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CHESTER UPLAND SCHOOL DISTRICT FACILITIES STUDY



Prepared by MG Engineering Associates

10/27/2021

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CHESTER UPLAND SCHOOL DISTRICT
FACILITIES STUDY 2021

Presented by MG Engineering Associates, LLC.

Introduction

MG Engineering was contracted by the Chester Upland School District Office of the Receiver to prepare and administer an assessment of all school buildings in the Chester Upland School District. The assessment was designed to inventory District facilities, to identify deficiencies in each school building, and to provide an estimate of the costs to abate undesirable, deficient, and hazardous conditions.

To achieve this goal, MG Engineering worked collaboratively with District personnel and a team of contracted professionals to assess overall building conditions within the timeframe allotted. Our team included seasoned licensed and certified engineers, architects, electricians, code officials, and HVAC and plumbing technicians.

The assessment included information pertaining to:

- Capacity and Utilization Data
- Exterior and Interior Building Components
- Mechanical, plumbing, and fire protection systems
- Electrical and Lighting Systems
- Building Code Compliance

As an engineering firm we understand that one of the most critical issues school administrators face today is addressing the physical condition of aging school buildings. We also understand that these older structures often present with failing equipment and systems that have a direct impact on a child's ability to adequately learn. When a facility begins to age, there are often common maintenance items that are overlooked and/or become the normal for operation. This report identifies areas where the facilities can improve and also provides a budgetary cost to fully upgrade facilities. While the estimate presented within this report are wholistic, with some spending, there is the potential to bring the facilities up to a higher standard. However, the District will need to assess the estimated cost of the repairs and the capacity of the schools to determine if it is more feasible to occupy an existing building or combine schools to construct a State-of-the-art facility.

Our hope is that this study will serve as a blueprint based on best practice facility standards, assisting the Officer of the Receiver, Superintendent, and elected School Board of Directors in identifying and prioritizing school needs. Therefore, in this report we seek to present strategies for effective and efficient school improvement projects that will, 1) improve the academic learning environment, 2) address critical infrastructure needs, and 3) increase the overall lifespan of the school districts assets.

CHESTER UPLAND SCHOOL DISTRICT
GENERAL OVERVIEW & UTILIZATION

Chester Upland at a Glance

The Chester Upland School District (CUSD) is a mid-sized, urban public school district serving the City of Chester, the Borough of Upland and Chester Township in Delaware County, Pennsylvania. Within the approximately six square miles that encompass the district, CUSD operates a high school (on two campuses), two intermediate schools and four elementary schools.

Mission & Vision

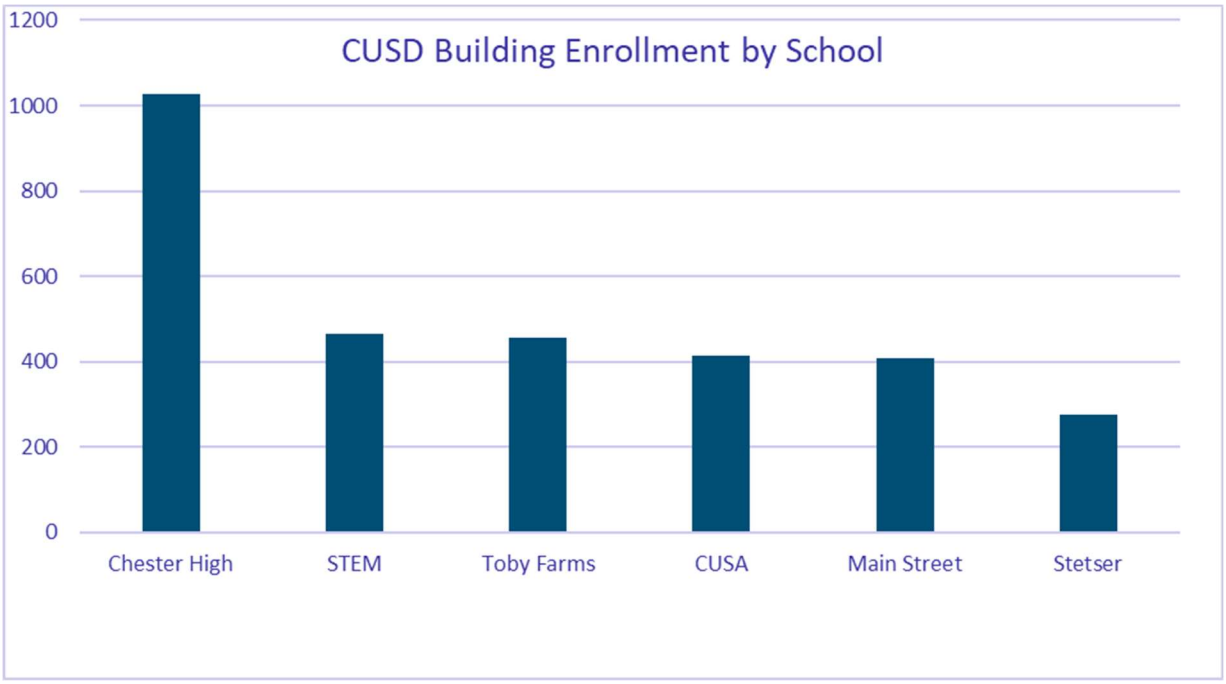
The Chester Upland School District is committed to providing all students the opportunity to achieve excellence in the four A's: Academics, Athletics, the Arts, and Activities. Their vision is that every student to graduate from high school ready for college and/or a career in spite of any and all challenges.

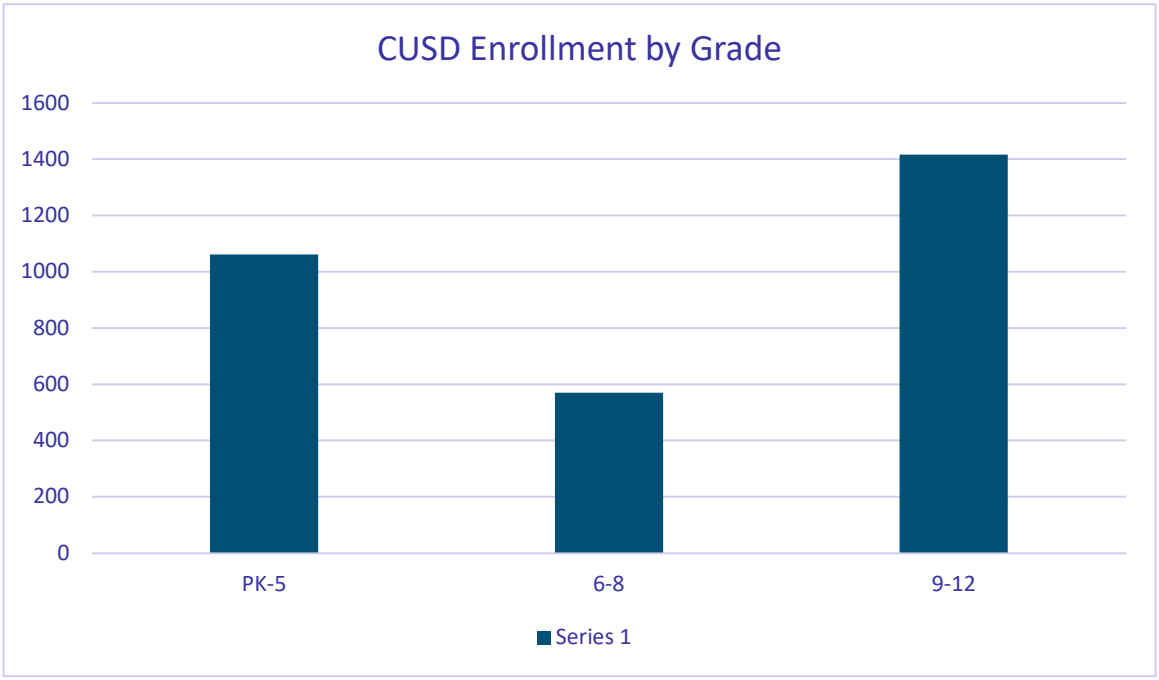
District Schools

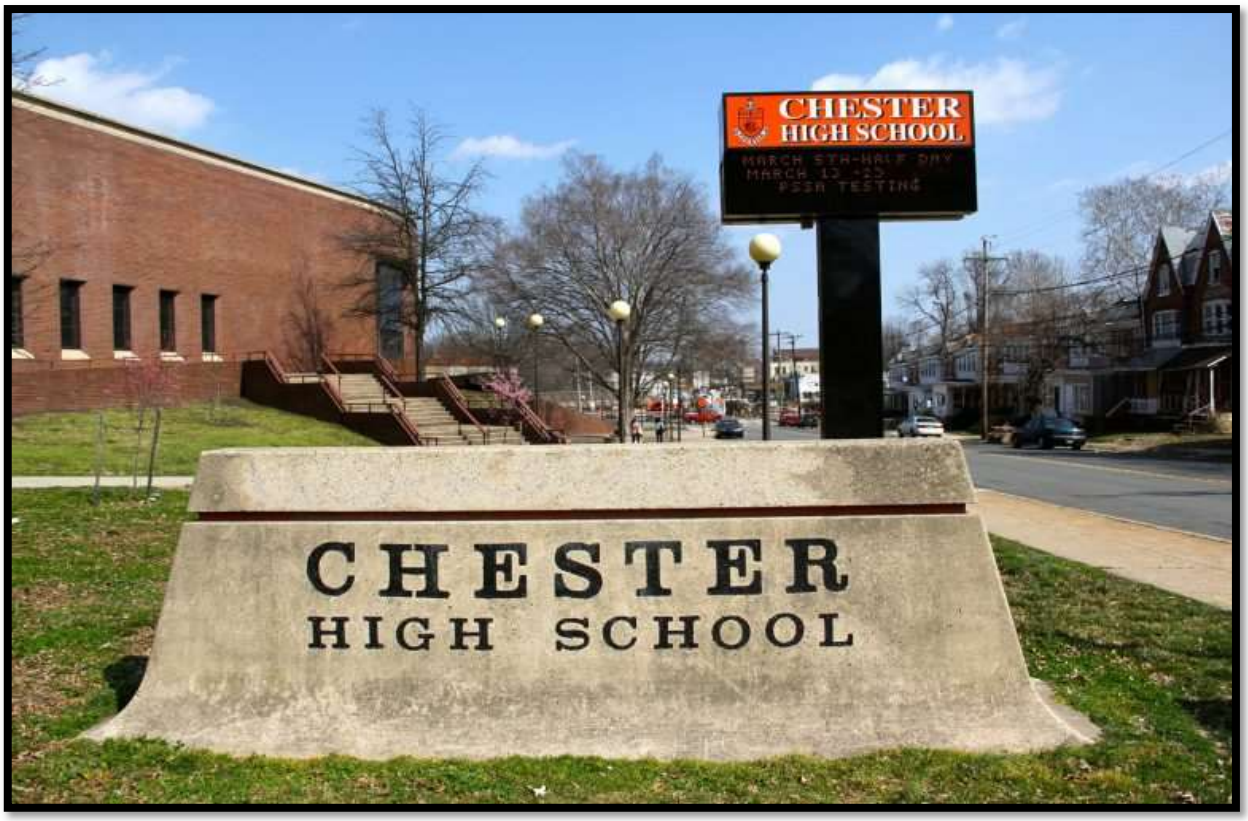
1) **Chester High School**
2) **STEM at Showalter**
3) **Stetser Elementary School**
4) **Main Street Elementary School**
5) **Toby Farms Intermediate School**
6) **Chester Upland School of the Arts**

Capacity & Utilization

According to a recent report published by the Public-School Review Chester Upland School District serves 3,047 students in grades Pre-K though 12. It's employees 203 teachers and has a current student to teacher ratio of 15:1, which is in line with the state average. The following graphs depict student enrollment levels by school and grade, respectively.


CUSD Building Enrollment by School
1200
1000
800
600
400
200
0
Chester High
STEM
Toby Farms
CUSA
Main Street
Stetser


CUSD Enrollment by Grade
1600
1400
1200
1000
800
600
400
200
0
PK-5
6-8
9-12
Series 1



CHESTER HIGH SCHOOL
200 W 9TH STREET
CHESTER, PA 19013

CONSTRUCTED IN 1974

Commonwealth Code Enforcement

427 North Springfield Road
Clifton Heights, Pa. 19018
Phone 484-469-3492 Scheduling 610 717 6367
Commonwealthcodes@live.com

Thursday, October 28, 2021

Mr. Mike Galante
MGE Associates
334 W Front Street
Media, Pa. 19063

Commonwealth Code Enforcement inspected Chester High School on October 26th, 2021, for interior conditions relating to safety. I found several items that should be addressed:

- **Not all of the exit signs are internally illuminated, and all are of an older style without battery backup.**
- **There are no braille signs to indicate the direction of travel at fire towers or at the emergency egresses from the building.**
- **While all the windows are a metal casement style it appears that 15-20 percent of the units need service on the operators. Some are not able to be opened or closed completely.**
- **The interior of the classrooms are in fair to good condition with the primary issues being flooring and ceiling tile replacements.**
- **The library on the third floor has similar flooring and ceiling issues. The furniture shows signs of deterioration and in some**

instances the damage to the tables and chairs may be a hazard to users. The ceiling is in disrepair and needs immediate attention.

- **The men's restroom outside the library is out of order with no indication of repairs imminent.**
- **Doors to the fire towers are held open by disabling the closers. In some cases, the closers are not operable or broken away from the door. The tower doors themselves appear in good condition, however there are replacements of the wire glass in several doors with plexiglass and not all replacements carry a fire rating.**
- **The kitchen equipment is in good condition. The exhaust system while not being used when I was there carries a current service tag.**
- **The gymnasium is in good condition except for the entry doors. This is a common issue with approximately half the doors into general use areas. They are not closing correctly or are damaged. Office doors are in better condition. A full review of the doors to be replaced should be conducted.**
- **The auditorium is in good condition, needing only painting and carpeting. Again, all exit signs in the area should be replaced.**

Walls, floors and ceilings in the corridors and administration areas are in good condition. Most egress doors require adjustments for operation.

Please contact me with questions.

Anthony Tartaglia, President
Commonwealth Code Enforcement, Inc.

CHESTER HIGH SCHOOL
MECHANICAL & PLUMBING SYSTEMS REPORT

Introduction:

For the purpose of performing the field investigation and survey of Chester High School mechanical and plumbing systems, MG Engineering Associates retained the services of McHugh Engineering Associates. Therefore, all data compiled on this section is as reported by services were obtained to perform a building system study as requested by McHugh Engineering Associates. Further analysis, cost estimates and recommendations have been prepared by MG Engineering Associates.

In completing this report, McHugh Engineering Associates referenced the following codes:

- International Mechanical Code 2015
- International Energy Conservation Code 2015

Disclaimer

1. When conducting the survey, we reviewed all visible items to the best of our ability. The majority of the piping and ductwork is concealed above ceiling and walls. Unforeseen conditions may exist.
2. McHugh Engineering Associates is not an equipment/manufacturer's service company and does not inspect or repair actual equipment/system components, integral wiring/piping/controls, hardware, or determine if said items or components are operating and functioning within manufacturer's performance criteria/specifications. We recommend obtaining the services of a licensed/certified manufacturer's service technician if further equipment/system evaluations are required or in need of repair.
3. Documentation Use – The documents being provided are for the end user and not shared with any other parties. The delivery of documents to any other party without the approval of McHugh Engineering Associates, Inc., will be at the sole risk and liability of the end user.
4. Mechanical Life Expectancy– The equipment life expectancy noted in this report is based on ASHRAE's Equipment Life Expectancy Chart. The recommendations provide qualitative feedback based on observation.

MECHANICAL SYSTEM

Existing Condition: The building uses a Dual Temperature system, which consist of a cooling and heat plant that provides heating and cooling not simultaneously to the entire building. The cooling plant consist of: Colling towers, water cooled chillers, and circulation pumps. The heating plant consist of: Boilers and circulation pumps. Ventilation is provided by central Air Handling Units (AHU) distributed throughout the building. All mechanical systems are integrated into a central Building Automation System (BAS), that was upgraded in 2016.

Chillers: There are two water cooled chillers in the building. The newest one was installed in 2017 and serves only the admin area. The old one was installed in 2005 and originally served the entire building, but the chilled water piping has been modified to exclude the load of admin area.

Boilers: There are a total of eight (8) boilers, with a dedicated circulating pump for each one of them. The boilers were installed in 2016 and are in great condition. All the combustion air, flue exhaust ductwork, natural gas piping and other accessories are new and in great condition.

Pumps: There are two (2) condenser water pumps that circulate water between the cooling tower and the chillers. They are both original. There are also two (2) chilled water pumps that circulate water between the chillers and the terminal equipment (AHUS, Unit Ventilators, Fan coils). They are original as well. There are three (3) heating hot water pumps that circulate water between the boiler plant and the terminal equipment (AHUS, Unit Ventilators, Fan coils). They are all equipped with VFDs and were installed in 2016. They are all in good condition.

Piping in Mechanical Room: All piping is insulated and labeled properly and was observed to be in good condition.

Ceiling Mounted Fan Coils in Corridors: They provide cooling or heating and use 2-way motorized valves. Some of them are original and some have been replaced over the years.

Unit Ventilators in Classrooms and Offices: They provide cooling or heating and use 2-way motorized valves. They cool or heat the classroom air and do not bring in outside air. Ventilation for the classrooms is provided via windows and transfer air from adjacent corridors. All the unit ventilators in the building have been replaced in the past 5 years. The units on floors 1 through 3 were replaced in 2016, and the units on floors 4-5 were replaced in 2019. All controls are new. Insulation of cabinet and piping is in good condition.

Air Handling Units:

There is an AHU-2 located in main mechanical room (basement) which serves the library area. It is an original unit. Maintenance has been done over the years, with replacement of filters, fans, belts, etc. The coils were replaced within the last 5 years.

There is an AHU-3 located in the 5th floor mechanical room which serves all the interior spaces. It is original construction and has been maintained over the years. Parts have been replaced as needed (fans, motors, belts, etc.). It utilizes original stand-alone controls and is not integrated to the BAS.

There is an AHU-4 located in the 5th floor mechanical room which serves the stair towers. It is original

construction, has been maintained over the years. Parts have been replaced as needed (fans, motors, belts, etc.). It utilizes original stand-alone controls and is not integrated to the BAS.

There is an AHU-5 located in main mechanical room (basement) which provides ventilation to the whole building. It is an original unit. Maintenance has been done over the years, with replacement of filters, fans, belts, etc.

There is an AHU-6 located in the 5th floor mechanical room which serves the cafeteria. It is original construction and has been maintained over the years. Parts have been replaced as needed (fans, motors, belts, etc.). It utilizes original stand-alone controls and is not integrated to the BAS.

Cooling Tower: There are two open, induced draft cooling towers. At the time of our visit only one of the towers was operating, at approximately 50% capacity. They were both installed in 2016 and are in overall good condition. However, the make-up water backflow preventor was leaking at the time of our visit. Water ponding was also observed under the cooling tower. Steel dunnage was in good overall condition, with some rust observed in one of the corners.

Cafeteria Exhaust: There are several kitchen hoods, equipped with ANSUL systems that have been installed within the last 5 years. They look clean and in good working condition. Exhaust duct has fire resistant wrap. The kitchen exhaust fans are located on the roof and are more than 20 years old.

Rooftop Equipment: There is an abandoned make-up air ventilation unit by Trane and several abandoned exhaust fans located on the roof. There are also abandoned air condensing units. Two 8-ton Liebert Condensing units, which serve an IT room were installed in 2021 and are in excellent condition.

MECHANICAL SYSTEM RECOMMENDATIONS

a. **Chillers:**
   i. The life expectancy for water cooled chillers is 20-30 years
   ii. The old chiller from 2005 is in good condition, but in 5 years will be approaching the end of its useful life and should be replaced in the next 5-10 years.
b. **Pumps:**
   i. The life expectancy for water pumps is 15-20 years
   ii. The 2 condenser water pumps and the 2 chilled water pumps are past their life expected useful life and should be replaced soon.
c. **Air Handling Units:**
   i. The life expectancy for air handling units is 15-20 years
   ii. It is unfeasible and unpractical to completely replace the two big air handling units located in the basement (AHU-2 and AHU-5). We recommend continuing maintenance and upgrades of individual components as required.
   iii. The three air handling units located in the 5th floor mechanical room are past their life expected useful life and should be replaced soon. New controls should be provided for these units and integrated into the BAS.
d. **Cooling Tower:**
   i. Water ponding on the roof should be resolved.
   ii. Leakage on the make-up water backflow preventor assembly should be resolved.
   iii. Continued observation of steel dunnage deterioration is required.
e. **Cafeteria Exhaust System:**
   i. The life expectancy for roof mounted centrifugal fans is 15-20 years
   ii. The kitchen exhaust fans are past their life expectancy and should be replaced in the near future.
   iii. One of the fans has a 90-degree elbow fitting at the intake. It should be replaced with a curved elbow fitting to improve the efficiency of the exhaust system.
f. **Rooftop Equipment:**
   i. The abandoned roof mounted equipment should be demolished and the roof openings patched.

PLUMBING SYSTEMS

Existing Conditions: The domestic water comes into the building at the corner of Penn St and 9th street. There is an underground meter pit with a meter and backflow preventer at that location.
Gas Service is provided via a 2" high pressure natural gas line which serves the entire building. It comes in through the courtyard by the parking area, where it splits into two lines and gets regulated down to low pressure. The gas meter is located outside of the building.

Hot Water System: There are two domestic water heaters located in the main mechanical room. They are both natural gas type. One was installed in 2006 (manufactured by AquaPlex) and the other in 2004 (manufactured by Power VT).

PLUMBLING SYSTEM RECOMMEDATIONS

There are no system maintenance or upgrade recommendations noted at this time.

1st Floor Maintenance Room:
A. Motor Control Center, GE-8,000-line control, all labeled.
B. Primary service 15 KV, appears to be fed from 2 – 15 KV circuits with an automatic transfer switch.
C. The 150-kw natural gas fired back-up generator appears to be non-functional. Last serviced 7/18/19.
D. The electrical switchgear and panel boards are in very good condition and fairly new. No dates were listed but my guess would be from 2018.
Elevator: Elevator has been updated. The fire alarm devices must be updated in the elevator control room.
Lecture Hall: 48 – existing fixtures are a par 56 waffle lamps combination of 300-to-500-watt incandescent halogen lamps. (120 volts). 25- Existing 90-watt halogen medium base lamps par 38 types.
1st Floor Corridors: Have been remodeled and there are currently LED trouffers installed.
2nd Floor Boiler Room:
A. The motor control center (MCC) is a fused unit. The MCC is functioning (no drawings were provided).
B. Mechanical/Boiler Lighting should be upgraded to LED direct drive lamps. Approximately 20 fixtures.
North Stair Tower Panels:
A. 2nd floor panel contains fused circuit switches. These panels are outdated and should be replaced with switch rated circuit breakers. Labeled LB2 section 1 & 2 24 circuit & 36 circuit 225 amps 3 phase, 277/408 volt.
B. 3rd floor panel same as 2nd floor labeled LB3 section 1 and LB# section 2 42 circuits each.
C. 4th Floor Panel same as 2nd floor labeled LB4 42 circuits 277/408 volt.
D. 5th Floor Panel same as 2nd floor labeled LB5 42 circuits 277/408 volt.
All four floors of section (6) – recommend replacing these panels, parts are not made available for future repairs and circuit breakers to replace fused switches.
Auditorium: Existing 16 – 400-watt metal halide fixtures should be replaced with LED type lamps. A scaffold and lift will be required, along with unbolting and bolting in the chairs for access.
Corridor between Gym & Auditorium: There are 17- 400-watt metal halide fixtures existing.
Gymnasium: Fixtures have been replaced to LED. There are 2 exit signs that need to be replaced.
Auditorium Stairwell: Existing motor control (MCC)- Torque connections and clean. Existing MDP2 -1600 amps, 120/208 volts, 3 phase (no work). Panel NLAB (emergency panel) 42 circuit, 225 amp, MLO, ITE, 120/208 volt. Panel REA section 1 & section 2, 84 circuits, 120/208 volt, 225 amps, MLO, ITE brand. 2-additonal panels REC & RED both 42 circuit, 120/208-volt, 225-amp ITE, MLO, clean and torque connections.

