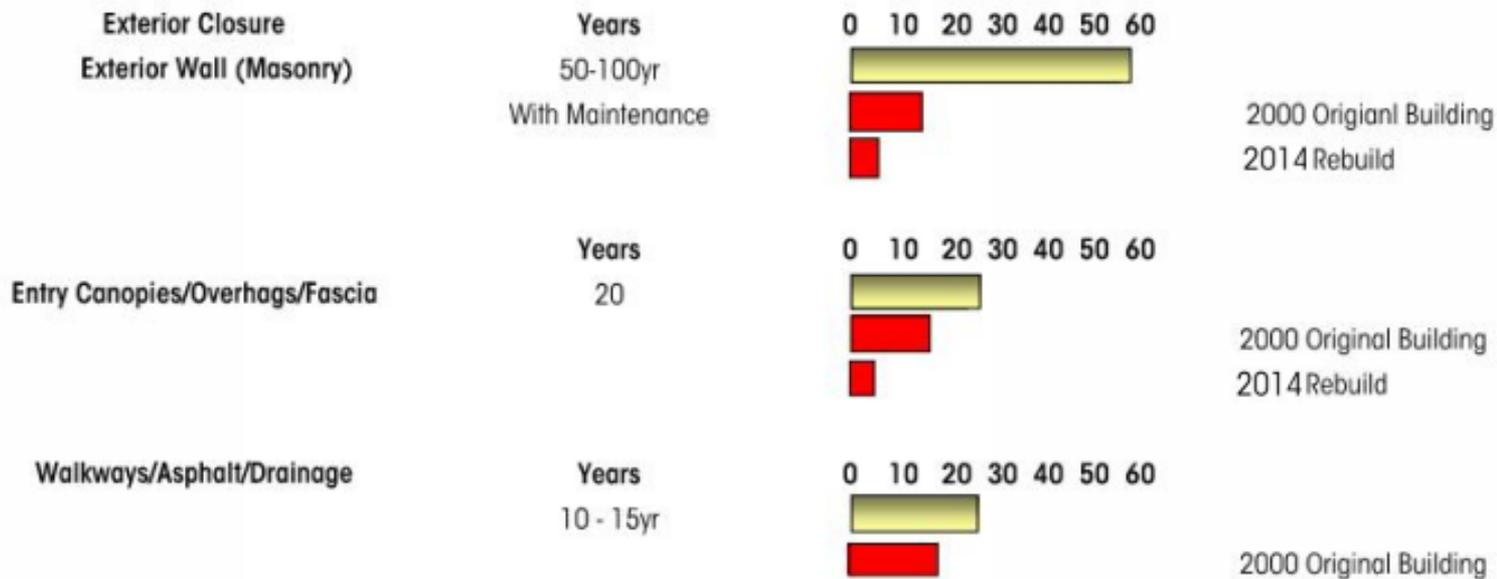
EXTERIOR
Component or System

Typical Use Lifespan



Country View Findings

Exterior Systems Lifespan Comparison (Continued)

