

RIFFENBURGH SCHOOL



POUDRE SCHOOL  
DISTRICT

RIFFENBURGH  
ELEMENTARY  
SCHOOL



## FACILITY CONDITION ASSESSMENT

FORT COLLINS, CO

OCTOBER 2023



Together, Building a Thriving Planet



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# Contacts

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## Key Contact Information

### McKinstry Contacts

Devin Boyce  
Program Manager, Facility Condition Assessments  
720.408.4573  
[devinb@mckinstry.com](mailto:devinb@mckinstry.com)

Roger Noonan  
Senior Facility Assessment Consultant  
970.531.1527  
[rogern@mckinstry.com](mailto:rogern@mckinstry.com)

Josh Phillips  
Facility Assessment Consultant  
719.480.1372  
[joshph@mckinstry.com](mailto:joshph@mckinstry.com)

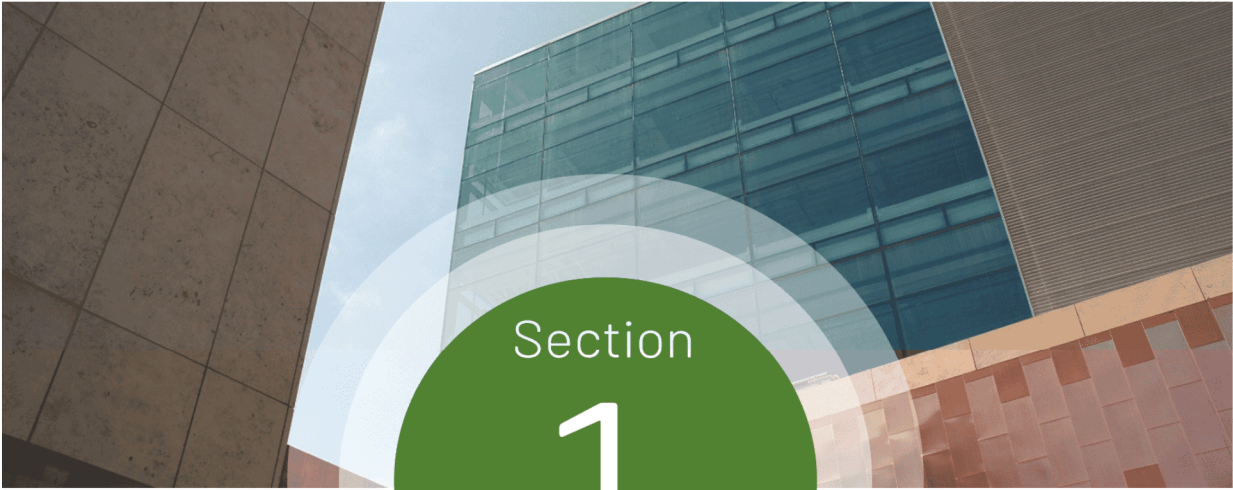
Tracey Cousins  
Strategic Account Manager  
720.445.7608  
[traceyc@mckinstry.com](mailto:traceyc@mckinstry.com)

Jaime Villarino-Eilenberger  
Project Manager - Technical Services  
949.933.7996  
[jaimbev@mckinstry.com](mailto:jaimbev@mckinstry.com)

### Poudre School District Contacts

Trudy Trimbath  
Energy and Sustainability Manager  
970.490.3502  
[ttrimbath@psdschools.org](mailto:ttrimbath@psdschools.org)

Jessie Ericson  
Administrative Assistant - Operations  
970.490.3080  
[jericson@psdschools.org](mailto:jericson@psdschools.org)



Section

1

# Executive Summary

# Executive Summary

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## Project Goals

The contents of this report present the results of the Facility Condition Assessment (FCA) performed at Riffenburgh, IB World School ES within the Poudre School District (PSD) on July 10, 2023. PSD intends to utilize the findings of this report to inform both capital and operating budgets, prioritize maintenance efforts, and optimize planning processes as replacements and upgrades of assets and facility systems become necessary in the future.

## Facility List

The scope of the FCA project included the assessment of the following campus.

FACILITY NAME	AREA (SF)	YEAR(S) BUILT
RIFFENBURGH, IB WORLD SCHOOL ES	48,433	1968
<b>TOTAL</b>	<b>48,433</b>	

## Facility Summary

### Riffenburgh, IB World School ES

Riffenburgh, IB World School ES is located at 1320 E. Stuart St., Fort Collins, CO 80525. This 48,433 SF facility consists of one level and was initially constructed in 1968. The equity index for this school is 0.83.



*Riffenburgh, IB World School ES*

# Executive Summary

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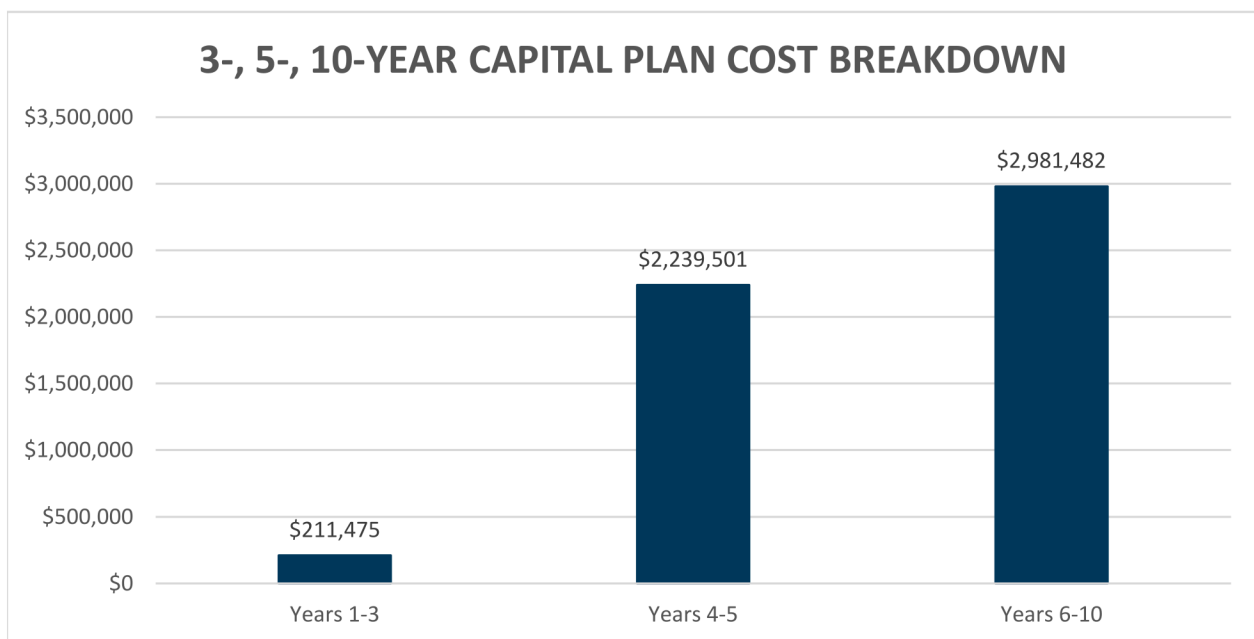
## Assessment Summary

This section summarizes the building systems at the facility and describes the general condition observed based on the assessment performed on July 10, 2023. Additional details, findings and recommendations are presented in Section 3 of this report.

## Capital Plan Summary

The estimated replacement costs for equipment expected to fail within the next ten years are shown below, divided into three separate plans. These plans are the 3-Year Plan, 5-Year Plan, and the 10-Year Plan. Each plan includes the cost for replacement of equipment expected to fail during these periods, based on the observed condition of the equipment at the time of the assessment.

Replacement costs include 3% inflation year over year.



