Performance Services

GRIFFITH PUBLIC SCHOOLS

District Facility Assessment

June 11, 2020

SUBMITTED TO:

Mrs. Michele Riise, Superintendent
Mrs. Meghan Damron, Director of Business Services
Mrs. George Smith, Supervisor of Buildings, Grounds, & Transportation

SUBMITTED BY:

Tony Kuykendall, Business Development Manager
Matt Peterson, PE, Project Development Engineer
Pete Beiriger, Project Development Engineer
Chris Gerrity, Senior Architect

NAESCO ACCREDITED ENERGY SERVICE COMPANY

ENERGY STAR PARTNER

Performance Services, Inc.
4670 Haven Point Blvd.| Indianapolis, IN 46280
p: 317-713-1750 f: 317-713-1751
www.performanceservices.com

Performance Services

Beiriger Elementary School

4670 Haven Point Blvd. | Indianapolis, IN 46280
Ph: 317.713.1750 | www.performanceservices.com

Performance Services

Beiriger Elementary School

Building Overview

The Beiriger Elementary School was constructed in 1967 with a renovation in 2008 and another renovation in 2010. Enrollment as of 2019-2020 school year is 496 students, per Indiana Department of Education. The building annual energy usage is 69,500 BTU/ft^2 which is relatively poor when compared to other elementary school buildings in Indiana. Energy savings opportunities also exist at this building through future improvements.

Category	Improvement	Cost Estimates
Central Plant	➢ None at this time	**$0**
HVAC	➢ None at this time	**$0**
Architectural	➢ None at this time	**$0**
Windows	➢ None at this time	**$0**
Roof	➢ Replace missing snow guards	**$1,050 - $1,200**
	Total	**$1,050 - $1,200**

Note: Some of the listed items were not priced because needs are not immediate or not enough information was available at time of printing.

Heating Plant

2010 BOILER PLANT

EXISTING CONDITIONS

- ✓ Two (2) Hydrotherm KN-6 boilers were installed in the 2010 renovation, and two (2) Hydrotherm KN-20 boilers were installed in the 2008 renovation.
- ✓ Boilers are 93% efficient.
- ✓ Boilers are in good condition.

PROPOSED SOLUTION

- ✓ None at this time.

2008 BOILER PLANT

EXISTING CONDITIONS

- ✓ Main heating distribution pumps are original to the recent renovations.
- ✓ The pumps are in fair condition.
- ✓ Heating water systems are currently variable volume primary configuration.

PROPOSED SOLUTION

- ✓ None at this time.

2010 HEATING PUMPS

2008 HEATING PUMPS

Cooling Plant

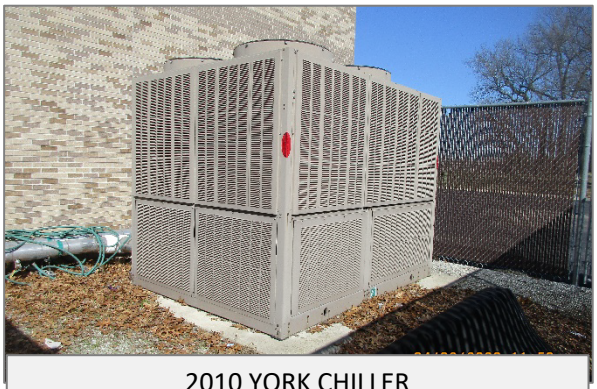
2008 YORK CHILLER

EXISTING CONDITIONS

- ✓ The two (2) York chillers are at this building, one was installed in 2008 & one in 2010.
- ✓ The chillers must be drained every winter because the evaporator is outdoors.

PROPOSED SOLUTION

- ✓ None at this time



2010 YORK CHILLER

EXISTING CONDITIONS

- ✓ The chilled water systems utilize variable primary pumping. Both sets of pumps are base mounted end-suction pumps. This arrangement is beneficial for maintenance access.
- ✓ The chilled water pumps are in good condition.

PROPOSED SOLUTION

- ✓ None at tis time.

2008 CHILLER DISTRIBUTION PUMPS

ONE OF 2010 CHILLER DISTRIBUTION PUMPS

General Building Environment

FAN POWERED VAV BOXES ARE INSTALLED ABOVE THE CEILING AND ARE DIFFICULT TO SERVICE (LADDER WORK)

EXISTING CONDITIONS

- ✓ This building is served primarily by a combination of fan powered VAV boxes and standard VAV boxes and single zone air handling units.
- ✓ Classrooms are served by fan powered VAV units installed in the ceilings.
- ✓ VAV air handlers include variable speed drives for volume control.
- ✓ VAV boxes area a combination of 2008 and 2010 vintage.

PROPOSED SOLUTION

- ✓ Recommend replacing fan powered VAV boxes at the end of their life, with standard VAV boxes to eliminate filter changes and motor maintenance.
- ✓ Safety - Maintenance people would not need to routinely get on a ladder and change filters/oil motors/etc. Most units require filter changes three times per year.

FAN POWERED VAV BOX INSTALLED IN MECHANICAL MEZZANINE

BENEFITS

- ✓ Ease of maintenance – no ladder work required for any routine maintenance work.

Air Handling Equipment

TYPICAL ROOF MOUNTED AIR HANDLING UNIT

EXISTING CONDITIONS

- ✓ The building is served by a combination of roof mounted and indoor 4-pipe, York air handling units (from both 2008 and 2010 renovations).

PROPOSED SOLUTION

- ✓ Recommend adding CO_2 based control of outdoor air to reduce energy usage on large single zone air handling units.

BENEFITS

- ✓ Energy savings.

INDOOR YORK AIR HANDLER WITH VFD

Terminal Heating Equipment

ELECTRIC FINNED TUBE HEATER

EXISTING CONDITIONS

- ✓ Terminal heating equipment at entries and auxiliary spaces is typically 2-pipe heating cabinet units within the building.
- ✓ Electric finned tube heat is installed at some windows and entries. Date of installation unknown.
- ✓ Mechanical spaces have propeller unit heaters.
- ✓ Units are original to both renovations.

PROPOSED SOLUTION

- ✓ None at this time.

Temperature Control System

DIGITAL SENSOR

DIGITAL PANEL

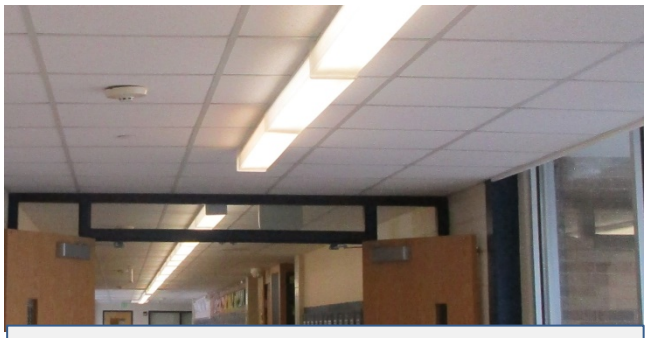
EXISTING CONDITIONS

- ✓ Existing temperature controls at this building are a Johnson Controls, digital system.
- ✓ The system was installed in 2014.
- ✓ Service support is by Johnson Controls.
- ✓ Digital controls are necessary in a school to properly monitor and control the learning environment. The system is in good condition but occupants complain about erratic temperatures.

PROPOSED SOLUTION

- ✓ Re-commission the controls for more comfort and room-to-room consistent temperatures.

Electrical



LIGHT FIXTURES IN CORRIDORS

EXISTING CONDITIONS

- ✓ Lighting has been changed to LED tubes throughout most of the building.
- ✓ LED lighting is installed in the parking lots.

PROPOSED SOLUTION

- ✓ None at this time

SOME OF THE SWITCHGEAR IS OLDER AND CAUSING OPERATIONAL ISSUES.

EXISTING CONDITIONS

- ✓ Some of the switchgear is older and causing operational issues.

PROPOSED SOLUTION

- ✓ More investigation is necessary in this area.

BENEFITS

- ✓ To be determined.

Plumbing

DOMESTIC WATER IS HEATED BY A HIGH EFFICIENCY UNIT

EXISTING CONDITIONS

- ✓ Domestic hot water heater is a newer model (2008) manufactured by Lochinvar.
- ✓ The unit is high efficiency.

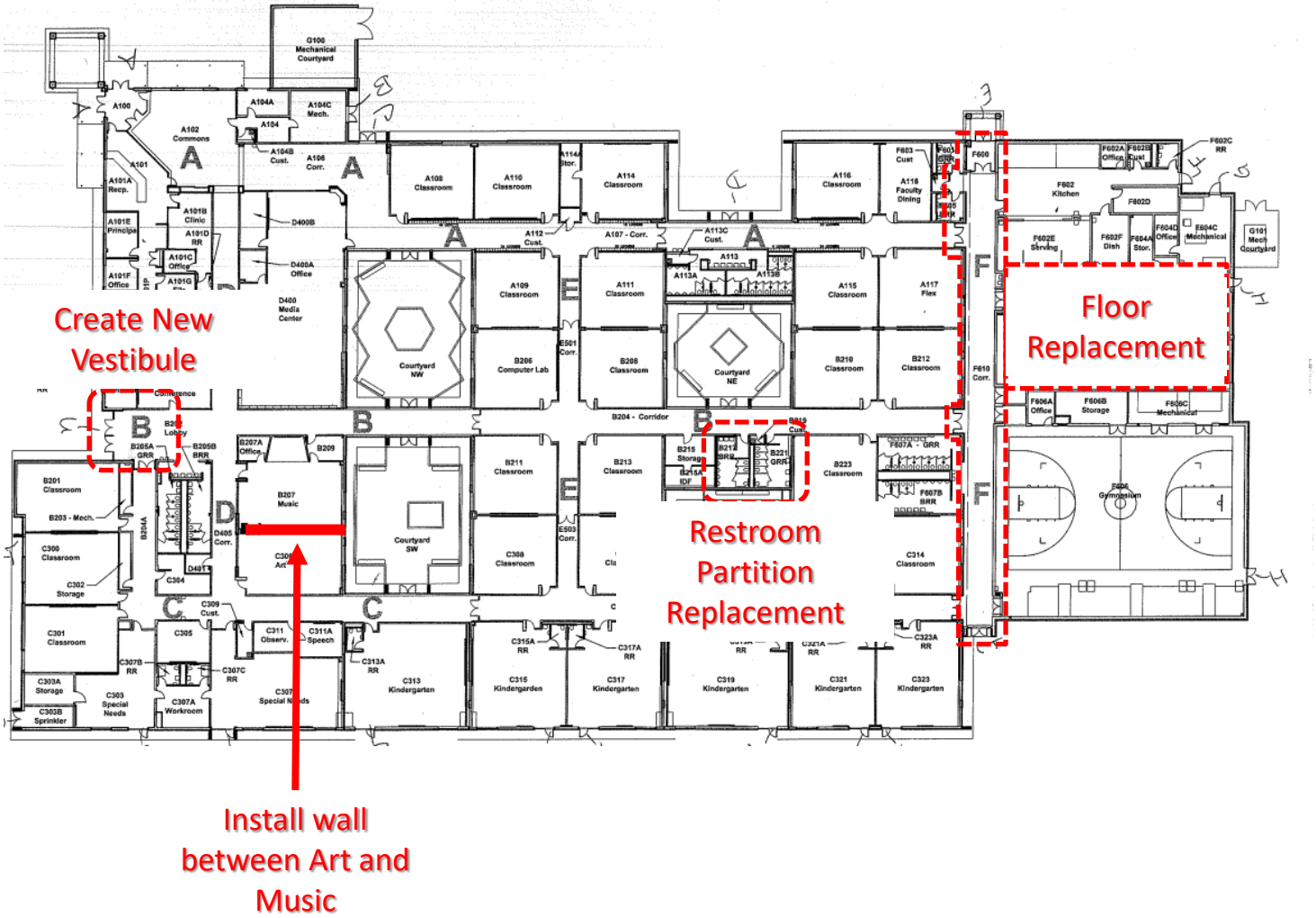
PROPOSED SOLUTION

- ✓ None at this time.