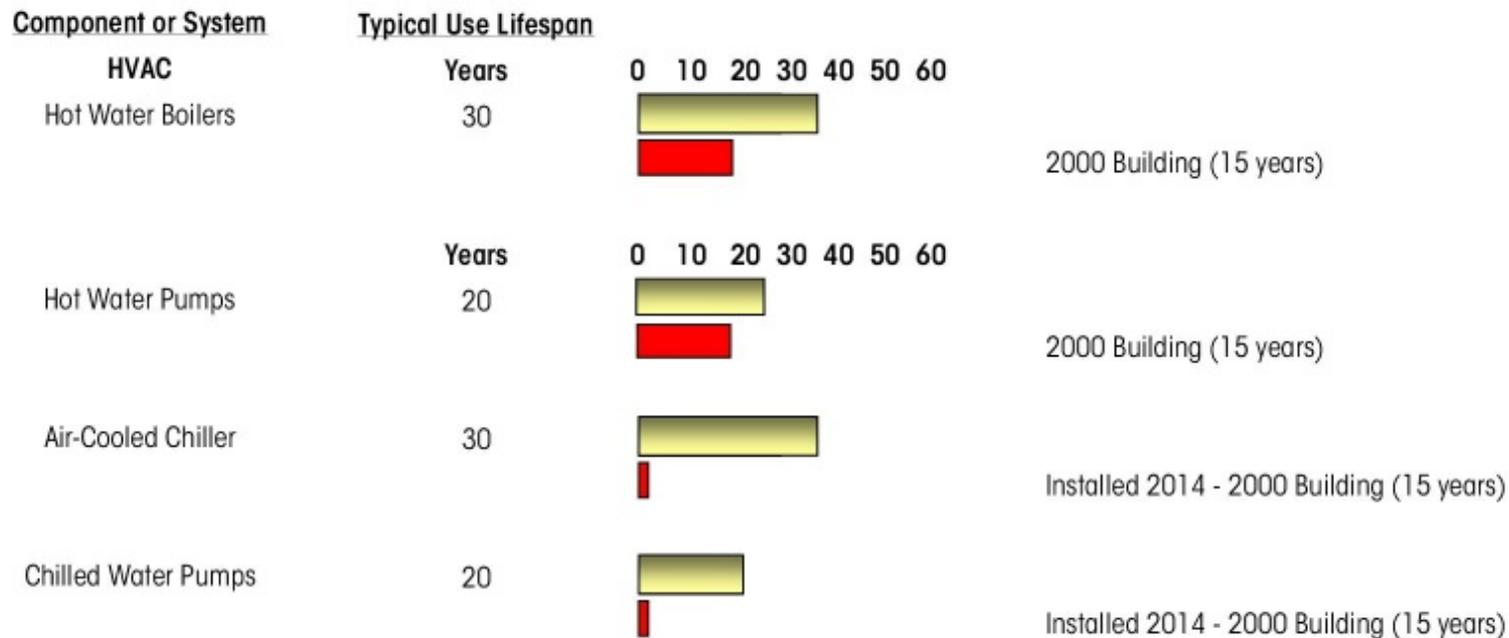


Country View Findings

HVAC Systems Lifespan Comparison

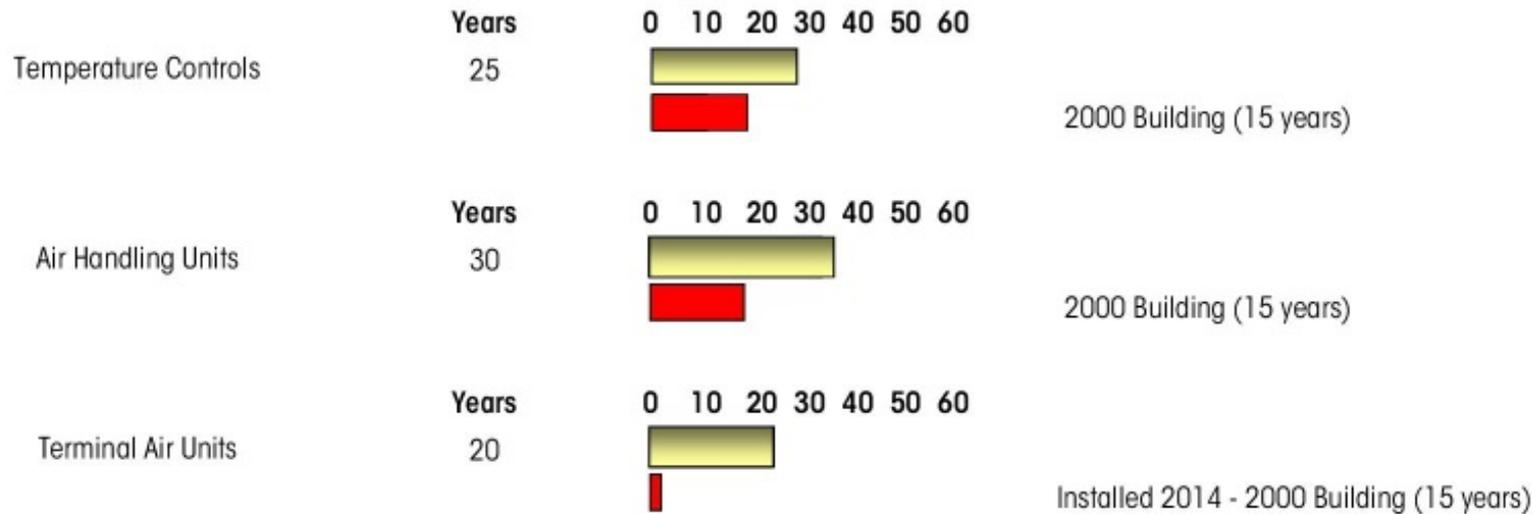
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Country View Findings

HVAC Systems Lifespan Comparison (Continued)

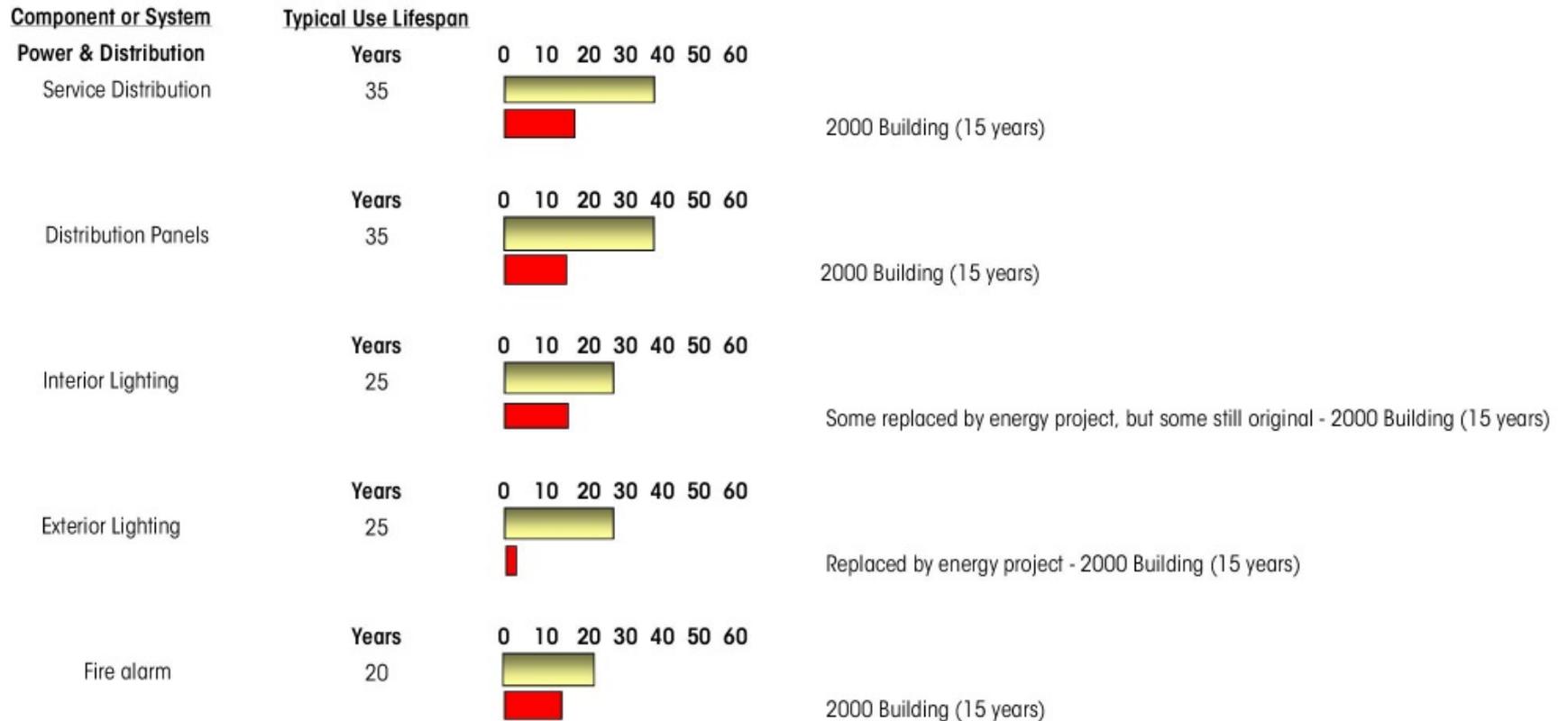


Country View Findings

Electrical Systems Lifespan Comparison

Anticipated Lifespan of Building Components

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Country View Findings

Overall Assessment:

- Built in 2000 with selective renovation in 2014 due to tornado damage. The facility is relatively new.
- Addition to the building possible but challenging programmatically.
- The facility has been well maintained and is generally in very good condition.
- Staff have noted only a few functional deficiencies.
- There is no building expansion space available on site.

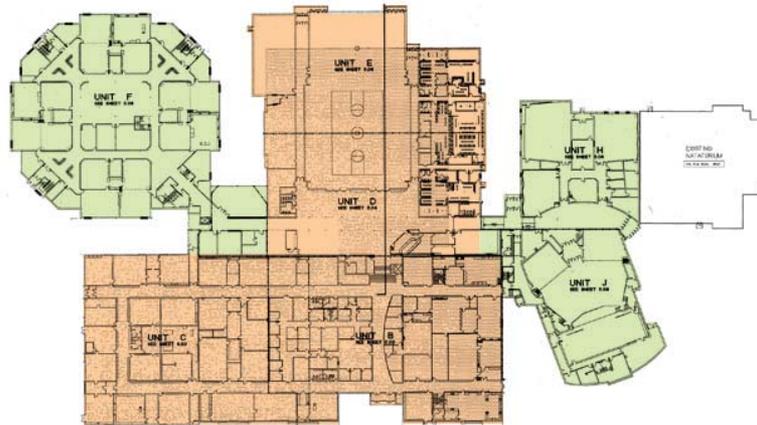
Verona Area High School Findings

General

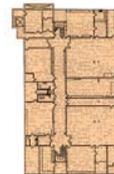
- The High School was built in 1960 with additions in 1970 and 1992.
- The High School serves all district students from 9th thru 12th Grade.
- The Total Area of the Facility is 320,436 sq. ft.
- The 2014-2015 Enrollment was 1578 total students.