Custodian Closets (5th,4th,3rd & 2nd): ITE panel boards, 2 section panels, 84 circuits, 120/208 volt, 3 phase, 225 amp. Panels contain an integral contactor that is not being used. Replace the panels and upgrade.

Electrical Systems Recommendations

1. Projection Room: Provide new ceiling lighting approximately 6 to 8 – 2x2 LED flat panels recommended.
2. Main Entrance: Install a new outlet (power pole) for the metal detector and eliminate the extension cords.
3. Open Area (5th Floor Ceiling): Replace existing lighting with 120-watt LED lamps and retrofit with a mogul base.
4. Custodian Closets (5th,4th,3rd & 2nd): Replace the panels and upgrade.
5. 1st Floor maintenance Room: The non-functional back-up generator needs immediate repair.
6. Auditorium: Existing 16 – 400-watt metal halide fixtures should be replaced with LED type lamps. (Scaffold and lift will be required, along with unbolting and bolting in the chairs for access).
7. Corridor between Gym & Auditorium: Replace 400-watt metal halide fixtures with 120-watt LED.
8. Gymnasium: There are 2 exit signs that need to be replaced.
9. The fire alarm devices must be updated in the elevator control room.
10. Lecture Hall: 48 – existing fixtures are a par 56 waffle lamps combination of 300-to-500-watt incandescent halogen lamps. (120 volts). 25- Existing 90-watt halogen medium base lamps par 38 types. Suggest to replace the lamps with LED. The switch and dimming controls must also be updated to an LED compatible dimming system. Replace 3 exit signs with an LED type.
11. 2nd Floor Boiler Room: The unit MCC1D should be updated within the next couple of years. Mechanical/Boiler Lighting should be upgraded to LED direct drive lamps. Approximately 20 fixtures.

PRELIMINARY

CHESTER UPLAND SCHOOL DISTRICT

SCHOOL BUDGETARY UPGRADE ESTIMATES

School Name: CHESTER HIGH SCHOOL

Date: 10/29/2021

No.	Description	Estimated Quantity	Units	Estimated Unit Price	Total
	GENERAL BUILDING ENVOLOPE/FACILITIES UPGRADES				
1	ADA ACCESSIBILITY UPGRADES (BATHROOMS ETC..)	1	LS	$ 750,000.00	$ 750,000.00
2	WINDOW REPLACEMENT	1	LS	$ 2,750,000.00	$ 2,750,000.00
3	FLOORING AND CEILING TILE UPGRADES, CLASSROOMS, HALLWAYS, DOORS, PAINTING, ETC..	300000	SF	$ 40.00	$ 12,000,000.00
4	UPGRADED FURNITURE AND FIXTURES	1	LS	$ 1,500,000.00	$ 1,500,000.00
5	EXTERIOR CONCRETE IMPROVEMENTS	1	LS	$ 150,000.00	$ 150,000.00
6	EXTERIOR FAÇADE IMPROVEMENTS	1	LS	$ 250,000.00	$ 250,000.00
7	HAZARDOUS MATERIALS ABATEMENT	1	LS	$ 250,000.00	$ 250,000.00
	SUBTOTAL				**$ 17,650,000.00**
	MECHANCIAL UPGRADES				
1	WATER COOLED CHILLERS WITH PIPING	2	EA	$ 250,000.00	$ 500,000.00
2	CONDENSER AND CHILLED WATER PUMPS	4	EA	$ 25,000.00	$ 100,000.00
3	CONDENSER AND CHILLED WATER PUMPS	4	EA	$ 25,000.00	$ 100,000.00
4	AIR HANDLING UNITS UPGRADES AND REPAIRS	1	LS	$ 750,000.00	$ 750,000.00
5	COOLING TOWER MAINTENANCE AND DUNNAGE	1	LS	$ 15,000.00	$ 15,000.00
6	CENTRIFUGAL FANS IN CAFETERIA	1	LS	$ 12,500.00	$ 12,500.00
7	DEMOLISHION OF ROOFTOP UNITS	1	LS	$ 7,500.00	$ 7,500.00
8	MISCELLANEOUS PIPING AND REPAIRS	1	LS	$ 50,000.00	$ 50,000.00
	SUBTOTAL				**$ 1,535,000.00**
	ELECTRICAL AND FIRE SYSTEM UPGRADES				
1	GAS FIRED GENERTOR REPLACEMENT	1	LS	$ 75,000.00	$ 75,000.00
2	UPDATE ELEVATOR FIRE ALARM DEVICES	1	LS	$ 5,000.00	$ 5,000.00
3	LECURE HALL LIGHT UPGRADES	1	LS	$ 20,000.00	$ 20,000.00
4	MOTOR CONTROL SYSTEM REPAIRS	1	LS	$ 15,000.00	$ 15,000.00
5	MECHANICAL/BOILER LIGHTING UPGRADES	1	LS	$ 2,500.00	$ 2,500.00
6	ELECTRICAL PANEL RETROFIT - STAIRWAY CORRIDOR	1	LS	$ 55,000.00	$ 55,000.00
7	AUDITORIUM LED UPGRADES AND EXIT SIGNS	1	LS	$ 7,500.00	$ 7,500.00
8	CORRIDOR BETWEEN GYM AND AUDITORIUM LED LIGHT UPGRADES	1	LS	$ 4,500.00	$ 4,500.00
9	PROJECTION ROOM LED UPGRADES	1	LS	$ 5,000.00	$ 5,000.00
10	HARD WIRE METAL DETECTOR	1	LS	$ 900.00	$ 900.00
11	LED UPGRADES 5TH FLOOR CEILING	1	LS	$ 10,000.00	$ 10,000.00
	SUBTOTAL				**$ 200,400.00**

Total Estimated Cost of Priorities:	**$ 19,385,400.00**
Construction Contingencies (10%):	**$ 1,938,540.00**
Project Management/Engineering (10%):	**$ 1,938,540.00**
Permit Fees:	**$ 350,000.00**
TOTAL ESTIMATE PROJECT COSTS:	**$ 23,612,480.00**



MAIN STREET ELEMENTARY SCHOOL
704 MAIN STREET
UPLAND, PA 19015

CONSTRUCTED IN 1954

MAIN STREET ELEMENTARY SCHOOL
GENERAL CONDITIONS REPORT

OVERVIEW

Phillips and Associates, Architects, LLC (P+A) was retained by MG Engineering c/o the Chester Upland School District to assess the physical condition of the building at Main Street Elementary School.

Walk through surveys of the school were performed by Phillips Associates on October 18, 2021.
It should be noted that for purposes of expediency, the survey walkthrough's primary purpose was to identify any major deficiencies within base building and systems. Since no existing building construction drawings were available the surveys were limited to visual observations. Several areas, such as electrical panels, remained locked and were inaccessible.

GENERAL COMMENTS

- Building appears to be overcrowded, with little space for storage or support functions. Copiers and equipment stored in hallways, vestibules, multi-purpose room. Could easily become a life-safety issue, blocking access to exits.
- Many of the building systems are worn out and at end-of-life cycle.
- Lunch tables and other equipment stored in the open around the perimeter of the multi-purpose room making it unsafe for use as a gym/play space.
- Much evidence of prior roof leakage – stained and damage ceiling tiles, with corresponding water damage to the floors, millwork & heating unit covers along the exterior window walls.
- Original 8x8 floor tiles observed throughout the building – *possibly contain hazardous asbestos*.
- The front entrance is not ADA accessible.
- ADA access issues throughout the building. Many existing doors are less than 3' wide and few have the required approach clearances.
- Lack of ADA compliant toilet accommodations throughout the building, requiring extensive renovations
- Existing wood exit doors have new hardware and have been covered in Fiberglass Reinforced Panels (FRP) recently, but are already showing signs of weather damage around edges and windows.
- All exterior security mesh applied to vision lights of exit doors are rusting.
- Many closets and support spaces lack ADA door hardware.
- A general lack of electrical outlets in classrooms to support expanding technology used in classrooms. Extensive use of power strips and extension cords present an overload danger, as well as a tripping hazard.
- Built-in millwork in classrooms is well-worn, broken/missing doors & shelves.
- Central clock system not functioning in many classrooms.
- All windows are single-pane uninsulated aluminum framed units that should be replaced with new insulated systems to improve energy efficiency.

- Mechanical ventilation systems are well beyond their lifespan. Comments that the units are difficult to regulate and are noisy, distracting teachers and students. Many of the covers are damaged and need repair/replacement.
- No central air conditioning system. Window units observed in some spaces.
- Emergency backup generator located in courtyard.

EXTERIOR

A. Entry lighting very dirty – dim or not functioning.
B. No handrails on front steps.
C. Cracked/broken concrete sidewalks.
D. Single step tripping hazard at front entry.
E. No curb cuts or ADA access to front entry.
F. Former A/C thru-wall opening closed off. Window unit a/c's in front office.
G. Deteriorating brick and grout at grade.
H. Slope concrete walk at side entry too steep to meet ADA ramp requirements. No handrails.
I. Missing concrete sidewalk at gas meter.
J. No external emergency lights over exit doors.
K. Exposed plywood sheathing at eaves, some areas showing signs of deterioration, recently replaced sections have been left unpainted.
L. Stone sills need repointing/caulk.
M. Exposed steel beams on exterior needs grinding and repainting to eliminate corrosion.
N. Fallen tree on play equipment.
O. Missing lamp/exposed wires above exit doors 17A.
P. Room 7 exit stair is failing, settlement has caused cracking and railing has collapsed. Stairs need to be rebuilt.
Q. Loose cables along interior courtyard façade.
R. Emergency generator located too close to operable windows. Danger of exhaust gases getting into the building.
S. Peeling paint observed on door frames and exposed lintels.
T. Rain gutters on Annex (Rm. 6) are clogged - need to be cleaned out.
U. Wood window in Room 6 is failing – plexiglass screwed to frame.
V. Access ramp to room 6 has cracked and settled – needs to be rebuilt to restore handicapped access.
W. Observed corrosion on steel columns and beams at covered pavilion.
X. Brick needs repointing at corner of pavilion and basement access door.
Y. Brick needs repointing between classrooms 5 & 4.
Z. Lights missing above basement access door.
AA. Storage shed in disrepair.

LOBBY

A. Display case veneer chipped.
B. No emergency lights observed.
C. 8x8 floor tile.
D. Copier and boxes stored in hallway.
E. Missing fixture on brick wall - exposed wires.

MAIN OFFICE
A. Carpeted flooring.
B. Window air conditioning unit added.
C. Added electric and data wire mold throughout space.
D. Staff mailroom used for general storage.

PRINCIPAL
A. Window air conditioning unit added.
B. Carpeted flooring.
C. Private toilet room with 2'-0" door.

TEACHERS CONFERENCE ROOM
A. Carpeted flooring.
B. 2'-6" door from hallway.
C. Private toilet room with 2'-0" door.
D. Concealed grid acoustic tile ceiling.

HALLWAY VESTIBULE (DOOR 27)
A. Missing 8x8 floor tiles at doors
B. Compact fluorescent lighting.
C. Cart stored in vestibule.
D. Exposed wires above.

VISITOR TOILET ROOMS (2)
A. Doors are 2'-6"
B. Rooms are too small to be ADA.

BOILER ROOM
A. Aging mechanical equipment beyond its lifespan.
B. Space being used for general storage. Blocked access to electrical panels.

MAINTENANCE OFFICE
A. Missing floor tile.

KITCHEN
A. Not enough space for all equipment. Refrigerator and other systems stored out with bldg.
B. Power cord to POS station across path of travel for students – tripping hazard.

MULTI-PURPOSE ROOM
A. Double 2'-6" exit doors.
B. Broken plaster at base board.
C. Burned out lights.
D. Dangling electric outlet above doors to hall.
E. Perimeter of room used for storage.
F. Exit signs recessed into unfinished holes in plaster.
G. Missing/broken sections of base cove tile.
H. Kitchen equipment stored in multi-purpose room due to lack of space in Kitchen.

STAGE
A. Used as storage.
B. Wood finish is worn out. Needs refinishing.
C. No emergency lights backstage.

NURSES OFFICE
A. Surface mounted electrical wire mold.
B. Bathroom door 2'-0" – non-ADA.

CL RM #2
A. Water damaged ceiling tiles.
B. Cracked 8x8 floor tiles through center of room.
C. Water damage to mechanical unit cover and millwork.
D. Missing cove base.
E. 2 lights not working.
F. Few outlets. Multiple extension cords.

CL RM #3
A. 2 lights not working.
B. 2'-0" bathroom door (typical)
C. Bathroom door delaminating.
D. Wood delaminating at sink cabinet.
E. Mechanical unit cover needs repainting.

CL RM #4
A. Carpet tile edge missing.
B. Wood delaminating at sink cabinet.
C. Water damage to mechanical unit cover and millwork.
D. Few outlets. Multiple extension cords.
E. Water stained/damaged ceiling tiles.

CL RM #5
A. Half of room is carpeted. Carpet is worn and ripped.
B. Missing ceiling tile.
C. 2 lights not working.
D. Low sink and counter.

CL RM #6 (ANNEX)
A. Carpet tiles – edges are curling, most likely due to moisture from below.
B. Popped ceiling tiles.
C. Office electrical panel blocked by cabinet.
D. Exit doors to access ramp blocked – not accessible.
E. Sidelights at entry door at deteriorating – wood is rotted.
F. Toilet room not ADA.
G. Toilet room ceiling stained.
H. Water fountain in room.

CL RM #7
A. Loose ceiling tile.
B. Missing cove base at cubbies.
C. 1 light not working.

CL RM #8
A. 1 light not working.
B. Loose ceiling tiles.
C. Missing cove base at cubbies and at entry.
D. Water damage to rear wall behind bulletin board.
E. Missing window shades. Some not functional.
F. Missing 8x8 floor tiles.

CL RM #9
A. Missing/falling perimeter trim at ceiling.
B. 2 lights not working.
C. Water damage to mechanical unit cover and millwork.
D. Water damage to ceiling and trim at front corner.

CL RM #10
A. Missing cove base.
B. Missing 8x8 floor tiles.
C. Many loose and stained ceiling tiles.
D. 4 lights not working.
E. Few outlets. Multiple extension cords.
F. Missing/falling perimeter trim at ceiling.
G. Water damage to mechanical unit cover and millwork.

CL RM #11 – LEARING SUPPORT
A. Carpet ripped.
B. Missing base cove.
C. Missing lens.
D. Few outlets, none on sidewalls. Multiple extension cords.

HALLWAY
A. Hi/Lo water fountain not ADA.
B. Chipped/damaged ceiling tiles.
C. Classroom doors have been replaced.
D. Some base cove missing or broken.
E. Fire separation doors removed – no fire separation of stairs at end of hall.
F. Floor tiles cracked at threshold of former fire doors.
G. Electrical panel door is unsecured.
H. No exit sign at egress doors (5A).
I. Fire gate removed from stairs preventing panic access to basement.
J. Handrails do not have extensions at top and bottom.

BASEMENT CLASSROOM

A. Carpet tile in good condition.
B. Lack of electrical outlets.
C. Exposed pipes and conduits at ceiling.
D. Room currently used for storage.
E. No windows.

RESOURCE ROOM

A. Carpet tile in good condition.
B. Lack of electrical outlets.
C. Exposed pipes and conduits at ceiling.
D. Room currently used for storage.
E. No windows.

CONNECTOR HALLWAY

A. Broken floor tiles at control joint.

CL RM #12

A. Window air conditioning unit – not functioning.
B. Many exposed data cables above.
C. Broken wire mold with exposed wires.
D. Carpet in good condition.
E. Walls need painting.
F. 1 light burned out.

CL RM #13

A. Carpet in good condition.
B. Window air conditioning unit.
C. Large wrapped pipe for hose cabinet in hallway.

CL RM #14

A. Old acoustic ceiling tile.
B. Some lamps not working.
C. Cracked outlet cover.
D. Few outlets. Multiple extension cords.
E. 2 closets with ADA lever handles.

CL RM #15

A. Displaced light fixture lenses.
B. Burned out lights.
C. Few outlets. Multiple extension cords.

CL RM #16

A. Missing base cove.
B. Missing window shade covers.
C. Mechanical unit cover needs repair/paint.

CL RM #17

A. Missing cove base.
B. Missing window shade covers.
C. Few outlets. Multiple extension cords.
D. Cubbies need repair/refinishing.
E. Burned out lights.
F. 2 missing lenses.
G. Water stained/damaged ceiling tiles.
H. Broken/sagging trim at ceiling above front alcove.
I. Walls need painting.
J. Water damage to mechanical unit cover and millwork.

CL RM #18

A. Exposed wires in ceiling.
B. Missing/damaged ceiling tiles.
C. Clock making noise.
D. Loose 8x8 floor tiles along exterior wall.
E. Water damage to mechanical unit cover and millwork.
F. Crack in wall – top left of window along frame.

CL RM #19

A. Missing/damaged ceiling tiles.
B. Water damage to mechanical unit cover and millwork.
C. Crack in wall – top left of window along frame.
D. Gap below exterior door.
E. Few outlets. Multiple extension cords.
F. Extension cord from ceiling to Prometheus board.
G. Lenses hanging from two broken lights.
H. Stained floor.

CL RM #20

A. Exterior door does not latch properly.
B. Damaged ceiling tiles.
C. Water damage to mechanical unit cover and millwork.
D. Trim below window sill missing.
E. Door frame has gap/bow in frame.
F. Few outlets. Multiple extension cords.
G. Faucet drips.

CL RM #21

A. Missing 8x8 floor tile.
B. Water damage to mechanical unit cover and millwork.
C. Sink cabinet delaminating.
D. 3 lights not working.
E. Missing blind/shade.

CL RM #22 AUTISTIC SUPPORT (BACK OF STAGE)

A. Backstage area converted to classroom space.
B. Wood stairs up from hallway well worn.
C. No handrail on left side, handrail on right too low – no extensions top and bottom.
D. Missing/falling perimeter trim at ceiling.
E. Many popped ceiling tiles.
F. Cracked VCT flooring tiles.
G. Horizontal cracks in wall.
H. Multiple extension cords.
I. Broken lens on light fixture.
J. New window air conditioner unit.
K. Data wires for Prometheus board through hole in floor present a tripping hazard.

BOYS TOILET ROOM

A. No ADA knee clearance or pipe protection under sinks.
B. No ADA stalls.
C. Wooden doors on cubicles need to be replaced.
D. No mirrors.
E. Under lit.

GIRLS TOILET ROOM

A. No ADA knee clearance or pipe protection under sinks.
B. No ADA stalls.
C. Wooden doors on cubicles need to be replaced.

HALLWAY

A. Floor tiles worn out at water fountain.
B. Water fountain not ADA.
C. Equipment stored in hall and vestibules.
D. Double exit doors are only 2'-6" each. (22 & 17A).
E. Chipped paint on door frames.
F. Missing/displaced ceiling tiles in vestibule.
G. Broken/missing floor tile at doors (17A).
H. Weatherstripping below doors worn out. (22)

MAIN STREET ELEMENTARY SCHOOL
MECHANICAL & PLUMBING SYSTEMS REPORT

Introduction:

For the purpose of performing the field investigation and survey of Main Street Elementary School mechanical and plumbing systems, MG Engineering Associates retained the services of McHugh Engineering Associates. Therefore, all data compiled on this section is as reported by services were obtained to perform a building system study as requested by McHugh Engineering Associates. Further analysis, cost estimates and recommendations have been prepared by MG Engineering Associates.

In completing this report, McHugh Engineering Associates referenced the following codes:

- International Mechanical Code 2015
- International Energy Conservation Code 2015

Disclaimer

1. When conducting the survey, we reviewed all visible items to the best of our ability. The majority of the piping and ductwork is concealed above ceiling and walls. Unforeseen conditions may exist.
2. McHugh Engineering Associates is not an equipment/manufacturer's service company and does not inspect or repair actual equipment/system components, integral wiring/piping/controls, hardware, or determine if said items or components are operating and functioning within manufacturer's performance criteria/specifications. We recommend obtaining the services of a licensed/certified manufacturer's service technician if further equipment/system evaluations are required or in need of repair.
3. Documentation Use – The documents being provided are for the end user and not shared with any other parties. The delivery of documents to any other party without the approval of McHugh Engineering Associates, Inc., will be at the sole risk and liability of the end user.
4. Mechanical Life Expectancy– The equipment life expectancy noted in this report is based on ASHRAE's Equipment Life Expectancy Chart. The recommendations provide qualitative feedback based on observation.

MECHANICAL SYSTEM

Existing Conditions: The building uses a heating only two-pipe system, where heating hot water is provided from a heating plant to unit ventilators distributed throughout the building with the heating plant consisting of boilers and circulation pumps. Ventilation for classrooms is provided via wall louvers located at the back of the unit ventilators. Corridors, cafeteria, and other common areas have no mechanical ventilation. Some office areas and one special education classroom have thru the wall packaged heat pumps, capable of providing cooling and heating. Some offices and corridors have hot water perimeter radiators. The building does not have a central Building Automation System.

Boilers: There are a total of two boilers units at the school. The boilers were installed in 2003, and are in fair condition. They were originally designed to use oil as fuel, but have been re-converted to use natural gas in recent years. It appears that routine maintenance has been performed on the boilers over the years, such as replacing the burners and blower. All the combustion air, flue exhaust ductwork, natural gas piping and other accessories are new and in acceptable working condition. Although, there is some corrosion damage at some shut-off valves and at the hot water piping connections to the boiler.

Mechanical room is ventilated via wall louvers, which are equipped with motorized dampers.
Both boilers were off at the time of field inspection.

Pumps: There are 2 heating hot water pumps that circulate water between the boiler plant and the terminal unit ventilators. Both units are equipped with Variable Frequency Drive's (VFDs) and were installed in 2003. They are in fair condition.

Piping in Mechanical Room: All piping is insulated and labeled properly and was observed to be in fair condition. However, upon inspection there was noted to be abandoned equipment including fuel oil piping, regulators, and accessories in the mechanical room. There were also abandoned control panels and old fire alarm panels.

Ventilators: Unit ventilators in classrooms and offices provide heating only and use 2-way motorized valves. They are nearly 67 years old and are in poor condition. They have rusted enclosures and noisy blower fans. Although, most of the unit ventilators have had their 2-way valves replaced in recent years. They mix fresh outside air from an outdoor louver with heated air coming from the AHU and deliver it to the classrooms. They are constant air volume and modulate the heat through wall mounted thermostats. Insulation of cabinet and piping is in bad condition.

Packaged Terminal Air Conditioners (PTAC): A new PTAC was installed in the special education classroom in 2020. It was manufactured by Friedrich and is in good condition. Several PTACs have been added to admin offices over the years. They vary in age and are in poor condition generally.

Cafeteria: The back of the gym was re-purposed as a kitchen, and the rest of the gym is used as a dining room. There is a kitchen hood with a fan located on the roof that is in poor condition.