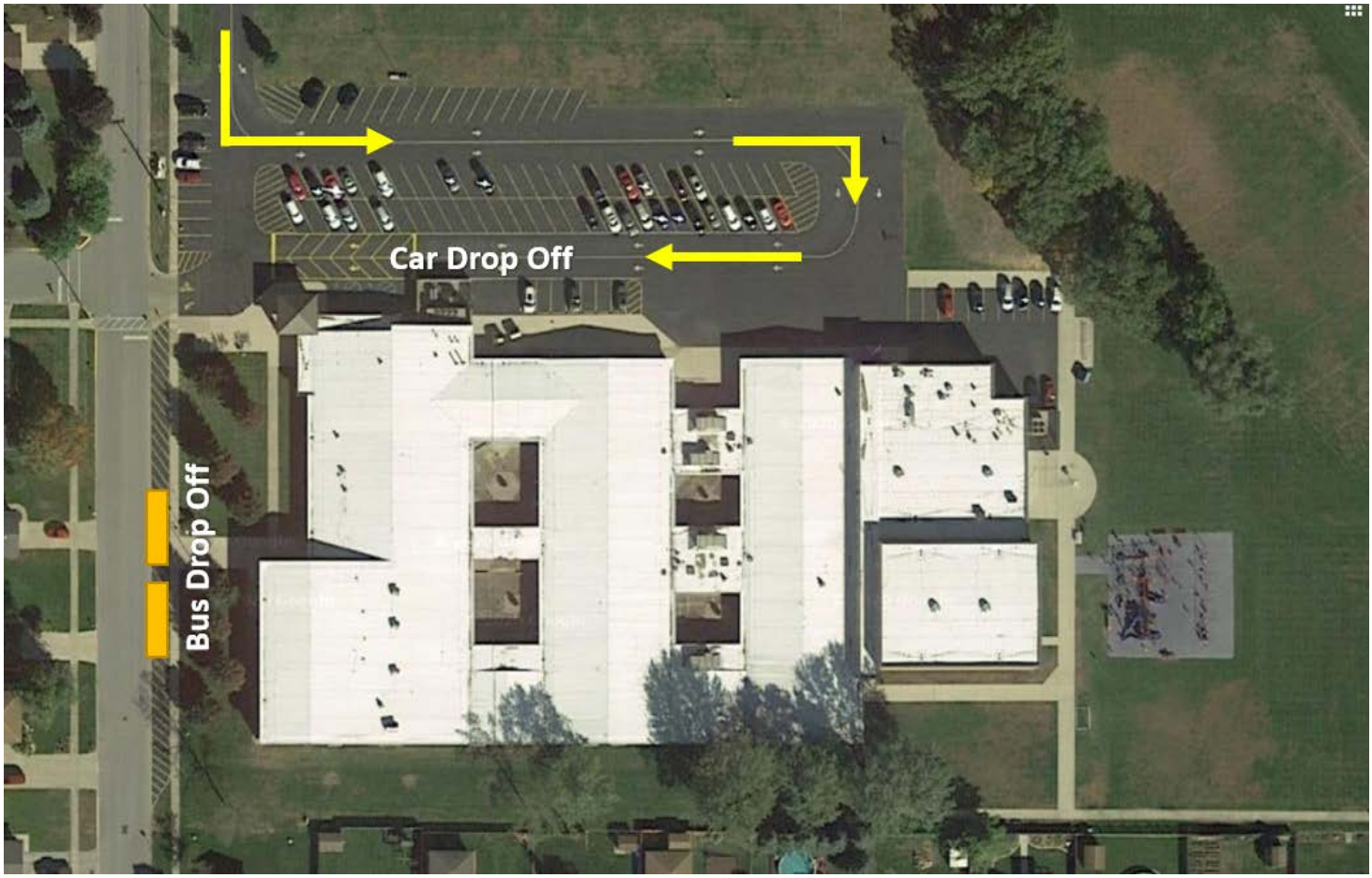
Architectural Interior Assessment

Building Item	Condition	Notes
Site Pavings	Average	No observed critical issues. Some locations of cracks that should be infilled.
Playground	Average	Exterior sports floor system showing signs of wear and should be repaired. Equipment appears to be in good condition.
Interior Walls	Good	
Interior Ceilings	Good	
Interior Flooring		
Classroom / Office	Average	Broad loom carpet in average condition. Recommend to replace with carpet tiles to enhance maintenance and improvie aesthetics.
Corridor	Good	Terrazzo floor
Sports Flooring	Good	Gym floor to be refinished Summer 2020
Wall Finishes	Average	Touch up painting in select locations
Casework & Equipment	Good	
Visual Display Boards	Good	Markerboards throughout the building
Interior doors and hardware	Average	Minor wear.
Security	Poor	Classroom cannot be secured from inside without exiting the room
Restroom Partitions	Good / Average	Most partitions in good condition. Existing B212 and B221 metal partitions in average condition.
ADA - Hardware	Meets Requirements	
ADA - Toilet Facilities	Some Meet Requirements	Original restrooms (B1221 and B121) toilet room may not meet requirements. All other appear to meet accessibility requirements when constructed.
Secure Entry	Yes	

Existing Floor Plan and Zones to Consider



Existing Site Utilization



- ✓ Existing Terrazzo flooring in good condition.
- ✓ Existing ceiling appears to be in good condition.

- ✓ Existing vinyl flooring in average to poor condition throughout the building.
- ✓ The aesthetics do not work well with the current building and may consider replacement

- ✓ Carpet in in average condition. While showing some wear, it does not appear to be damaged.
- ✓ Carpet is broad loom and not carpet tiles.

- ✓ Interior door hardware is not classroom secure The staff member would be required to leave the room to lock the door in the even of an emergency.

- ✓ The playground surface is worn in many locations and should be patched.

- ✓ The bus exit door does not have vestibule doors allowing cold air to enter the building. As this door is commonly used, vestibules is recommended to improve to improve comfort.

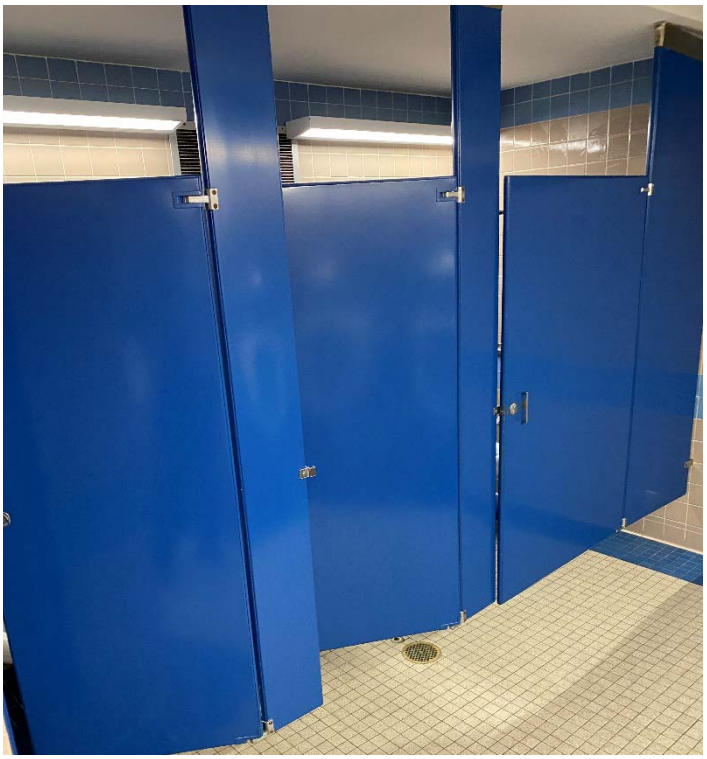
- ✓ Operable partition between art and music should be removed and installed with a permanent wall to improve the acoustical separation between the rooms.

- ✓ Existing gym floor and equipment appears to be in good condition. There are no acoustical treatment in the gym which should be considered.

- ✓ Existing gym floor shows some separation. This is not critical to replace. This is typically caused by the wood drying and shrinking. However, additional coating of finish is recommended.

- ✓ Main entrance currently has a secure entry vestibule.

- ✓ Typical Classroom with coat cubbies.



- ✓ Metal partitions in B212 and B221 in average condition.

- ✓ Other restrooms have been remodeled and are in good condition.

✓ Window Assessment:

- Fenestration in good share aesthetically.
- Windows appear to be 30+ years old. No visible signs of failure.
- It is assumed that the current windows have at least 5 years of life left.
- Lack of sun / natural light control requiring blinds. New glass should have low-e coating to improve thermal performance .

Roofing Conditions

EXISTING CONDITIONS

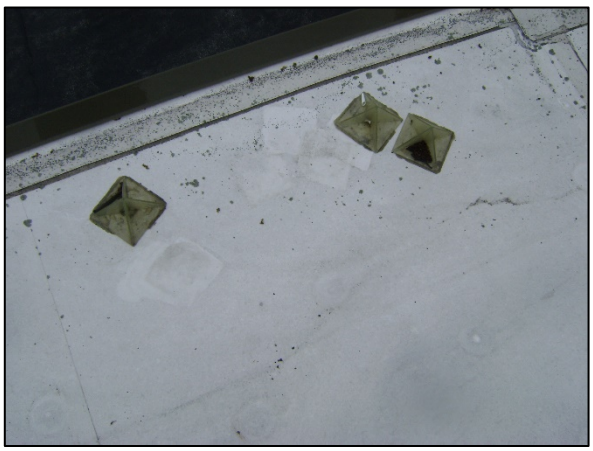
- ✓ These roofs were found in good condition.
- ✓ They appear to have been replaced in the last 10 to 12 years.
- ✓ We did find some snow guards loose on a small canopy roof over a door entry on the North Side.