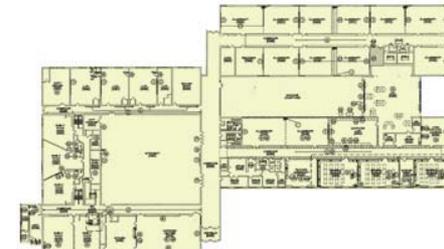
Second Floor



First Floor



Basement



K Wing

Historical Key - Building Additions

1960	
1970	
1992	

Verona Area High School Facility

Architectural Review - Exterior

- Face brick and mortar generally in good condition. There are no expansion joints in older section of the building.
- Clear security sequence at the beginning of the building is adequate.
- Bus drop off is on the Far East side of the site at the K wing. Distance is an issue along with security of the students. Administration does not have continuous line of sight. Monitoring students from K wing drop off to the High School continues to be an issue.



Verona Area High School Findings

Exterior Systems Lifespan Comparison

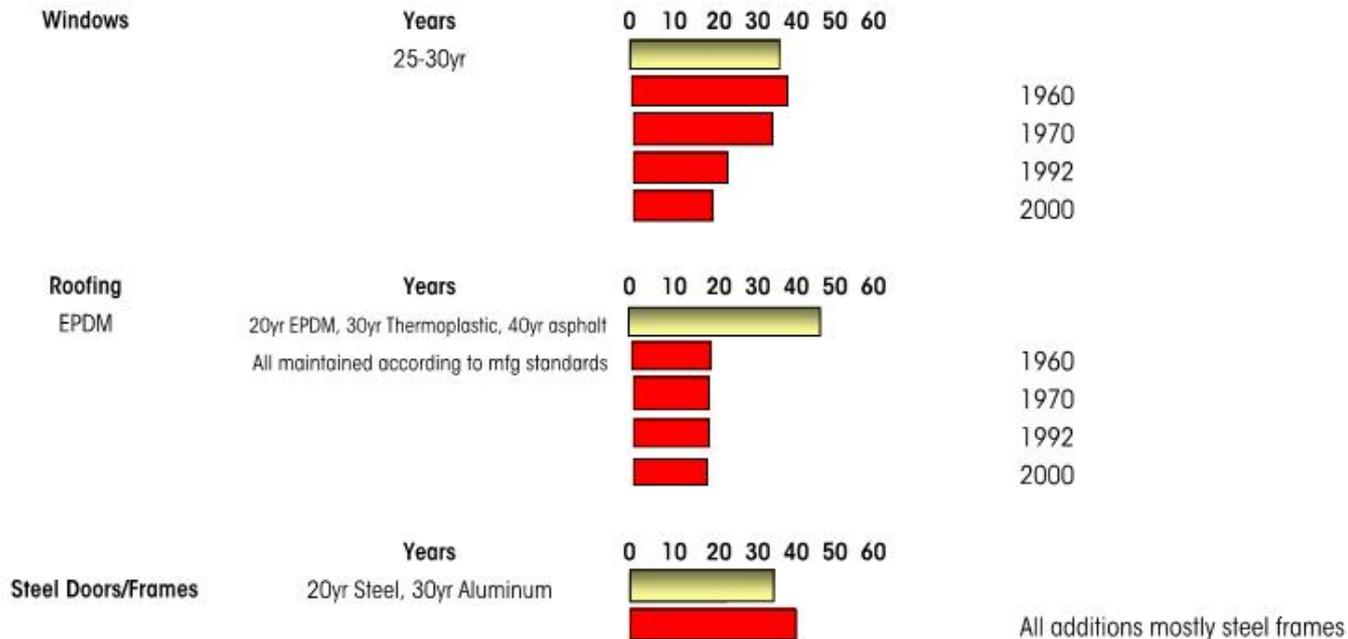
Anticipated Lifespan of Building Components

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High School

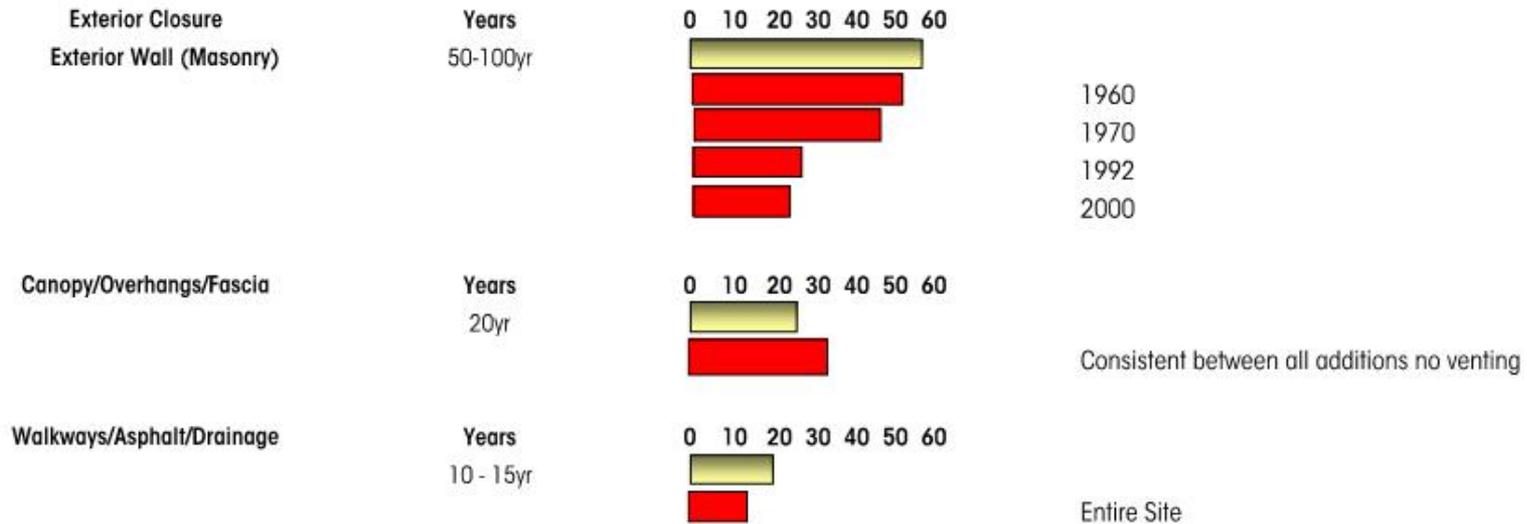
EXTERIOR Component or System

Typical Use Lifespan



Verona Area High School Findings

Exterior Systems Lifespan Comparison (Continued)