MECHANICAL SYSTEM RECOMMENDATIONS

a. **Building System:**
    i. The building does not have cooling, and the unit ventilators are past their useful life and in poor condition.
    ii. We recommend a full replacement of the HVAC system in the building.
    iii. We recommend demolishing all the unit ventilators and replacing them with new vertical DX/ natural gas air handling units. The AHUs will be able to provide cooling (DX), heating (natural gas), ventilation (via wall louvers) and humidity control (via hot water reheat coils)
    iv. Provide closets for the vertical AHUs and install new air devices and ducts above the ceilings.
    v. Reuse existing heating hot water plant adding new piping to serve the reheat coils.
    vi. Provide new Building Automation System (BAS)
b. **Boilers:**
    i. The life expectancy for hot water cast iron boilers is 30-35 years
    ii. The two existing boilers are in acceptable condition and can be re-used and integrated into the new HVAC system for another 10 years with continued maintenance.
c. **Pumps:**
    i. The life expectancy for water pumps is 15-20 years
    ii. The 2 heating hot water pumps are past their life expected useful life and should be replaced soon.
d. **Unit Ventilators:**
    i. The life expectancy for unit ventilators units is around 20-years.
    ii. All the unit ventilators are nearly 67 years old and well past their expected useful life. They should be demolished when the building HVAC system is upgraded.
e. **Packaged Terminal Air Conditioners (PTAC):**
    i. The life expectancy this type of equipment is 10-12 years
    ii. The new Friedrich unit is in good condition and can be used for another 10 years.
    iii. The old PTACs in the admin areas are close or past their life expectancy and should be demolished when the building HVAC system is upgraded.
f. **Cafeteria Exhaust System:**
    i. Replace hood and fan when the building system is upgraded.

PLUMBING SYSTEMS

Existing Conditions: The water supply enters the school at the mechanical room. There is a water meter and backflow preventer assembly at that location. There is a duplex hot water pump, manufactured by Alyan Pumps, appearing to be in good condition. Gas Service is supplied via a 2” high pressure natural gas line. There is a meter and two regulators directly outside of the mechanical room.

Hot Water System: There is one natural gas domestic water heater located in the main mechanical room. It was installed in 2003 and manufactured by PVI industries. It is in poor condition. The jacket of its vent piping is not sealed and needs to be re-installed.

PLUMBING SYSTEM RECOMMEDATIONS

Hot Water System: Repair flue jacketing and replace water heater.

MAIN STREET ELEMENTARY SCHOOL
ELECTRICAL SYSTEMS REPORT

Existing Conditions: In the Boiler Room there is a new panel EN. MLO 42 circuit, 3 phase, 120/208-volt Siemens, 21 circuits used, 225 amp rated. New panel PA: MLO, 42 circuit, 3 phase, 120/208-volt, 225 amp rated, 23 circuits used. Both fed from a new MDP. The existing 100 amp, 2 phase panel in the boiler room should be replaced with a 100-amp 3 phase panel, repurposing the existing feeder conduit, and replacing conductors. Fed from existing transformer (# phase to 2 phase).

Lighting: Many of the school's interior fixtures have been converted to LED lamps. There are approximately 60 not yet converted.

Fire Alarm: Edward IO series, located in main office (rear). Last tested 07/2020. No sprinkler system.

Panels:

1. East Corridor: 100-amp, 120/208 volt, 3 phase, recessed 22 circuit panel. Recommend to retrofit the existing panel.
2. Hall Kindergarten: 100 amp, 3 phase, 120/208-volt Federal Pacific Electric (FPE) recessed.
3. Stage Panel: 100-amp, 120/208 volt, 3 phase, 34 circuit panel with a 100-amp main breaker. Split bus panel has an old contactor that is not functioning. Retrofit panel with switch rated breakers and eliminate the contactor.
4. Corridor Panel LF1: 22 circuit, 70-amp 2 phase panel.
5. Mechanical/Electrical Room: There is a new 800 amp (installed 2004), 10 – 3 pole breakers, a 200-amp rated panel, 3 phase, a 200-amp rated 3 phase transfer switch, newer Katolight 3 phase 60 KW natural gas fired back-up generator. Katolight was last serviced 3/18/21.

A. Siemens 24 circuit panel (appears to be a split buss 2 phase panel (replace with a 30 circuit Siemens 100-amp 3 phase).

B. Existing 2 phase panel, 36 circuit, 100-amp, 120/240 volt to be replaced with a 3 phase 100-amp panelboard 42 circuit fed from the MDP

ELECTRICAL SYSTEM RECOMMENDATIONS

1. Upgrade fire alarm system by installing pull stations at all exit doors.
2. Remove old Veeder root equipment from the boiler room – originally used for the underground oil tank.
3. Cafeteria: Replace the 22 – 2x2 fluorescent fixtures with 2x2 LED flat panel fixtures.
4. Retrofit the Corridor Panel with a 3 phase 70-amp panel after the 2-phase transformer is removed.
5. Stage Panel: Split bus panel has an old contactor that is not functioning, retrofit panel with switch rated breakers and eliminate the contactor.
6. Retrofit the existing panel in the Kindergarten Hallway.
7. Ground fault the existing water coolers.
8. Remove the existing 2 phase transformer in the mechanical/electrical room, reefed the new panels as 3 phases.
9. Replace existing 2 phase panel, 36 circuit, 100-amp, 120/240-volt t with a 3 phase 100-amp panelboard 42 circuit fed from the MDP.
10. Upgrade the 8 existing high pressure sodium wall packs with 40-watt LED wall packs.
11. Retro fit one pedestal area light with a LED lamp.

PRELIMINARY

CHESTER UPLAND SCHOOL DISTRICT

BUDGETARY ESTIMATES

School Name: MAIN STREET ELEMENTARY SCHOOL

Date: 10/29/2021

No.	Description	Estimated Quantity	Units	Estimated Unit Price	Total
	GENERAL BUILDING ENVOLOPE/FACILITIES UPGRADES				
1	ADA ACCESSIBILITY UPGRADES (BATHROOMS ETC..)	1	LS	$ 350,000.00	$ 350,000.00
2	WINDOW REPLACEMENT	1	LS	$ 750,000.00	$ 750,000.00
3	FLOORING AND CEILING TILE UPGRADES, CLASSROOMS, HALLWAYS, DOORS, PAINTING, ETC..	40000	SF	$ 45.00	$ 1,800,000.00
4	UPGRADED FURNITURE AND FIXTURES	1	LS	$ 350,000.00	$ 350,000.00
5	EXTERIOR CONCRETE IMPROVEMENTS	1	LS	$ 150,000.00	$ 150,000.00
6	EXTERIOR FAÇADE IMPROVEMENTS	1	LS	$ 125,000.00	$ 125,000.00
7	HAZARDOUS MATERIALS ABATEMENT	1	LS	$ 150,000.00	$ 150,000.00
	SUBTOTAL				**$ 3,675,000.00**
	MECHANCIAL UPGRADES				
1	UPGRADES TO MECHANICAL SYSTEMS	1	LS	$ 3,500,000.00	$ 3,500,000.00
	UNIT VENTHILATORS				
	HOT WATER PUMPS				
	BUILDING AUTOMATION SYSTEM				
	PACKAGED TERMINAL AIR CONDITIONER DEMOLITION				
	UPGRADE TO CAFETERIA EXHAUST SYSTEM				
	HOT WATER SYSTEM				
	INCIDENTAL IMPROVEMENTS				
	SUBTOTAL				**$ 3,500,000.00**
	ELECTRICAL AND FIRE SYSTEM UPGRADES				
1	FIRE ALARM STATIONS AT EXIT DOORS	1	LS	$ 7,500.00	$ 7,500.00
2	REMOVE VEEDER ROOT EQUIPMENT FROM BOILER ROOM	1	LS	$ 500.00	$ 500.00
3	REPLACE 22 - 2 X 2 FLOUSCENT FIXTURES WITH LED IN CAFETERIA	1	LS	$ 10,000.00	$ 10,000.00
4	RETROFIT CORRIDOR PANEL WITH 3-PHASE 70-AMP PANEL AND 2-PHASE TRANSFORMER.	1	LS	$ 5,000.00	$ 5,000.00
5	RETROFIT PANEL IN KINDERGARTEN HALLWAY	1	LS	$ 4,000.00	$ 4,000.00
6	STAGE PANEL: SPLIT BUS WITH 3-PHASE 70-AMP PANEL AFTER THE 2-PHASE TRANSFORMER IS REMOVED	1	LS	$ 5,000.00	$ 5,000.00
7	GROUND FAULT EXISTING WATER COOLERS	1	LS	$ 500.00	$ 500.00
8	REMOVE 2-PHASE TRANSFORMER IN MECHANCIAL/ELECTRICAL ROOM, REEFED THE NEW PANELS AS 3-PHASE	1	LS	$ 25,000.00	$ 25,000.00
9	REPLACE 2-PHASE PANEL, 36 CIRCUIT, 100 AMP, 120/240 VOLT WITH 3-PHASE 100-AMP PANELBOARD, 42 CIRCUIT FED WITH MDP	1	LS	$ 5,000.00	$ 5,000.00
10	UPGRADE 8 HPS WALL PACKS WITH LED	1	LS	$ 3,500.00	$ 3,500.00
11	RETROFIT PEDESTRIAL LIGHT WITH LED	1	LS	$ 500.00	$ 500.00
	SUBTOTAL				**$ 66,500.00**

Total Estimated Cost of Priorities:	**$ 7,241,500.00**
Construction Contingencies (10%):	**$ 724,150.00**
Project Management/Engineering (10%):	**$ 724,150.00**
Permit Fees:	**$ 350,000.00**
TOTAL ESTIMATE PROJECT COSTS:	**$ 9,039,800.00**



TOBY FARMS ELEMENTARY SCHOOL
201 BRIDGEWATER RD.
BROOKHAVEN, PA 19015

CONSTRUCTED IN 1969

TOBY FARMS SCHOOL
GENERAL CONDITIONS REPORT

OVERVIEW

Phillips and Associates, Architects, LLC (P+A) was retained by MG Engineering c/o the Chester Upland School District to assess the physical condition of the building at the Toby Farms Intermediate School.

Walk through surveys of the school were performed by Phillips Associates on October 18, 2021.
It should be noted that for purposes of expediency, the survey walkthrough's primary purpose was to identify any major deficiencies within base building and systems. Since no existing building construction drawings were available the surveys were limited to visual observations. Several areas, such as electrical panels, remained locked and were inaccessible.

GENERAL COMMENTS

- The building was observed to be clean and appeared that maintenance and upkeep of the building is quite good.
- Original 8x8 floor tiles observed throughout the building – *possibly contain hazardous asbestos*.
- Accessibility compliance involves the route from parking to building entrance to horizontal and vertical movement within the building. The front entrance is handicapped accessible; with new concrete walks and curb cuts.
- ADA access issues throughout the building. Many existing doors are less than 3' wide and few have the required approach clearances.
- Lack of ADA compliant toilet accommodations throughout the building, requiring extensive renovations
- The existing facility lacks the requirement for vertical access to the second floor by means of an elevator and the required stair wall rail configurations.
- Most existing doors have had their louvers replaced with plywood panels or with perforated sheet metal. Doors with these metal screens are not secure in an emergency and do not control sound from hall to classroom. Classroom doors have newer lever hardware but the doors themselves are very worn/damaged.
- Many closets and support spaces lack ADA door hardware.
- Shared toilet rooms between classrooms (typical for pre-K & kindergarten) are not appropriate for the grade levels (4-8) currently using those rooms. Several of these small toilet rooms were non-functioning.
- Many unused/non-functional plumbing fixtures (primarily sinks in classrooms and small toilet fixtures) throughout the building.
- A general lack of electrical outlets in classrooms to support expanding technology used in classrooms. Extensive use of power strips and extension cords present an overload danger, as well as a tripping hazard.

- Lighting is fluorescent tubing varying in color temperature throughout the school, within classrooms and even within fixtures. Recommend upgrading to LED fixtures or at least relamping with consistent bulbs (3,000 to 3,500K)
- Built-in millwork in classrooms is well-worn, broken/missing doors & shelves.
- Low counters in most rooms are not appropriate for the current age level served.
- Central clock system not functioning in many classrooms.
- Several classrooms, the former library and kitchen prep areas, are unused/underutilized and have become general storage.
- All windows are uninsulated, single-pane aluminum framed curtain wall systems that should be replaced with new insulated systems to improve energy efficiency. Spandrel panels damaged, pitted and rusting in many locations.
- Mechanical ventilation systems are well beyond their lifespan. Comments that the units are difficult to regulate and are noisy, distracting teachers and students. Many of the covers are damaged and need repair/replacement.
- No central air conditioning system. Window units observed in some spaces.
- No emergency backup generator observed.

EXTERIOR

1. Some cracking in brick observed outside of side entrance to kitchen wing.
2. Broken concrete sidewalks outside of kitchen entrance/boiler room.
3. Broken/missing window in Facilitators Room. Opening blocked off with cardboard.
4. C/D wing curtain wall spandrel panels observed in most locations to be rusted, discolored, warped and damaged.
5. B wing spandrels have some dings and rust. Major damage to frame and panel a Classroom #6.
6. Bent mullion exterior of B-wing Hall.
7. Outdoor play spaces appear to be unused. Playing fields overgrown/unkept.
8. Several missing light fixtures with exposed wiring boxes visible.
9. Broken light fixture above B-wing corridor exit doors.
10. Birds nest in soffit light above A wing exit doors.
11. Horizontal crack in brick extending for header of A wing exit doors.
12. Exposed steel lintels showing signs of corrosion. Needs remediation,

LOBBY

1. Exit signs not properly illuminated.
2. Hi/lo water cooler does not meet ADA requirements.
3. Mismatched ceiling tiles. Original concealed grid system patched in places with exposed grid system.

MAIN OFFICE

1. Doors do not have ADA lever handles and are less than 3’ wide
2. Door veneers are delaminating
3. Room has a portable air conditioner with a hose that vents above ceiling tiles. Unable to determine if it vents to the exterior.
4. Room has carpet.

PRINCIPAL’S OFFICE

1. Doors within suite are only 2’-6” wide.
2. No ADA levers.

3. Door veneers damaged.
4. Loose/missing cove base in areas.

I.T./COPY ROOM
1. No ADA door hardware.

CONFERENCE – no access

STAFF MENS ROOM
1. Door is only 2'-0" wide.
2. Non-ADA layout.

STAFF WOMENS ROOM
1. Door is only 2'-0" wide.
2. Non-ADA layout,

NURSE
1. No ADA door hardware.
2. Non-ADA bathroom.
3. Missing lens cover on light fixture.
4. Burned out bulbs.

FACULTY LOUNGE: (Women's Room out of order.)
1. Plywood panel over missing door louvers.
2. Doors to men's and women's rooms are only 2'-0" wide. Non-ADA layouts.
3. Loose base cove.
4. Sagging/broken ceiling tiles.
5. Non – ADA water cooler.

CAFETERIA/STAGE
1. Some missing floor tiles.
2. Some of the lunch tables are delaminating and need replacement.
3. No ADA access to the stage.
4. No directional exit signs backstage.

KITCHEN/PREP
1. Large areas underutilized as general storage.
2. Missing astragal weather seal at double doors to the exterior.

CUSTODIAL WING HALL
1. Structural crack in brick wall.
2. Missing walk off mat at egress doors. Depression for grille covered by plywood.
3. Missing cove base.
4. Poorly lit, burned out/non-functioning fixtures.

MECH/BOILER ROOM
1. Well maintained but aging systems.
2. Poorly lit.
3. Being used for general storage – access to some equipment blocked.

STAFF MENS
1. Door grille missing.
2. 2'-6" door
3. Trough urinal – non-ADA

STAFF WOMENS
1. 2'-6" door
2. Non-ADA

FACILITATOR OFFICE/ C&I BOOK STORAGE
1. Stained Ceiling tiles.
2. Burned out bulbs.

ISOLATION ROOM (room appears to have recently been used as a COVID isolation area)
1. Unused drapery track has hanging cords – hazardous.
2. Missing cove base.

LIBRARY
1. Currently used as storage and as a music room.
2. Rips and holes in carpet
3. Broken louvered door.
4. Broken faucet in former Librarian's office – water running and will not shut off.
5. Vertical blind tracks with hanging cords.

GYM / GYM STORAGE
1. Missing base cove.
2. Missing auto closer on exterior door.
3. Broken auto closer on hall door.
4. Missing access cover to sewer C.O.
5. Missing light fixture at ceiling.
6. Overloaded with equipment.
7. Burned out bulbs.
8. Exit sign partially obscured.

HALLWAY (NURSE TO GYM)
1. Missing expansion joint cover on wall by library.
2. Cracks in floor
3. Missing walk off mat at egress doors. Depression for grille covered by plywood.
4. Cracked floor tiles near Faculty Lounge,
5. Water fountain not ADA compliant.
6. No Exit signs visible.

A-WING

CL RM #1
1. Missing base cove.
2. Missing ceiling tile.
3. Missing/broken 8x8 floor tiles.
4. Non-standard low counter height.
5. Non-ADA door hardware.

CL RM #2 - STUDENT SERVICES
1. Non-ADA door hardware.

CL RM #3
1. Chalkboard delaminating.
2. Missing cove base.
3. Low counter/sink base has been removed.

CL RM #4
1. Very low toilet fixture.
2. Loose base cove.
3. Wiremold loose.
4. Mech unit cover needs replacing.
5. Non-standard low counter height.
6. Non-ADA door hardware.

CL RM #5 - (USED AS STORAGE)
1. Missing mechanical cover.
2. CAT5 cover knocked loose.
3. Door glass loose.

CL RM #6
1. Non-standard low counter height. No sink.
2. Missing cove base.
3. Wiremold cover damaged.
4. Broken toilet seat.
5. Toilet partition base rusted away.
6. Lens missing from bathroom light.

CL RM #7
1. Damaged & loose ceiling tiles.
2. Bathroom closed off from one side by drywall within door frame.

CL RM #8
1. Non-standard low counter height.
2. Bathroom threshold is missing.

A-WING HALLWAY

1. Displaced ceiling tiles.
2. All classroom doors show signs of wear and damage. Louvers all missing and replaced by plywood or metal screen.

B-WING

CL RM #9 - SCIENCE LAB

1. Former kindergarten. Non-standard low counter height.
2. Missing lens covers.
3. Displaced ceiling tile.
4. Non- ADA closet hardware.
5. Few outlets. Multiple extension cords.

CL RM #10

1. Non-standard low counter height.
2. Missing lens covers.
3. Loose CAT5 wire mold.
4. Non- ADA closet hardware.
5. Few outlets. Multiple extension cords.

CL RM #11

1. Non-standard low counter height.
2. Shared bathroom has no door locks.
3. Bathroom out of order.
4. Non-ADA closet hardware.
5. Few outlets. Multiple extension cords.

CL RM #12 – COMPUTER LAB

1. Room has additional power supplied for power poles from the ceiling.
2. No air conditioning. Window left open and fans to provide cooling for equipment.

CL RM #13

1. Broken/missing Plastic laminate on counter top.

CL RM #14

1. Non-standard low counter height.
2. Shared bathroom has no door locks.
3. Bathroom out of order.
4. Non-ADA closet hardware.
5. Few outlets. Multiple extension cords.

B-WING HALLWAY

1. Areas of missing base cove.
2. Single pane, plate glass, uninsulated aluminum window frames along corridor need replacement.

C-WING

CL RM #15 – unable to access

CL RM #16
1. Door grille covered by plywood.
2. Closet door hardware non-ADA.
3. Millwork has water damage.
4. Limited outlets.

CL RM #17
1. Door grille missing.
2. Closet door hardware non-ADA.
3. Limited outlets.

CL RM #18
1. Door grille missing.
2. Closet door hardware non-ADA.
3. Limited outlets.

CL RM #19
1. Door grille missing.
2. Closet door hardware non-ADA.
3. Limited outlets.

CL RM #20
1. Mechanical unit cover loose.
2. Clock not working – wires exposed.
3. Limited outlets.

CL RM #21 – (USED AS STORAGE)
1. Displace ceiling tiles.
2. Limited outlets.

CL RM #22 – COMPUTER LAB (UNUSED)
1. Low counters missing doors.
2. New VCT flooring.
3. Room has additional power supplied for power poles from the ceiling.

CL RM #23
1. No motion detectors for light control.
2. Room has carpeting in good condition.
3. Window unit air conditioner.

BOYS TOILET ROOM
1. Missing floor tile.
2. Crack in CMU wall,
3. Damaged hand towel/trash unit.
4. Damaged toilet partitions and doors.
5. No lights working.
6. Entry door is 2'-6".
7. Door louvers missing, replaced by wire mesh.
8. Semi-ADA stall not to code.

GIRLS TOILET ROOM
1. Broken door on semi-ADA stall.
2. Semi-ADA stall not to code.
3. Partitions need repainting.
4. Loose gasket at door transom.
5. Peeling paint on ceiling access panel.
6. Entry door is 2'-6".
7. Door louvers missing, replaced by wire mesh.

SCHOOL STORE – Unable to access

STAFF LOCKER/I.T. ROOM
1. Displaced/broken ceiling tiles.
2. No ventilation for IT equipment.

ASSISTANT PRINCIPAL
1. Window unit air conditioner.
2. Window left open to vent heat from I.T. room.

HALLWAY
1. Control joints need to be re-caulked.
2. Fire cabinets are not ADA.
3. Loose/cracked/stained ceiling tiles.
4. Missing access cover to sewer C.O. outside of Girls Room.
5. Loose cove base.

STAIR #1
1. Guard rails not to code. Spaces larger than 4".
2. Handrails do not have extensions at top and bottom as required by code.
3. Exit sign missing at bottom of stair.
4. No closer on doors.
5. Lights not working.

D-WING

CL RM #24
1. Chipped floor tiles.
2. Missing lens cover.
3. Missing mechanical unit cover.
4. Unused vertical blind track with hanging cords.

CL RM #25
1. Missing window shades.
2. Broken/missing plam on countertop.

CL RM #26
1. Hold open on classroom door not working.
2. Central clock not working, exposed wires.
3. Cracked ceiling tiles.
4. Chipped floor tiles.
5. Unused vertical blind track with hanging cords.
6. Broken/missing plam on countertop.

CL RM #27
1. Chipped floor tiles.
2. Few outlets. Multiple extension cords.
3. Door grille covered by plywood.

CL RM #28
1. Damaged ceiling tiles.
2. Motion detector not working.
3. Chipped floor tiles.

CL RM #29
1. Exposed CAT5 wires.
2. Millwork missing doors and shelves.

CL RM #30
1. Door grille covered by plywood.
2. Hold open on classroom door not working.

CL RM #31
1. Wiremold pulled from wall.
2. Water-stained ceiling tiles.
3. Damaged floor tiles.
4. Non-standard low counter height.

CL RM #32 SEMINAR
1. Floor is carpeted.
2. Window unit air conditioner but few outlets with multiple extension cords.

COPY/BOOK STORAGE
1. Water-stained ceiling tiles.
2. Double doors 2'-6" each.
3. Missing rubber base.
4. Missing floor tiles.
5. Burned out light bulbs.
6. Door grilles covered by plywood.

BOYS TOILET ROOM
1. Entry doors are 2'-6".
2. Non-ADA door clearances.
3. Door louvers missing, replaced by wire mesh.
4. Inner door broken.
5. Missing mirror.
6. Damaged hand towel/trash unit.
7. Broken door on semi-ADA stall.
8. No pipe protection under sinks.
9. Semi-ADA stall not to code.
10. No ADA urinal.
11. No pipe protection under sinks.