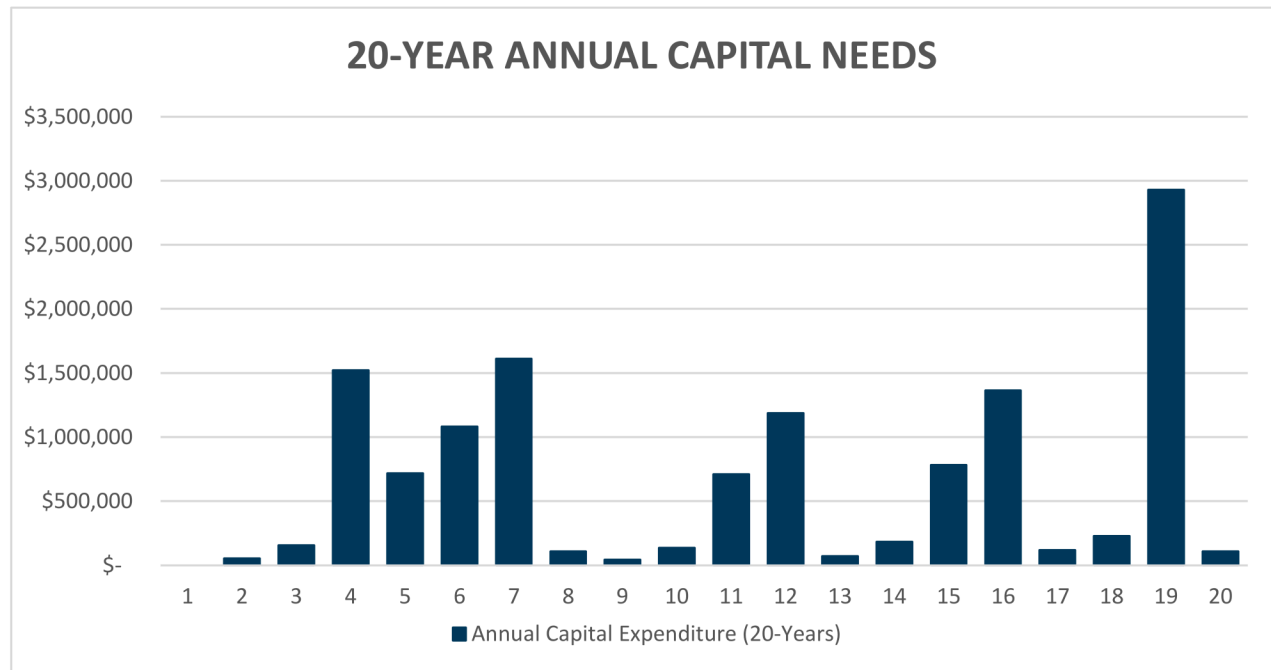
**3-, 5-, 10-Year Capital Plan Cost Breakdown**

# Executive Summary

## Annual Capital Expenditure (20 Years)

20-Year Annual Capital Needs and 20-Year Annual Capital Expenditure by Subsystem below indicate the estimated replacement costs for equipment expected to fail within the next twenty years, and are displayed both by year and by subsystem.

Replacement costs include 3% inflation year over year.



**Annual Capital Expenditure by Year**

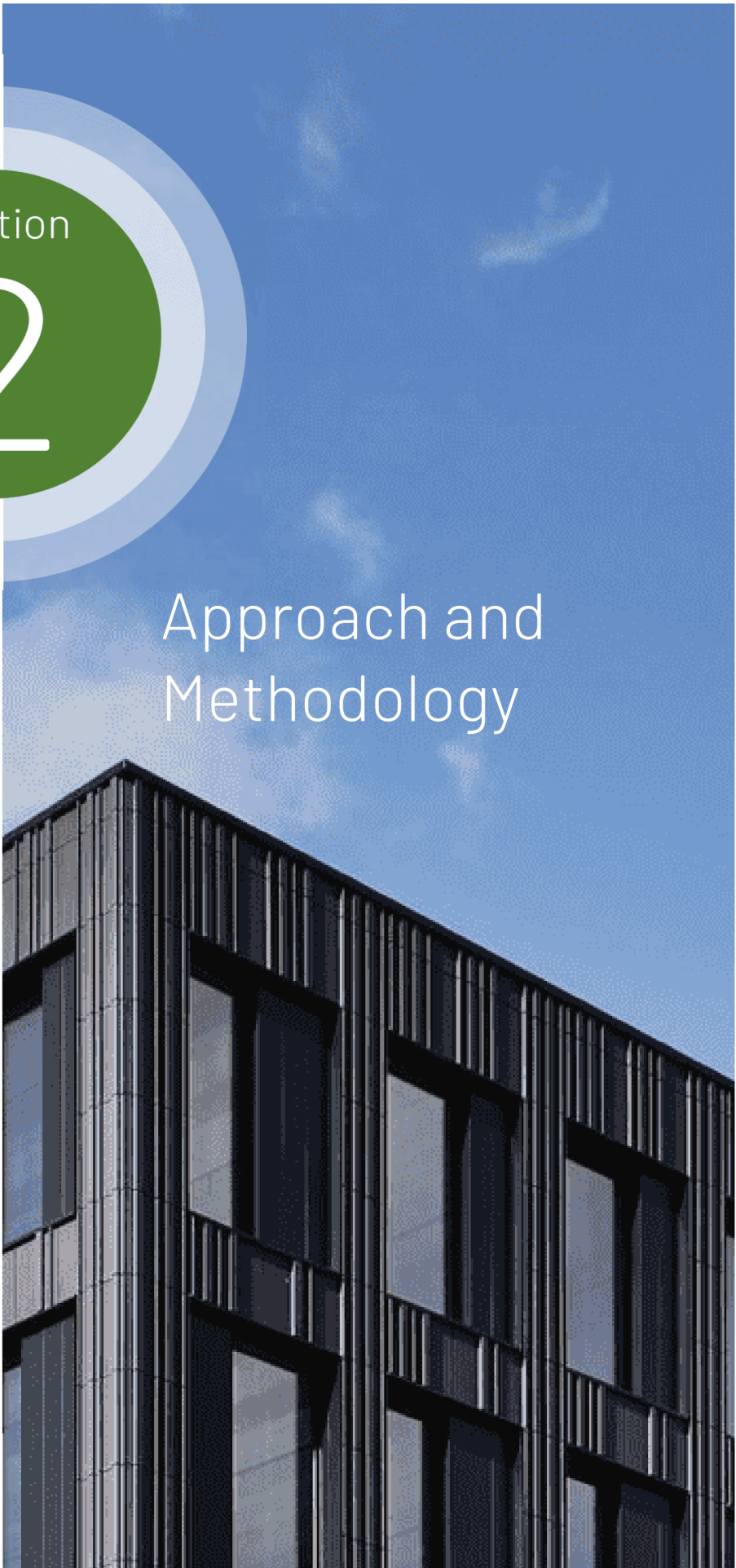
Replacement costs associated with the Annual Capital Expenditure graph and table include values that are adjusted for inflation.

**20-Year Annual Capital Expenditure by Subsystem**

Subsystem	Years 1-5	Years 6-10	Years 11-15	Years 15-20
B20 - Enclosure	\$0	\$256,843	\$63,676	\$3,007,899
B30 - Roofing	\$0	\$746,660	\$0	\$99,126
C10 - Int. Construction	\$0	\$599,664	\$0	\$0
C20 - Stairs	\$0	\$0	\$0	\$0
C30 - Interior Finishes	\$697,438	\$57,002	\$1,249,527	\$342,380
D10 - Conveying	\$0	\$0	\$0	\$0
D20 - Plumbing	\$1,311	\$38,897	\$19,553	\$44,563
D30 - HVAC	\$845,824	\$391,149	\$267,288	\$1,127,566
D40 - Fire Suppression	\$0	\$0	\$1,162,521	\$0
D50 - Electrical	\$906,404	\$878,059	\$170,944	\$127,825
E10 - Equipment	\$0	\$13,206	\$0	\$0
<b>Total:</b>	<b>\$1,753,539</b>	<b>\$1,321,312</b>	<b>\$1,620,306</b>	<b>\$1,299,954</b>

Section  
2

Approach and  
Methodology





# Scope and Approach

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## Scope and Approach

### SCOPE OF WORK

The scope of this facility condition assessment includes all major mechanical, electrical, and plumbing equipment, and commercial refrigeration equipment. In addition, the building enclosure, roofing, interior construction and finishes, and fire suppression systems are included within the assessment. Turf, site assets, kitchen assets besides walk-in freezers, exhaust fans and kitchen make up air units are not included in scope.