PROPOSED SOLUTION

- ✓ Replace missing snow guards.

BENEFITS

- ✓ Protects entry from falling ice and snow upon build up.



Equipment List

Equipment	Brand	Expected Useful Life (yrs)	Year Installed	Useful Life Remaining	Outstanding Issues
Boilers (4)	Lochinvar	25	2008 2010	13 15	High efficiency
Chillers (2)	York York	15 to 20	2008 2010	8 10	
Fan Coil Units	York	20	2010	10	
Fan Powered VAV Boxes	Varies	20	2008 2010	8 10	
Domestic Hot Water Heater Tank	Lochinvar	20	2010	10	High efficient heating system
Hot Water Pumps	Bell and Gossett	20	2008 2010	8 10	
Chilled Water Pumps	Bell and Gossett	20	2008 2010	8 10	
Air Handling Units	York York	25	2008 2010	13 15	Add variable speed drives where needed
Unit Heaters	York York	20	2008 2010	12 15	
Temperature Controls	Johnson Controls	15	2014	9	

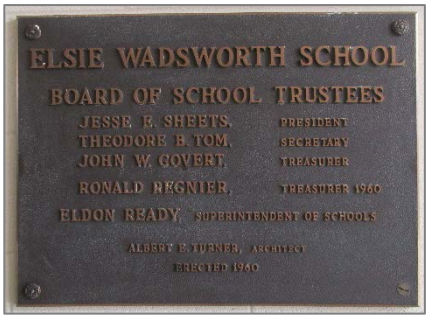
Performance Services

Wadsworth Elementary School

4670 Haven Point Blvd. | Indianapolis, IN 46280
Ph: 317.713.1750 | www.performanceservices.com

Performance Services

Wadsworth Elementary School



Building Overview

The Wadsworth Elementary School was constructed in 1960 with a major renovation in 2001. Enrollment as of 2019-2020 school year is 352 students, per Indiana Department of Education. The building annual energy usage is 57,700 BTU/ft^2 which is average when compared to other elementary school buildings in Indiana.

Category	Improvement	Cost Estimates
Central Plant	➢ Boiler replacement with high efficiency.	**$270,000 - $320,000**
HVAC	➢ Replace Fan Coil units and ERVs system with vertical classroom units. ➢ Replace fan coils for office and misc. areas ➢ Install VFDs and CO2 controls on 4 existing constant volume air handling units.	**$1,982,000 - $2,402,640**
Electrical	➢ None at this time	-
Architectural	➢ Exterior upgrades including playground fence and edging ➢ Interior security and aesthetic upgrades ➢ Interior condition/function upgrades ➢ Educational space reconfigurations	**$3,580,900 - $3,833,400**
Roof	➢ Install ladder to gym roof	**$7,700 - $8,800**
Windows/Facade	➢ Replace EIFS water proof coating ➢ Replace Limestone wall cap	**$53,200 - $61,000**
	Total	**$5,893,800 - $6,625,840**

Note: Some of the listed items were not priced because needs are not immediate or not enough information was available at time of printing.

Heating Plant

BOILER PLANT

EXISTING CONDITIONS

- ✓ Two (2) atmospheric Lochinvar boilers are original to the 2001 renovation. Boilers are rated at 1.8 MBH each.
- ✓ Boilers are only 80% efficient.
- ✓ Boilers are in fair to poor condition due to their age and hours of operation.

PROPOSED SOLUTION

- ✓ Recommend replacing boilers with two high efficiency condensing boilers.

BENEFITS

- ✓ Significant gas savings would be realized at this facility due to overall load in the building.
- ✓ The boiler room would not overheat during the heating season.

HEATING WATER PUMPS

EXISTING CONDITIONS

- ✓ Main heating distribution pumps are original to the 2001 renovation and are in fair condition.
- ✓ Heating water system is currently primary secondary pumping with constant volume on the secondary side.

PROPOSED SOLUTION

- ✓ Recommend replacing heating water pumps with new pumps and drives when high efficiency boilers installed.

BENEFITS

- ✓ Variable speed pumps create electrical energy savings.

Cooling Plant

NEW CHILLER

EXISTING CONDITIONS

- ✓ A new McQuay/Daikin chiller was installed in 2015.

PROPOSED SOLUTION

- ✓ None at this time.

CHILLER DISTRIBUTION PUMPS

EXISTING CONDITIONS

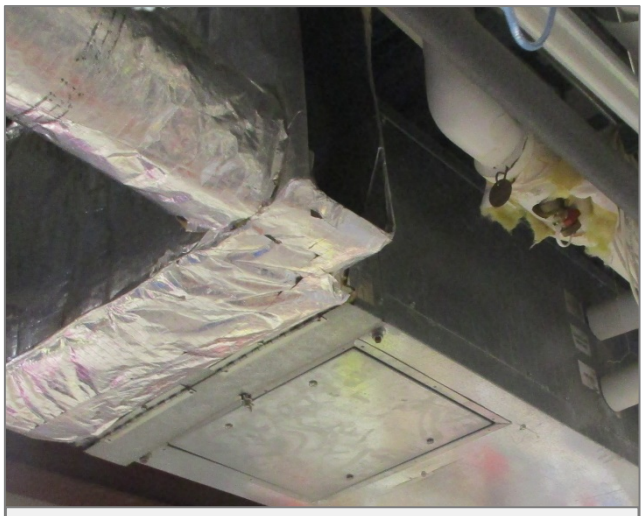
- ✓ The chilled water system utilizes primary/secondary pumping system. Both sets of pumps are base mounted, end-suction pumps. This arrangement is beneficial for maintenance access.
- ✓ The chilled water pumps are in good condition and the secondary pumps currently utilize variable frequency drives.

PROPOSED SOLUTION

- ✓ None at this time.

VARIABLE SPEED DRIVES FOR PUMPS

General Building Environment



FAN COIL UNITS ARE INSTALLED ABOVE THE CEILING AND ARE DIFFICULT TO SERVICE (LADDER WORK)

FRESH AIR UNIT (SEE FOLLOWING PAGE)

EXISTING CONDITIONS

- ✓ This building is served by a combination of fan coil units and single zone air handling units.
- ✓ Classrooms are served by fan coil units installed in the ceilings.

PROPOSED SOLUTION

- ✓ Recommend replacing fan coil units at the end of their life, with either a VAV system or vertical classroom units.
- ✓ Safety - Maintenance people would not need to routinely get on a ladder and change filters/oil motors/etc. Most units require filter changes three times per year.

BENEFITS

- ✓ Improved building environment including:
  - Consistent temperatures and humidity.
  - MUCH better fresh air system than currently installed.
- ✓ Ease of maintenance – no ladder work required for any routine maintenance work.

Air Handling Equipment

EXISTING CONDITIONS

- ✓ The large areas of the building are served by four (4) 4-pipe, air handling units (from the 2001 renovation).

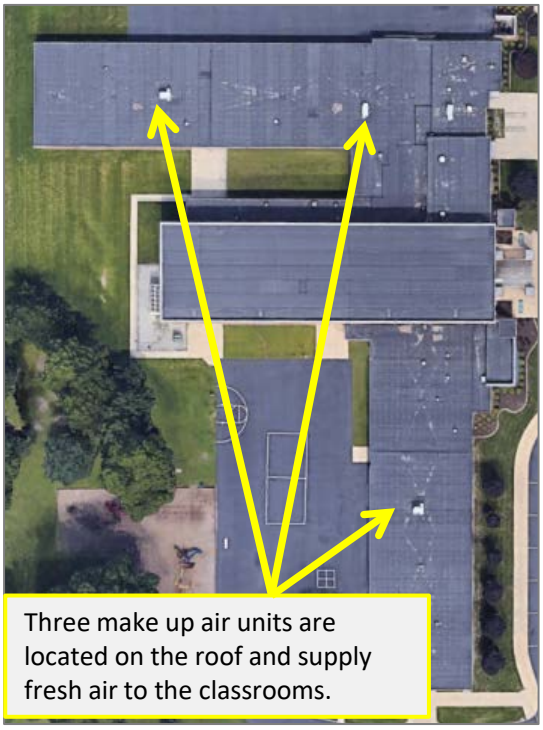
PROPOSED SOLUTION

- ✓ Recommend adding CO_2 based control of outdoor air to reduce energy usage.
- ✓ Recommend adding variable speed drives to the air handlers for energy savings and quieter operation.

BENEFITS

- ✓ Energy savings.

Fresh Air Units



Three make up air units are located on the roof and supply fresh air to the classrooms.

EXISTING CONDITIONS

- ✓ The fresh air in this building comes mostly from three Venmar energy recovery units are located on the roof supplying air to the building. Units installed in 2001.
- ✓ Fresh air is ducted to the fan coil units installed in the ceilings.
- ✓ Then, air is ducted to each classroom from the fan coil unit to diffusers in the ceiling.

PROPOSED SOLUTION

- ✓ Recommend replacing the fresh air units at the end of their life with a system that is designed to better control humidity and temperatures including either a VAV system or vertical classroom units.

BENEFITS

- ✓ Improved building environment including:
  - Consistent temperatures and humidity.
  - MUCH better fresh air system than currently installed.

Terminal Heating Equipment

ENTRYWAY HEATER

EXISTING CONDITIONS

- ✓ Terminal heating equipment at entries and auxiliary spaces is typically 2-pipe heating cabinet units within the building and above ceilings.
- ✓ Mechanical spaces have propeller unit heaters.
- ✓ Units are original to 2001 renovation.

PROPOSED SOLUTION

- ✓ None at this time.

Temperature Control System

DIGITAL CONTROL SENSOR

EXISTING CONDITIONS

- ✓ Existing temperature controls at this building are a 1999 obsolete Johnson Controls, digital system.
- ✓ Service support is by Johnson Controls.
- ✓ Digital controls are necessary in a school to properly monitor and control the learning environment.
- ✓ The system is basically obsolete and is functioning poorly.

PROPOSED SOLUTION

- ✓ Griffith Public Schools may want to have this system replaced in the next two years since many components are beginning to fail and support for older systems is limited.

Other Building Items

SOME DOOR THRESHOLDS NEED ATTENTION

Electrical

PARKING LOTS HAVE LED LIGHTING

FLUORESCENT LIGHT FIXTURES IN CORRIDOR

EXISTING CONDITIONS

- ✓ Existing building lighting has recently been upgraded to LED tubes by the district.
- ✓ LED lighting is installed in the parking lots.

PROPOSED SOLUTION

- ✓ None

Plumbing

DOMESTIC WATER HEATER

EXISTING CONDITIONS

- ✓ Domestic hot water heater is a model manufactured by A. O. Smith.
- ✓ The unit is high efficiency.
- ✓ This unit was installed in 2019 to replace a unit that had been causing maintenance problems, and appears to be in good condition.