GIRLS TOILET ROOM
1. Entry doors are 2'-6".
2. Non-ADA door clearances.
3. Door louvers missing, replaced by wire mesh.
4. Semi-ADA stall not to code.
5. No pipe protection under sinks.
6. Missing/broken floor tile.
7. One sink needs reattachment to the wall.

WOMENS STAFF TOILET
1. Entry doors are 2'-6".
2. Non-ADA door clearances.
3. Door louvers missing, replaced by wire mesh.

HALLWAY
1. Non-ADA water cooler.
2. Missing lens covers.
3. Low light level.

STAIR #2
1. Guard rails not to code. Spaces larger than 4".
2. Broken grid panel in guard rail.
3. Handrails do not have extensions at top and bottom as required by code.
4. Exit sign missing at bottom of stair.
5. Missing lens cover.

TOBY FARMS SCHOOL
MECHANICAL & PLUMBING SYSTEMS REPORT

Introduction:

For the purpose of performing the field investigation and survey of Main Street Elementary School mechanical and plumbing systems, MG Engineering Associates retained the services of McHugh Engineering Associates. Therefore, all data compiled on this section is as reported by services were obtained to perform a building system study as requested by McHugh Engineering Associates. Further analysis, cost estimates and recommendations have been prepared by MG Engineering Associates.

In completing this report, McHugh Engineering Associates referenced the following codes:

- International Mechanical Code 2015
- International Energy Conservation Code 2015

Disclaimer

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2. McHugh Engineering Associates is not an equipment/manufacturer's service company and does not inspect or repair actual equipment/system components, integral wiring/piping/controls, hardware, or determine if said items or components are operating and functioning within manufacturer's performance criteria/specifications. We recommend obtaining the services of a licensed/certified manufacturer's service technician if further equipment/system evaluations are required or in need of repair.
3. Documentation Use – The documents being provided are for the end user and not shared with any other parties. The delivery of documents to any other party without the approval of McHugh Engineering Associates, Inc., will be at the sole risk and liability of the end user.
4. Mechanical Life Expectancy– The equipment life expectancy noted in this report is based on ASHRAE's Equipment Life Expectancy Chart. The recommendations provide qualitative feedback based on observation.

MECHANICAL SYSTEM

Existing Conditions: The building uses a heating only system, where hot water is provided from a heating plant to two multi-zone air handlers that serve the entire building. The multi-zone air handlers distribute the air to ceiling diffusers, and terminal unit ventilators located in the classrooms and offices. The heating plant consist of: Boilers and circulation pumps. Ventilation is provided thru wall louvers located at the back of the unit ventilators. The building does not have a central Building Automation System. Each zone (classroom) is controlled by a wall mounted thermostat, that regulates the amount of heat provided to that zone by modulating the 2-way motorized valve in the duct mounted hot water coil serving that zone. All unit ventilators are constant air volume.

Boilers: There are a total of 2 boilers. The boilers were installed in 1999, and are in poor condition. They were originally designed to use oil as fuel, but have been re-converted to use natural gas in recent years. Maintenance has been performed on the boilers over the years, such as replacing the burners and blower.

Pumps: There are 2 heating hot water pumps that circulate water between the boilers and the terminal heating coils in the multi-zone AHUs. They were installed in 1999 and are in fair condition.

Piping in Mechanical Room: All piping is insulated and labeled properly, and was observed to be in fair condition.

Unit Ventilators in Classrooms and Offices: They are nearly 52 years old and are in poor condition. They mix fresh outside air from an outdoor louver with heated air coming from the AHU and deliver it to the classrooms. They are constant air volume and modulate the heat through wall mounted thermostats.

Air Handling Units:

There is an AHU-1 located in main mechanical room (basement) which serves wings C and D of the building. it is original construction, nearly 52 years old. Maintenance has been done over the years, with replacement of filters, fans, belts, etc. It utilizes stand-alone controls.

There is an AHU-2 located in main mechanical room (basement) which services wings A and B, and the cafeteria. It is original construction, nearly 52 years old. Maintenance has been done over the years, with replacement of filters, fans, belts, etc. It utilizes stand-alone controls.

MECHANICAL SYSTEM RECOMMENDATIONS

a. **Building System:**
   I. The building does not have cooling, and the heating plant, the multi-zone AHUs, and the unit ventilators are at the end of their useful life and in poor condition.
   II. We recommend a full replacement of the HVAC system in the building.
   III. We recommend the new system to be a dual temperature 2-pipe system, capable of providing seasonal cooling and heating. The new system should consist of:
      1. New boilers (2)
      2. New air-cooled chiller (1)
      3. New dual temperature pumps
      4. New variable air volume rooftop units
      5. New VAV terminals located above the ceilings.
      6. New air devices and duct distribution above the ceilings.
      7. New dual temperature piping from heating/cooling plant to RTUs.
      8. New Building Automation System (BAS)

      All existing HVAC equipment should be demolished.

b. **Boilers:**
   I. The life expectancy for hot water cast iron boilers is 30-35 years
   II. The two existing boilers are approaching the end of their useful life. They can still work a few more years with continued maintenance and should be replaced when the building HVAC system is upgraded.

c. **Pumps:**
   I. The life expectancy for water pumps is 15-20 years
   II. The 2 heating hot water pumps are past their life expected useful life and should be replaced soon.

d. **Unit Ventilators:**
   I. The life expectancy for unit ventilators units is around 20 years.
   II. All the unit ventilators are nearly 52 years old and well past their expected useful life. They should be demolished when the building HVAC system is upgraded.

e. **Air Handling Units:**
   I. The life expectancy for air handling units is 15-20 year.
   II. The two multi-zone air handling units are nearly 52 years old and well past their expected useful life. They should be demolished when the building HVAC system is upgraded.

PLUMBING SYSTEMS

Existing Conditions: The domestic water supply is delivered via a 3” domestic water line that enters the building from Bridgewater Road. There is an underground meter pit with a meter and backflow preventer at that location, and a shut-off valve inside the building. Gas Service is supplied to the entire building via a 2” low pressure natural gas line. The gas meter is located outside by the entrance to the mechanical room.

Hot Water System: There is a gas fired domestic water heater and two storage tanks located in the main mechanical room. Both were installed in 2000 and look to be in good working condition.

PLUMBING SYSTEM RECOMMEDATIONS

Hot Water System: Continue routine maintenance. Replace water heater within the next 5 years.

TOBY FARMS ELEMENTARY SCHOOL
ELECTRICAL SYSTEMS REPORT

Lighting: Part of the interior light fixtures have been previously retrofitted to LED. There is no exterior lighting at the main school entrance. Multi-purpose Room: Has existing 400-watt metal halide lamps with 120-watt LED lamps. Recommendations for upgrades can be found below.

Panels:
Panel located on Stage: Existing Federal Pacific Electric (FPC) panel board recessed. Split bus panel with a contactor to operate the stage lighting (currently not used).
Boiler Room: FPE 24 circuit bolt-on panel, 24 circuit 3-phase.
600-amp MDP for addition panels, 3 phase, 120/208 volt, 30 circuit.
Pump panel: 36 circuit, FPE, 600 amp, 3 phase sub-panel with fused, knife switches.
Sub-panel (rear): 200-amp FPE 42 circuit, 3 phase panel.
1st floor Custodian: 100 amp, 3 phase, 30 circuit Siemen's bolt-on (feeds computer room). No work.
Section A: 42 circuit panel, 120/208 FPE recessed with 3- 3 pole 20 amp, 33 – 1 pole 20 amp. Suggest retrofit a new panel and breakers and ground fault water coolers.
Section B: Two FPE Panels – one is 30 circuits with 2 – 3 pole 20 amp & 24 – 1 pole 20-amp breakers. The other is a 24 circuit with 2 – 3pole 20 amp & 20 - 1 pole 20-amp breakers. Another panel was located in the custodian's room but unable to access.
Section C:

A. Panel recessed by Gym, 100 amp, 3 phase, 120/208 volt, 42 circuit. Panel Kinney appears to be a Siemens type B breaker. Suggest to leave in place. Torque connections. Breakers originally (ITE, Siemens makes exact replacements).
B. Panel # 2: 150-amp main breaker, 42 circuit, suggest torque connections. ITE type B bolt-on breakers.

Section C: Second Floor

A. 150-amp main breaker, 42 circuit, recessed panel, 3 phase, ITE (Kenney) Siemens B type.
B. Custodian closet: 100 amp, 3 phase, 24 circuit, 120/208 volts. Siemens BL type (no work).

Generator: Natural gas fired back-up generator located inside the boiler room supplies power to a 16-circuit fused sub-panel. Suggest relocating and replacing outdated generators to the exterior, replace switch and fused panel board.

Fire Alarm System: Edward brand fire alarm located at the front entrance IO series. Last certified 07/23/21. There is no sprinkler system and additional fire pull stations should be installed at the exits.

ELECTRICAL RECOMMENDATIONS

1. Fire Alarm System: Additional fire pull stations should be installed at the exits.
2. Multi-purpose Room: Remove existing ballasts and replace existing 400-watt lamps with 120-watt LED lamps.

3. Upgrade the area pedestal lighting located near the bus parking lot.
4. Section D: 1st & 2nd Floors: Classroom fixtures retrofit existing fixtures to 4k LED type lamps and replace bathroom lights with an A-19 led lamps at 4k.
5. Panel located on Stage: Replace the panel with switch rated circuit breakers.
6. Boiler Room: Replace panel.
7. Pump panel: Replace fuses and knife switches with breakers.
8. Sub-panel (rear): Replace panel.
9. Disconnect (labeled addition): 600-amp, fused safety switch (THW cable).
10. Update all 5 exit signs.
11. Gym: Replace 5 – 400-watt metal halide lamps with 120-watt LED lamps, remove ballasts.
12. Upgrade remaining interior lighting to LED.
13. Install LED wall packs (to operate by a photocell) at the main entrance exterior.
14. Upgrade the area pedestal lighting located near the bus parking lot.
15. Ground fault all water fountains.
16. Natural gas fired back-up generator located inside the boiler room supplies power to a 16-circuit fused sub-panel. Suggest relocating and replacing outdated generator to the exterior, replace switch and fused panel board.

PRELIMINARY

CHESTER UPLAND SCHOOL DISTRICT

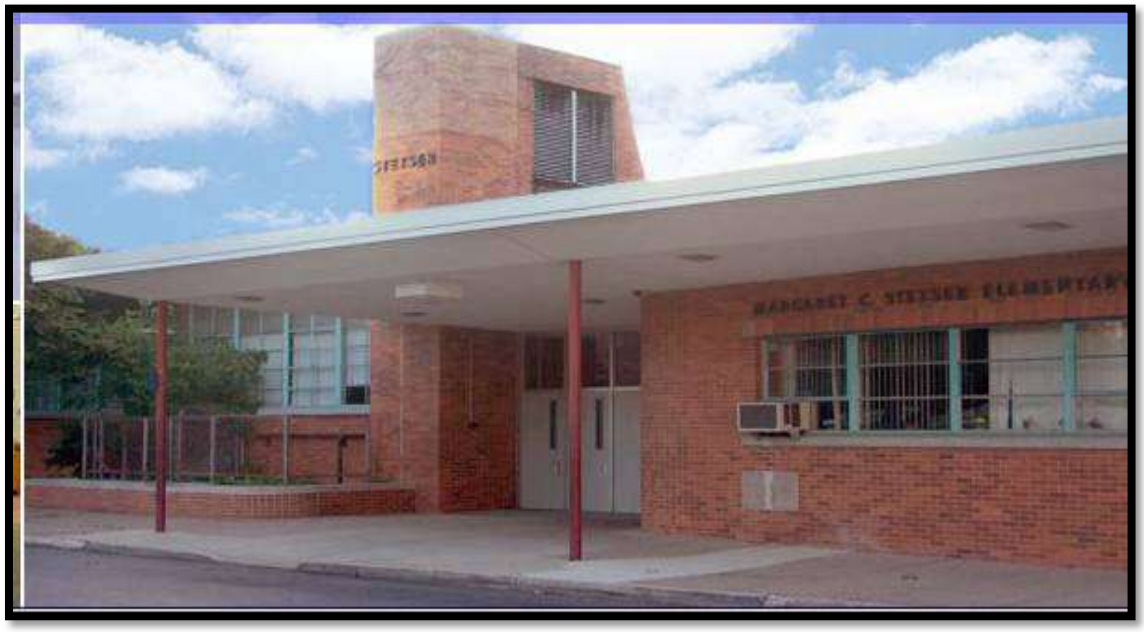
BUDGETARY ESTIMATES

School Name: TOBY FARMS ELEMENTARY SCHOOL

Date: 10/29/2021

No.	Description	Estimated Quantity	Units	Estimated Unit Price	Total
	GENERAL BUILDING ENVOLOPE/FACILITIES UPGRADES				
1	ADA ACCESSIBILITY UPGRADES (BATHROOMS ETC..)	1	LS	$ 350,000.00	$ 350,000.00
2	WINDOW REPLACEMENT	1	LS	$ 1,600,000.00	$ 1,600,000.00
3	FLOORING AND CEILING TILE UPGRADES, CLASSROOMS, HALLWAYS, DOORS, PAINTING, ETC..	40000	SF	$ 45.00	$ 1,800,000.00
4	UPGRADED FURNITURE AND FIXTURES	1	LS	$ 400,000.00	$ 400,000.00
5	EXTERIOR CONCRETE IMPROVEMENTS	1	LS	$ 15,000.00	$ 15,000.00
6	EXTERIOR FAÇADE IMPROVEMENTS	1	LS	$ 35,000.00	$ 35,000.00
7	HAZARDOUS MATERIALS ABATEMENT	1	LS	$ 150,000.00	$ 150,000.00
	SUBTOTAL				**$ 4,350,000.00**
	MECHANCIAL UPGRADES				
1	UPGRADES TO MECHANICAL SYSTEMS	1	LS	$ 5,635,000.00	$ 5,635,000.00
	UNIT VENTHILATORS				
	HOT WATER PUMPS				
	BUILDING AUTOMATION SYSTEM				
	PACKAGED TERMINAL AIR CONDITIONER DEMOLITION				
	UPGRADE TO CAFETERIA EXHAUST SYSTEM				
	HOT WATER SYSTEM				
	INCIDENTAL IMPROVEMENTS				
	SUBTOTAL				**$ 5,635,000.00**
	ELECTRICAL AND FIRE SYSTEM UPGRADES				
1	FIRE ALARM PULL STATIONS	1	LS	$ 3,500.00	$ 3,500.00
2	MULTI-PURPOSE ROOM - REMOVE EXISTING BALLASTS AND REPLACE EXISTING 400 WALL LAMPS WITH 120 WATT LED LAMPS	1	LS	$ 15,000.00	$ 15,000.00
3	SECTION D: 1ST AND 2ND FLOOR: CLASSROOM FIXTURES RETROFIT EXSITING FIXTURES TO 4K LED TYPE LAMPS AND REPLACE BATHROOM LIGHTS WITH AN A-19 LED LAMPS AT 4K	1	LS	$ 2,500.00	$ 2,500.00
4	REPLACE STAGE PANEL WITH SWITCH RATED CIRCUIT BREAKERS	1	LS	$ 4,500.00	$ 4,500.00
5	REPLACE BOILER ROOM PANEL	1	LS	$ 4,000.00	$ 4,000.00
6	REPLACE FUSES AND KNIFE SWITCHES WITH BREAKERS	1	LS	$ 8,000.00	$ 8,000.00
7	REPLACE REAR SUBPANEL	1	LS	$ 3,500.00	$ 3,500.00
8	DISCONNECT (LABELED ADDITION): 500-AMP, FUSED SAFETY SWITCH (THW CABLE), CLEAN AND RETORQUE CONNECTIONS	1	LS	$ 300.00	$ 300.00
9	UPGRADE ALL 5 EXIT SIGNS	1	LS	$ 400.00	$ 400.00
10	GYM: REPLACE 5 - 400 -WATT METAL HALIDE LAMPS WITH 120-WATT LED LAMPS, REMOVE BALLASTS.	1	LS	$ 2,500.00	$ 2,500.00
11	UPGRADE REMAINING INTERIOR LIGHTING TO LED	1	LS	$ 10,000.00	$ 10,000.00
12	INSTALL LED WALL PACKS AT MAIN ENTRANCE DOOR	1	LS	$ 3,000.00	$ 3,000.00
13	UPGRADE PEDESTAL LIGHTING LOCATED NEAR THE BUS PARKING LOT	1	LS	$ 3,500.00	$ 3,500.00
14	GROUND FAULT ALL WATER FOUNTAINS	1	LS	$ 1,500.00	$ 1,500.00
15	RELOCATE/REPLACE OUTDATED GENERATOR TO EXTERIOR, REPLACE SWITH ON FLOOR BOARD	1	LS	$ 75,000.00	$ 75,000.00
	SUBTOTAL				**$ 137,200.00**

Total Estimated Cost of Priorities:	**$ 10,122,200.00**
Construction Contingencies (10%):	**$ 1,012,220.00**
Project Management/Engineering (10%):	**$ 1,012,220.00**
Permit Fees:	**$ 350,000.00**
TOTAL ESTIMATE PROJECT COSTS:	**$ 12,496,640.00**



STETSER ELEMENTARY SCHOOL
808 E. 7TH STREET
CHESTER, PA 19013

CONSTRUCTED IN 1954

STETSER ELEMENTARY SCHOOL
GENERAL CONDITIONS REPORT

Commonwealth Code Enforcement

427 North Springfield Road
Clifton Heights, Pa. 19018
Phone 484-469-3492 Scheduling 610 717 6367
Commonwealthcodes@live.com

Saturday, October 30, 2021

Mr. Mike Galante
MGE Associates
334 W Front Street
Media, Pa. 19063

Commonwealth Code Enforcement inspected Stetser Elementary School on October 28th, 2021, for conditions relating to safety. The school is in very good condition with only minor issues.

- **Exit signs and emergency lighting are of the newer generation and working correctly.**
- **Braille signage is missing from most of the egress path and exit doors.**
- **Most classroom identification does not include braille.**
- **Floors will need minor repairs through the main corridors.**
- **Minor adjustments are required at the egress doors for correct latching operation.**
- **Walls, floors, and ceilings in the administration areas are in good condition.**

Please contact me with questions.
Anthony Tartaglia, President
Commonwealth Code Enforcement, Inc.

STETSER ELEMENTARY SCHOOL
MECHANICAL & PLUMBING SYSTEMS REPORT

Introduction:

For the purpose of performing the field investigation and survey of Stetser Elementary School mechanical and plumbing systems, MG Engineering Associates retained the services of McHugh Engineering Associates. Therefore, all data compiled on this section is as reported by services were obtained to perform a building system study as requested by McHugh Engineering Associates. Further analysis, cost estimates and recommendations have been prepared by MG Engineering Associates.

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- International Energy Conservation Code 2015

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4. Mechanical Life Expectancy– The equipment life expectancy noted in this report is based on ASHRAE's Equipment Life Expectancy Chart. The recommendations provide qualitative feedback based on observation.

MECHANICAL SYSTEM

Existing Conditions: The building uses a heating only system, where hot water is provided from a heating plant to one multi-zone air handler that serve the entire building. The multi-zone air handler distributes the air to ceiling diffusers throughout the building. The heating plant consist of: Boilers and circulation pumps. Ventilation is provided from the main AHU and thru operable windows in the classrooms and corridors. The building has a central Building Automation System (BAS) by Alerton Controls, that is monitored by the central Widener University BAS. Each zone (classroom) is controlled by a wall mounted thermostat, that regulates the amount of heat provided to that zone by modulating the 2-way motorized valve in the duct mounted hot water coil serving that zone. All zones from the AHU are constant air volume.

Boilers: There are a total of 2 cast iron boilers. The boilers were installed in 2000 and are in good working condition. They were originally designed to use oil as fuel but have been re-converted to use natural gas in recent years. Maintenance has been performed on the boilers over the years, such as periodic cleaning and replacing the burners and blowers. The boilers are vented together with a 12" round vent duct going through the roof. The boiler vent's insulation is damaged and needs to be replaced. Combustion air for the boilers is provided through a louvered door to the outside.

Pumps: There are 2 variable flow heating hot water pumps that circulate water between the boilers and the terminal heating coils in the multi-zone AHU. They were installed in 2020 and are in great condition. The pumps speed is controlled by two new VFDs that were installed in 2020.

Air Handling Unit: There is an AHU-1 located in mechanical room (basement) which serves the entire building. Constant air volume. Original construction, nearly 67 years old. Maintenance has been done over the years, with replacement of filters, fans, belts, etc. Operation is controlled and monitored by the BAS. Each zone duct branch has a recently replaced coil (2020). Water to each coil is modulated by newly installed (2020) motorized 2-way valves (by Belimo). All valves are tagged with the number of the zone they serve and are controlled and monitored by the BAS.

Piping in Mechanical Room: All piping is properly insulated and labeled and was observed to be in good condition.

General Mechanical Room: The mechanical room is not mechanically ventilated

Kitchen: The gym was reconverted into a cafeteria/dining area. There is a small kitchen that has ovens, sinks, and food warmers, but no kitchen hood.

MECHANICAL SYSTEM RECOMMENDATIONS

a. **Building System:**
   i. The building does not have cooling.
   ii. If cooling is to be added in the future, we recommend converting the system into a 2-pipe dual temperature system, by adding a new air-cooled chiller and converting the heating coils into heating/cooling coils.
   iii. This new system would consist of:
      - (2) existing boilers.
      - (2) variable flow dual temperature pumps. The existing heating hot water pumps that will be re-converted to serve the chillers and the boilers.
      - new air-cooled chiller located on the ground.
      - Existing constant air volume multi-zone air handling unit, capable of providing non simultaneous heating and cooling to the entire building.
      - Re-use all air duct distribution and air devices.
      - Re-use the existing Building Automation System (BAS).
   iv. Alternate system to add cooling to the building:
      - Demolish the existing multi zone AHU and replace it with new DX/ natural gas VAV rooftop units. The RTUs will be able to provide cooling (DX), heating (natural gas), ventilation and humidity control (thru hot water reheat coils)
      - Re-use the existing air devices and re-configure the air duct distribution above the ceilings.
      - Re-use the existing heating hot water plant and add new piping to serve the re-heat coils.
      - Re-use the existing Building Automation System (BAS)

b. **Boilers:**
   i. The life expectancy for hot water cast iron boilers is 30-35 years
   ii. The two existing boilers have 10-15 years more of useful life, they are in good working condition and will be able to perform for that period of time with continued maintenance.

c. **Air Handling Unit:**
   i. The life expectancy for air handling units is 15-20 year.
   ii. Although the multi-zone air handling unit is nearly 67 years old and well past their expected useful life, it's not feasible to replace it due to its size. Maintenance and replacement of all its part has been done recently and the unit is in good working condition.

PLUMBING SYSTEMS

Existing Conditions: The domestic water supply is delivered via a 3" water line which enters the building at the mechanical room. There is a double check valve backflow preventor assembly and a meter in the mechanical room. The water line is insulated but the insulation is in very poor condition. Gas Service is supplied via a 2" @ 2 psi natural gas line which serves the entire building. The gas meter is located outside by the entrance to the mechanical room.

PLUMBING SYSTEM RECOMMEDATIONS

Water Service: Replace damaged insulation in the mechanical room.

STETSER ELEMENTARY SCHOOL
ELECTRICAL SYSTEMS REPORT

Existing Conditions: There is a PECO owned transformer located in the front of the building. In the basement there is a 400 Amp, 3 phase, 120/208 volt main disconnect. (MDP) Main Distribution Panel. There are also two 2-phase circuits being supplied by one 50 KVA transformer which operate the gym partitions and a fresh air make-up unit.