The following table lists the general asset types included within the scope of this assessment. Also shown is the corresponding Unifomat code, which has been used to catalog equipment based on type and intended use.

*UniFormat Classification of Building Systems*

UNIFORMAT CODE	CATEGORY DESCRIPTION
B20	Exterior Enclosure (i.e. windows, walls, doors)
B30	Roofing (i.e. roofing covering, skylights, etc.)
C10	Interior Construction (i.e. doors, walls)
C20	Interior Stairs (i.e. stair construction)
C30	Interior Finishes (i.e. flooring, ceiling finishes, etc.)
D10	Conveying (i.e., elevators)
D20	Plumbing (i.e., water heating, pumps, compressors)
D30	Heating, Ventilation, and Air Conditioning
D40	Fire Suppression Systems
D50	Electrical (panelboards, transformers, switchgear)
E10	Equipment, Kitchen Hoods, Walk-in Units, etc.

# Scope and Approach

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## RATINGS, METHODS AND SCORING

To allow Poudre School District more flexibility in prioritizing capital planning efforts, McKinstry has developed the following metrics which assign various scores to each asset.

### Asset Condition

Condition ratings are presented for each asset as a score of 1 – 5. Scores are based upon a visual inspection during the building evaluation period. A score of 1 signifies that the asset is in great, “like new” condition. A score of 2 indicates that the asset is in good condition. A score of 3 signifies that the asset is in expected “average” condition based on function and the age of the asset. A score of 4 signifies that the asset is in poor condition, in need of repair, and will require replacement in the near future. A score of 5 signifies that the asset is in very poor or failed condition and in need of imminent replacement.

SCORE	CONDITION ASSESSMENT
1	Asset is in great condition, no action required.
2	Asset is in good condition, regular maintenance expected.
3	Asset is in expected condition, regular replacement/maintenance expected.
4	Asset is in poor condition, maintenance/replacement recommended soon.
5	Asset is in very poor condition, urgent replacement needed.

### Student/Teacher Impact

Student/Teacher Impact scores are presented for each asset on a scale of 1 – 5 (low to high impact). This metric considers educational (student and/or teacher) impact caused if the equipment were to fail. Assets serving classrooms and other educational spaces are assigned scores of 2-5 depending on the impact the failure of an asset would have and if backups are available. A student/teacher impact score of 1 indicates that there is little to no impact to educational activities.

SCORE	STUDENT/TEACHER IMPACT
1	Failure poses no significant educational impact.
2	Failure poses low educational impact.
3	Failure poses moderate impact. Asset serves teaching area, but has backup.
4	Failure poses high educational impact.
5	Failure poses severe impact. Asset serves teaching area and has no backup.

### Energy Cost Impact

The Energy Impact score is presented for each asset on a scale of 1-5 (low to high impact). Each of the asset types within the scope of this assessment were evaluated based on their impact to energy cost and consumption (including electrical, natural gas, and liquid fuels). Assets with a higher Energy Cost Impact score indicate that the asset has a large contribution to the overall energy costs of the facility. A sample of Energy impact scores is shown below:

# Scope and Approach

ASSET TYPE	ASSET SIZE	ENERGY COST IMPACT (1-5)
Air Handling Unit	less than 10,000 CFM	3
	between 10,000 CFM – 50,000 CFM	4
	greater than 50,000 CFM	5
Chiller	less than 200 tons	3
	between 200 – 500 tons	4
	greater than 500 tons	5
Computer Room AC Condensing Unit Heat Pump	less than 10 tons	2
	greater than 10 tons	3
Cooling Tower	less than 200 tons of rejection	2
	greater than 200 tons of rejection	3
Dust Collector	less than 5 HP	2
	between 5 HP and 25 HP	3
	greater than 25 HP	4
Exhaust Fan	less than 5000 CFM	2
	greater than 5000 CFM	3
Fan Coil Unit	greater than 3000 CFM	2
Fuel Fired Boiler	less than 200 MBH	2
	between 200 – 1000 MBH	3
	between 1000 – 2000 MBH	4
	greater than 2000 MBH	5
Furnace	less than 100 MBH	2
	between 100 and 500 MBH	3
	greater than 500 MBH	4
Generator	less than 500 KW	2
	greater than 500 KW	3
Lighting, Exterior	LED	2
	Fluorescent	3
	HID/Incandescent	4
Lighting, Interior	LED	2
	Fluorescent	4
	HID/Incandescent	5
Make-Up Air Unit	less than 5,000 CFM	3
	between 5,000 and 25,000 CFM	4
	greater than 25,000 CFM	5
Pumps	less than 25 HP	2
	between 25 -150 HP*	3
	greater than 150 HP*	4
Return Fan Supply Fan	less than 20 HP	2
	greater than 20 HP*	3

# Scope and Approach

ASSET TYPE	ASSET SIZE	ENERGY COST IMPACT (1-5)
Rooftop Unit	less than 5 ton	2
	between 5 and 20 tons	3
	between 20 and 50 tons	4
	greater than 50 tons	5
Transformer	greater than 200 kVA	2
VFD	greater than 50 HP	2
Air Compressor	All sizes	2
Air Curtain		
Air Dryer		
Cabinet Unit Heater		
Dehumidifier		
Electric Duct Heater		
Humidifier		
Unit Heater		
Unit Ventilator		
Walk-In Condenser		
Walk-In Unit		
All Other		

\*Add 1 for direct drive motors

## Operational Impact

Operational Impact scores are presented for each asset on a scale of 1 – 5 (low to high impact). This metric considers the operational impact caused if the equipment were to fail. Assets serving critical administrative and district operational spaces are assigned scores of 2-5 depending on the impact the failure of an asset would have and if backups are available. An operational impact score of 1 indicates that there is little to no impact to administrative or operational activities.

SCORE	OPERATIONAL COST IMPACT SCORE
1	Asset has little to no operational impact.
2	Asset has a low level of operational impact.
3	Asset has a moderate operational impact.
4	Asset has a high level of operational impact.
5	Asset has severe operational impact.

## Industry Life Expectancy

The designed life expectancy for a given asset is determined using a combination of widely accepted industry standards including ASHRAE and BOMA, as well as a manufacturers’ database of equipment life expectancies. This value is expressed in number of years.

# Scope and Approach

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## Observed Remaining Life

The Observed Remaining Life is also expressed in number of years and takes into consideration the function and operating environment of the asset, as well as a determination based upon a visual inspection of the asset. The Observed Remaining Life value may vary from the Design Life value. For example, a secondary heat exchanger that has been well maintained may have an Observed Remaining Life that is greater than the expected Design Life. Likewise, a primary chilled water pump that has not been well maintained, and shows visual signs of premature wear and tear, may have an Observed Remaining Life that is less than the expected Design Life.

## Cost Estimating

Based on the constraints of the scope outlined in the contract we have based our asset pricing upon industry standards, RSMeans, and pricing data sourced through McKinstry's construction division. This information is intended to assist in the prioritization and resource allocation associated with maintenance and capital replacement projects. Cost estimates are determined using specific characteristics of each asset (tonnage, motor size, capacity, etc.) along with one of several cost information data sets. Standard equipment warranties are included.

To clarify, all Estimated Replacement Costs include averages of the material cost of the asset, the demolition and installation of that asset type and are expressed in 2023 dollars. Additionally, site specific construction and equipment invoices have been utilized as available.