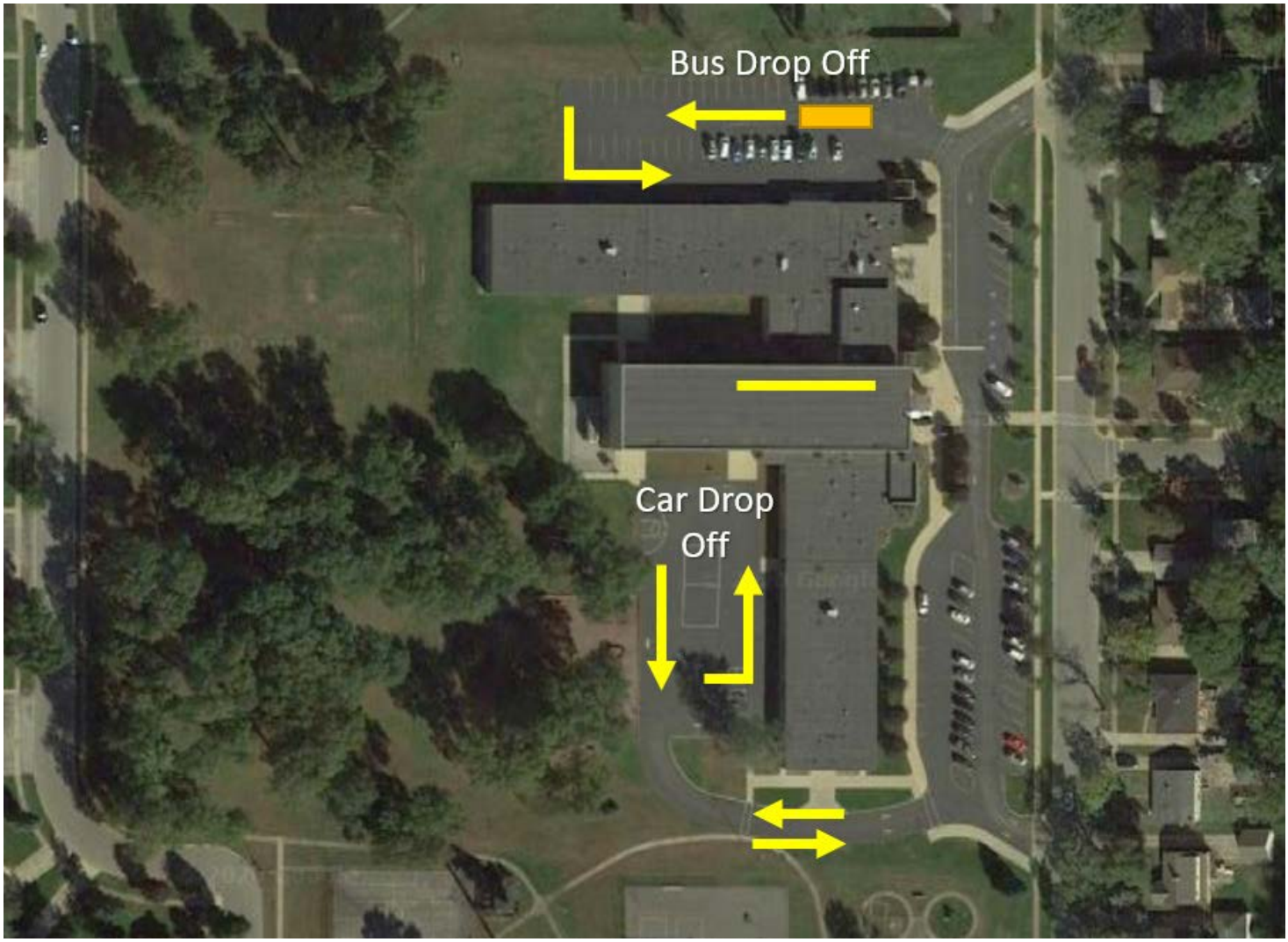
PROPOSED SOLUTION

- ✓ None

Architectural Interior Assessment

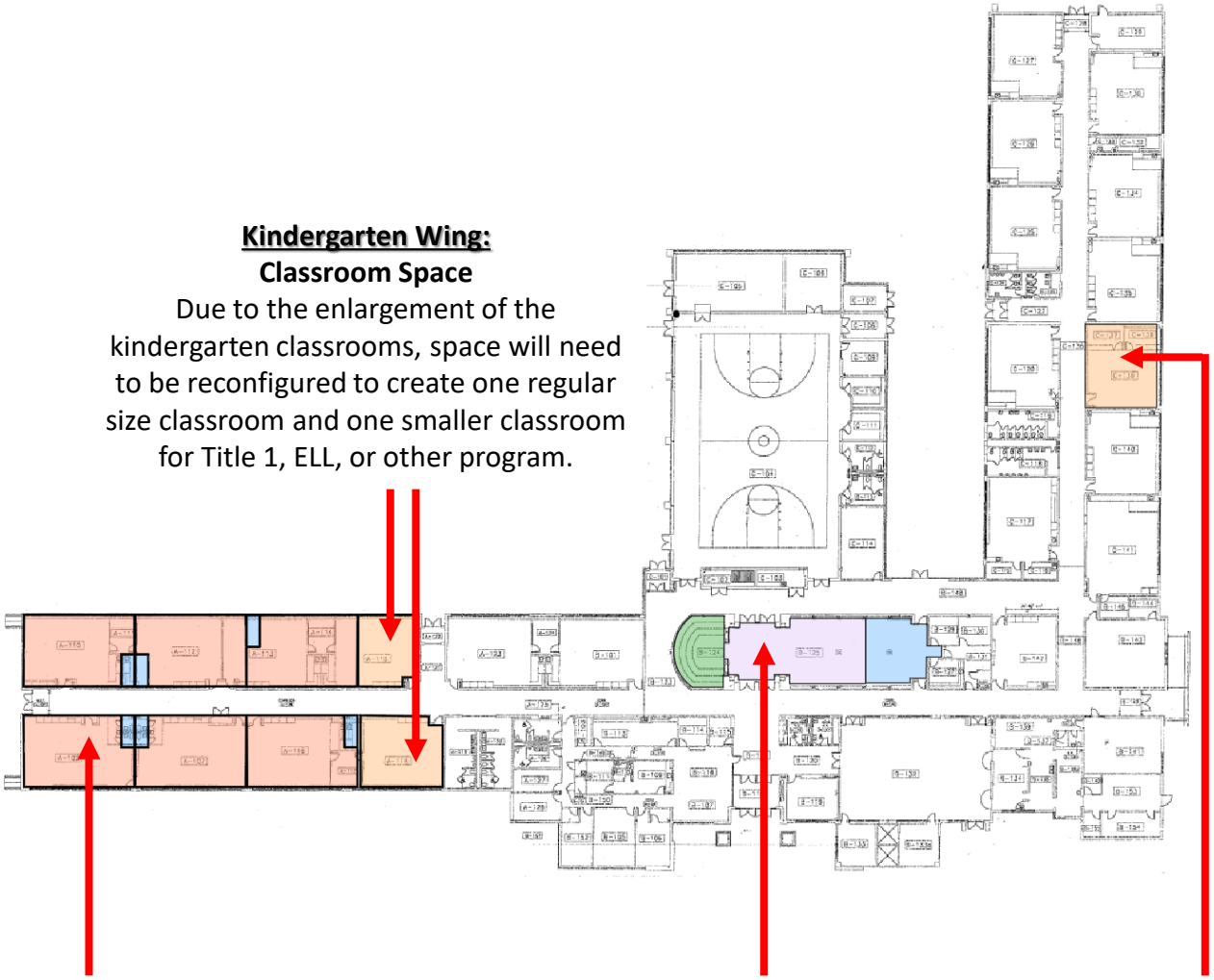
Building Item	Condition	Notes
Interior Walls	Good	
Interior Ceilings	Average	Ceiliong grid appears to be in average condition. The pads (tiles) are curling at the corners and sagging. It is recommended that, at minimum, the pads be replaced.
Interior Flooring		
Classroom / Office	Poor	Broad loom carpet in poor condition and stained. Some locations where the carpet is frayed.
Corridor	Poor	Carpet is worn in some locaitons and stained. This is broad loom carpet making repairs and removal of stains difficult.
Sports Flooring	Good	
Wall Finishes	Average	Touch up painting in select locations. To improve the aesthetics of the building, new painting can be used to brighten the hallways and introduce color opportunities.
Casework & Equipment	Average	Casework appears to be in good condition. However, the existing coat / book bag hooks do not separate each student's belongings. This allows for the spread of lice. It is recommended the use of cubbies.
Visual Display Boards	Good	Markerbaords throughout the building
Interior doors and hardware	Average	Minor wear.
Security	Poor	Classroom cannot be secured from inside without exiting the room
Restroom Partitions	Good	
ADA - Hardware	Meets Requirements	
ADA - Toilet Facilities	Some Meet Requirements	Kindergarten restrooms do not appear to meet accessibility requirements nor do restrooms in the original hallway.
Secure Entry	Yes	

Existing Site Utilization



Educational Program Assessment

Kindergarten Wing:
Classroom Space
Due to the enlargement of the kindergarten classrooms, space will need to be reconfigured to create one regular size classroom and one smaller classroom for Title 1, ELL, or other program.



Kindergarten Wing:
Existing Kindergarten Rooms:
The existing kindergarten restrooms do not meet accessibility requirements. It is recommended these be reconfigured.