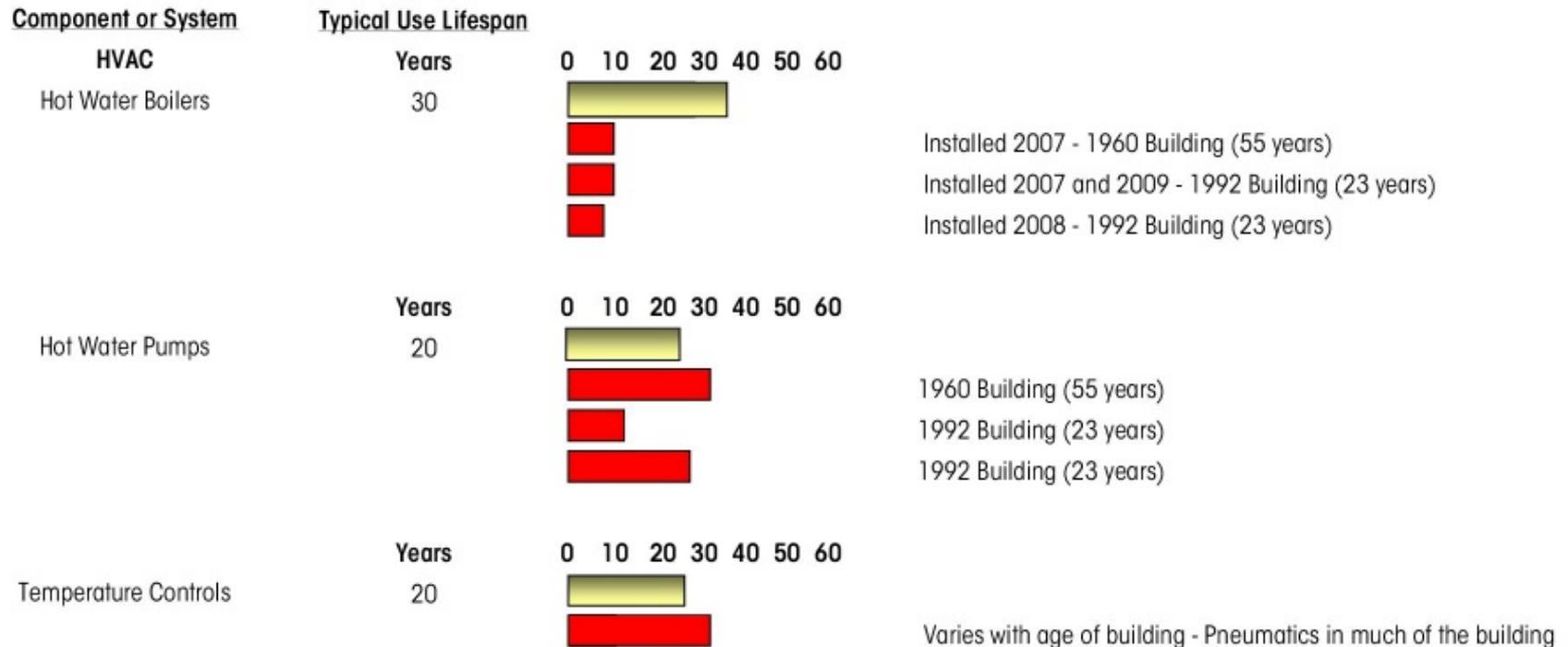


Verona Area High School Findings

HVAC Systems Lifespan Comparison

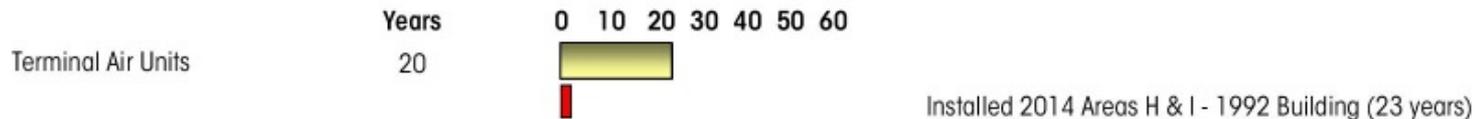
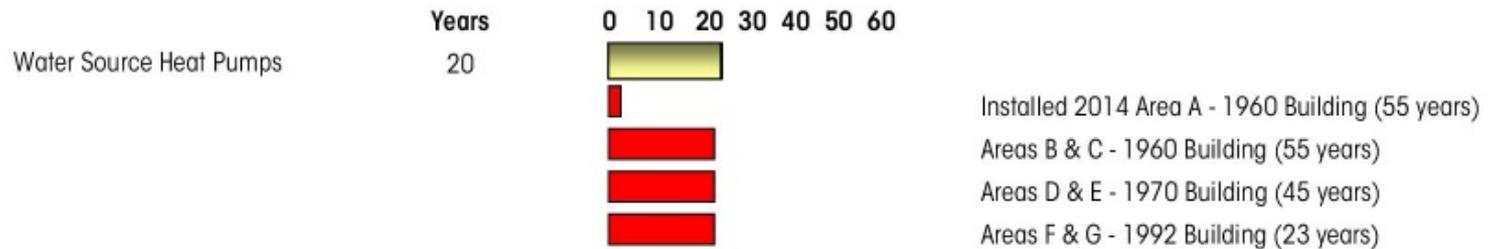
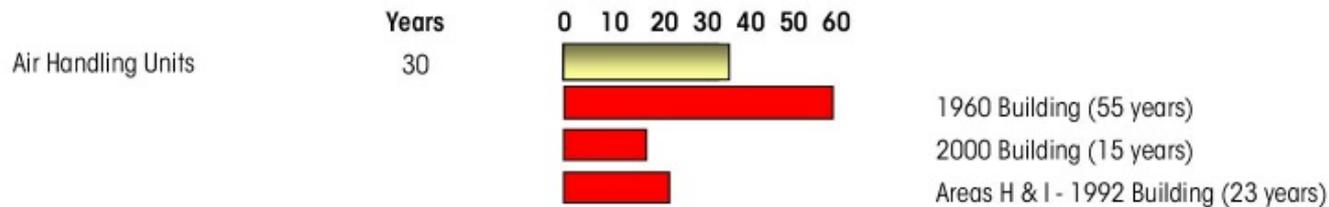
Anticipated Lifespan of Building Components

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Verona Area High School Findings

HVAC Systems Lifespan Comparison (Continued)