Costs associated with project design, contractor competence, commissioning, test and balance services and are excluded from the estimate and are the responsibility of the Client. McKinstry assumed a 3% inflation, applied year over year. All work is during normal business hours. For mechanical equipment any duct work, piping, existing appurtenances are to be reused; costs to repair or replace any lines going to or coming from the units is excluded. Existing isolation valves to be used; repair or replacement of isolation valves is excluded.

Costs typically associated with project-specific parameters are excluded and should be added at the discretion of the Client. Such exclusions include risks or contingencies such as asbestos abatement, other hazardous waste abatement, scope changes, design changes, taxes, special wage requirements such as Prevailing Wage rates, warranty management and unknown site conditions. Overtime and after-hours work is excluded. Any necessary structural or electrical upgrades to replace equipment is excluded. Incidental code violations resulting from project scope or execution are excluded. Correction of any existing code violations are excluded. Temporary heating, cooling, ventilation, and power during construction and the warranty period are excluded. Moving of heavy equipment or furniture to complete the work is excluded. Running and terminating new IP drops for equipment is excluded. Any changes to fire and life safety systems for mechanical equipment upgrades is excluded.

## Data-Driven Maintenance Approach

Included with the submission of this report is the FCA Data Collection Workbook, which includes all data collected for each asset. The Workbook can be used to quickly sort through equipment and prioritize maintenance and replacement efforts. Additional observations and equipment details are provided within the workbook for each asset.

# Scope and Approach

Each asset is classified according to building system, size, capacity, and other standards, as well as ratings of current condition and impact of failure. Such organization and classification facilitate searching and sorting the data for maintenance and replacement priorities. As mentioned, the impact ratings help to compare one asset to another. Based on observed condition and impact scores, the future maintenance priorities for each building are described further in later sections.

As each of the components identified in the workbook is repaired or replaced, the information can be revised to reflect the new conditions. Remaining useful life values can also be manually iterated one year from the assessment date to reflect fewer remaining years of life. Assets no longer in service can be removed from the list. Similarly, assets that have been newly installed can be added to the list. Following the impact guidelines, relative priority can be calculated for these assets.

## Equity Index

As an additional metric to the six existing areas of the Facilities Condition Assessment, Poudre School District has created an Equity Index to assist in prioritizing facilities improvement projects. This number takes into account student poverty, students qualifying for ELA services, students qualifying for Special Education services, and students who are homeless. The calculated score for each school is based on these factors and where it falls in relation to the district average. The formula would be:

$$\frac{\text{School Percentage in these areas added together as decimals}}{\text{District Percentages in these areas added together as decimals}}$$

In this formula, a school with student needs equal to the district average would have an equity index of 1.0. Schools with student needs higher than the district average would have an Equity Index greater than 1.0. Schools with student needs less than the district average would have an Equity Index less than 1.0.

Category	Equity Index
Low	0.29
High	3.20
Average	1.11
Median	0.95

The equity index for Riffenburgh, IB World School ES is 0.83.

Sample Calculation:

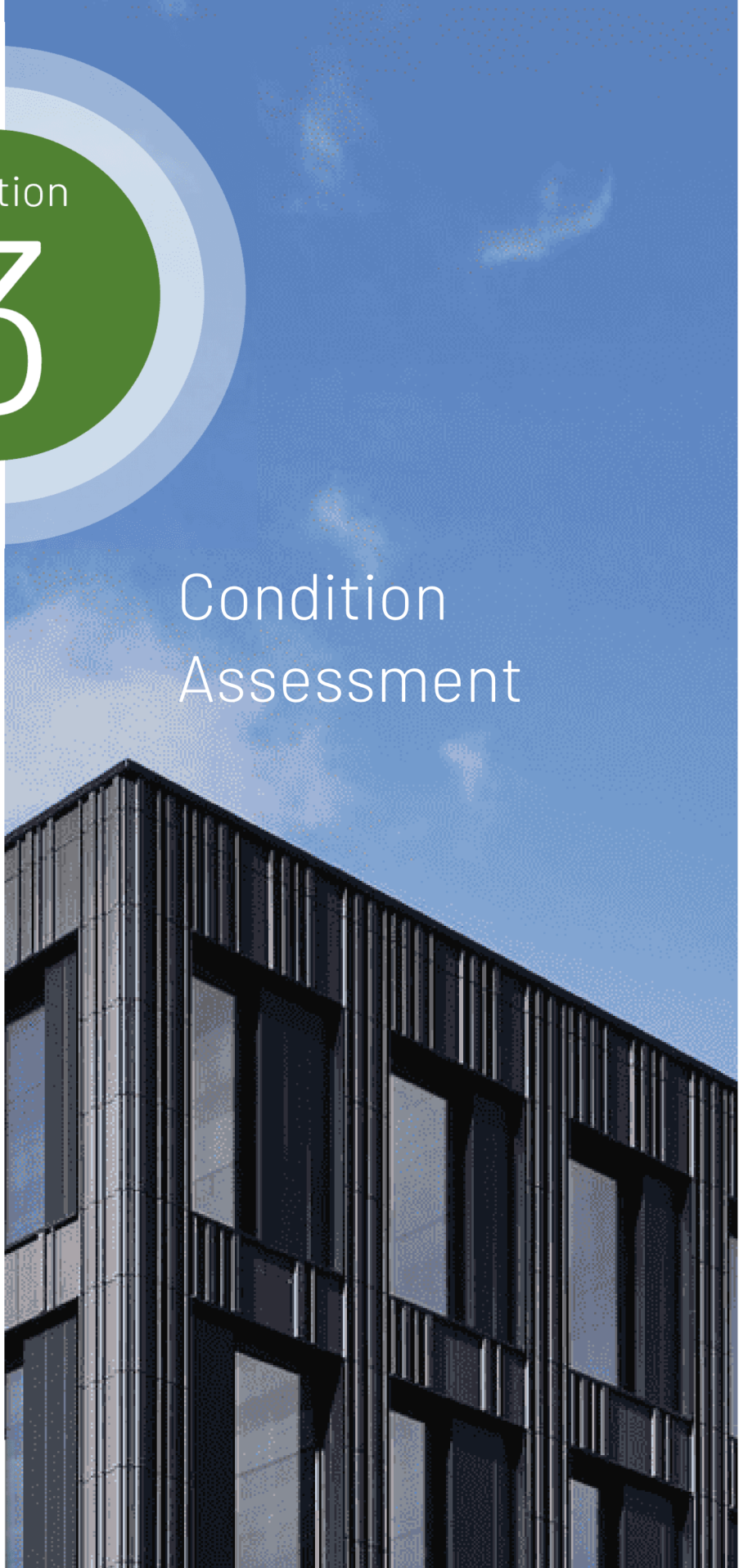
School Name	School Population K-12 Total	F/R	ELL	SPED	McKinney-Vento	Total of Previous Columns	Equity Index Number = school average / district average
Sample	381	15.20%	0.00%	8.40%	0.00%	0.24	0.24/0.48 = 0.49
<b>Grand PSD Total - Oct 2022 Count</b>	<b>26,163</b>	<b>29.5%</b>	<b>5.8%</b>	<b>9.5%</b>	<b>3.4%</b>	<b>0.48</b>	

F/R - Free or Reduced-Price Lunch; ELL- English Language Learners; SPED - Special Ed.; McKinney-Vento - Homeless Assistance

Section

3

# Condition Assessment



# Condition Assessment

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## SYSTEMS DESCRIPTION

This section summarizes the building systems at Riffenburgh, IB World School ES and describes the general condition observed based on the assessment. Specific findings and recommendations are detailed later in this report.

### Exterior Enclosure

The building's exterior walls consists of a combination of brick masonry and concrete masonry unit (CMU). The walls are original to the building's initial construction in 1967, as well as the addition of the gymnasium in 2002. Exterior doors consist of metal single and double doors, as well as glass storefront doors for the main entrance. The building's exterior windows include a combination of metal and vinyl construction. There are three (3) mobile classrooms located to the west of the main building. These structures were constructed within the last 10-15 years and are primarily of wood construction.