.

Lighting: Hallway lighting is motion sensor operated and has been converted to LED. However, classroom lighting has not been updated. Although, LED fixtures are onsite awaiting installation. Recessed square lighting fixtures at doorways and corridor corners are incandescent.

Emergency Signage: There are exit signs located in the basement that have been converted to battery type LED units.

Fire Alarm System: The hard-wired alarm system is located in the main office. Brand is Intelli-knight system with Starlink – Inspected on 7/22/21.

Panels:

- South Corridor: There is a Siemens MLO 225 Amp, 3 phase 120/280-volt panels located in the South Corridor that had been recently updated.
- North Corridor: Panelboard Siemens E & E1 each are 42 circuit, 3 phase, 120/208 volt and 200 Amps. Panelboard Siemens "D" fed from MDP 42 circuit, 3 phase, 200 amps. No work required.
- Stage Panels: C & C1 were replaced to Siemen's panelboards in 2004. 200 amp, 3 phase, 120/208 volts and 42 Circuits. No work required.
- Cafeteria: Panel located in the cafeteria was installed around 2005. No work required – 200 amp, 3 phase, GE load center.

ELECTRICAL SYSTEM RECOMMENDATIONS

1. Replace the equipment with 3 phase equipment.
2. Complete the conversion of the classroom light fixtures to LED (lamps are on-site).
3. Ground fault the water coolers in the corridors.
4. Install emergency lighting in each of the 4 bathrooms.
5. Replace the lighting at the exterior soffit at the main entrance to LED.
6. Remove the antiquated emergency light system and batteries in the basement.
7. Converted recessed square lighting fixtures at doorways and corridor corners to LED A-19 medium based lamps.
8. Replace the motor and controls for the partition doors which are currently 2-phase in the mutil-purpose room.
9. Replace 12 – 400-watt metal halide lamps with 120-watt direct drive LED lamps in the multi-purpose room.

PRELIMINARY

CHESTER UPLAND SCHOOL DISTRICT

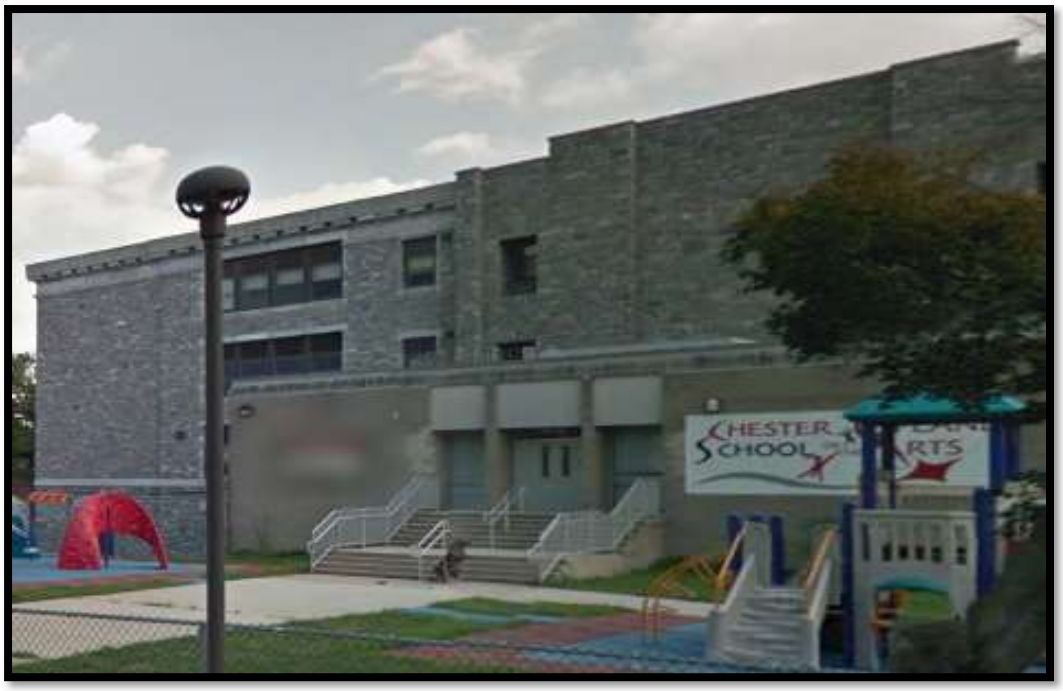
BUDGETARY ESTIMATES

School Name: STETSER ELEMENTARY SCHOOL

Date: 10/29/2021

No.	Description	Estimated Quantity	Units	Estimated Unit Price	Total
	GENERAL BUILDING ENVOLOPE/FACILITIES UPGRADES				
1	ADA ACCESSIBILITY UPGRADES (BATHROOMS ETC..)	1	LS	$ 2,500.00	$ 2,500.00
2	WINDOW UPGRADES (PARTIAL)	1	LS	$ 25,000.00	$ 25,000.00
3	FLOORING AND CEILING TILE UPGRADES, CLASSROOMS, HALLWAYS, DOORS, PAINTING, ETC..	2500	SF	$ 45.00	$ 112,500.00
4	UPGRADED FURNITURE AND FIXTURES	1	LS	$ 50,000.00	$ 50,000.00
5	EXTERIOR CONCRETE IMPROVEMENTS	1	LS	$ 5,000.00	$ 5,000.00
6	EXTERIOR FAÇADE IMPROVEMENTS	1	LS	$ 7,500.00	$ 7,500.00
7	HAZARDOUS MATERIALS ABATEMENT	1	LS	$ 25,000.00	$ 25,000.00
	SUBTOTAL				**$ 227,500.00**
	MECHANCIAL UPGRADES				
1	UPGRADES TO HVAC SYSTEM TO INCLUDE A COOLING SYSTEM	1	LS	$ 1,250,000.00	$ 1,250,000.00
2	REPLACEMENT OF DAMAGED INSULATION IN MECHANICAL ROOM	1	LS	$ 10,000.00	$ 10,000.00
	SUBTOTAL				**$ 1,260,000.00**
	ELECTRICAL AND FIRE SYSTEM UPGRADES				
1	REPLACE EQUIPMENT WITH 3-PHASE EQUIPMENT - AIR HANDLER AND GYM DOORS	1	LS	$ 12,500.00	$ 12,500.00
2	COMPLETE CONVERSION OF CLASSROOM LIGHT FIXTURES TO LED	1	LS	$ 10,000.00	$ 10,000.00
3	GROUND FAULT THE WATER COOLERS IN THE CORRIDORS	1	LS	$ 1,200.00	$ 1,200.00
4	INSTALL EMERGENCY LIGHTING IN EACH OF THE 4 BATHROOMS	1	LS	$ 1,500.00	$ 1,500.00
5	REPLACE THE LIGHTING AT EXTERIOR SOFFIT AT THE MAIN ENTRACE TO LED	1	LS	$ 2,000.00	$ 2,000.00
6	REMOVE THE ANTIQUATED EMERGENCY LIGHT SYSTEM AND BATTERIES IN THE BASEMENT	1	LS	$ 1,000.00	$ 1,000.00
7	CONVERT RECESSED SQUARE LIGHTING FIXTURES AT DOORWAYS AND COORRIOR CORNERS TO LED A-19 MEDIUM BASED LAMPS	1	LS	$ 300.00	$ 300.00
8	REPLACE THE MOTOR AND CONTROLS FOR THE PARTITION DOORS WHICH ARE CURRENTLY 2-PHASE IN THE MULT-PURPOSE ROOM	1	LS	$ 3,000.00	$ 3,000.00
9	REPLACE 12-400-WATT METAL HALIDE LAMPS WITH 120-WATT DIRECT DRIVE LED LAMPS IN THE MULTI-PURPOSE ROOM	1	LS	$ 8,000.00	$ 8,000.00
	SUBTOTAL				**$ 39,500.00**

Total Estimated Cost of Priorities:	**$ 1,527,000.00**
Construction Contingencies (10%):	**$ 152,700.00**
Project Management/Engineering (10%):	**$ 152,700.00**
Permit Fees:	**$ 350,000.00**
TOTAL ESTIMATE PROJECT COSTS:	**$ 2,182,400.00**



CHESTER UPLAND SCHOOL OF THE ARTS
501 W. 9TH STREET # 1
CHESTER, PA 19013

Commonwealth Code Enforcement

427 North Springfield Road

Clifton Heights, Pa. 19018

Phone 484-469-3492 Scheduling 610 717 6367

Commonwealthcodes@live.com

Saturday, October 30, 2021

Mr. Mike Galante
MGE Associates
334 W Front Street
Media, Pa. 19063

Commonwealth Codes inspected the Chester Upland School of the Arts on October 26th, 2021, for interior conditions relating to safety. I found several items that should be addressed:

- **Not all of the exit signs are internally illuminated. There is a second set of exit signs at the floor level that are not illuminated and, in many cases, blocked from view.**
- **The entry on the right side of the building has a plywood panel above the doorway where the glass panel has been broken out, (picture one).**
- **Braille signage is missing from most of the egress path and exit doors.**
- **The windows are double hung wood sash on an old unique balance support system, (picture two). Neary all are damaged, and all are in bad condition, (pictures three and four).**
- **The original windows in some cases have been retrofitted with an internal storm window that does not appear to be tempered glass. I would recommend the replacement of all window units with a**

commercial metal or metal clad unit utilizing insulated tempered glass.

- The interiors of the classrooms are in fair to good condition with the primary issues being flooring and ceiling tile replacements.
- The restrooms are in fair condition however the doors are held open and there are no modesty shields at the urinals. The hand sinks are installed in cabinets that are not accessible and are deteriorating.
- The kitchen equipment is in good condition.
- The elevator certificate, (picture five) should be posted in a tamper proof frame or kept in the maintenance office for review. Handwriting on the certificate for date of inspection cannot be verified.
- The general condition of the floors and ceilings in the public area is good except for damage to the tile at ramps and joints in the floor concrete, (picture six).
- There is damage to the ceiling of a fire tower, (picture seven), and the door to the tower, (picture eight) that contains communication equipment.
- The sprinkler system was inspected and passed on July 20th, 2021 and on inspection all pressures were good.

Walls, floors and ceilings in the corridors and administration areas are in good condition.

Several of the egress doors require adjustments for proper latching. This would be an adjustment of the closing hardware.

Exterior masonry is in good condition.

Please contact me with questions.

Anthony Tartaglia, President
Commonwealth Code Enforcement, Inc.

CHESTER UPLAND SCHOOL OF THE ARTS
MECHANICAL & PLUMBING SYSTEMS REPORT

Introduction:

For the purpose of performing the field investigation and survey of Chester Upland School of the Arts mechanical and plumbing systems, MG Engineering Associates retained the services of McHugh Engineering Associates. Therefore, all data compiled on this section is as reported by services were obtained to perform a building system study as requested by McHugh Engineering Associates. Further analysis, cost estimates and recommendations have been prepared by MG Engineering Associates.

In completing this report, McHugh Engineering Associates referenced the following codes:

- International Mechanical Code 2015
- International Energy Conservation Code 2015

Disclaimer

5. When conducting the survey, we reviewed all visible items to the best of our ability. The majority of the piping and ductwork is concealed above ceiling and walls. Unforeseen conditions may exist.
6. McHugh Engineering Associates is not an equipment/manufacturer's service company and does not inspect or repair actual equipment/system components, integral wiring/piping/controls, hardware, or determine if said items or components are operating and functioning within manufacturer's performance criteria/specifications. We recommend obtaining the services of a licensed/certified manufacturer's service technician if further equipment/system evaluations are required or in need of repair.
7. Documentation Use – The documents being provided are for the end user and not shared with any other parties. The delivery of documents to any other party without the approval of McHugh Engineering Associates, Inc., will be at the sole risk and liability of the end user.
8. Mechanical Life Expectancy– The equipment life expectancy noted in this report is based on ASHRAE's Equipment Life Expectancy Chart. The recommendations provide qualitative feedback based on observation.

MECHANICAL SYSTEM

Existing Conditions: The building uses a Dual Temperature system, which consists of a cooling and heat plant that provides heating and cooling not simultaneously to the entire building. The cooling plant consists of one air cooled chiller and chilled water circulation pumps. The heating plant consists of boilers and circulation pumps. Ventilation is provided by several Air handling units (AHU) and Rooftop Units (RTU) distributed throughout the building. The main mechanical equipment (AHUs, RTUs, chillers and boilers) is controlled by a central Building Automation System (BAS). The terminal unit ventilators serving the classrooms operate under their own local controls.

Chiller: There is one 150-ton air cooled chiller, installed in 2003 serves the entire building. It is mounted on the ground in the back of the building. The Chiller is not in good condition and well approaching the end of its useful life (20- 25 years). The chiller uses refrigerant R-22, which is phased out of production. At the time of the visit, the chiller was running and high vibration and noise was observed. The chiller enclosure was rusted, and its refrigerant piping was exposed and not insulated.

Boilers: There are 2 boilers. One of them was replaced in 2019 and the other one was manufactured and installed in 2003. The new boiler still has the old burner and controls from 2003. Both boilers are operational and in good working condition. All the combustion air, flue exhaust ductwork, natural gas piping and other accessories are in good condition. There is no mechanical ventilation in the boiler room.

Pumps: There are 2 chilled water pumps that circulate water between the chillers and the terminal equipment (AHUs, Unit Ventilators). They were installed in 2003. There are 2 heating hot water pumps that circulate water between the boiler plant and the terminal equipment (AHUs, Unit Ventilators). They were installed in 2003.

Piping in Mechanical Room: All piping is insulated and labeled properly and was observed to be in good condition.

Unit Ventilators in Classrooms and Offices: They provide cooling or heating and use 3-way motorized valves. They cool or heat the classroom air and don't bring outside air. Ventilation for the classrooms is provided via windows and transfer air from adjacent corridors. All the unit ventilators in the building were installed in 2003 and have been maintained and serviced over the years.

Air Handling Units:

i. AHU-1 located in the boiler room
(i) Serves the cafeteria.
(ii) Installed in 2003. Maintenance has been done over the years, with replacement of filters, fans, belts, etc.
(iii) Controls integrated to the BAS.
ii. AHU-2 located in a mechanical room adjacent to the boiler room (i) Serves back of the house spaces in the basement.
(ii) Installed in 2003. Maintenance has been maintained over the years, with replacement of filters, fans, belts, etc.
(iii) Controls integrated to the BAS.
(iv) Unit was very noise at the time of the visit.

Rooftop Units:

i. There are 5 RTUs located in the upper roof and one in the lower roof over the admin area.

ii. RTU-1

(i) Located in upper roof
(ii) Type: Split RTU, with condenser and evaporator installed next to each other. (iii) Capacity: 10 tons.
(iv) Looks abandoned. Not running at time of visit. Refrigerant insulation missing/damaged.

iii. RTU-2

(i) Located in upper roof
(ii) Type: Split RTU, with condenser and evaporator installed next to each other. (iii) Capacity: 20 tons.
(iv) Looks abandoned. Not running at time of visit. Refrigerant insulation missing/damaged.

iv. RTU-3

(i) Located in upper roof
(ii) Type: Split RTU, with condenser and evaporator installed next to each other. (iii) Capacity: 20 tons.
(iv) Unit running at time of visit. Refrigerant insulation missing/damaged. (v) Poor overall condition

v. RTU-4

(i) Located in upper roof
(ii) Type: Split RTU, with condenser and evaporator installed next to each other. (iii) Capacity: 18 tons.
(iv) Looks abandoned. Not running at time of visit. Refrigerant insulation missing/damaged.

vi. RTU-5

(i) Located in upper roof
(ii) Type: Split RTU, with condenser and evaporator installed next to each other. (iii) Capacity: 10 tons.
(iv) Looks abandoned. Not running at time of visit. Refrigerant insulation missing/damaged.

vii. RTU-6

(i) Located in lower roof
(ii) Type: Packaged RTU
(iii) Capacity: 15 tons.
(iv) Unit running at time of visit. In good condition.

MECHANICAL SYSTEM RECOMMENDATIONS

a. Chillers:

i. The life expectancy for air cooled chillers is 20-25 years
ii. The existing chiller is from 2003 and in poor condition. It should be replaced within the next 2-5 years.
iii. The new chiller shall be re-connected to the existing chilled water piping.

b. Pumps:

i. The life expectancy for water pumps is 15-20 years

ii. The 2 chilled water pumps and the 2 heating hot water pumps are approaching the end of their life expected useful life and should be replaced soon.

c. Air Handling Units:

i. The life expectancy for air handling units is 15-20 years

ii. Although AHU-1 and AHU-2 have been reasonably well maintained they are approaching the end of their life expected useful life and should be replaced within the next 5 years.

d. Air cooled packaged rooftop units:

i. The life expectancy for air cooled packaged rooftop units is around 15 years

ii. All the 5 RTUs on the upper roof are in poor condition and past their life expectancy. It is unclear if all of the units are operable.

iii. We recommend replacing the 5 RTUs as soon as possible.

e. Abandoned Rooftop Equipment:

i. All abandoned roof mounted equipment should be demolished and the roof openings patched.

PLUMBING SYSTEMS

Existing Conditions: There is domestic water service. There is an underground meter pit with a meter and backflow preventer located on the sidewalk of Fulton St. Gas Service is provided via a 3" low pressure natural gas line which serves the entire building. The gas meter and pressure regulators are located inside a fenced area next to the chiller, on W 8th Street.

PLUMBING SYSTEM RECOMMEDATIONS

There are no system maintenance or upgrade recommendations noted at this time.

CHESTER UPLAND SCHOOL OF THE ARTS
ELECTRICAL SYSTEMS REPORT

Main Service: Primary service 15 KV with a fused-primary-fuses. Recommend purchasing 3 – spare fuses to have on site. Secondary (load side of transformer) 277/408 volts extended to equipment room.

Fire Alarm Systems: Edwards IO series last tested and serviced 7/22/21. Suggest to add pull stations at the exit doors, the building is only partially sprinkled. Sprinkler system was last tested and serviced on 07/2021.

Cafeteria Lighting: Recommend removing the existing 2x4 fluorescent light fixtures and replace with 54- LED flat panel fixtures.

Kitchen Lighting: The kitchen was already retrofitted with LED lamps.

Classroom Lighting: Most classrooms have been retrofitted for LED lamps. Some work is still required to complete, lamps are on site.

Equipment Room:

A. 480-volt panels (EN) 200-amp 42 circuit.
B. 480-volt to 120/208 volt 45 KVA transformer.
C. Panel (E) – 480/277-volt lighting panel 42 circuit, 200-amps.
D. Generator located in this room, 100 KW at 480/277-volts, good condition. Last serviced and tested on 7/22/21.
E. Elevator power does not appear to be tied into the generator.

Cafeteria Panels: 2- 100-amp 3 phase 30 circuit, RB! & RB (one feeder). 1 – 200-amp 3 phase 42 circuit 120/208 volt. All Siemens brand and no need to update.

Kitchen Panel: Siemens 225-amp, 120/208 volt, 42 circuit for the kitchen equipment.

Far Side of Cafeteria (Water Heater Room): 2 – panels MLO 42 circuits each 225 amps each.

Principal's Office: 1 – 100-amp, 20 circuit load center, Cutler Hammer.

1st Floor Data Room: Panel R1 =277/480-volt 30 circuit Siemens, Panel L1 = 277/480-volt 30 circuit Siemens, Panel R1-2 = 120/208-volt 42 circuit Siemens, Panel CP1 = 120/208 volt, 30 circuit Siemens. No work required.

2nd Floor (4 Panels): Panel L2 = 277/480 volts 30 circuit 3 phase 250-amp Siemens panel, Panel PC= 277/480 volts 30 circuit 3 phase 400-amp MLO Siemens panel, Panel CP2 = 120/208-volt 30 circuit 250-amp main breaker Siemens panel, Panel R2 = 120/208-volt MLO 42 circuits 250-amp Siemens panel. No work required; Siemens panels were updated.

3rd Floor Panels (4 panels):
Panel CP3 = 100-amp main breaker 120/208-volt 30 circuit Siemens panel,
Panel L3 = 277/480-volt MLO 3 phases 100-amp 30 circuit Siemens panel,
Panel R3 = 120 /208-volt MLO 3 phase 30 circuit 225 amp feed through to panel R3-2 = 120/208 MLO 3 phase 30 circuit Siemens panel.

Electrical System Recommendations

1. Ground fault protection for both sets of drinking fountains.

2. Suggest to add emergency lighting in the equipment room and elevator equipment room.

3. Lower-Level Corridor: Replace 3 exit signs with an LED type. Addone combination exit/emergency at the exit door.

4. Exterior:
   A. Replace the round wall packs around the exterior of the building with 100-watt LED wall packs (14).
   B. Replace or retrofit the area lights (pedestal) located around the building (retrofit) the existing fixtures with LED typical for 12 poles.
   C. Replace the decorative style wall packs at the entrance doors with = 75-watt LED decorative (tamperproof) fixtures.

5. 1st Floor Corridor: Replace 2 exit signs to an LED type.

PRELIMINARY

CHESTER UPLAND SCHOOL DISTRICT

BUDGETARY ESTIMATES

School Name: CHESTER UPLAND SCHOOL OF THE ARTS

Date: 10/29/2021

No.	Description	Estimated Quantity	Units	Estimated Unit Price	Total
	GENERAL BUILDING ENVOLOPE/FACILITIES UPGRADES				
1	ADA ACCESSIBILITY UPGRADES (BATHROOMS ETC..)	1	LS	$ 50,000.00	$ 50,000.00
2	WINDOW UPGRADES	1	LS	$ 1,200,000.00	$ 1,200,000.00
3	FLOORING AND CEILING TILE UPGRADES, CLASSROOMS, HALLWAYS, DOORS, PAINTING, ETC..	45000	SF	$ 45.00	$ 2,025,000.00
4	UPGRADED FURNITURE AND FIXTURES	1	LS	$ 250,000.00	$ 250,000.00
5	EXTERIOR CONCRETE IMPROVEMENTS	1	LS	$ 125,000.00	$ 125,000.00
6	EXTERIOR FAÇADE IMPROVEMENTS	1	LS	$ 10,000.00	$ 10,000.00
7	HAZARDOUS MATERIALS ABATEMENT	1	LS	$ 125,000.00	$ 125,000.00
	SUBTOTAL				**$ 3,785,000.00**
	MECHANCIAL UPGRADES				
1	CHILLER REPLACEMENT	1	LS	$ 495,000.00	$ 495,000.00
2	CHILLED WATER PUMPS	1	LS	$ 10,000.00	$ 10,000.00
3	AIR HANDLING UNIT REPAIRS/MAINTENANCE	1	LS	$ 75,000.00	$ 75,000.00
4	REPLACEMENT OF 5 RTU'S	1	LS	$ 650,000.00	$ 650,000.00
5	DEMOLISH ABANDONED ROOF MOUNTED EQUIPMENT	1	LS	$ 10,000.00	$ 10,000.00
	SUBTOTAL				**$ 1,240,000.00**
	ELECTRICAL AND FIRE SYSTEM UPGRADES				
1	GROUND FAULT PROTECTION FOR DRINKING FOUNTAINS	1	LS	$ 1,200.00	$ 1,200.00
2	EMERGENCY LIGHTING IN EQUIPMENT ROOM	1	LS	$ 300.00	$ 300.00
3	REPLACE 3 EXIT SIGNS WITH LED TYPE IN LOW LEVEL CORRIDOR	1	LS	$ 900.00	$ 900.00
4	EXTERIOR LIGHTING UPGRADES	1	LS	$ 5,000.00	$ 5,000.00
5	REPLACE 2 EXIT SIGNS IN FIRST FLOOR CORRIDOR	1	LS	$ 500.00	$ 500.00
	SUBTOTAL				**$ 7,900.00**

Total Estimated Cost of Priorities:	**$ 5,032,900.00**
Construction Contingencies (10%):	**$ 503,290.00**
Project Management/Engineering (10%):	**$ 503,290.00**
Permit Fees:	**$ 350,000.00**
TOTAL ESTIMATE PROJECT COSTS:	**$ 6,389,480.00**



STEM AT SHOWALTER HIGH SCHOOL
1100 W. 10TH STREET
CHESTER, PA 19013

CONSTRUCTED IN 1951

Commonwealth Code Enforcement

427 North Springfield Road
Clifton Heights, Pa. 19018
Phone 484-469-3492 Scheduling 610 717 6367
Commonwealthcodes@live.com

Saturday, October 30, 2021

Mr. Mike Galante
MGE Associates
334 W Front Street
Media, Pa. 19063

Commonwealth Code Enforcement inspected STEM at Showalter High School on October 28th, 2021, for conditions relating to safety. The school is in good condition with some exceptions.