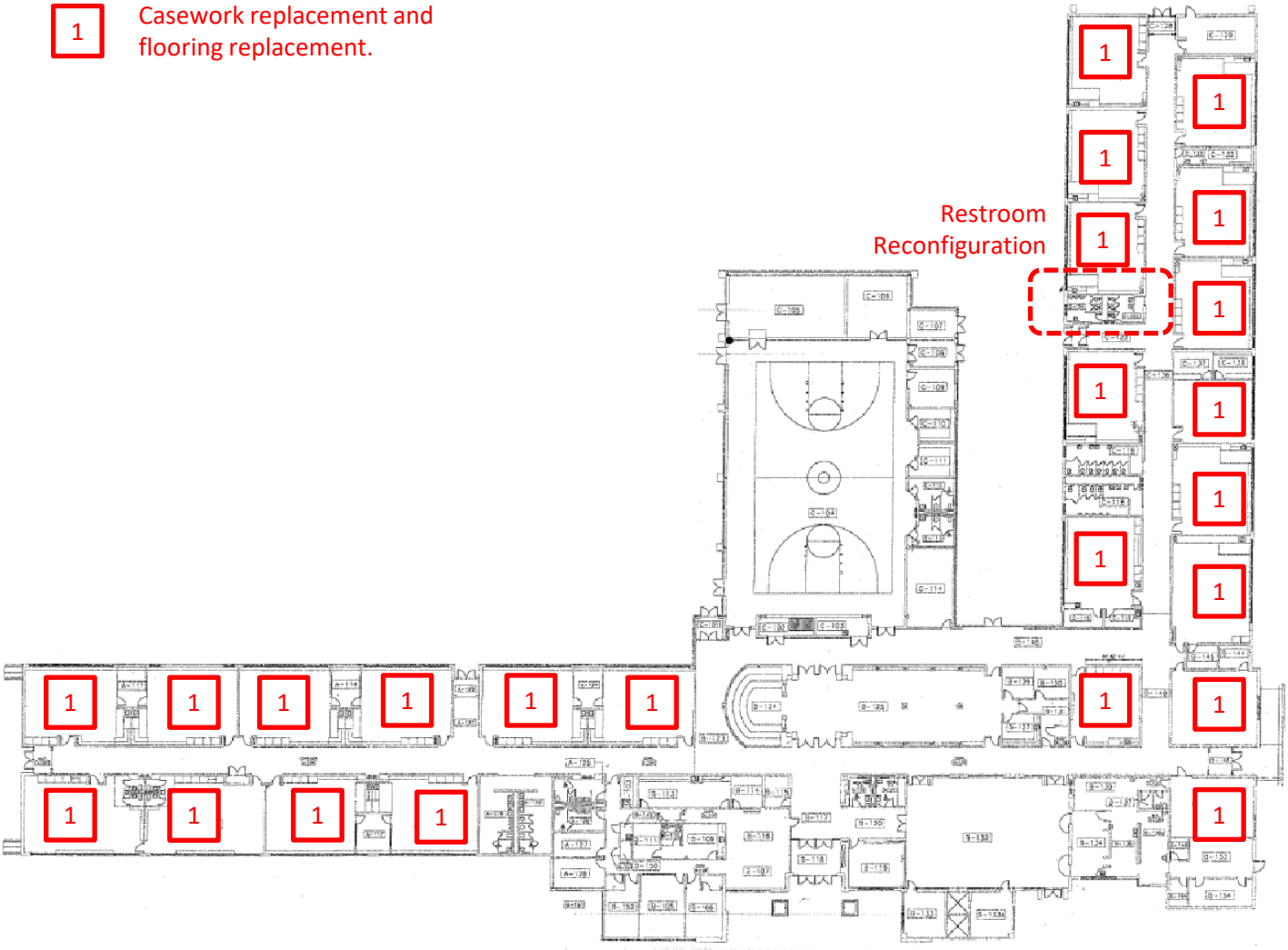
New Kindergarten Rooms:
Existing classrooms in this wing are 900 SF +/-. Typically, a kindergarten classroom is 1,200sf. In addition, restrooms will need to be added to these rooms.

Media Center
The school would like to update the media center to remove the reading steps to provide more usable space, replace the oversized reception / circulation desk, and create a new Maker Space

Enlarge Classroom
Remove existing offices on one classroom and upgrade classroom equipment to allow for the creation of a standard grade level classroom.

Architectural Interior Assessment

1 Casework replacement and flooring replacement.



✓ Existing secure entry vestibule.

✓ Existing gym appears to be in good condition.

✓ Corridors are broad loom carpet and are worn and should be replaced.

- ✓ VCT in vestibules in poor condition and should be replaced.

- ✓ Existing gym appears to be in good condition. There are no acoustical wall panels resulting in a loud and revertant room.

- ✓ Gym restroom in good condition. There is poor site line protection to the room (most of the restroom is visible from the gym). Due to current layouts, there is not a cost-effective solution to remedy the situation.

- ✓ Existing classroom casework is in good condition. The student coat storage is a series of wall hooks. As these hooks are not separated between student, this can allow the spread of lice. It is recommended that coat cubbies be utilized to provide separation between student's belongings.

- ✓ Classroom door hardware is in good condition. However, the locks cannot be secured from the inside of the classroom in an emergency situation.

- ✓ Classroom carpet is worn and should consider replacement.

- ✓ Kindergarten restrooms do not appear to meet ADA requirements and are undersized for accessibility.

- ✓ The kindergarten restroom floors are VCT and is failing. As this will commonly be subject to water, it is recommended these be replaced with a resinous floor.

- ✓ The restroom partition in the oldest wing are in poor condition and should be replaced.

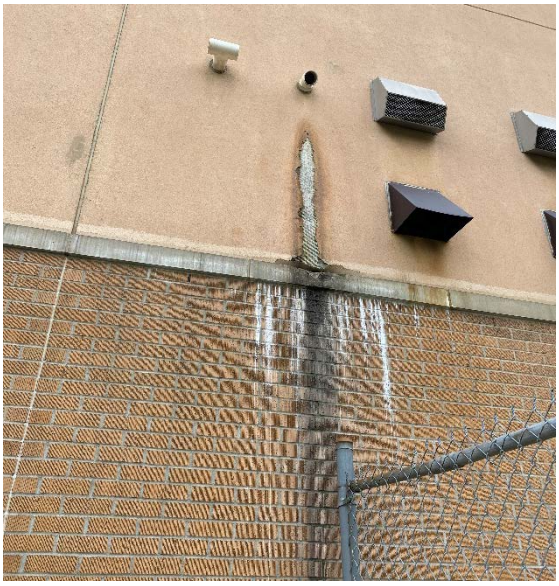
- ✓ The existing asphalt and curbs are in average conditions. There are some damaged curbs due to vehicle traffic and cracks should be infilled.

- ✓ The playground equipment appears to be in good condition. Additional mulch is recommended to infill low areas.

- ✓ The playground border should be re-secured.
- ✓ If the school uses the playground during car drop off/pick up, a fence should be considered to protect the playground from car traffic.

- ✓ A sidewalk is recommended between the hard surface play area to the entrance to the playground equipment for ADA access and reduce dirt / mud spreading.

- ✓ The exist on the northwest wing does not have a sidewalk outside of the door brining in dirt / mud when the door is used.



- ✓ Existing EIFS and masonry is damaged on the west elevation of the gym due to the exhaust of the water heater. The exhaust system should be addressed and the wall repaired.

✓ Window Assessment:

- Fenestration in good shape aesthetically.
- Windows appear to be 30+ years old. No visible signs of failure.
- It is assumed that the current windows have at least 5 years of life left.
- Lack of sun / natural light control requiring blinds. New glass should have low-e coating to improve thermal performance .

Roofing/EIFS Wall Conditions

EXISTING CONDITIONS ON ROOFING SYSTEMS

- ✓ Appear to be in good condition. No deficiencies noted.
- ✓ From records these Fully Adhered EPDM roof systems look like they were recently installed in 2015.
- ✓ A external ladder should be installed from the lower roof levels to access the higher bay Gym roof.

PROPOSED SOLUTION

- ✓ Install ladder from lower elevation to gym roof.

EXISTING CONDITIONS ON EIFS WALLS & COPING CAP

- ✓ EIFS walls appear to be in a state of deterioration on the North side of the gym.
- ✓ Deficient caulking joints, minor cracking of the EIFS top coat and severe algae/staining on surface of the EIFS.
- ✓ Limestone coping cap around brick walls of dumpster enclosure are failing.

PROPOSED SOLUTION

- ✓ Restore EIFS walls with new waterproofing coating and repairs.
- ✓ Replace existing limestone coping cap with new limestone copings.

Equipment List

Equipment	Brand	Expected Useful Life (yrs)	Year Installed	Useful Life Remaining	Outstanding Issues
Boilers (2)	Lochinvar	20	2001	1	Not efficient and operational issues have become more common
Chiller (1)	McQuay /Daikin	20	2015	16	Recently replaced the 2000 Trane chiller
Fan Coil Units	Enviro-Tec	20	2001	1	Replace soon
Domestic Hot Water Heater	A.O. Smith	15	2019	14	Recently replaced
Hot Water Pumps	Bell and Gossett	20	2001	1	Replace with new boilers
Chilled Water Pumps	Bell and Gossett	20	2001	1	Replace during next HVAC project
Air Handling Units	McQuay	25	2001	6	Add variable speed drives where needed
Unit Heaters	---	20	2001	1	
Temperature Controls	Johnson Controls	15	2001	-4	Upgrade during next HVAC project

Performance Services

Griffith Middle/High School

4670 Haven Point Blvd. | Indianapolis, IN 46280
Ph: 317.713.1750 | www.performanceservices.com

Performance Services

Griffith Middle/High School

Building Overview

The Griffith Middle/High School experienced a major renovation in 2001. Enrollment as of 2019-2020 school year is 1077 students, per Indiana Department of Education. The building annual energy usage is 75,700 BTU/ft^2 which is below average when compared to other high school buildings in Indiana. Significant energy savings are possible through future improvements.

Category	Improvement	Cost Estimates
Central Plant	➢ Boiler replacement with high efficiency. ➢ Convert domestic water heating to high efficiency. ➢ Convert pool water heating to high efficiency.	**$965,000 - $1,115,000**
HVAC	➢ Replace Fan Coil and ERV system with Vertical classroom units and new fan coils in select locations. VAV system possible in some locations.	**$7,813,000 - $8,612,000**
Pool Unit	➢ Replace Pool Dehumidification Units.	**$600,000 - $675,000**
Electrical	➢ None at this time.	
Architectural	➢ None at this time.	
Windows	➢ None at this time.	
Roofs	➢ None at this time.	
	Total	**$9,378,000 - $10,402,000**

Note: Some of the items were not priced because needs are not immediate or not enough information was available at time of printing.

Heating Plant

BOILER PLANT

EXISTING BOILER SHOWING SIGNS OF WEAR AND TEAR

EXISTING CONDITIONS

- ✓ Six (6) atmospheric Lochinvar boilers are original to the 2001 renovation.
- ✓ Boilers are only 80% efficient.
- ✓ Boilers are in fair to poor condition due to their age and hours of operation.
- ✓ The boilers run all year around….they heat the domestic water and pool water in addition to the building heat.
- ✓ One boiler was recently replaced because of a failure of an original boiler.

PROPOSED SOLUTION

- ✓ Recommend replacing boilers with two high efficiency condensing boilers.
- ✓ Replace pool water heat exchanger with a high efficiency dedicated heater.
- ✓ Replace the domestic water heat exchanger with a high efficiency heater.

BENEFITS

- ✓ Significant gas savings would be realized at this facility due to overall load in the building.
- ✓ The boiler room would not overheat during the heating season.
- ✓ Floor space savings.

BOILER DISTRIBUTION PUMPS

EXISTING CONDITIONS

- ✓ Main heating distribution pumps are original to the 2001 and are in fair condition due to good maintenance practices.
- ✓ Heating water system is currently variable volume on the secondary side.

PROPOSED SOLUTION

- ✓ Recommend replacing heating water pumps with new pumps and drives when high efficiency boilers installed.

BENEFITS

- ✓ Variable speed pumps create electrical energy savings.

Cooling Plant

NEW DAIKIN CHILLERS

NEW CHILLER INDOOR EVAPORATOR BARREL

EXISTING CONDITIONS

- ✓ The two (2) packaged chillers were replaced in 2020.
- ✓ Chillers have remote barrels that are mounted inside the building to eliminate the need for glycol in the cooling system.
- ✓ Both chillers are manufactured by Daikin and have screw type compressors and R-134a refrigerant.