### Roofing

The roofing includes both flat rolled asphalt sections, as well as standing seam metal accents along the perimeter of walls. The building's asphalt roofing [REDACTED] and will likely require substantial repair or replacement within 4-7 years. There are multiple skylights located on the rooftop which are generally in good condition. The roofing of the mobile classrooms is comprised of asphalt shingles.

### Interior Construction and Finishes

Interior walls consist of a combination of CMU, drywall, and masonry brickwork. Interior doors are of wood construction, including for the mobile classrooms. There are several accordion type folding partitions separating larger classrooms. These doors appear original, [REDACTED]. The majority of the building's flooring is comprised of rolled carpeting; however, portions of the building utilize ceramic and vinyl tiling. The ceilings are finished with both drywall, and acoustic ceiling tiles. The building's interior finish and construction assets are in fair condition, with the exception of the cafeteria ceiling tiles and VCT flooring which are in poor condition.

### Conveyance

There are no conveyance systems in use at this school.

### Electrical and Lighting

The building's electrical distribution equipment includes 120/208 and 120/240V panels, transformers, and switchboards. The building's main switchboard has a total ampacity of 2400 amps and requires replacement within 3 years. Generally, the majority of the distribution assets were replaced within the last 10-15 years; however, a handful of panelboards appear to date back to the building's initial construction. Emergency backup power is provided by one (1) generator with an estimated capacity of around 30 kW. This generator is approximately 20 years old. The building's interior lighting consists primarily of fluorescent (T8) fixtures; however, the gymnasium utilizes LED fixtures installed in 2023. Exterior lighting includes both high intensity discharge (HID) and LED lighting.

### HVAC Systems

The building's heating, ventilation, and air conditioning (HVAC) system consists of a total of eight (8) multi-zone rooftop air handling units. These air handlers were originally installed in the 1990s, but were refurbished in 2014. The Administration RTU needs to be replaced first. Each unit utilizes a heating and cooling coil, and is controlled via variable frequency drives (VFDs). Heating water is provided by two (2) natural gas fired hydronic boilers, which were installed in 1994. These boilers are currently functional, but have surpassed their recommended lifespan. Cooling is provided by one (1) cooling tower, providing cooled water to the air handling units. The cooling tower was installed in 2014. Additional HVAC equipment includes split system units for the mobile classrooms, rooftop exhaust fans, and heating and cooling water distribution equipment.

### Plumbing

Domestic hot water is provided by a combination of four (4) water heaters, including one (1) natural gas fired unit, and three (3) electric tank type water heaters. These water heaters were generally installed between 2006-2010, with one having been replaced in 2022. Overall, the domestic hot water system is in good condition.

### Fire Suppression

[REDACTED]

### Equipment

There is one (1) walk-in cooler used in the kitchen, equipped with a rooftop condenser. [REDACTED] however, the interior of the cooler could not be accessed.





# Condition Assessment

## PRIORITIES

### SPECIFIC PRIORITIES

The top capital measures (up to five max) have been detailed in the following tables. Each measure receives a priority level of 1, 2, or 3. A priority level of 1 indicates that the measure is considered an immediate concern or a potential hazard and should be addressed as soon as possible. A priority level of 2 indicates that the measure is considered urgent, but not a potential hazard or there is a less severe impact to occupants. A priority level of 3 indicates that the assets associated with the measure are nearing end of life, but have not yet failed or have a mild to moderate impact on occupant safety and comfort.

### Riffenburgh, IB World School ES

#### 1. Replace Outdated HVAC Equipment

A number of the buildings HVAC assets were originally installed in the 1990s, or earlier. This includes many of the building's rooftop exhaust fans. Note, this measure includes several rooftop air handling units. While these assets were refurbished approximately 10 years ago; they will likely require some refurbishment or replacement during this period depending on component conditions.

The following assets are included within this measure:

- RTU-1 (FCAID-500067)
- RTU-2 (FCAID-500068)
- RTU-3 (FCAID-500069)
- RTU-4 (FCAID-500070)
- RTU-1 (FCAID-500066)
- Rooftop Unit (FCAID-500113)
- Condensing Unit M41 (FCAID-500084)
- (10) Exhaust Fans (FCAIDs vary)
- Unit Heater (FCAID-500114)
- CW Air Separator (FCAID-500074)
- HW Air Separator (FCAID-500075)
- Glycol Feeder (FCAID-500108)



**Priority Level:** 2  
**Estimated Cost:** \$809,060  
**Remaining Life:** 2-7 years

# Condition Assessment

## 2. Replaced Outdated Electrical Assets

A portion of the building's electrical distribution assets date back to the 1960s and 1970s, including panelboards and switchboards. [REDACTED]

The following assets are included within this measure:

- Main Switchboard, Section 1 (FCAID-500155)
- Main Switchboard, Section 2 (FCAID-500156)
- Backup Generator (FCAID-500124)
- Panel A (FCAID-500135)
- Panel B (FCAID-500136)
- Panel K (FCAID-500142)
- Panel L (FCAID-500143)
- Panel LAP (FCAID-500144)
- Panel MM (FCAID-500148)
- ATS (FCAID-500123)



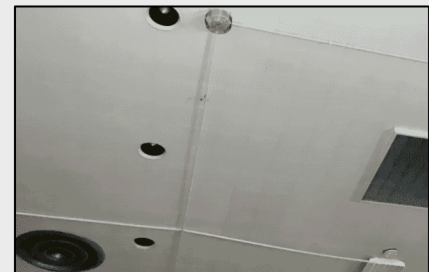
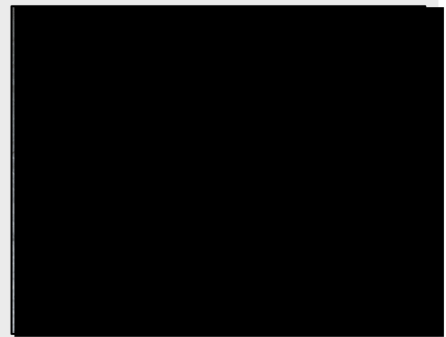
**Priority Level:** 2  
**Estimated Cost:** \$141,570  
**Remaining Life:** 3-5 years

## 3. Update Cafeteria Interior Finishes

The interior finishes of the cafeteria were found to be in particularly poor condition, including the vinyl floor tiles and ceiling tiles. These assets may be over 30 years old, and are due for replacement. [REDACTED]

The following assets are included within this measure:

- Ceiling Tiles, Cafeteria (FCAID-500043)
- VCT Flooring, Cafeteria (FCAID-500054)



**Priority Level:** 2  
**Estimated Cost:** \$61,920  
**Remaining Life:** 2-3 years

# Condition Assessment

## 4. Prepare for Boiler Replacement

While the building's two boilers are currently functional, they are now nearly 30 years old. Typical boilers are manufactured with a lifespan of around 35 years. Plan for replacement or substantial refurbishment of the heating water system within the next 5-7 years to ensure that is operating efficiently, and as designed.

The following assets are included within this measure:

- Boiler B-1 (FCAID-500102)
- Boiler B-2 (FCAID-500103)
- P-1 (FCAID-500110)
- P-2 (FCAID-500111)
- ET-1 (FCAID-500099)
- ET-2 (FCAID-500101)

**Priority Level:** 3  
**Estimated Cost:** \$164,040  
**Remaining Life:** 5-7 years



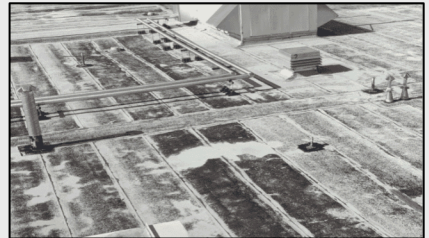
## 5. Replace or Refurbish the Roofing

The building's roofing was noted [REDACTED] with areas of cracking and degradation of the reflective top coating. Plan for substantial repairs of the roofing surface within the next 7 years to ensure a water tight envelope.