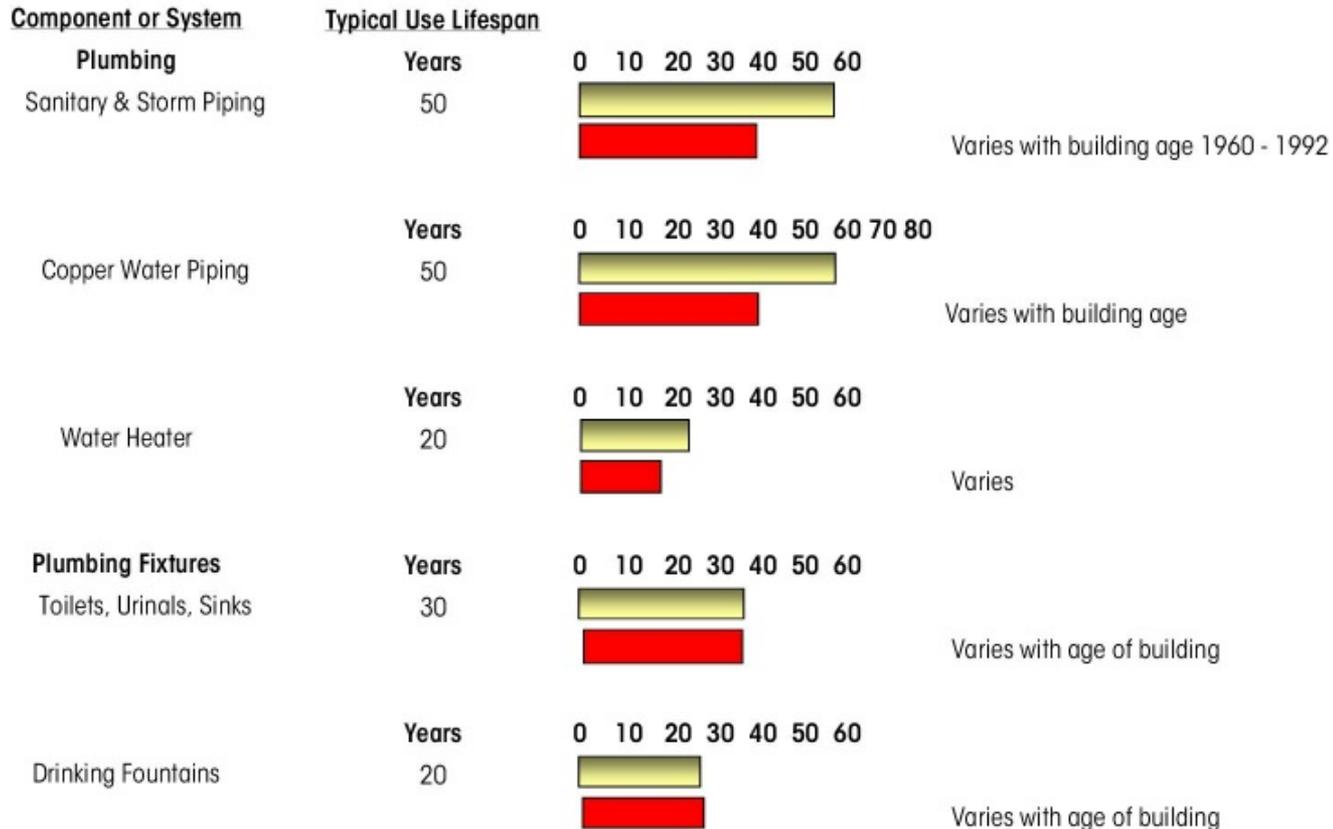


Verona Area High School Findings

Plumbing Systems Lifespan Comparison

Anticipated Lifespan of Building Components

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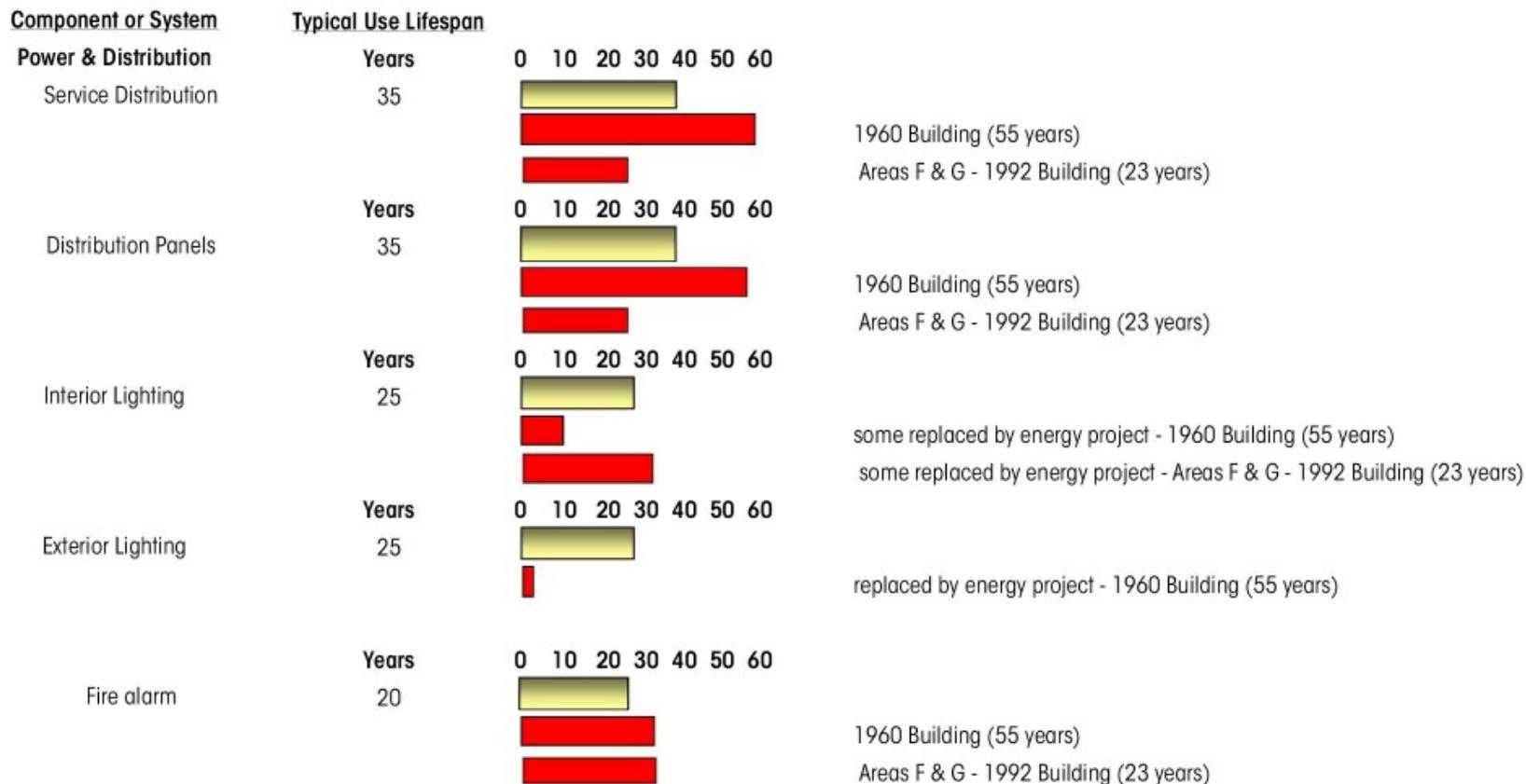


Verona Area High School Findings

Electrical Systems Lifespan Comparison

Anticipated Lifespan of Building Components

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Verona Area High School Findings

Overall Assessment:

- The building has been well-maintained but is aging and in need of some maintenance.
- Bus drop off will be a continuous security and monitoring issue.
- Major mechanical boilers are in good condition.
- Pipes may be in good condition but investigation with camera is recommended.
- Asphalt between K Wing and High School should be considered for replacement
- 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. See Section 3 for more detail.
- There is no building expansion space available on site.