PROPOSED SOLUTION

- ✓ None at this time

CHILLER DISTRIBUTION PUMPS

EXISTING CONDITIONS

- ✓ The chilled water system utilizes primary/secondary pumping system. Both sets of pumps are base mounted end-suction pumps. This arrangement is beneficial for maintenance access.
- ✓ The chilled water pumps are in good condition and the secondary pumps currently utilize variable frequency drives.

PROPOSED SOLUTION

- ✓ None at this time

General Building Environment

FAN COIL UNITS AND VAV BOXES ARE INSTALLED ABOVE THE CEILING

ENERGY RECOVERY AIR HANDLING UNIT

EXISTING CONDITIONS

- ✓ This building is served by a combination of fan coil units, fan powered VAV boxes, standard VAV boxes and single zone air handling units.
- ✓ Classrooms are served by fan coil units installed in the ceiling above the corridors.
- ✓ The fan coil units, VAV boxes, and air handlers are original to the 2001 renovation.
- ✓ Small energy recovery units are located on the roof supplying air to most of the building.
- ✓ Air is ducted to each room from the fan coil unit to diffusers in the room ceiling.
- ✓ Outdoor air for the fan coils is ducted directly from roof mounted make up air units to the fan coil units. These units have no heating or cooling capacity only energy recovery from exhaust air.
- ✓ VAV air handlers include variable speed drives for volume control.

PROPOSED SOLUTION

- ✓ Recommend replacing the fan coil units at the end of their life with a system that is designed to better control humidity and temperatures including either a VAV system or vertical classroom units.
- ✓ Recommend replacing fan powered VAV boxes at the end of their life, with standard VAV boxes to eliminate filter changes and motor maintenance.
- ✓ Safety - Maintenance people would not need to routinely get on a ladder and change filters/oil motors/etc. Most units require filter changes three times per year.

BENEFITS

- ✓ Improved building environment including:
  - Consistent temperatures and humidity.
  - MUCH better fresh air system than currently installed.
- ✓ Ease of maintenance – no ladder work required for any routine maintenance work.

Pool Conditioning System

POOL DEHUMIDIFICATION UNIT

EXISTING CONDITIONS

- ✓ The pool is currently conditioned by two DX Pool Pak units mounted on the roof.
- ✓ These units are at or near the end of its life.
- ✓ Refrigerant is R-22 that is no longer manufactured and is expensive to replace.

PROPOSED SOLUTION

- ✓ Recommend replacing Pool Pak unit with similar piece of equipment for pool conditioning.

Terminal Heating Equipment

EXISTING CONDITIONS

- ✓ Terminal heating equipment at entries and auxiliary spaces is typically 4-pipe heating/cooling cabinet units within the building and above ceilings.
- ✓ Mechanical spaces have propeller unit heaters.
- ✓ Units are original to 2001 renovation.

PROPOSED SOLUTION

- ✓ Replacement of units would be needed to take advantage of a new condensing boiler system.

BENEFITS

- ✓ Energy savings.

Air Handling Equipment

EXISTING CONDITIONS

- ✓ The large areas of the building are served by 4-pipe, Trane air handling units (from the 2001 renovation).

PROPOSED SOLUTION

- ✓ Recommend adding CO_2 based control of outdoor air to reduce energy usage.
- ✓ The heating coils may need to be replaced to take advantage of a new condensing boiler system.

BENEFITS

- ✓ Energy savings.

Temperature Control System

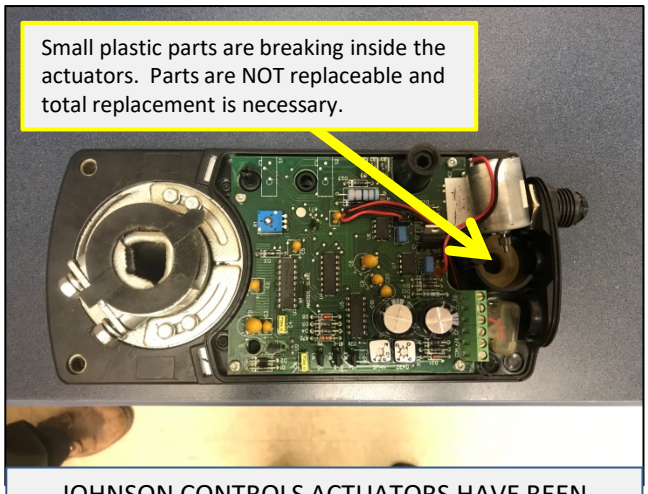
DIGITAL CONTROL SENSORS

EXISTING CONDITIONS

- ✓ Existing temperature controls at this building are a Johnson Controls, digital system.
- ✓ Service support is by Johnson Controls.
- ✓ Digital controls are necessary in a school to properly monitor and control the learning environment. The system is becoming obsolete but is working well.

PROPOSED SOLUTION

- ✓ See below on actuator replacement.



JOHNSON CONTROLS ACTUATORS HAVE BEEN FAILING AT A RAPID RATE

EXISTING CONDITIONS

- ✓ Existing actuators on damper motors and valves are manufactured by Johnson Controls and are at their life expectancy.
- ✓ Failures have become common which leads to uncomfortable students/staff members.

PROPOSED SOLUTION

- ✓ Audit all the air handling devices and determine the quantity of actuators needing replacement.
- ✓ Audit all the air handling control valves and determine the quantity of valves needing replacement.
- ✓ Get pricing from multiple vendors and replace devices.

Electrical

EMERGENCY GENERATOR

EXISTING CONDITIONS

- ✓ There is a backup generator currently at this building that serves the computer systems, pool pump, lighting, etc.
- ✓ The capacity of the generator and what is currently connected would need to be evaluated to make proper recommendations.

PROPOSED SOLUTION (FUTURE)

- ✓ Increase the size of the generator.
- ✓ Most school generators have the following loads connected: boiler(s), boiler pumps, emergency lighting including exit signs, computers/servers in the IT room, telephone system, door locks and swipes, fire alarm panels, cameras, security system, cooling for the IT room, kitchen freezer and cooler, temperature controls for the boiler room, sump pumps, well pumps and sewage pumps.

LIGHT FIXTURES IN CLASSROOMS

EXISTING CONDITIONS

- ✓ Existing building lighting was retrofitted by the school district to LED tubes recently.
- ✓ Corridors have LED lighting.

PROPOSED SOLUTION

- ✓ None at this time

BENEFITS

Plumbing

DOMESTIC WATER IS HEATED BY MAIN BOILERS

EXISTING CONDITIONS

- ✓ Domestic hot water heater is accomplished by running the main boiler system and heating a tank of water.
- ✓ The tank has pumps that deliver the hot water to the piping in the building.
- ✓ The lack of adequate return piping does not provide warm water at faucets and showers in a timely manner.
- ✓ The water heating is not high efficiency.

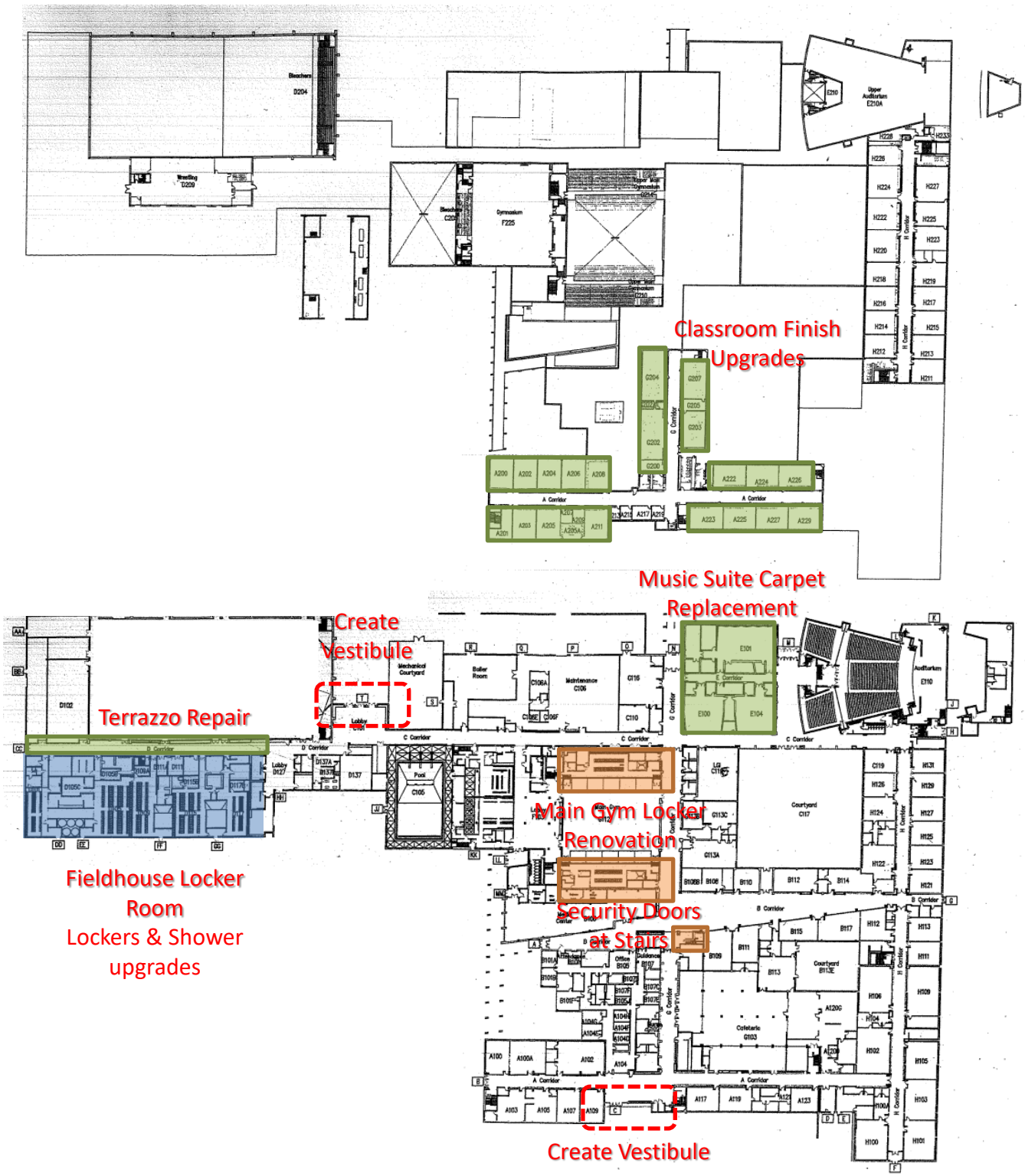
PROPOSED SOLUTION

- ✓ Replace the domestic water tank heat exchanger with a high efficiency heater.

BENEFITS

- ✓ Significant gas savings would be realized at this facility due to overall load in the building.