The following assets are included within this measure:

- Roofing, Rolled Asphalt (FCAID-500022)
- Roofing, Metal Standing Seam (FCAID-500024)
- Roofing, Metal Flashing (FCAID-500021)
- Roofing, Rolled Asphalt, Gym Addition (FCAID-500023)

**Priority Level:** 3  
**Estimated Cost:** \$634,220  
**Remaining Life:** 4-7 years

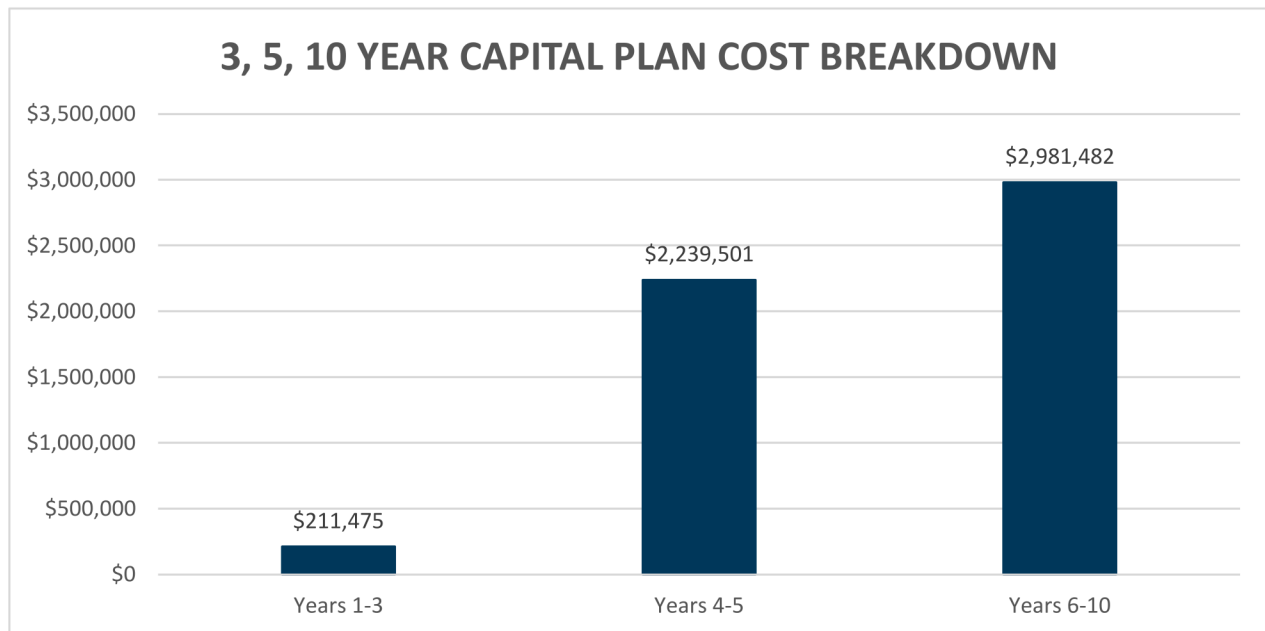


# Condition Assessment

## 3-, 5-, 10-YEAR PLANS

The following sections present the expected equipment replacement costs over the next ten years, broken into three separate plans. These plans are the 3-Year Plan, 5-Year Plan, and the 10-Year Plan. Each plan includes the equipment expected to fail during these periods, based on the observed condition of the equipment at the time of the assessment. Note, the 3-Year Plan includes assets failing within the next three years, the 5-Year Plan includes assets failing between four and five years, and the 10-Year Plan includes assets failing between in the next six to ten years from the assessment date.

**The chart below presents the total expected replacement costs for each plan. Note that these figures include 3% inflation YOY.**



## Future Capital Plan

The table below displays replacement costs for the campus, and the number of associated assets expected to fail within the next ten years. Assets requiring replacement or extensive maintenance in this plan are presented in Appendices A, B, and C.

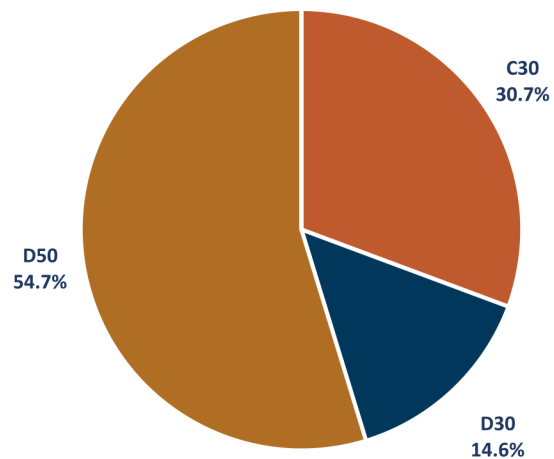
REPLACEMENT PERIOD	ASSET QUANTITY	CUMULATIVE REPLACEMENT COST
3-Year Plan	15	\$211,475
5-Year Plan	25	\$2,239,501
10-Year Plan	46	\$2,981,482
<b>Total</b>	<b>86</b>	<b>\$5,432,458</b>

# Condition Assessment

## 3-YEAR PLAN BREAKDOWN

The three-year plan includes the estimated capital expenditure needed to replace assets reaching end of life in years 1-3, or between 2024 and 2026. The sum of the anticipated capital needs is \$211,475. The specific assets that will reach end of life in this period are listed in Appendix A.

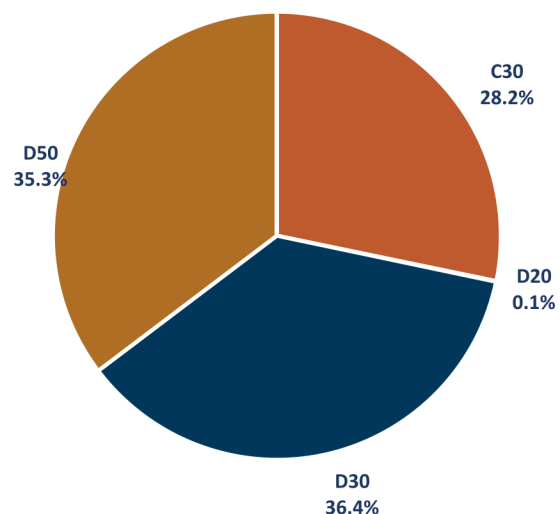
SUBSYSTEM	Years 1-3	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$0	0%
B30 - Roofing	\$0	0%
C10 - Int. Construction	\$0	0%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$64,857	31%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$0	0%
D30 - HVAC	\$30,895	15%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$115,723	55%
E10 - Equipment	\$0	0%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$0	0%



## 5-YEAR PLAN BREAKDOWN

The five-year plan includes the estimated capital expenditure needed to replace assets reaching end of life in years 4-5, or between 2027 and 2028. The sum of the anticipated capital needs is \$2,239,501. The specific assets that will reach end of life in this period are listed in Appendix A.

SUBSYSTEM	Years 4-5	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$0	0%
B30 - Roofing	\$0	0%
C10 - Int. Construction	\$0	0%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$632,581	28%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$1,311	<1%
D30 - HVAC	\$814,928	36%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$790,681	35%
E10 - Equipment	\$0	0%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$0	0%

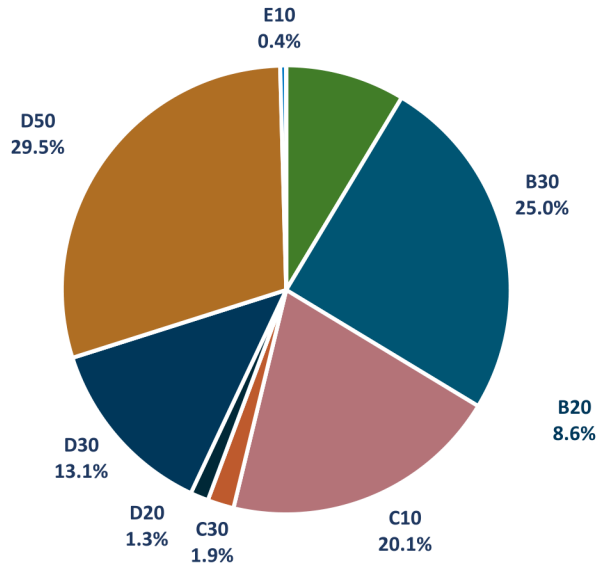


# Condition Assessment

## 10-YEAR PLAN BREAKDOWN

The ten-year plan includes the estimated capital expenditure needed to replace assets reaching end of life in years 6-10, or between 2029 and 2033. The sum of the anticipated capital needs is \$2,981,482. The specific assets that will reach end of life in this period are listed in Appendix A.