- **Exterior main entry has had a recent upgrade for accessibility. Steps and ramps are in good condition. However there appears to be an ongoing roofing issue, (picture one), that is damaging the canopy over the steps and can become a hazard.**
- **Exit signs and emergency lighting are of the newer generation and working correctly.**
- **Braille signage is missing from most of the egress path and exit doors.**
- **Most if not all classrooms have identification signage but do not include braille.**
- **The library has had a recent renovation. I had inspected the work and the finished product.**

- **Floors will need minor repairs at doorways, (picture two), and at joints in the concrete deck, (picture three).**
- **The kitchen equipment is in good condition. The floor of the kitchen requires minor repairs, (picture four).**
- **The general condition of the floors and ceilings in the public area is good except for intermittent damage to the tile at steps, (picture five), and joints in the floor concrete, (picture six).**

Walls, floors and ceilings in the administration areas are in good condition. Exterior masonry is in good condition.

Please contact me with questions.

Anthony Tartaglia, President
Commonwealth Code Enforcement, Inc.

STEM AT SHOWALTER HIGH SCHOOL
MECHANICAL & PLUMBING SYSTEMS REPORT

Introduction:

For the purpose of performing the field investigation and survey of STEM at Showalter High School mechanical and plumbing systems, MG Engineering Associates retained the services of McHugh Engineering Associates. Therefore, all data compiled on this section is as reported by services were obtained to perform a building system study as requested by McHugh Engineering Associates. Further analysis, cost estimates and recommendations have been prepared by MG Engineering Associates.

In completing this report, McHugh Engineering Associates referenced the following codes:

- International Mechanical Code 2015
- International Energy Conservation Code 2015

Disclaimer

1. When conducting the survey, we reviewed all visible items to the best of our ability. The majority of the piping and ductwork is concealed above ceiling and walls. Unforeseen conditions may exist.
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3. Documentation Use – The documents being provided are for the end user and not shared with any other parties. The delivery of documents to any other party without the approval of McHugh Engineering Associates, Inc., will be at the sole risk and liability of the end user.
4. Mechanical Life Expectancy– The equipment life expectancy noted in this report is based on ASHRAE's Equipment Life Expectancy Chart. The recommendations provide qualitative feedback based on observation.

MECHANICAL SYSTEM

Existing Conditions: The building uses a Dual Temperature system, which consists of a cooling and heat plant that provides heating and cooling not simultaneously to the entire building. The cooling plant consists of: Cooling towers, plate and frame heat exchanger, water cooled chillers, and circulation pumps. The heating plant consists of: Boilers and circulation pumps. Ventilation is provided by two central custom built multi-zone air handling units (AHUs), each located in the mechanical rooms at the north and south ends of the building. Air is distributed to the classrooms, corridors and offices, through overhead diffusers and above the ceiling ductwork. Each zone is controlled by a wall mounted thermostat that regulates the amount of air provided to that zone by modulating the 2-way motorized air dampers mounted in the duct serving that zone. All mechanical systems are integrated into a central Building Automation System (BAS), manufactured by Trane.

Chillers: There are two helical rotary water-cooled chillers in the building, located in the south mechanical room. They were both installed in 2001 and appear to be in good working condition. One chiller was on at the time of the visit.

Boilers: There are a total of 3 condensing boilers, independently vented to the outside. Boilers were installed in 2014. Two of them are in good condition and the third one is not operational and looks abandoned. All the combustion air, flue exhaust ductwork, natural gas piping and other accessories are new and in good condition. All boilers were off at the time of the visit.

Pumps: There are 2 condenser water pumps that circulate water between the cooling tower, the heat exchanger, and the chillers. Their nameplate information was not accessible during our visit. They were installed in 2001 and look in good working condition. There are 2 dual chilled water pumps that circulate water between the chillers and the two air handling units. They are original. Their nameplate information was not accessible during our visit. They were installed in 2001 and look in good working condition.

Piping in Mechanical Room: All piping is insulated and labeled properly and was observed to be in good condition.

Air Handling Units:

i. AHU-2 located in south mechanical room (basement)

(i) Multi-zone, custom built, constant air volume unit.
(ii) Serves half of the building
(iii) Installed in 1966, and had major upgrades in 2010, where most of its components such as coils, fans, belts, controls etc were replaced.
(iv) There is damage to the filter rack, plenum box, and fan shaft on this unit.
(v) There is dirt and mud at the base of the air handler and no operational way of draining condensate.
(vi) The outside air intake for AHU-2 is located next to the cooling tower and was covered with rotten/wet plywood.

ii. AHU-1 located in north mechanical room (basement)

(i) Multi-zone, custom built, constant air volume unit.
(ii) Serves half of the building

(iii) Installed in 1966, and had major upgrades in 2010, where most of its components such as coils, fans, belts, controls etc. were replaced.
(iv) The plenum box was clean.
(v) The by-pass dampers controlling the airflow for each zone are not operational. The building maintenance personnel operates them manually and close/open then as needed when there are comfort complains from the school staff.

Cooling Tower: There's one open, induced draft cooling tower. The tower has two cells, and at the time of our visit only one of them was operating. The casing of the towers and their dunnage are made of double wall engineered plastic (HDPE). They were installed in 2010 and are in overall good condition. Some of the outdoor condenser water piping jacketing was observed to be cracked and damaged.

Kitchen Exhaust System: The kitchen hood is served by an upblast roof mounted exhaust fan. The fan was installed in 2010 and observed to be in good working condition.

Kitchen/Cafeteria RTU:

i. There's a DX/Gas rooftop unit dedicated to the kitchen and cafeteria located in the north end of the building.
ii. The unit was installed in 2010 and observed to be in good working condition.

MECHANICAL SYSTEM RECOMMENDATIONS

a. Chillers:

i. The life expectancy for water cooled chillers is 20-30 years
ii. The two chillers are from 2001 and in good condition. With proper continued maintenance, their life can be extended another 10 years.

b. Pumps:

I. The life expectancy for water pumps is 15-20 years
ii. The 2 condenser water pumps and the 2 chilled water pumps are approaching the end of their expected useful life and should be replaced within the next few years.

c. Air Handling Units:

I. The life expectancy for air handling units is 15-20 years
ii. It is unfeasible and unpractical to completely remove the air handling unit located in the south mechanical room (AHU-2).
(I) We recommend abandon this unit in place, install a new outdoor mounted AHU and re-connect it to the existing ductwork.
(ii) All motorized zone dampers should be replaced.
(iii) Until a new AHU is installed, the condensate issues should be addressed, and the outside air intake and duct should be cleaned off debris.
iii. For the air handling unit located in the north mechanical room, we recommend continuing maintenance and upgrades of individual components as required.

(I) All motorized zone dampers should be replaced and re-connected to the BAS.
(ii) A new outside air opening from the room should be provided for this unit.
iv. The three air handling units located in the 5th floor mechanical room are past their life expected useful life and should be replaced soon. New controls should be provided for these units and integrated into the BAS.

d. Cooling Tower:

i. Damaged piping jacketing should be fixed.

PLUMBING SYSTEMS

Existing Conditions: Domestic Water Service is supplied via a 3" domestic water line that serves the entire building. Line enters the building at the north mechanical room. There is a backflow preventer assembly and meter at that location. Gas Service is supplied via a 3" low pressure natural gas line which also serves the entire building. It comes into the building at the north corner by the north mechanical room. The meter and regulators are located outside in a fenced area.

Domestic Hot Water System: There is a gas fired domestic water heater located in the north mechanical room. It was installed in 2009 (manufactured by Bradford White) and was observed to be in good working condition.

PLUMBING SYSTEM RECOMMEDATIONS

There are no system maintenance or upgrade recommendations noted at this time.

STEM AT SHOWALTER HIGH SCHOOL
ELECTRICAL SYSTEMS REPORT

Fire Alarm Systems: The fire alarms system was updated. Although, at the time of field inspection it was in trouble mode. Fire alarm contractors should be notified as soon as possible.

Lighting:

1. Lobby: Convert the T-5 fluorescent fixtures to LED lamps retrofit fixtures.
2. Gym: Existing recessed 400-watt metal halide fixtures, retro fit fixtures with 120-watt mogul base LED lamps (Quantity 12).
3. Basketball Gym: Existing 400-watt metal halide fixtures, retro fit fixtures with 120-watt mogul base LED lamps (quantity – 15).

Panels:

Stage Panel Boards: Panel 1 -30 circuit, 120/208 volt, 225 amps MLO, recessed, 3 phase
Panel 2 -18 circuit, 120/208 volt, 225 amps MLO, recessed, 3 phase
Panel 3 -30 circuit, 120/208 volt, 250 amps MLO, recessed, 3 phase
Panel 4 -18 circuit, 120/208 volt, 250 amps MLO, recessed split-bus with a contactor for 2nd 18 circuit panel. Retro fitted in 2009 – No work required.
Lobby Panel Boards:
Panel 5 – 3 phases, 120/208-volt MLO, 30 circuit was previously retro fitted. No work required.
Rear Hall: Panel C102 – recessed Eaton retrofitted in 03/2010 42 circuit, 3 phase, 120/208 volt & 225 Amps.
Electrical Room: Recessed panel 126E right, 42 circuit, 120/208 volts, 3 phase, 250 amp, and retrofitted 03/30/2010. No work required.
Panel located in computer room. (No access to computer lab).
Cafeteria: 1 – 30 circuit, 3 phase, 200-amp, 120/208-volt recessed panel was retrofitted on 03/2010. Retro fit the cafeteria linear lighting to LED type lamps, removing existing ballasts.
Kitchen Panel: 400-amp main breaker, 3 phase, 84 circuit, 120/208 volts (2 sections) retrofitted 04/2010 and inspected on 12/2010

Basement (rear): Please read very important. The existing switch gear needs to be repaired. The integral transformer with a 15 KV primary and a secondary 120/208 volt, 3phase 800 amp is out of service. There is a temporary transformer in the rear and temporarily wired. This requires immediate attention to install a new transformer and replace the buss on the secondary side. Install new stress cones on the primary cable, megger the system and re-energize. Cutler Hammer representatives must evaluate the equipment first.

There are two other sets of switchgear located in the boiler room. All 3 sets appear to be de-energized by the Peco owned switch in the front yard. A high voltage electrician should evaluate to verify the primary circuits and disconnects. Switchgear should be cleaned for proper ventilation of the equipment.

Recommendations

1. The fire alarms system is in trouble mode and requires immediate service.
2. Add additional pull stations at the exit doors.
3. Peco's High Voltage Equipment: Debris, weeds and trees to be removed and kept clear of the equipment in the front yard area. There should be proper signage indicating that this is the main service disconnect for the school. Clearly labeled on at least 3 – sides of the fenced area.
4. Front entrance soffit: Replace the 4- 18x18 fixtures with LED type fixtures.
5. Install a light for the flagpole.

PRELIMINARY

CHESTER UPLAND SCHOOL DISTRICT

BUDGETARY STIMATES

School Name: STEM AT SHOWALTER HIGH SCHOOL

Date: 10/29/2021

No.	Description	Estimated Quantity	Units	Estimated Unit Price	Total
	GENERAL BUILDING ENVOLOPE/FACILITIES UPGRADES				
1	ADA ACCESSIBILITY UPGRADES (BATHROOMS ETC..)	1	LS	$ 75,000.00	$ 75,000.00
2	WINDOW UPGRADES	1	LS	$ 1,200,000.00	$ 1,200,000.00
3	CEILING TILES, WALL COVERINGS, PAINT AND FLOORING (PARTIAL REPAIRS)	10000	SF	$ 40.00	$ 400,000.00
4	UPGRADED FURNITURE AND FIXTURES	1	LS	$ 100,000.00	$ 100,000.00
5	EXTERIOR CONCRETE IMPROVEMENTS	1	LS	$ 50,000.00	$ 50,000.00
6	EXTERIOR FAÇADE IMPROVEMENTS	1	LS	$ 25,000.00	$ 25,000.00
7	HAZARDOUS MATERIALS ABATEMENT	1	LS	$ 150,000.00	$ 150,000.00
	SUBTOTAL				**$ 2,000,000.00**
	MECHANCIAL UPGRADES				
1	CHILLER CONTINUAL MAINTENANCE	1	LS	$ 10,000.00	$ 10,000.00
2	WATER PUMPS REPLACEMENT	1	LS	$ 15,000.00	$ 15,000.00
3	UPGRADES TO AIR HANDLING UNITS AND HVAC SYSTEM	1	LS	$ 200,000.00	$ 200,000.00
4	REPAIR DAMAGED PIPE JACKETING	1	LS	$ 5,000.00	$ 5,000.00
5	MISCELLAENOUS PIPING AND REPAIRS UPGRADES	1	LS	$ 10,000.00	$ 10,000.00
	SUBTOTAL				**$ 240,000.00**
	ELECTRICAL AND FIRE SYSTEM UPGRADES				
1	SERVICE FIRE ALARM PANEL AND REPAIR AND FAULTS	1	LS	$ 1,200.00	$ 1,200.00
2	ADD PULL STATIONS AT EXIT DOORS	1	LS	$ 750.00	$ 750.00
3	PECO HIGH VOLTAGE EQUIPMENT SIGNS/GENERAL MAINTENANCE	1	LS	$ 300.00	$ 300.00
4	REPLACE FOUR (4) 18" X 18" FIXTURES WITH LED AT FRONT ENTRANCE	1	LS	$ 3,000.00	$ 3,000.00
5	REPLACE TRANSFORMER IN REAR SWITCHGEAR	1	LS	$ 30,000.00	$ 30,000.00
6	FLAGPOLE LIGHT	1	LS	$ 1,200.00	$ 1,200.00
	SUBTOTAL				**$ 36,450.00**

Total Estimated Cost of Priorities:	**$ 2,276,450.00**
Construction Contingencies (10%):	**$ 227,645.00**
Project Management/Engineering (10%):	**$ 227,645.00**
Permit Fees:	**$ 350,000.00**
TOTAL ESTIMATE PROJECT COSTS:	**$ 3,081,740.00**

CONTRIBUTING PARTNERS

The following is a list of partner agencies contracted by MG Engineering for the purpose of completing this facilities studies.

- **Commonwealth Codes** is a Delaware County based contracting firm serving public and private entities. We over 30 years expertise is building, energy, accessibility, mechanical, zoning and construction code compliance.

- **McHugh Engineering Associates, Inc.** was established in 1981 as a multi-discipline consulting engineering company offering design and energy-related services for commercial, institutional, educational, ecclesiastical, healthcare, retail, municipal, and industrial projects. Since then, they have been providing mechanical and electrical system designs for a variety of structures for various architects and owners. Areas of application include heating, ventilating, air conditioning, geothermal, energy recovery, LEED, lighting, power, fire alarm, plumbing, emergency/standby power systems, fire protection and miscellaneous associated system designs and specifications. McHugh Engineering Associates, Inc. holds professional licenses in Alabama, California, Delaware, Florida, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, South Carolina, New York, District of Columbia, Virginia, Connecticut, Tennessee, Massachusetts, and Rhode Island.
- **Amped Electric Inc.** is a Delaware County based electrical and code compliance firm established in 1987. We are a family-owned electrical contracting company licensed in PA, NJ, DE and MD.

- **Phillips & Associates Architects, LLC:** is a full-service professional Architecture firm founded in 2005 and located in Ambler, Pennsylvania. The principals are licensed to practice architecture in the states of New Jersey, New York, Pennsylvania and in the country of Bermuda.

- **TREMCO** was established in 1928 when William Treuhaft opened his small roofing materials manufacturing plant in Cleveland, Ohio, naming the company the Tremco Manufacturing Company. Today, Tremco is an RPM International, Inc. affiliate company employing over 500 people and a leader in the construction industry. Tremco consists of operating divisions specializing in the manufacture of sealants and waterproofing products for multiple structures including office buildings, stadiums, parking garages, single- and multi-family homes, hospitals, high-rises and more.

SUMMARY & CONCLUSIONS

The Office of Civil Rights at the U.S. Department of Education stated in a 2014 Dear Colleague Letter that:

“Structurally sound and well-maintained schools can help students feel supported and valued. Students are generally better able to learn and remain engaged in instruction, and teachers are better able to do their jobs, in well-maintained classrooms that are well-lit, clean, spacious, and heated and air conditioned as needed. In contrast, when classrooms are too hot, too cold, overcrowded, dust-filled, or poorly ventilated, students and teachers suffer” (Kappanonline.org, How crumbling school facilities perpetuate inequality)

The statement above sums up the state of disrepair of the Chester Upland School Facilities. There are libraries that have no books, walls and are cluttered with debris. Classrooms that are overcrowded, leaking ceiling tiles, broken doors, and numerous inconsistencies that you will have a hard time finding in surrounding municipality school districts. The facilities contain inadequate heating and cooling, which further exacerbates the impacts and inequities.

Our study evaluates each of the six (6) schools from an operation standpoint and we reviewed cosmetics, building envelope, electrical systems, mechanical, fire, gas, water and roofs. It is the intention of this study to develop both short term and long-term recommendations for the School District Moving Forward.

A summary of each of the schools is detailed below:

Chester High School and CUSA – These schools are in need of major cosmetic repairs, window replacement, Mechanical, Electrical and Plumbing Upgrades. We would recommend that a feasibility study be performed to determine if new schools would be more prudent that upgrading the existing facility.

Toby Farms and Main Street Schools – Main Street School appeared to be overcrowded while Toby Farms Junior High School appeared to be well maintained with adequate space. Due to the close proximity of these schools and the major repairs that both schools required. It is recommended that a feasibility study be performed to determine if combining the schools would be more cost beneficial and provide greater education value to the student population.

Stetser and STEM School – These schools were in the best condition and we would recommend that a long-term operation and maintenance plan be implemented in order to provide continued successful operation.

Long Term Recommendations

We have the following long-term recommendations:

- Perform a feasibility to determine if it is more cost effective from an operational and education standpoint to construct new schools at Chester High School, CUSA, Main Street and Toby Farms.
- Develop long-term capital improvement plans for Stetser Elementary and STEM and Showalter School.
- Develop a building management database to house and store any building plans, equipment warranties, etc…

Short-Term Recommendations

We have the following long-term recommendations:

- While the district is considering feasibility studies or next steps for major capital repairs, we would recommend that the district address critical repairs. This shall include, but not limited to, electrical and HVAC Repairs, Emergency Exit Lights, boiler replacements, etc..

Moving forward, we would recommend that we meet to review the report and discuss how to best address the infrastructure needs in the facilities.

APPENDIX A - INSPECTION PHOTOS BY SCHOOL

CHESTER HIGH SCHOOL PHOTOS

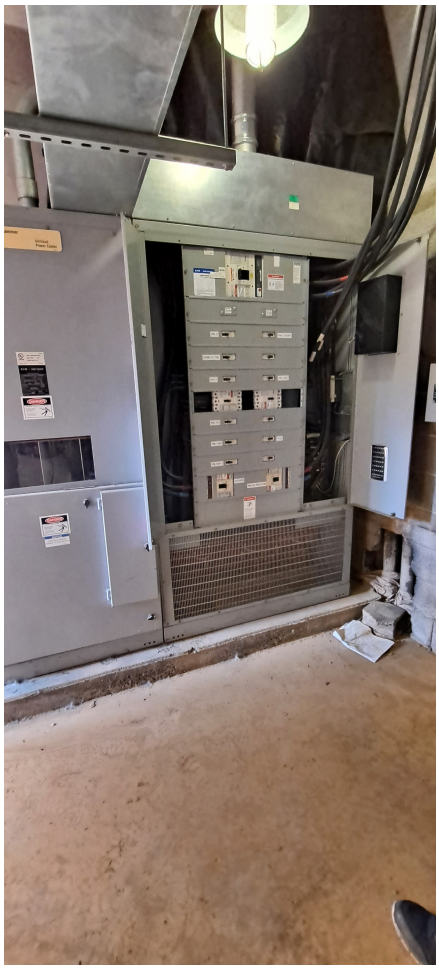












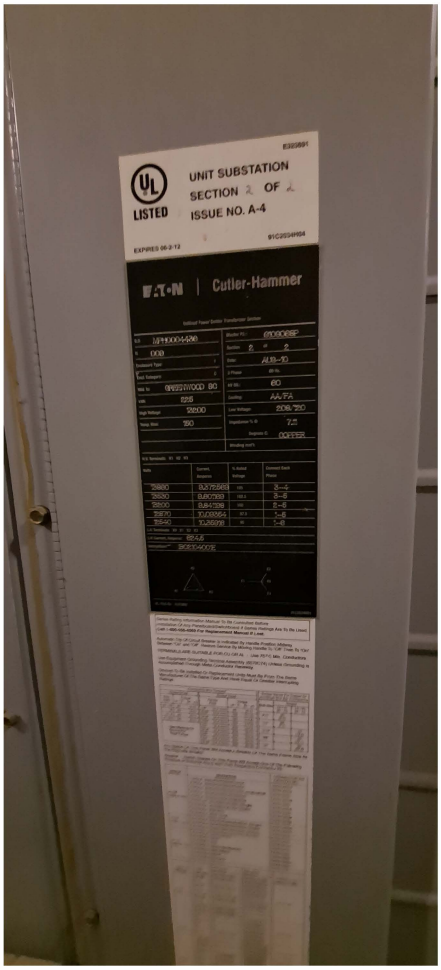




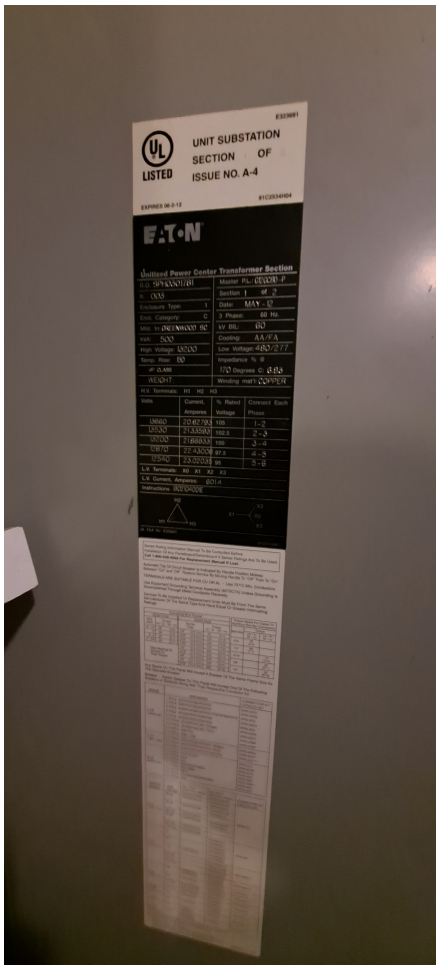





UNIT SUBSTATION
SECTION 1 OF 2
ISSUE NO. A-4
LISTED
EXPIRES 06-2-12
Cutler-Hammer
DANGER
WARNING - HIGH VOLTAGE - KEEP OUT
Hazardous voltage.
Will cause severe
injury or death.
Turn off power or use
protective equipment
when working inside.