Existing Floor Plans and Zones to Consider



Security and Building Isolation Plan

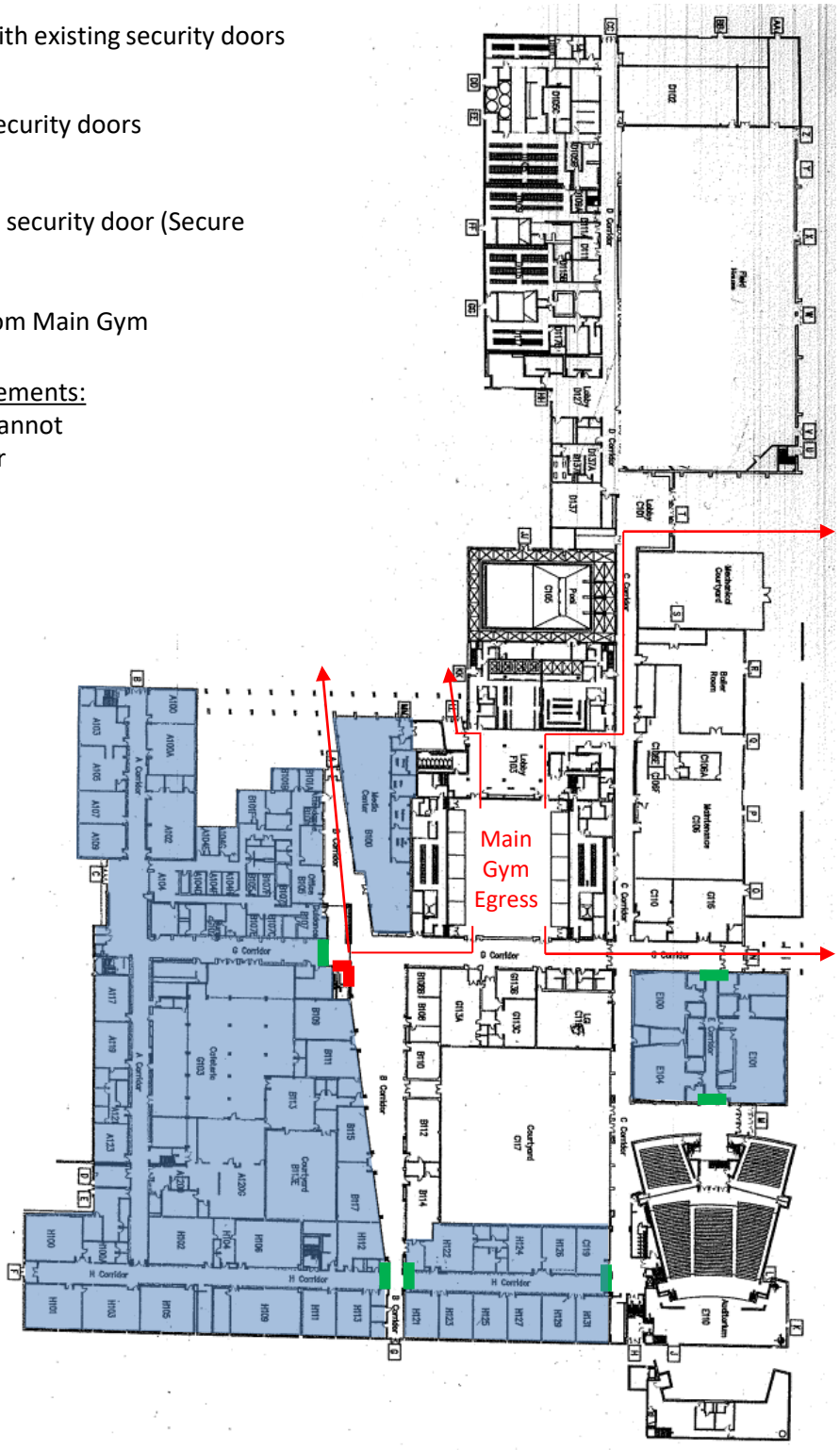
Secured with existing security doors

Existing security doors

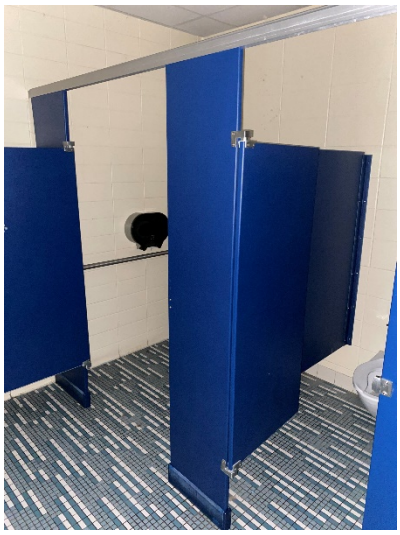
Proposed security door (Secure 2nd Floor)

Egress from Main Gym

<u>Dead-End Corridor Requirements:</u>
Security doors and gates cannot create a dead-end corridor



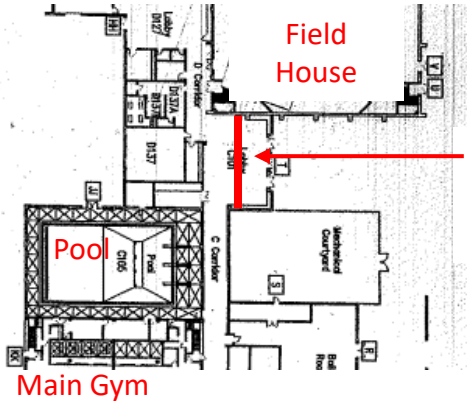
- ✓ Existing security gates create dead-end corridors creating life safety issues. Reference security door diagram for secured sections of the building. Additional security gates can be provided to secure sections of building. However, these doors must be located as to not create dead-end corridors.
- ✓ Additional doors are recommended to be installed at one staircase to secure the 2nd floor.



- ✓ Restrooms appear to meet accessibility requirements. Partitions throughout the building look in good condition.
- ✓ Many restrooms floor and wall finish appear dated. Replacing the floor and painting the walls could modernize the appearance.

- ✓ Restrooms are in good condition. The appearance is dated. Restrooms can be upgraded with new paint and/or floor replacement. However, the finishes are in good condition for the age.

- ✓ The north entrance lobby does not have a vestibule to protect from the weather / cold, especially during evening events and activities.



- ✓ Pool spectator seating area is not accessible. Accessible seating should be planned on the main pool deck.
- ✓ Flooring on the mezzanine is in poor condition and should be considered to be replaced.
- ✓ The existing railing is does not meet current safety requirements.

- ✓ Pool metal deck is showing signs of rust. This should be observed and replaced as the rust expands.

- ✓ Classroom door hardware is in good condition. However, the locks cannot be secured from the inside of the classroom in an emergency situation.

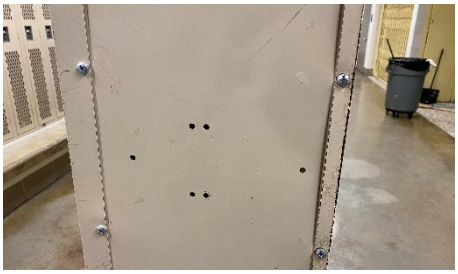
- ✓ Existing classrooms have chalk boards. These should be considered to be replaced with markerboard.

- ✓ Existing classroom casework is in good condition.

- ✓ Science casework is in good condition.

- ✓ Existing fieldhouse is in good condition. Floor markings on the wood floor and synthetic floor appearance is in average condition. The markings on the wood floor should be repainted when refinished. The synthetic flooring also shows signs of marking.

- ✓ Existing lockers are damaged in some locations. The lockers appear to be knock-down type lockers. As these are free-standing in many locations, these lockers should be fully welded type lockers for durability



- ✓ Existing pole showers should not be used as this does not meet Indiana Board of Health Requirements and not an ideal layout. These should be reconfigured to individual showers.

- ✓ Restrooms are in average condition.

- ✓ Existing terrazzo by the field house is damaged and should be refinished and repaired.

- ✓ Existing locker rooms have deadbolts which does not meet panic egress requirements. These should be replaced with standard hardware or panic hardware where required.

- ✓ Painting in areas are marked. A budget and plan should be developed to paint the building.

- ✓ The band and choir carpet steps have minor damage and should consider replacement. Flooring in the choir practice room has also been removed and should be replaced.

- ✓ The auditorium main entrance do not have a light-lock vestibule to protect from noise and light from the corridor / lobby.

- ✓ The corridor lockers, ceiling, and carpet floor are in good condition.

- ✓ Classroom carpet is in average condition.

- ✓ Classroom entrance does not have a vestibule to protect from weather / wind. If this is used for regular use, a vestibule should be considered.

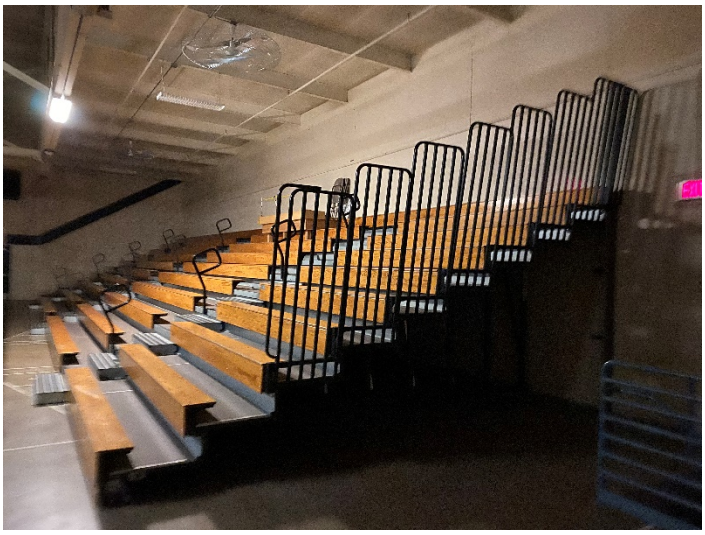
- ✓ The main entrance currently has a secure entry vestibule and is in good condition.

- ✓ The existing media center is in good condition. However, there is limited acoustical treatment causing high reverberation (echo) in the roof. Additional acoustical panels are recommended.

- ✓ The flooring on the upper floor is in poor condition.

- ✓ The old science casework on the upper level should be removed and install new standard casework to match the remainder of other typical classrooms.

- ✓ The existing blinds are damaged in some rooms. These should be selectively replaced or replaced throughout the building with a different blinds system.



- ✓ The bleachers in the main gym appears to be in average condition but showing age, especially at the wood seats. The ends should have a vinyl cover installed to secure the under bleachers from the public.
- ✓ The upper bleacher section is not ADA accessible. Unfortunately, there is not a convenient method to provide an accessible route.

- ✓ The main gym appears to be in good condition. The bleachers are aged but appear to function.
- ✓ Railings at existing mezzanine do not meet current safety requirements.