SUBSYSTEM	Years 6-10	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$256,843	9%
B30 - Roofing	\$746,660	25%
C10 - Int. Construction	\$599,664	20%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$57,002	2%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$38,897	1%
D30 - HVAC	\$391,149	13%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$878,059	29%
E10 - Equipment	\$13,206	<1%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$0	0%



# Condition Assessment

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## PRIORITY SUMMARY

The summary below assigns a composite Overall Priority Score to the campus as of the assessment date. Priority Scores range from 6 (low priority) to 30 (high priority), and are based on asset condition, operating impact, student impact, energy impact, estimated replacement cost, and observed remaining life.

In addition to the Overall Priority Score, each Subsystem category within the site is assigned a Priority Score. This score can differentiate systems that may need more attention than others, due to condition or impact on occupants or operations. Each Subsystem category includes a general narrative section under the Description column.

## Future Capital Plan


The Subsystem scores are color coded to reflect the level of priority:  $\leq 12$  = Green, 12.1-23.9 = Yellow,  $\geq 24$  = Red. Higher priority scores indicate that a system should be considered for maintenance or capital improvements before other systems with lower scores. The rating scale for Priority Score is visualized below.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30



# Condition Assessment

## PRIORITY SCORE SUMMARY - RIFFENBURGH, IB WORLD SCHOOL ES

	<b>RIFFENBURGH, IB WORLD SCHOOL ES</b>	
	BUILDING TYPE:	Elementary School
	YEAR BUILT:	1968
	GROSS AREA (SF):	48,433
	DATE ASSESSED:	July 10, 2023
PRIORITY SCORE:	<b>16.3</b>	

SUBSYSTEM:	DESCRIPTION	PRIORITY SCORE
B20 - Ext. Enclosure	The building's exterior walls consists of a combination of brick masonry and concrete masonry unit (CMU). The walls are original to the building's initial construction in 1967, as well as the addition of the gymnasium in 2002. Exterior doors consist of metal single and double doors, as well as glass storefront doors for the main entrance. The building's exterior windows include a combination of metal and vinyl construction. There are three (3) mobile classrooms located to the west of the main building. These structures were constructed within the last 10-15 years and are primarily of wood construction.	<b>12.6</b>
B30 - Roofing	The roofing includes both flat rolled asphalt sections, as well as standing seam metal accents along the perimeter of walls. The building's asphalt roofing [REDACTED] will likely require substantial repair or replacement within 4-7 years. There are multiple skylights located on the rooftop which are generally in good condition. The roofing of the mobile classrooms is comprised of asphalt shingles.	<b>16.2</b>
C10 - Int. Construction	Interior walls consist of a combination of CMU, drywall, and masonry brickwork. Interior doors are of wood construction, including for the mobile classrooms. There are several accordion type folding partitions separating larger classrooms. These doors appear original, but are in fair condition. The majority of the building's flooring is comprised of rolled carpeting; however, portions of the building utilize ceramic and vinyl tiling. The ceilings are finished with both drywall, and acoustic ceiling tiles. The building's interior finish and construction assets are in fair condition, with the exception of the cafeteria ceiling tiles and VCT flooring which are in poor condition.	<b>15.4</b>
C30 - Interior Finishes		<b>13.5</b>
D20 - Plumbing	Domestic hot water is provided by a combination of four (4) water heaters, including one (1) natural gas fired unit, and three (3) electric tank type water heaters. These water heaters were generally installed between 2006-2010, with one having been replaced in 2022. Overall, the domestic hot water system is in good condition.	<b>11.5</b>
D30 - HVAC	The building's heating, ventilation, and air conditioning (HVAC) system consists of a total of eight (8) multi-zone rooftop air handling units. These air handlers were originally installed in the 1990s, but were refurbished in 2014. The Administration RTU needs to be replaced first. Each unit utilizes a heating and cooling coil, and is controlled via variable frequency drives (VFDs). Heating water is provided by two (2) natural gas fired hydronic boilers, which were installed in 1994. These boilers are currently functional, but have surpassed their recommended lifespan. Cooling is provided by one (1) cooling tower, providing cooled water to the air handling units. The cooling tower was installed in 2014. Additional HVAC equipment includes split system units for the mobile classrooms, rooftop exhaust fans, and heating and cooling water distribution equipment.	<b>17.6</b>
D40 - Fire Suppression	[REDACTED]	<b>20.0</b>
D50 - Electrical	The building's electrical distribution equipment includes 120/208 and 120/240V panels, transformers, and switchboards. The building's main switchboard has a total ampacity of 2400 amps and requires replacement within 3 years. Generally, the majority of the distribution assets were replaced within the last 10-15 years; however, a handful of panelboards appear to date back to the building's initial construction. Emergency backup power is provided by one (1) generator with an estimated capacity of around 30 kW. This generator is approximately 20 years old. The building's interior lighting consists primarily of fluorescent (T8) fixtures; however, the gymnasium utilizes LED fixtures installed in 2023. Exterior lighting includes both high intensity discharge (HID) and LED lighting.	<b>21.0</b>
E10 - Equipment	There is one (1) walk-in cooler used in the kitchen, equipped with a rooftop condenser. This refrigeration unit was found to be in fair condition; however, the interior of the cooler could not be accessed.	<b>15.0</b>

System priority scored from 6 (lowest priority) to 30 (highest priority) based on condition, operating impact, student/teacher impact, energy impact, estimated replacement cost, and observed remaining life. [≤12 = green, 12-24 = yellow, ≥24 = red]

Appendices

- A. 3-YEAR PLAN ASSETS LIST
- B. 5-YEAR PLAN ASSETS LIST
- C.10-YEAR PLAN ASSETS LIST

# Appendix A

## APPENDIX A: 3-YEAR PLAN ASSETS LIST

The individual assets associated with the 3-Year Plan are shown below, sorted from highest to lowest priority score. The priority score key is shown below for convenience.

Note that these values represent current replacement costs expressed in 2023 dollar amounts and are not adjusted for inflation.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

The asset ID listed for each entry has been assigned during this assessment and reflects the corresponding asset in the FCA workbook.

### RIFFENBURGH, IB WORLD SCHOOL ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING	REPLACEMENT COST	PRIORITY SCORE
FCAID-500155	Main Switchboard, Section 1	D50 - Electrical	3	\$40,180	19
FCAID-500156	Main Switchboard, Section 2	D50 - Electrical	3	\$40,180	19
FCAID-500094	EF-6	D30 - HVAC	2	\$6,210	16
FCAID-500098	Exhaust Fan	D30 - HVAC	2	\$6,210	16
FCAID-500095	EF-7	D30 - HVAC	2	\$6,710	16
FCAID-500093	EF-5	D30 - HVAC	2	\$6,210	16
FCAID-500144	Panel LAP	D50 - Electrical	3	\$3,270	15
FCAID-500143	Panel L	D50 - Electrical	3	\$3,270	15
FCAID-500148	Panel MM	D50 - Electrical	3	\$3,270	15
FCAID-500142	Panel K	D50 - Electrical	3	\$3,270	15
FCAID-500136	Panel B	D50 - Electrical	3	\$12,370	15
FCAID-500043	Ceiling Tiles, Cafeteria	C30 - Int. Finishes	2	\$27,000	15
FCAID-500135	Panel A	D50 - Electrical	3	\$3,270	15
FCAID-500114	Unit Heater	D30 - HVAC	3	\$4,520	14
FCAID-500054	VCT Flooring, Cafeteria	C30 - Int. Finishes	3	\$34,920	14

# Appendix B

## APPENDIX B: 5-YEAR PLAN ASSETS LIST

The individual assets associated with the 5-Year Plan are shown below, sorted from highest to lowest priority score. The priority score key is shown below for convenience.