Verona Area High School K Wing Findings

Exterior Systems Lifespan Comparison

Anticipated Lifespan of Building Components

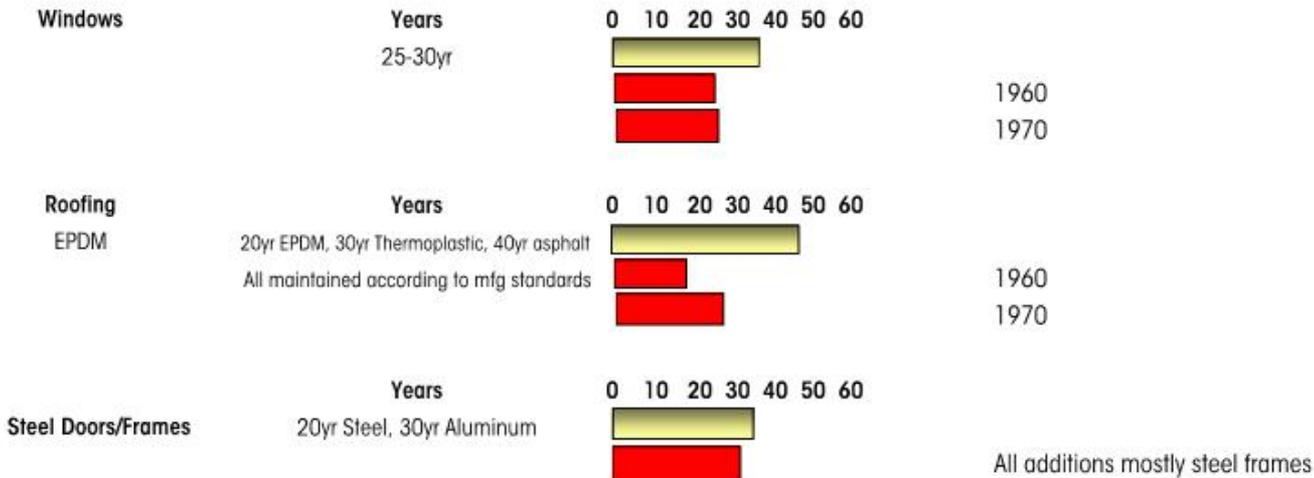
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K Wing

EXTERIOR

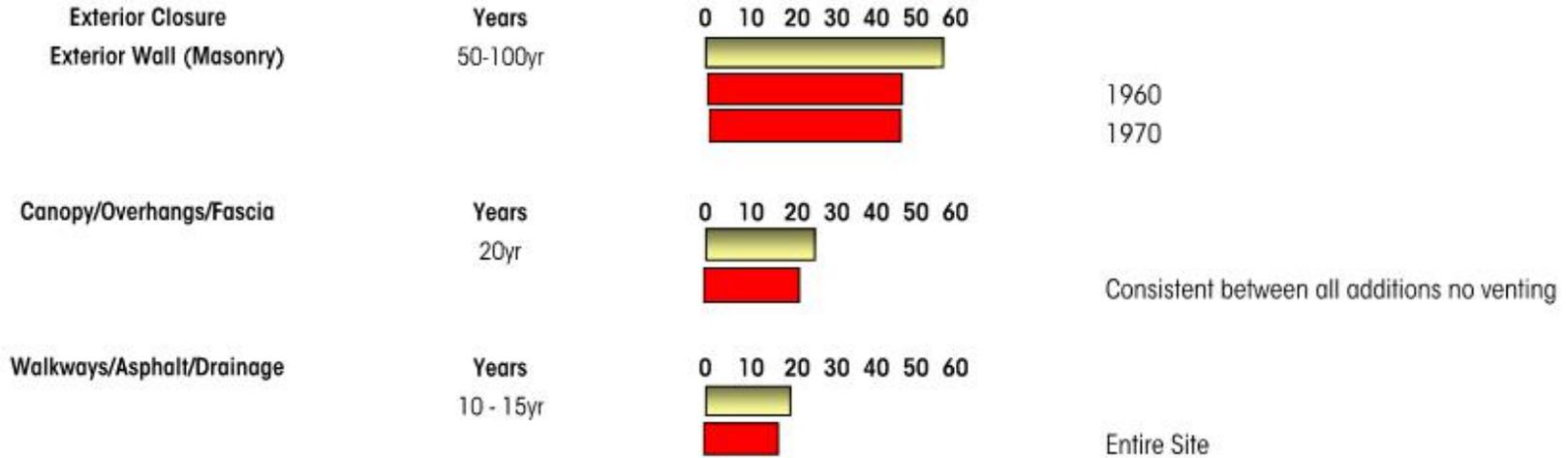
Component or System

Typical Use Lifespan



Verona Area High School K Wing Findings

Exterior Systems Lifespan Comparison (Continued)

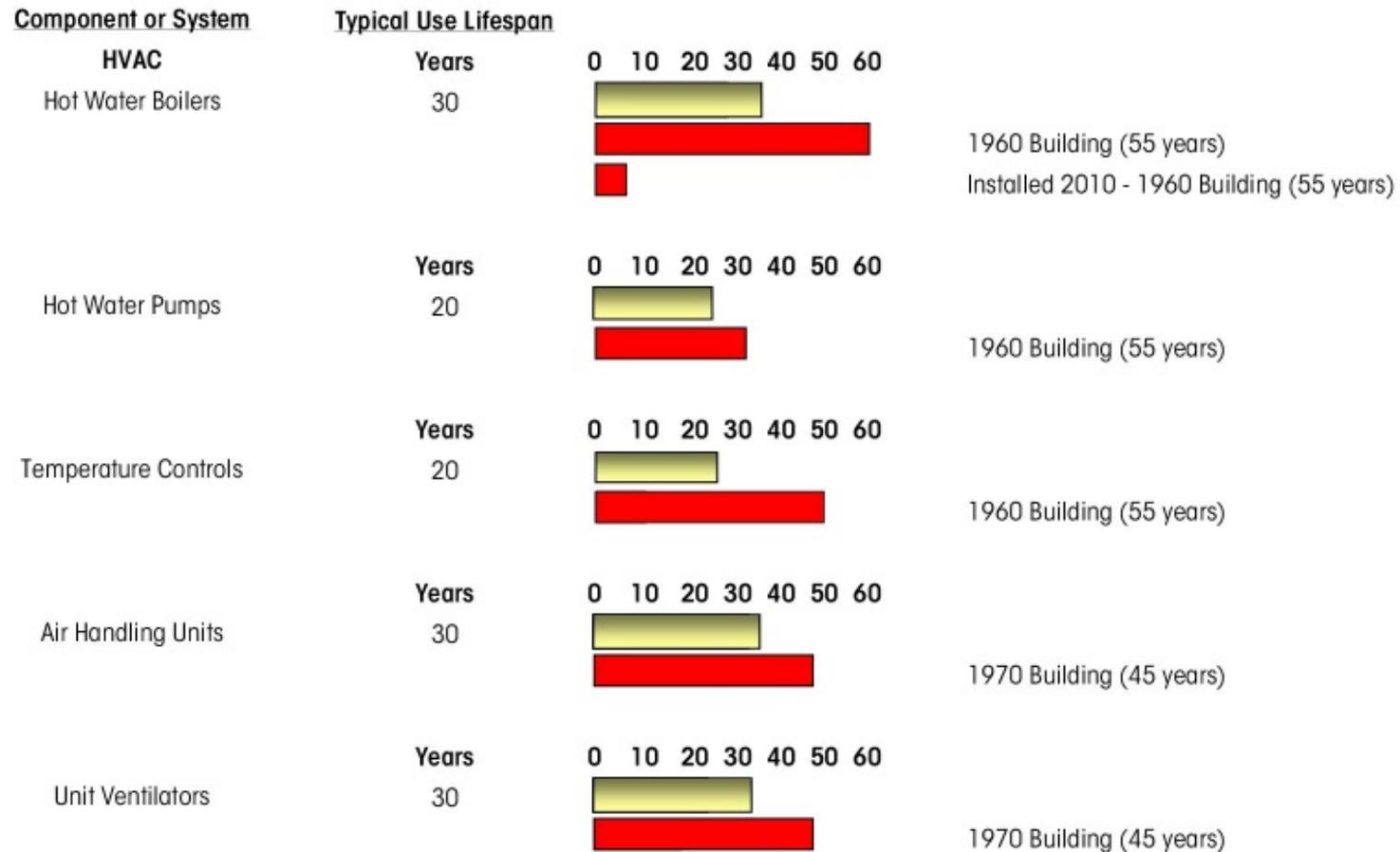


Verona Area High School K Wing Findings

HVAC Systems Lifespan Comparison

Anticipated Lifespan of Building Components

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Verona Area High School K Wing Findings