- ✓ The lockers under the existing gym is not accessible as there are stairs at each entrance. The locker rooms are sub divided into smaller locker spaces making supervision poor.

- ✓ The locker rooms have damaged sections and appearance is dated.

- ✓ The showers is a large open space and does not provide individual showers.

✓ Window Assessment:

- Fenestration in good share aesthetically.
- Windows appear to be 20 years old. No visible signs of failure.
- Approximately 10 units showed signs of failure.
- Some metal sills are sloped towards the glass which causes leak issues.
- Lack of sun / natural light control requiring blinds. New glass should have low-e coating to improve thermal performance .

Roof Conditions

EXISTING CONDITIONS

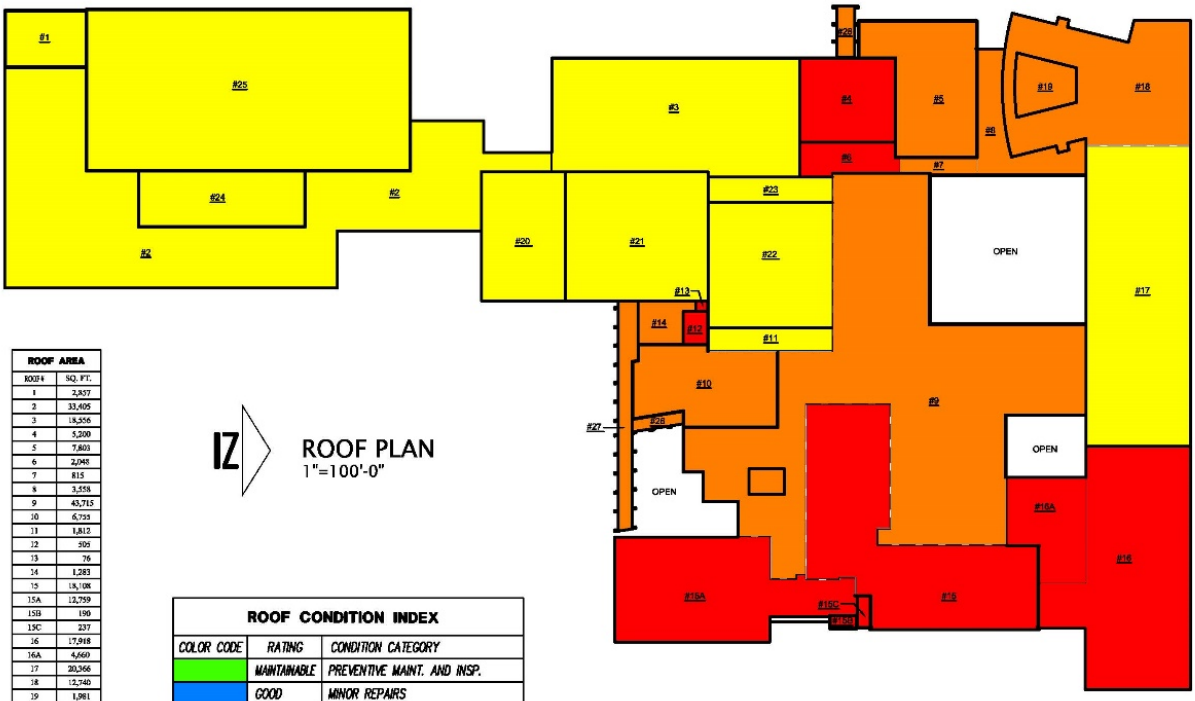
- ✓ 21 roof sections on the HS/MS were replaced in 2019.
- ✓ All other roof sections on the HS/MS appear to be in good condition with only minor maintenance recommended.
- ✓ All Roofs are Fully Adhered Polyvinyl Chloride (PVC) roof systems.
- ✓ Below: all roofs in Red and Orange were completed in 2019.

PROPOSED SOLUTION

- ✓ None at this time.

BENEFITS

- ✓ Roofs in yellow should be good until 2026.



ROOF AREA	
ROOF #	SQ. FT.
1	2,857
2	33,405
3	18,556
4	5,200
5	7,803
6	2,048
7	815
8	3,558
9	43,715
10	6,753
11	1,812
12	505
13	76
14	1,283
15	18,108
15A	12,759
15B	190
15C	237
16	17,918
16A	4,660
17	20,366
18	12,740
19	1,981
20	7,010
21	11,942
22	10,066
23	2,051
24	5,857
25	33,349
26	413
27	2,255
28	597
TOTAL	280,887

ROOF PLAN
1"=100'-0"

ROOF CONDITION INDEX		
COLOR CODE	RATING	CONDITION CATEGORY
	MAINTAINABLE	PREVENTIVE MAINT. AND INSP.
	GOOD	MINOR REPAIRS
	FAIR TO GOOD	AGGRESSIVE REPAIRS
	FAIR TO POOR	RESTORATION
	POOR	REPLACE DELAY POSSIBLE
	FAILED	REPLACE IMMEDIATELY
	CRITICAL	EMERGENCY REPLACEMENT
	UNDER WARRANTY	NEEDS REPAIRS

RECOMMENDED PLAN:
(2019) COMPLETE ALL RED/BUDGET CONFIRMED AT $1,287,677.00
(2020) COMPLETE ALL ORANGE
(2025-2026) COMPLETE ALL YELLOW

GRIFFITH MIDDLE/HIGH SCHOOL

2/13/2019
MM W.O. 19-04-5344

9855 Crosspoint Blvd. | Suite 100 | Indianapolis, Indiana 46256 | 317.577.0910 phone | 317.577.0912 fax | www.moisturemanagementllc.com

Equipment List

Equipment	Brand	Expected Useful Life (yrs)	Year Installed	Useful Life Remaining	Outstanding Issues
Boilers (5) **Boiler (1)**	Lochinvar Lochinvar	20 20	2001 2017	1 17	Not efficient and operational issues have become more common
Chillers (2)	Daikin	20	2019	19	
Fan Coil Units	Trane	20	2001	1	
VAV Boxes	Trane	20	2001	1	
Domestic Hot Water Heater Tank		30	2001	11	Not efficient heating system
Hot Water Pumps	Bell and Gossett	20	2001	1	
Chilled Water Pumps	Bell and Gossett	20	2001	1	
Air Handling Units	Trane	25	2001	6	Add variable speed drives where needed
Pool Units (2)	Pool Pak	20	2001	1	Replace soon
Unit Heaters	Trane	20	2001	1	Designed for high temp water
Temperature Controls	Johnson Controls	15	2001	-6	Plan for upgrade

Performance Services

Improvement List

4670 Haven Point Blvd. | Indianapolis, IN 46280
Ph: 317.713.1750 | www.performanceservices.com

Improvement List - 6/1/2020

Griffith Public Schools

Scope of Work	Improvements	Immediate (0-2 Years)		Future (3-5 Years)		Future (5+ Years)	
Beiriger Elementary School							
	Mechanical/Electrical/Plumbing Improvements						
	* None at this time.						
	MEP Total						
	Architectural/Roofing/Windows						
	* Infill asphalt cracks			TBD	TBD		TBD
	* Playground repair exterior sports floor system						
	* Classroom Door Hardware Replacement						
	* Corridor and cafeteria floor finish replacement						
	* Restroom partition replacement						
	* Refinish wood gym floor			$395,700	$423,600		
	* Paint Select Locations						
	* Create new vestibule at B entry						
	* wall between art and music room						
	* Acoustical Wall Panels: Gym						
	* Replace missing roof snow guards	$1,050	$1,200				
	Architectural/Roofing/Windows Total	**$1,050**	**$1,200**	**$395,700**	**$423,600**		
	Building Total	**$1,050**	**$1,200**	**$395,700**	**$423,600**		
Wadsworth Elementary School							
	Mechanical/Electrical/Plumbing Improvements						
	* Boiler Replacement with High Efficiency						
	* Replace fan coil units and ERV system for classrooms	$2,252,000	$2,722,640				
	* Replace office fan coil units						
	* Install VFDs and outdoor air controls on 4 air handling units						
	MEP Total	**$2,252,000**	**$2,722,640**				
	Architectural/Roofing/Windows						
	* Curb Repairs	TBD	TBD				
	* Playground mulch, fence, edging, sidewalk						
	* Landing / sidewalk northwest exit (ADA exiting)						
	* Masonry / EIFS repair west elevation						
	* Classroom Door Hardware Replacement						
	* Classroom Cubby Replacement						
	* Replace Classroom Carpet and VCT						
	* Replace Corridor Floor Finish	$3,641,800	$3,903,200				
	* Paint Corridors						
	* Acoustical Wall Panels: Gym						
	* C-Wing Restroom Reconfiguration						
	* Kindergarten Wing Reconfiguration						
	* Media Center Remove Steps / Maker Space / Circulation						
	* C Wing Renovation						
	* Replace EIFS waterproof coating and Limestone wall cap, roof ladder						
	* Replace Windows					$562,000	$601,700
	Architectural/Roofing/Windows Total	**$3,641,800**	**$3,903,200**			**$562,000**	**$601,700**
	Building Total	**$5,893,800**	**$6,625,840**			**$562,000**	**$601,700**
Griffith Middle/High School							
	Mechanical/Electrical/Plumbing Improvements						
	* Boiler replacement with high efficiency						
	* Convert domestic water heating to high efficiency						
	* Convert pool water heating to high efficiency	$9,378,000	$10,402,000				
	* Replace fan coil and ERV systems with new Vertical Classroom Units and replacement fan coils, potentially VAV.						
	* Replace Pool dehumidification units						
	* Replace controls on 16 existing AHU's			$422,400	$482,100		
	MEP Total	**$9,378,000**	**$10,402,000**	**$422,400**	**$482,100**		
	Architectural/Roofing/Windows						
	* 2nd Floor Classroom Floor Replacement						
	* 2nd Floor Old Science Lab Casework to Standard Casework					$718,500	$769,200
	* Music Classroom Suite Carpet Replacement						
	* Pool mezzanine floor replacement						
	* Classroom Door Hardware Replacement						
	* Security doors at stairs						
	* Vinyl ends at bleachers						
	* Railing replacement at pool mezzanine						
	* Railing replacement at Main Gym						
	* Fieldhouse Locker Room Renovations						
	* Main Gym Locker Room Renovations			$6,496,800	$6,954,300		
	* Athletic Vestibule						
	* Classroom vestibule						
	* Markerboard Replacement						
	* Re-finish existing fieldhouse floor						
	* Terrazzo repair						
	* Acoustical Wall Panels in Media Center						
	Architectural/Roofing/Windows Total			**$6,496,800**	**$6,954,300**	**$718,500**	**$769,200**
	Building Total	**$9,378,000**	**$10,402,000**	**$6,919,200**	**$7,436,400**	**$718,500**	**$769,200**
GRAND TOTAL		**$15,272,850**	**$17,029,040**	**$7,314,900**	**$7,860,000**	**$1,280,500**	**$1,370,900**

NOTE 1: No allowance has been included for asbestos removal/abatement.