UNIT SUBSTATION
SECTION 2 OF 2
ISSUE NO. A-4
LISTED
EXPIRES 06-2-12
Cutler-Hammer

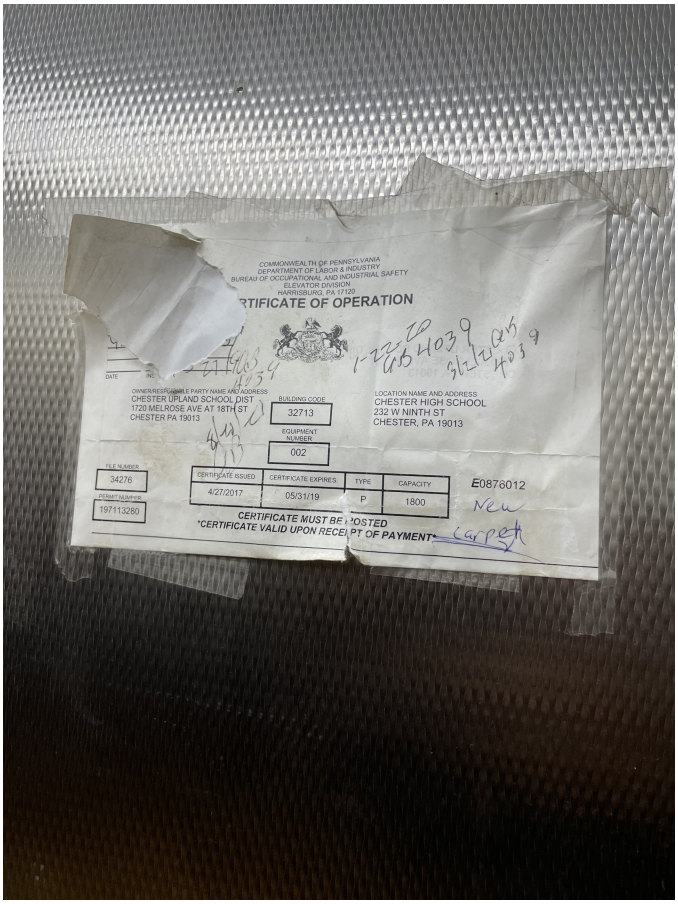

UNIT SUBSTATION
SECTION OF
ISSUE NO. A-4
Cutler-Hammer
DANGER
WARNING - HIGH VOLTAGE - KEEP OUT


UNIT SUBSTATION
SECTION OF
ISSUE NO. A-4
Unitized Power Center Transformer Section




EXIT




COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF LABOR & INDUSTRY
BUREAU OF OCCUPATIONAL AND INDUSTRIAL SAFETY
ELEVATOR DIVISION
HARRISBURG, PA 17120
RTIFICATE OF OPERATION
OWNER/REGISTERED PARTY NAME AND ADDRESS
CHESTER UPLAND SCHOOL DIST
1720 MELROSE AVE AT 18TH ST
CHESTER PA 19013
BUILDING CODE
32713
EQUIPMENT NUMBER
002
LOCATION NAME AND ADDRESS
CHESTER HIGH SCHOOL
232 W NINTH ST
CHESTER, PA 19013
FILE NUMBER
34276
PERMIT NUMBER
197113280
CERTIFICATE ISSUED
4/27/2017
CERTIFICATE EXPIRES
05/31/19
TYPE
P
CAPACITY
1800
E0876012
New
carpet
CERTIFICATE MUST BE POSTED
CERTIFICATE VALID UPON RECEIPT OF PAYMENT

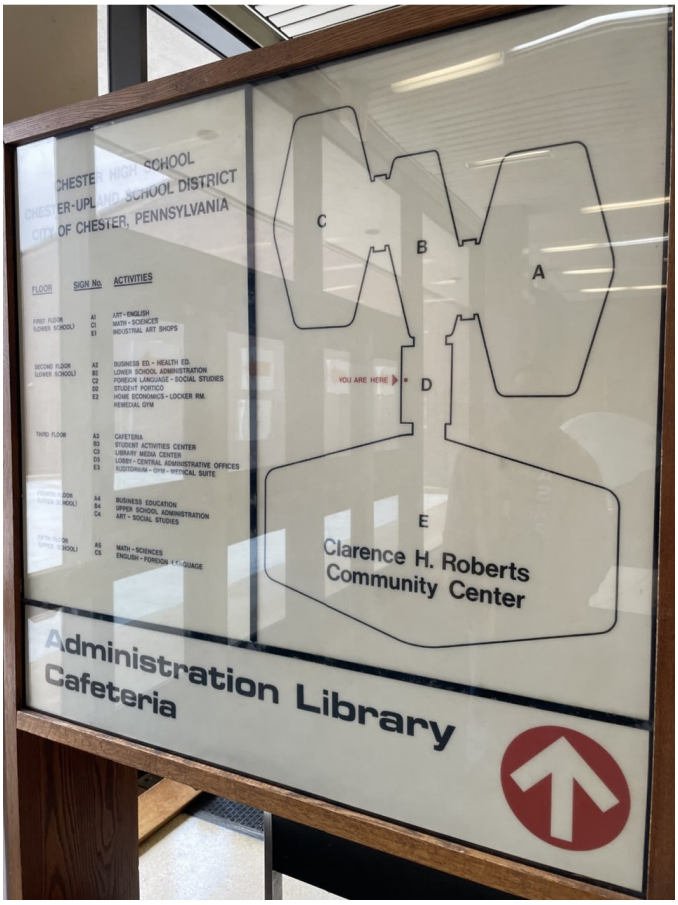

EXIT
A63




STOP
EMERGENCY USE ONLY
ALARM SOUNDS WHEN EXTINGUISHER IS REMOVED
Alternate Fire Extinguisher






SCHOOL
SCHOOL DISTRICT
OF CHESTER, PENNSYLVANIA
FLOOR
SIGN No.
ACTIVITIES
C
B
A
D
E
YOU ARE HERE
Clarence H. Roberts
Community Center
Administration Library
Cafeteria

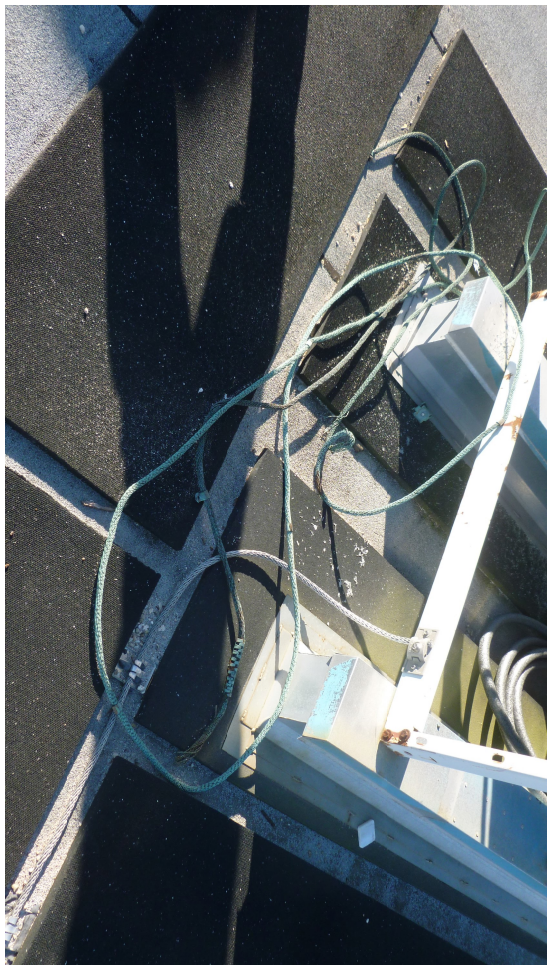





EXIT










EXIT
FIRE EXTINGUISHER






KOHLER


KOHLER

MECHANCIAL PHOTO APPENDIX

Mechanical Equipment Photos

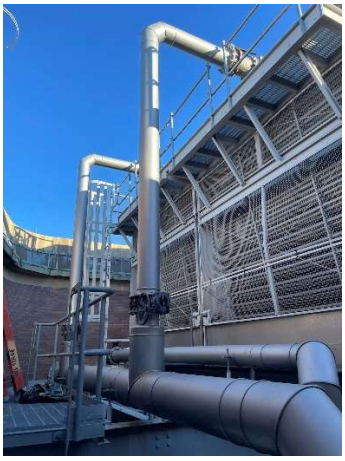


1. Unit Ventilator
    a. Location: Classrooms, offices
    b. Manufacturer: MagicAire
    c. Date Installed: 2016
    d. Model Number: varies
    e. Capacity (MBH): 1-3 tons





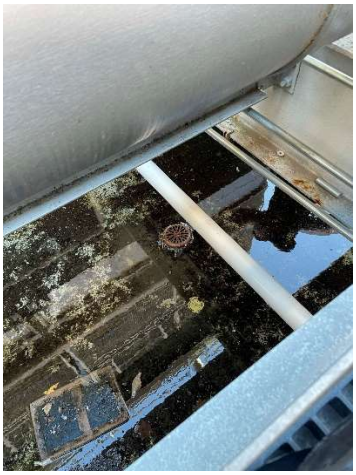




2. Cooling Towers
    a. Location: Roof
    b. Manufacturer: Baltimore Air Coil
    c. Date Installed: 2016
    d. Model Number: 15125-270
    e. Capacity (MBH): -









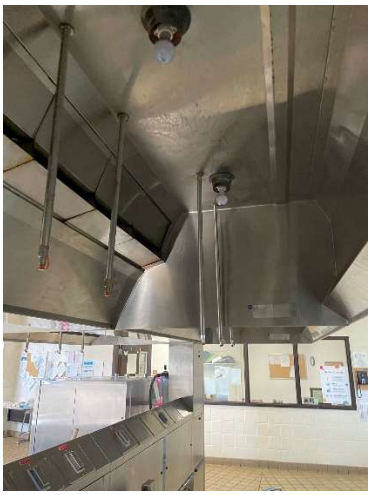
3. Air handling Units in 5th Floor Mech Room
    a. Location: 5th floor
    b. Manufacturer: Trane
    c. Date Installed: Original
    d. Model Number: Varies
    e. Capacity (MBH): -

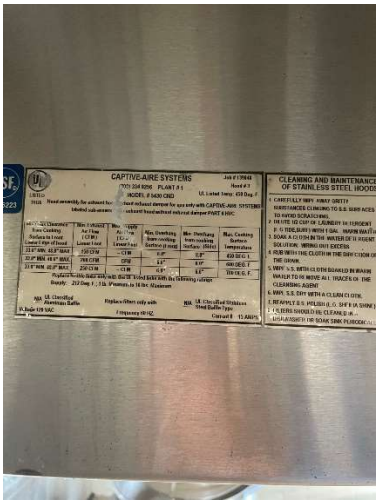












4. Kitchen Hoods
    a. Location: Ground Floor
    b. Manufacturer: Captive-Aire
    c. Date Installed: 2016
    d. Model Number: Varies
    e. Capacity (MBH): -



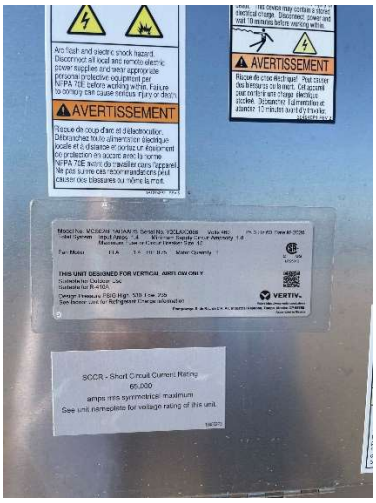




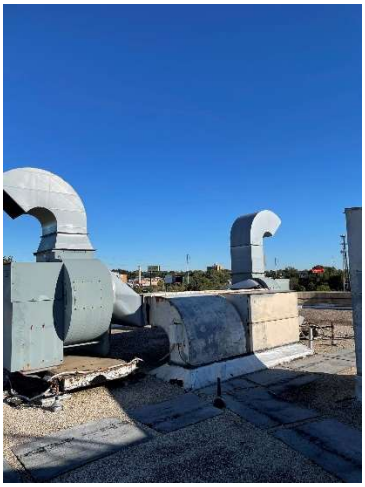
5. Abandoned Roof Equipment
    a. Location: Roof
    b. Manufacturer: Varies
    c. Date Installed: Original
    d. Model Number: Varies
    e. Capacity (MBH): -







6. IT Room Dedicated Cooling Unit
    a. Location: Roof
    b. Manufacturer: Liebert
    c. Date Installed: 2021
    d. Model Number: Varies
    e. Capacity: 8 tons

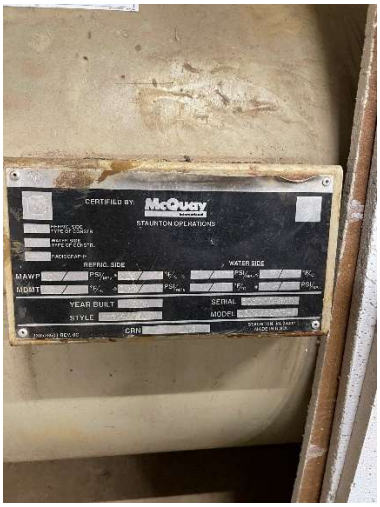






7. Kitchen exhaust fans
   a. Location: Roof
   b. Manufacturer: Cook
   c. Date Installed: Original
   d. Model Number: Varies
   e. Capacity: -







8. Old Chiller
    a. Location: Basement Mech Room
    b. Manufacturer: McQuay
    c. Date Installed: 2005
    d. Model Number: E3612CE2-A
    e. Capacity: 300 Tons







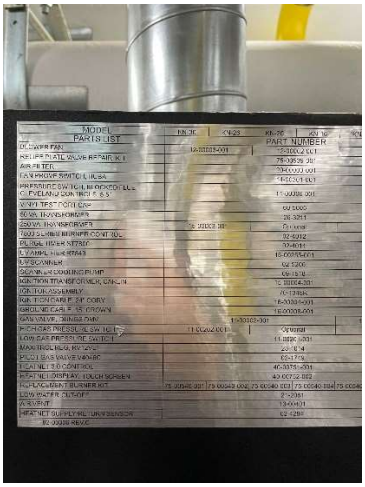
9. Condenser Water Pumps
    a. Location: Basement Mech Room
    b. Manufacturer: Teco Westinghouse
    c. Date Installed: Original
    d. Model Number: 404VP-RVE
    e. Size: 100 HP
    f. Quantity: 2





10. Condenser Water Pumps
    a. Location: Basement Mech Room
    b. Manufacturer: Teco Westinghouse
    c. Date Installed: Original
    d. Model Number: 404VP-RVE
    e. Size: 100 HP
    f. Quantity: 2







11. Boilers
    a. Location: Basement Mech Room
    b. Manufacturer: Advanced Thermal Hydronics
    c. Date Installed: 2016
    d. Model Number: KN26
    e. Capacity: 2,600 MBH each
    f. Number of Boilers: 8







12. Heating hot water pumps
    a. Location: Basement Mech Room
    b. Manufacturer: Bell and Gossett
    c. Date Installed: 2016
    d. Model Number: e-S0SC-5X13.5
    e. Capacity: 750 gpm each
    f. Number of Pumps: 3







13. New Chiller
    f. Location: Basement Mech Room
    g. Manufacturer: Aermec
    h. Date Installed: 2017
    i. Model Number: NXW0550
    j. Capacity: 35 Tons
    k. Chilled water pumps
        a. Manufacturer: Grainger
        b. Date installed: 2017
        c. Model Number: 1770-184TC
        d. Quantity: 2







14. Air handling Units in Basement Mech Room
    a. Location: 5th floor
    b. Manufacturer: Trane
    c. Date Installed: Original
    d. Model Number: Varies
    e. Capacity (MBH): -



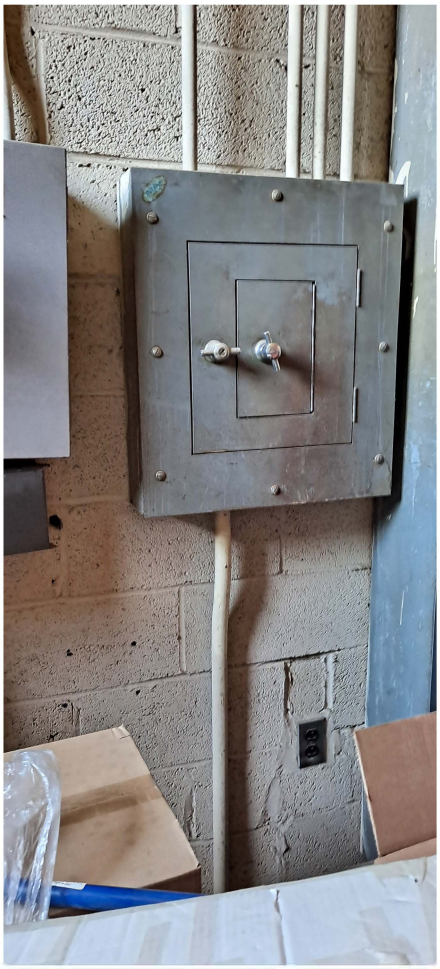


15. Natural gas service
    a. Location: Outdoor courtyard
    b. Size: 2”
    c. Pressure: 2 psi

MAIN STREET SCHOOL PHOTOS










CLOCKS


STAY ON B/R
RED FOOT
UPPER BLUE
UPPER RED
UPPER YELLOW
MULTI PURPOS.RM.
MULTI. PURPOS.RM.




Cutler-Hammer
ON
OFF











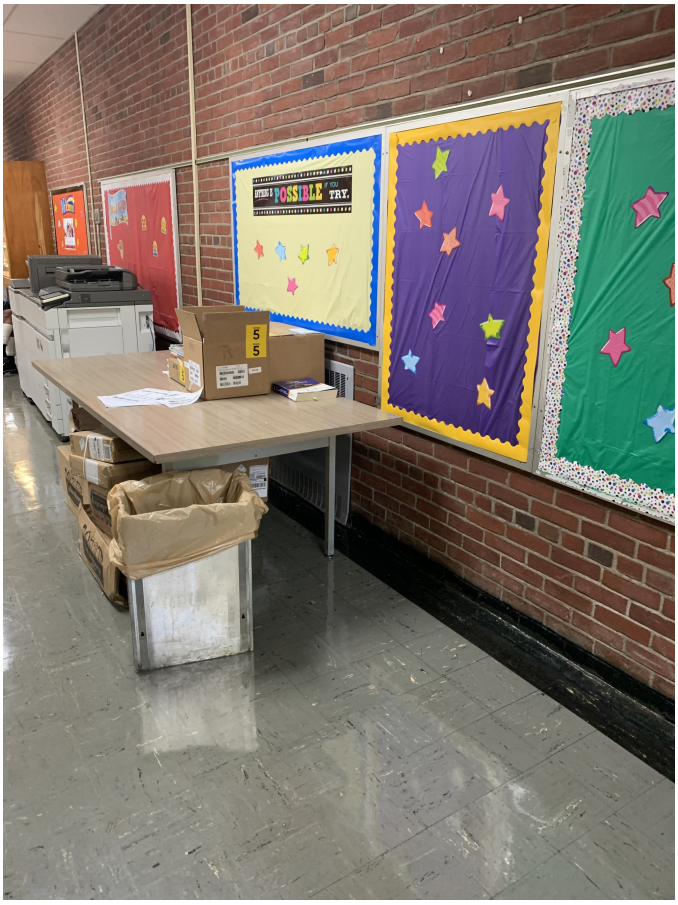

EXIT


EXIT


got milk?
got milk?
got milk?
got milk?
got milk?
got milk?
got milk?
got milk?
got milk?
got milk?