Plumbing Systems Lifespan Comparison

Anticipated Lifespan of Building Components

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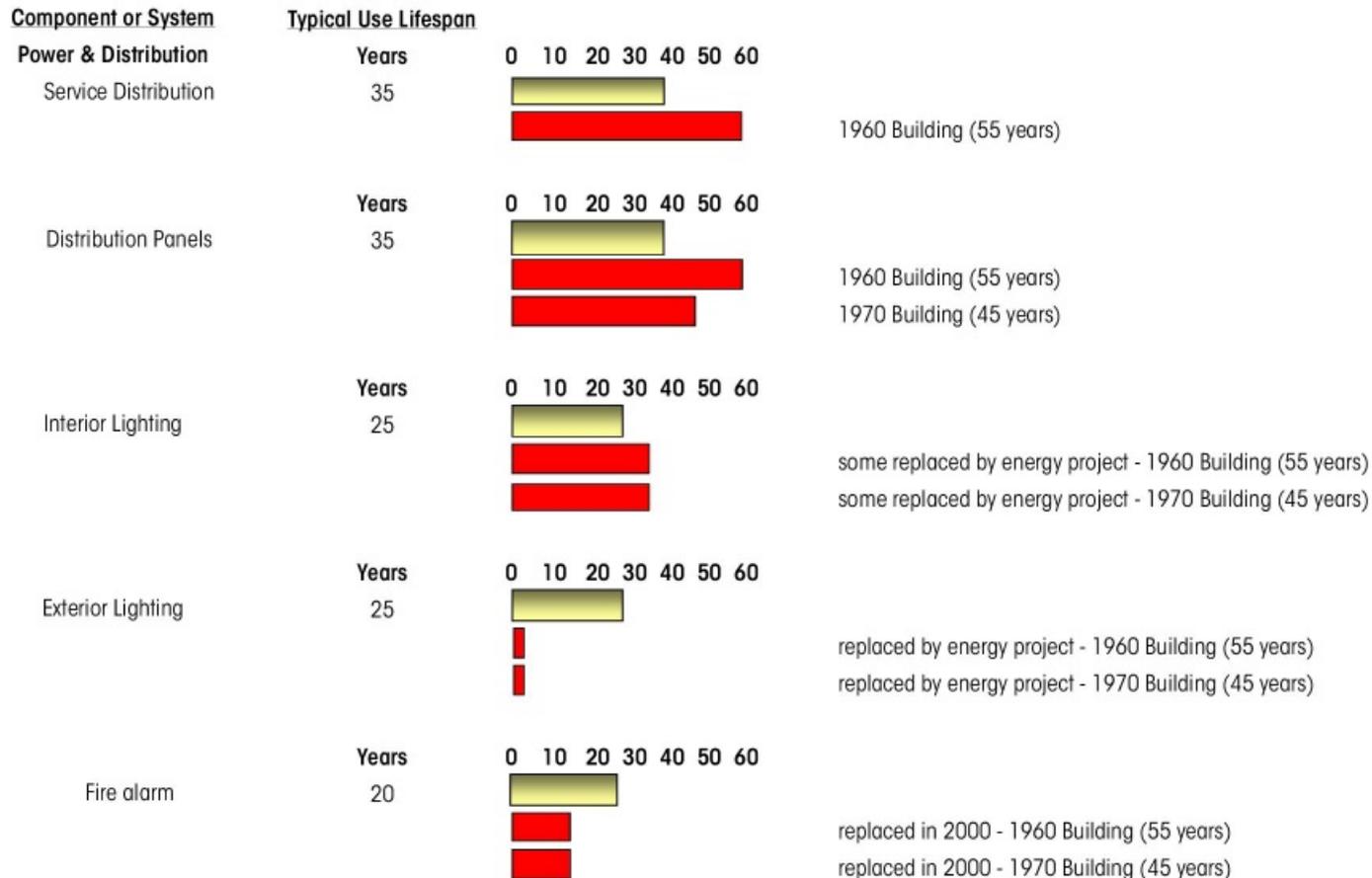


Verona Area High School K Wing Findings

Electrical Systems Lifespan Comparison

Anticipated Lifespan of Building Components

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Verona Area High School K Wing Findings

Overall Assessment:

- The building has been well-maintained but is aging and in need of some maintenance.
- Age and condition of the piping will continue to be a maintenance issue for VASD.
- Should consider window and door replacement.
- In general, stoops need to be repaired to eliminate tripping hazard.
- There is no building expansion space available on site.

Capacity Calculations

Elementary Capacity

- Total Student Capacity was analyzed using several different methods.
 - **SAGE Capacity** is based on student to teacher required ratio
 - **Functional Capacity by Area** calculates the capacity of each academic space based on available area and assumes 90% Utilization
 - **Capacity Based on Building Area** determines the capacity based on recommended square foot per student guidelines for the entire facility.

Capacity Analysis

The current enrollment numbers were provided by the Verona Area School District

School	Current Enrollment (Provided by District)	Capacity Based on SAGE Requirements	Functional Capacity by Area ^{a,b}	Functional Capacity based on Gross Building Square Footage
New Century Elementary	119	NA	104	87
Sugar Creek Elementary	499	504	600	457
Country View Elementary	471	536	668	609
Verona High School	1578	NA	1956	1324

- a. *Based on 55 SF per student for 4K & K, 35 SF per student for grades 1-5, 30 SF per student for grades 6-12 for general classrooms. Science Rooms, Ag Labs, FACE Labs, Band and Art Rooms use 50 SF per student. Tech Ed Lab spaces use 100 SF per student. Auto uses 150 SF per student.*
- b. *Functional Design Capacity is 90% of the maximum capacity in Elementary Schools and 80% of the maximum capacity in Middle Schools and High Schools.*

Capacity Calculations

High School Capacity

- Total Student Capacity was analyzed using two different methods.
 - **Functional Capacity by Area** calculates the capacity of each academic space based on available area and assumes 80% Utilization
 - **Capacity Based on Building Area** determines the capacity based on recommended square foot per student guidelines for the entire facility.

Capacities ranged from 1956 to 1324 – ranging above and below the current 1578 students enrolled.

Utilization

- A further analysis of how often spaces are utilized and how many students are scheduled to be in each space further confirmed that the school is below capacity:
 - **Utilization Factor** based on preliminary 2014-2015 schedule was **75.9%**
 - Target utilization is **80%**
 - On average, class sizes are around **22.1** students per classroom and classrooms are used **5.3** periods out of a **7** period day.