Note that these values represent current replacement costs expressed in 2023 dollar amounts and are not adjusted for inflation.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

The asset ID listed for each entry has been assigned during this assessment and reflects the corresponding asset in the FCA workbook.

### RIFFENBURGH, IB WORLD SCHOOL ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING LIFE	REPLACEMENT COST	PRIORITY SCORE
FCAID-500131	Interior Lighting, Fluorescent	D50 - Electrical	4	\$679,200	25
FCAID-500068	RTU-2	D30 - HVAC	4	\$142,910	23
FCAID-500069	RTU-3	D30 - HVAC	4	\$142,910	23
FCAID-500067	RTU-1	D30 - HVAC	4	\$144,330	23
FCAID-500070	RTU-4	D30 - HVAC	4	\$142,910	23
FCAID-500066	RTU-1	D30 - HVAC	4	\$96,410	21
FCAID-500113	Rooftop Unit	D30 - HVAC	4	\$31,160	19
FCAID-500048	Flooring, Carpeting	C30 - Int. Finishes	5	\$464,910	16
FCAID-500124	Backup Generator	D50 - Electrical	5	\$28,150	16
FCAID-500125	Exterior Lighting, HID	D50 - Electrical	4	\$10,920	15
FCAID-500096	Exhaust Fan	D30 - HVAC	5	\$5,550	13
FCAID-500088	EF-1	D30 - HVAC	5	\$6,210	13
FCAID-500097	Exhaust Fan	D30 - HVAC	5	\$6,210	13
FCAID-500056	CT Fill Backflow Preventer	D20 - Plumbing	4	\$400	13
FCAID-500057	DCW Backflow Preventer	D20 - Plumbing	4	\$400	13
FCAID-500092	EF-4	D30 - HVAC	5	\$6,210	13
FCAID-500055	Backflow Preventer	D20 - Plumbing	4	\$400	13
FCAID-500091	EF-3	D30 - HVAC	5	\$6,210	13
FCAID-500090	EF-2	D30 - HVAC	5	\$6,210	13
FCAID-500045	Carpeting, Mobile 41	C30 - Int. Finishes	5	\$17,360	12
FCAID-500044	Rubberized Athletic Flooring	C30 - Int. Finishes	5	\$45,050	12
FCAID-500046	Carpeting, Mobile 45	C30 - Int. Finishes	5	\$17,360	12
FCAID-500047	Carpeting, Mobile 46	C30 - Int. Finishes	5	\$17,360	12
FCAID-500123	ATS	D50 - Electrical	5	\$4,340	12
FCAID-500101	ET-2	D30 - HVAC	5	\$7,230	10

# Appendix C

## APPENDIX C: 10-YEAR PLAN ASSETS LIST

The individual assets associated with the 10-Year Plan are shown below, sorted from highest to lowest priority score. The priority score key is shown below for convenience.

Note that these values represent current replacement costs expressed in 2023 dollar amounts and are not adjusted for inflation.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

The asset ID listed for each entry has been assigned during this assessment and reflects the corresponding asset in the FCA workbook.

### RIFFENBURGH, IB WORLD SCHOOL ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING LIFE	REPLACEMENT COST	PRIORITY SCORE
FCAID-500127	Fire Alarm System	D50 - Electrical	6	\$377,290	22
FCAID-500129	Emergency Exit Lights	D50 - Electrical	7	\$184,530	20
FCAID-500102	Boiler B-1	D30 - HVAC	6	\$63,070	19
FCAID-500103	Boiler B-2	D30 - HVAC	6	\$63,070	19
FCAID-500154	Security System	D50 - Electrical	7	\$184,530	19
FCAID-500032	Interior Doors, Wood, Single	C10 - Int. Construct.	7	\$337,300	18
FCAID-500022	Roofing, Rolled Asphalt	B30 - Roofing	7	\$308,290	17
FCAID-500024	Roofing, Metal Standing Seam	B30 - Roofing	6	\$271,790	17
FCAID-500084	Condensing Unit M41	D30 - HVAC	7	\$25,130	16
FCAID-500086	Condensing Unit M46	D30 - HVAC	8	\$25,130	15
FCAID-500085	Condensing Unit M45	D30 - HVAC	8	\$25,130	15
FCAID-500167	Walk-in Condenser	E10 - Equipment	7	\$5,030	15
FCAID-500031	Interior Doors, Wood, Double	C10 - Int. Construct.	7	\$34,720	15
FCAID-500168	Walk-in Cooler	E10 - Equipment	7	\$6,030	15
FCAID-500023	Roofing, Rolled Asphalt, Gym Addition	B30 - Roofing	6	\$33,900	14
FCAID-500021	Roofing, Metal Flashing	B30 - Roofing	7	\$20,240	14
FCAID-500111	P-2	D30 - HVAC	7	\$11,720	14
FCAID-500008	Exterior Doors - Metal, Single, Original	B20 - Ext. Enclosure	7	\$133,930	14
FCAID-500110	P-1	D30 - HVAC	7	\$11,720	14
FCAID-500062	Water Heater	D20 - Plumbing	7	\$8,580	13
FCAID-500061	Water Heater	D20 - Plumbing	7	\$8,580	13
FCAID-500063	Water Heater, Kitchen	D20 - Plumbing	7	\$10,610	13
FCAID-500112	Kitchen Hood	D30 - HVAC	8	\$12,980	13
FCAID-500007	Exterior Doors - Metal, Double, Original	B20 - Ext. Enclosure	7	\$49,600	13
FCAID-500053	Flooring, VCT	C30 - Int. Finishes	6	\$49,170	12

FCAID-500030	Accordion Doors (Double)	C10 - Int. Construct.	6	\$59,530	12
FCAID-500079	Cabinet Heater	D30 - HVAC	8	\$6,360	12
FCAID-500080	Cabinet Heater	D30 - HVAC	8	\$6,610	12
FCAID-500001	Exterior Doors - Metal, Double, Gym Additi	B20 - Ext. Enclosure	9	\$29,760	12
FCAID-500078	Cabinet Heater	D30 - HVAC	8	\$6,360	12
FCAID-500081	Cabinet Heater	D30 - HVAC	8	\$6,360	12
FCAID-500074	CW Air Separator	D30 - HVAC	6	\$7,530	10
FCAID-500099	ET-1	D30 - HVAC	7	\$7,230	10
FCAID-500028	Drywall Ceilings	C10 - Int. Construct.	10	\$63,310	10
FCAID-500075	HW Air Separator	D30 - HVAC	6	\$7,530	10
FCAID-500059	Sump Pump	D20 - Plumbing	9	\$4,530	9
FCAID-500122	VAV-5-8	D30 - HVAC	10	\$5,520	9
FCAID-500117	VAV-5-3	D30 - HVAC	10	\$5,520	9
FCAID-500118	VAV-5-4	D30 - HVAC	10	\$5,520	9
FCAID-500115	VAV-5-1	D30 - HVAC	10	\$4,140	9
FCAID-500108	Glycol Feeder	D30 - HVAC	7	\$1,780	9
FCAID-500116	VAV-5-2	D30 - HVAC	10	\$5,520	9
FCAID-500029	Interior Walls, Drywall	C10 - Int. Construct.	10	\$2,940	9
FCAID-500121	VAV-5-7	D30 - HVAC	10	\$1,930	9
FCAID-500119	VAV-5-5	D30 - HVAC	10	\$5,520	9
FCAID-500120	VAV-5-6	D30 - HVAC	10	\$4,140	9