Capacity Analysis

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VAHS - Utilization Study

Room No.	Primary Use of Room (Subject)	S.F. Area	Based on Square Feet per Student of Room Size	Based on Total Square Feet 320,436	Periods							Avrg Class Size	% of use	# periods used (7)
					1	2	3	4	5	6	7			
					8:30-9:20	9:27-10:19	10:26-11:16	11:16-12:43	12:50-1:40	1:47-2:37	2:44-3:37			
A01	TECH ED Classroom	743	25		16	16	17	17	17		16	16.5	85.7	6
A02	TECH ED Woods	1931	19		used in conjunction with A01									
A03	TECH ED Auto	987	10		used in conjunction with A01									
A04	TECH ED Metals	2110	21		used in conjunction with A01									
A07	TECH ED (PLTW Eng)	905	18		16	21	16	17	14		15	16.5	85.7	6
A08	TECH ED (PLTW Bio)	911	18				18	18	21			19.0	42.9	3
B101	ART	1044	21			23		24			24	23.7	42.9	3
B107	FOR LANG	762	25			23	21	20	23	23		22.0	71.5	5
B110	FOR LANG	771	26		19	28	28	27	30	16	23	24.4	100.0	7
B112	FACE	1532	31		13	15	12	24	14	14	24	16.6	100.0	7
B116	ESL	766	26		1	19	30	20						
B120	SCIENCE	760	15		29		25	30		24	21	25.8	71.5	5
B125	ART	994	20				12			25	22	19.7	42.9	3
B128	ART	1302	26		24	16	23		28	1	10	17.0	85.7	6
B131	ART	1527	31		12	16	12	15	18	13	22	15.4	100.0	7
B134	FACE	708	14		29	27	27		29	14		25.2	71.5	5
B135	FACE	877	18		18	14	17			12		15.3	57.2	4
C101	BUSINESS ED	741	19		22	20	16	12	19	16		17.5	85.7	6
C104	FOR LANG	752	25				14	24	25	21		21.0	57.2	4
C106	FOR LANG	826	28		17		21		19	20	24	20.2	71.5	5
C110	FOR LANG	914	30		24		23	24	17	24	30	23.7	85.7	6
C111	FOR LANG	791	26		21		21	24	11		22	19.8	71.5	5
C114	FOR LANG	802	27		18	18	30	21	22			21.8	71.5	5
C117	AG	792	16		used in conjunction with other spaces									
C122	AG/SCIENCE	792	16		19		26			16		20.3	42.9	3
C124	AG	877	18		19	14	11	25	23	22		19.0	85.7	6
C126	SCIENCE	873	17		22	27	26	24	23	1	32	22.1	100.0	7
C130	SCIENCE	1076	22		used in conjunction with other spaces									
C131	SCIENCE	1125	23		used in conjunction with other spaces									
C135	FOR LANG	799	27				16	25	23	18	21	20.6	71.5	5
C136	FOR LANG	960	32		22	24	20	25	19		21	21.8	85.7	6
C137	BUSINESS ED	877	22		17	18	15		18	17	30	19.2	85.7	6
C142	COMPUTER LAB	912	23				24	16				20.0	28.6	2

G151	COMPUTER LAB	587	15			19	14		20		17.7	42.9	3		
GYM	GYM	5960	25		18	29	27	30	28	16	24.7	85.7	6		
GYM-1	GYM	11352	50		27	19	17	28	28	22	34	25.0	100.0	7	
H103	MUSIC	1445	41				28	13	32		27	25.0	57.2	4	
H106	MUSIC	2729	55				50		33		32	38.3	42.9	3	
H112	MUSIC	1966	39		11		28	15	30			21.0	57.2	4	
K130	GAP	818	27		12	10	15	9				11.5	57.2	4	
K131	SCIENCE	1024	20		27	15		28	23	29	30	25.3	85.7	6	
K134	MATH	1414	47		12	27		10	19	17	27	18.7	85.7	6	
K135	SCIENCE	1186	24		27	29		17	13	30		23.2	71.5	5	
K139	SCIENCE	1145	23		23	26		27	27	26		25.8	71.5	5	
K140	MATH	1254	42		13	24		8	17	20	27	18.2	85.7	6	
K142	SCIENCE	1280	26		30	16		27	27	27	18	24.2	85.7	6	
K143	MATH	904	30		14	29		27		15	27	22.4	71.5	5	
K145	Day Care	1071			not included in this analysis										
K146	Day Care	926			not included in this analysis										
K147	Day Care	1100			not included in this analysis										
K157	SPECIAL EDUCATION	1072	21				1								
K158	SPECIAL EDUCATION	1067	21							11					
K165	SOCIAL STUDIES	1215	41		28	27		26	30	28	29	28.0	85.7	6	
K167	ENGLISH	996	33		28	28		30	26	31	24	27.8	85.7	6	
K168	MATH	1021	34		20	26		25				23.7	42.9	3	
K169	ENGLISH	1014	34		23	22		20	19	22	24	21.7	85.7	6	
K170	ENGLISH	1026	34		28	25				27	28	27.0	57.2	4	
K171	SOCIAL STUDIES	996	33		22	23		31	23	24	22	24.2	85.7	6	
K172	SOCIAL STUDIES	1027	34		25	28		19	26	28	27	25.5	85.7	6	
K173	SOCIAL STUDIES	1000	33		29	29						29.0	28.6	2	
K175	MATH	1271	42		29	29	29		11	30		25.6	71.5	5	
K176	ENGLISH	1032	34		29	19	25	27	23	20	25	24.0	100.0	7	
K162	K Wing Gym	9303	25		18		30		30	30	31	27.8	71.5	5	
NAT	Pool				13	20	13		12		20				
Release	Off site				61	21	13	21	9	29	238				
K149	EXPLORATION ACADEMY	1041	35		19	15	12	16	17	14	14	15.3	100.0	7	
K151	EXPLORATION ACADEMY	1041	35		19	15	12	16	17	14	14	15.3	100.0	7	
K153	EXPLORATION ACADEMY	1050	35		19	15	12	16	17	14	14	15.3	100.0	7	
K156	EXPLORATION ACADEMY	1055	35		19	15	12	16	17	14	14	15.3	100.0	7	
AVERAGE												22.1	75.9	5.3	
	Max Capacity		2445	1324											
	Functional Capacity @ 80%		1956												
	2014-15 Enroll.	1578													
	Actual Hourly Total				1539	1602	1588	1560	1624	1567	1577				



Next Steps for VASD Feedback:

- VASD School Board to review 2015 Facilities Assessment Report for Sugar Creek, New Century and Country View Elementary Schools and Verona Area High School
- School Board establishes priorities for addressing identified needs
- Preliminary concepts and options developed
- Preliminary cost estimates developed
- Community-wide engagement plan and survey development to test priorities, options and financial support
- Refine concepts and options based on community feedback
- School Board determines next steps and timeline



Verona Area School District Mission Statement....

*“The **Verona Area School District**, a community of learners, values and supports educational excellence. To foster the joy of learning and to prepare students for future challenges, we set rigorous academic and creative expectations for each student. Students, in turn, must show they meet these expectations.”*