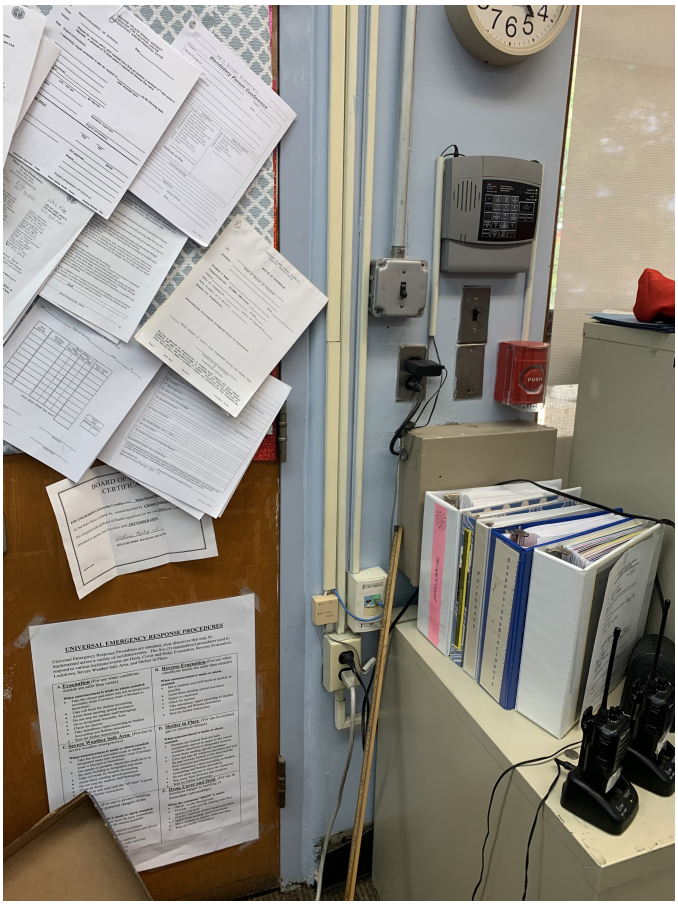


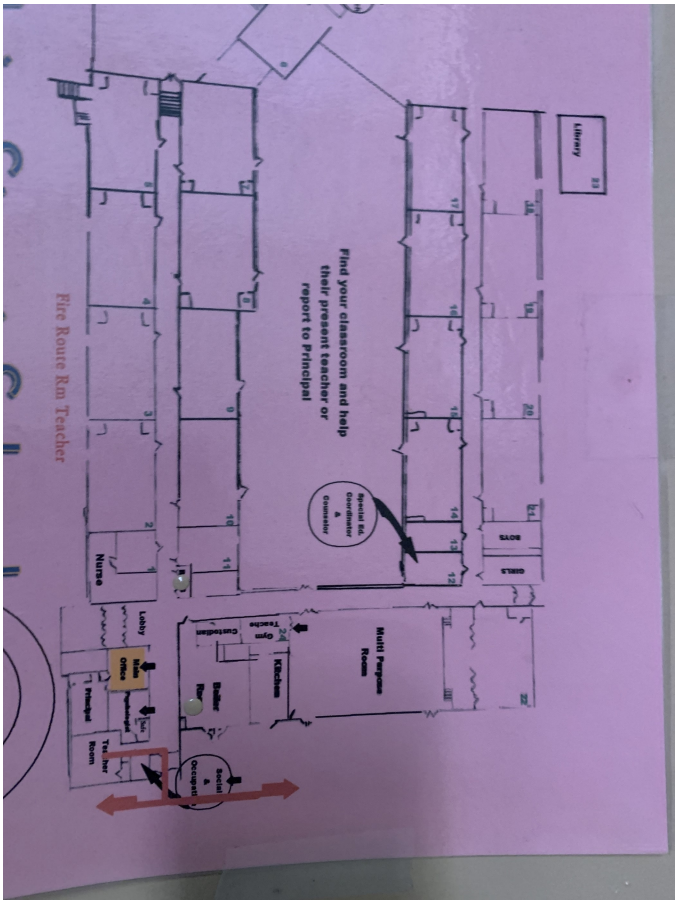



POSSIBLE
TRY




HAMMERMILL
Paper for Life.
Fore Multi-Purpose
HAMMERMILL
Paper for Life.
Principal's Album


UNIVERSAL EMERGENCY RESPONSE PROCEDURES


Library
Find your classroom and help their present teacher or report to Principal
Fire Route Rm Teacher
Nurse
Lobby
Main Office
Principal
Teacher Room
Custodian
Gym Teacher
Kitchen
Boiler Rm
Multi Purpose Room
Special Ed. Coordinator & Counselor
BOYS
GIRLS


FIRE

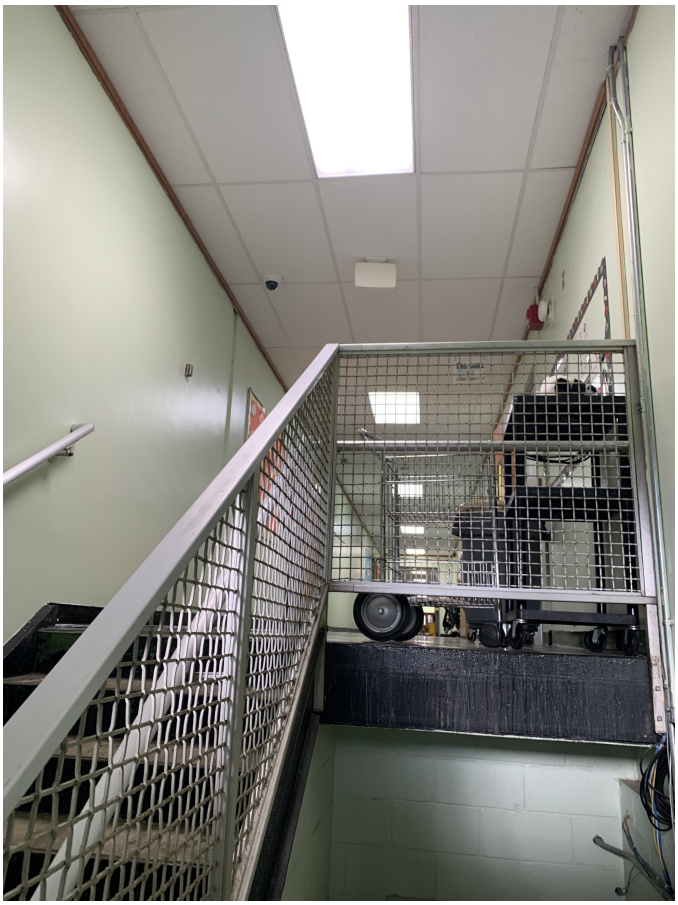



NATION
EXIT



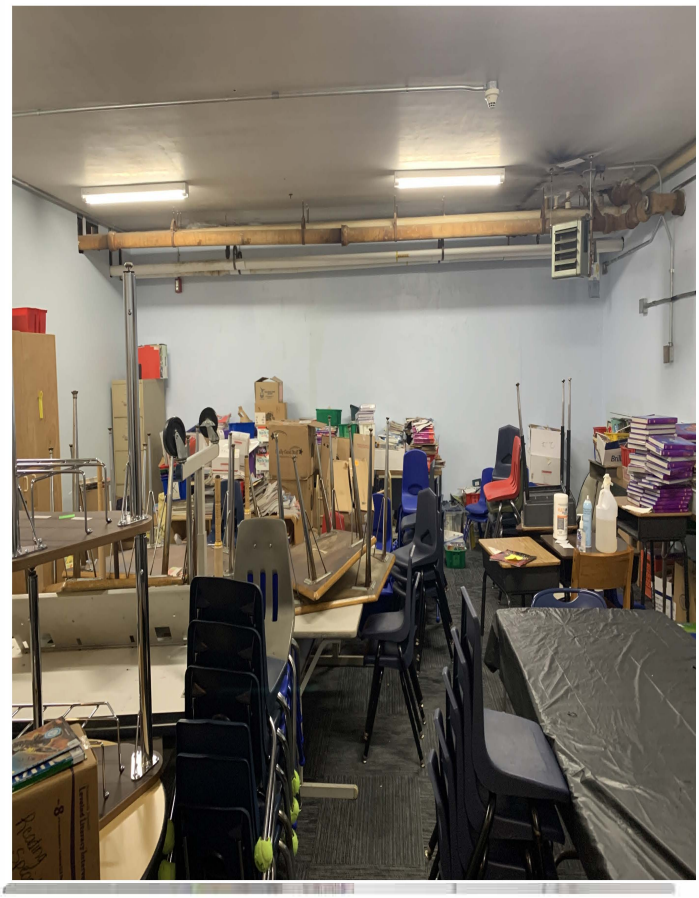













EXIT
EXIT
FIRE EXIT

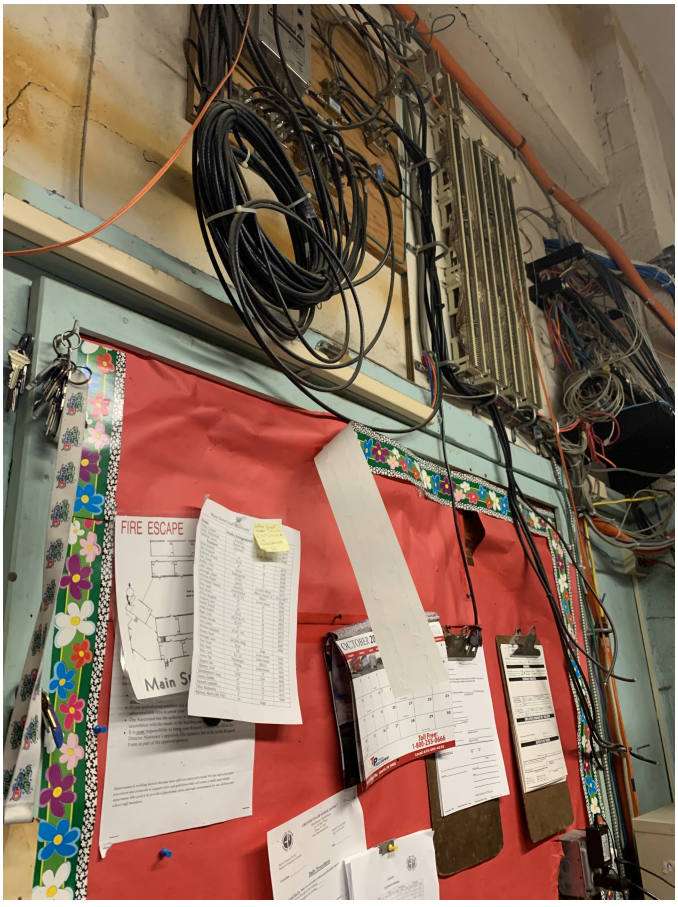





Room 11
Restroom
Adults Only
Key is in the office


NURSE PERKINS
NURSE CONA
MS. MICHELLE
Rm. 1
Medical Staff




FIRE ESCAPE

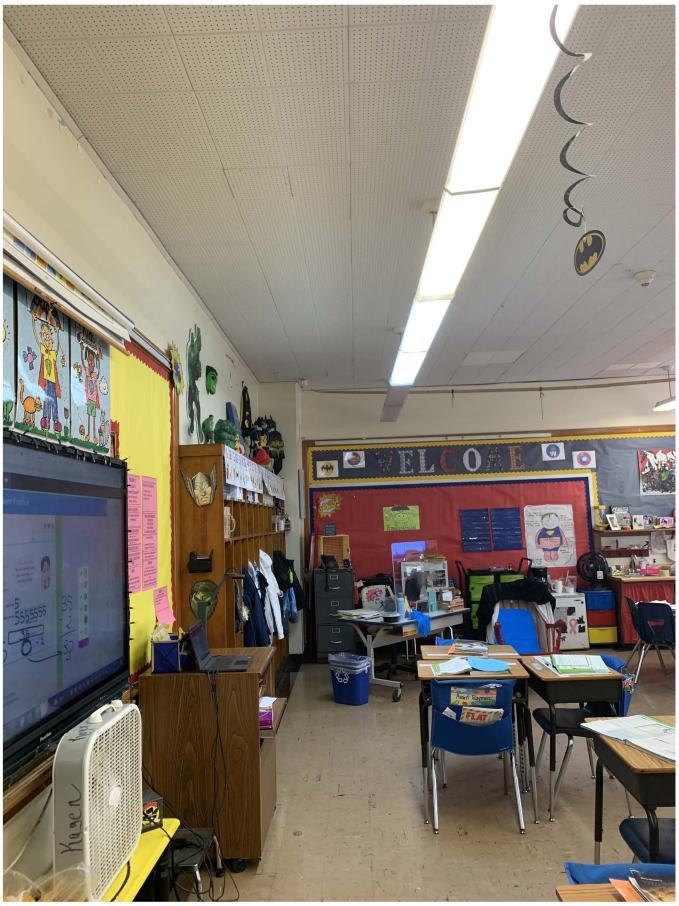

Wash Your Hands!
Wet
Get Soap
Scrub
Rinse
Dry



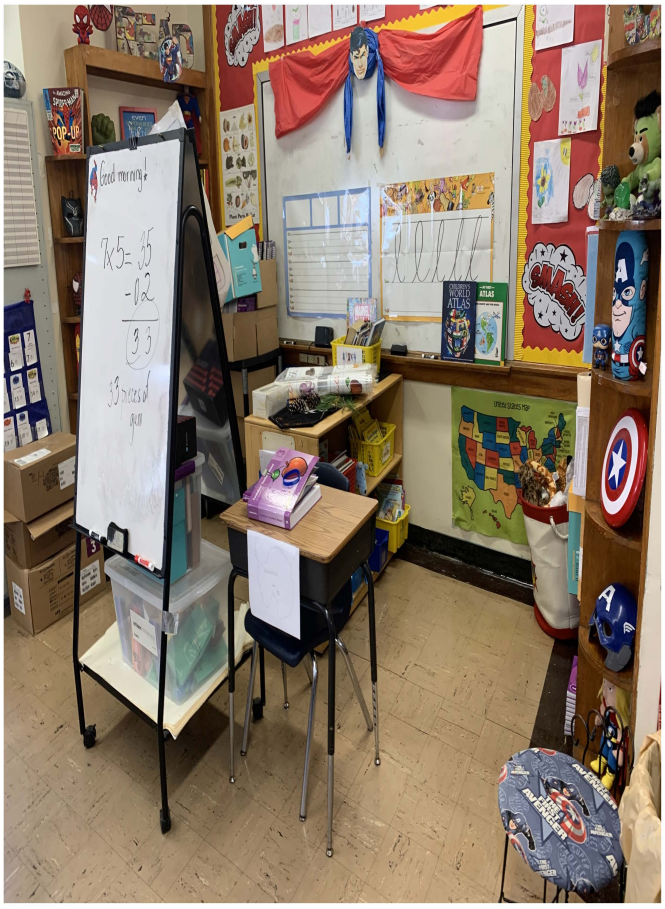


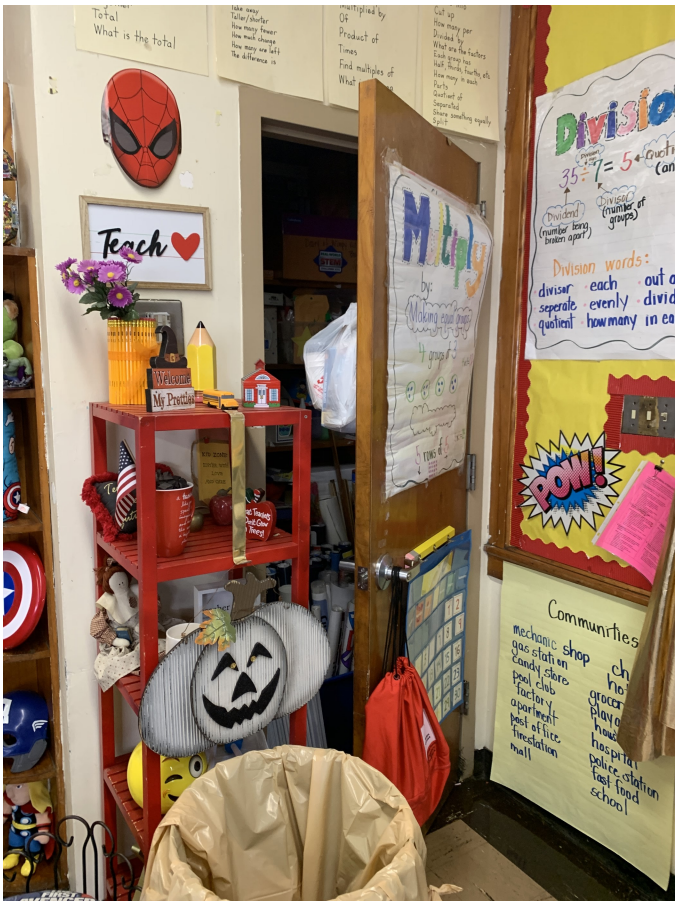

Wash Your Hands!
Wash Your Hands!





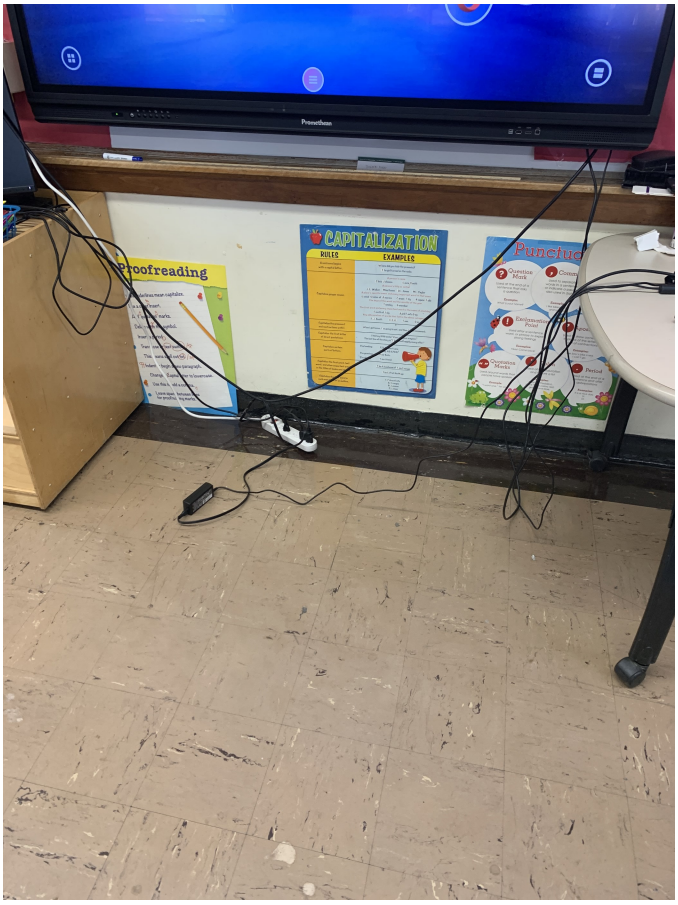



Good morning!
7x5= 35
-02
33
33 pieces of gum


Total
What is the total
Teach
Welcome
Multiply
Division words:
divisor each
seperate evenly
quotient how many
POW!
Communities
mechanic shop
gas station
candy store
pool club
factory
apartment
post office
firestation
mall
police station
fast food
school


X-ACTO.


MATH
SPACE VALUE
1,234
MATH SYMBOLS
EQUALS
PLUS


Proofreading
CAPITALIZATION
RULES
EXAMPLES


EXIT
MAKE THIS
YEAR
Native Americans
of the Southwest




TREET CELEBRATES
R PARENTS
ST TEACHERS
1
NOTICE


Pre - K Parents
Please pick up your child
at their classroom back door.
Thank you for your cooperation!
Welcom
Chester


MAIN STREET ELEMENTARY SCHOOL
1954
THANK YOU!
FOR SAVING
UR SCHOOLS


1954




27
27


NOTICE
NO SMOKING OR USE OF TOBACCO PRODUCTS PERMITTED ON SCHOOL PROPERTY AT ANY TIME
23
23


NO PARKING


22
NO








19




17A
17A






Room
7




7
Room
NUT FREE


Room
NUT FREE






11
11


SP
KATOLIGHT
60w






WELCOME




























FLAMMABLE
KEEP FIRE
AWAY


YOU ARE
WORTH
In a world where you can be anything be kind.
Aa Bb Cc Dd Ee Ff
PROOFREADING MARKS
The Writing Process
WHAT GOOD READERS DO
All About Dd
Circle Time
Parts of Speech


How are these animals alike and different?
English Language Development
Reading
Start Right Readers
Rigby



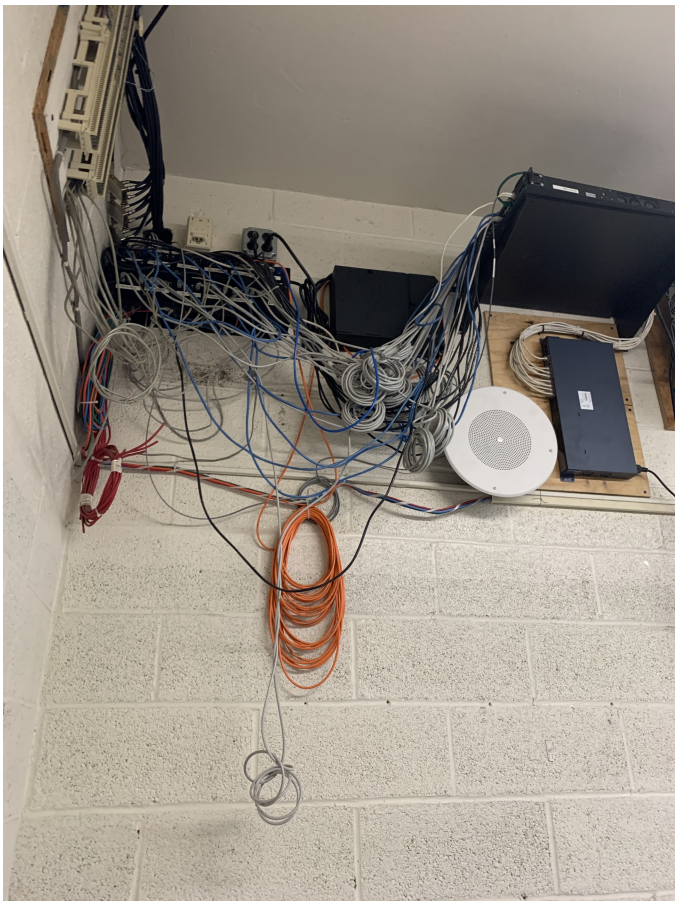

Main Street School


SOCIAL STUDIES
enVision® STEM Activities
Pick a Project
Who We Are!




STOP
REMEMBER TO WASH YOUR HANDS
CLEAN HANDS ARE HAPPY HANDS!
BE ENERGY WISE
70% Less Energy
ENERGY USAGE
75% Less Energy
1 Gallon
8 Gallons

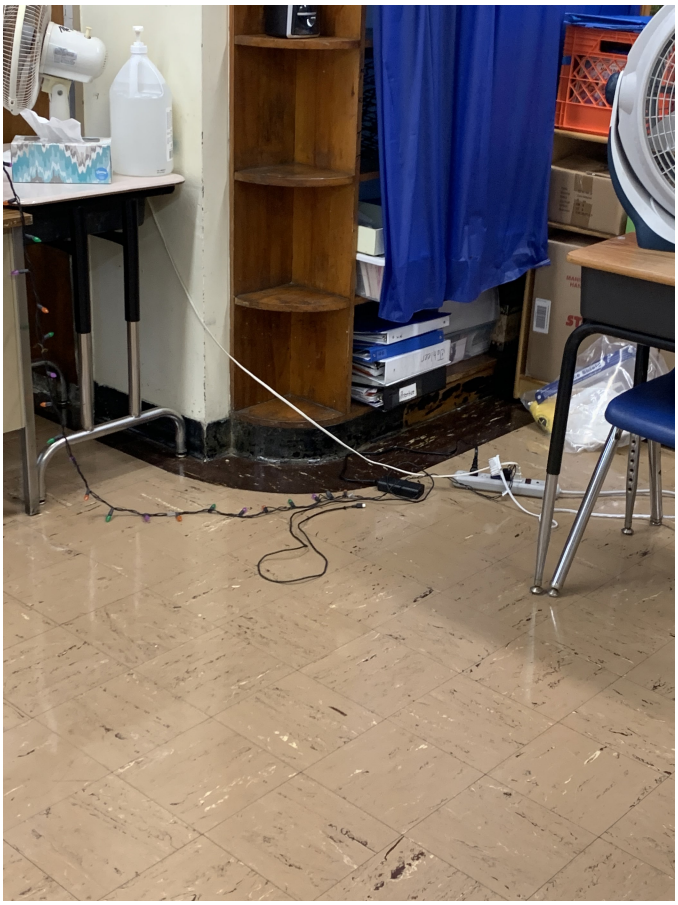







2G
Category Words
2G
Category Words
2G
Category Words





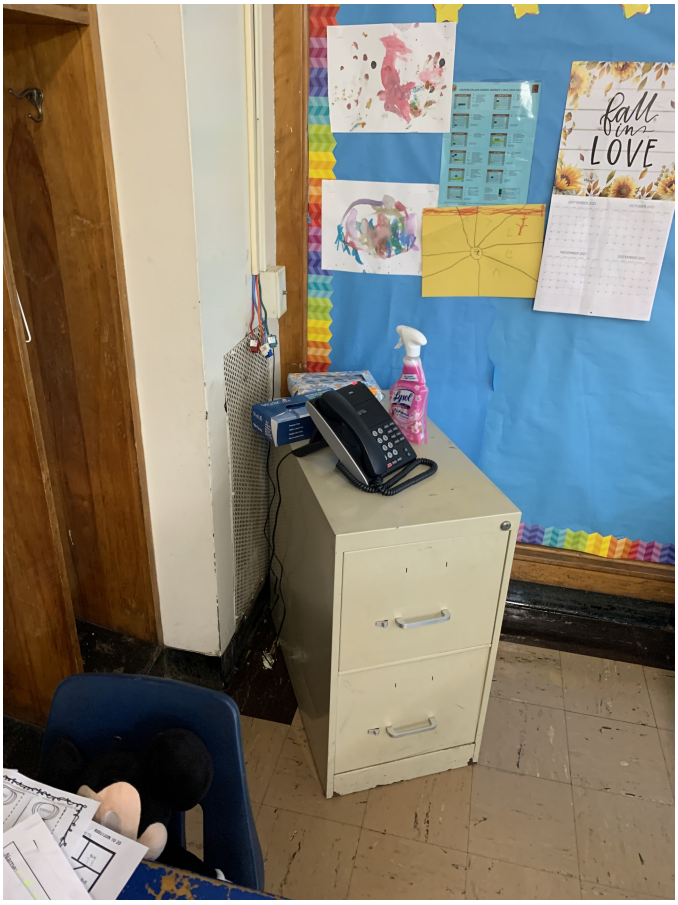

SYDNEY C.
AVA
THEO
Spread Smiles, Not Germs

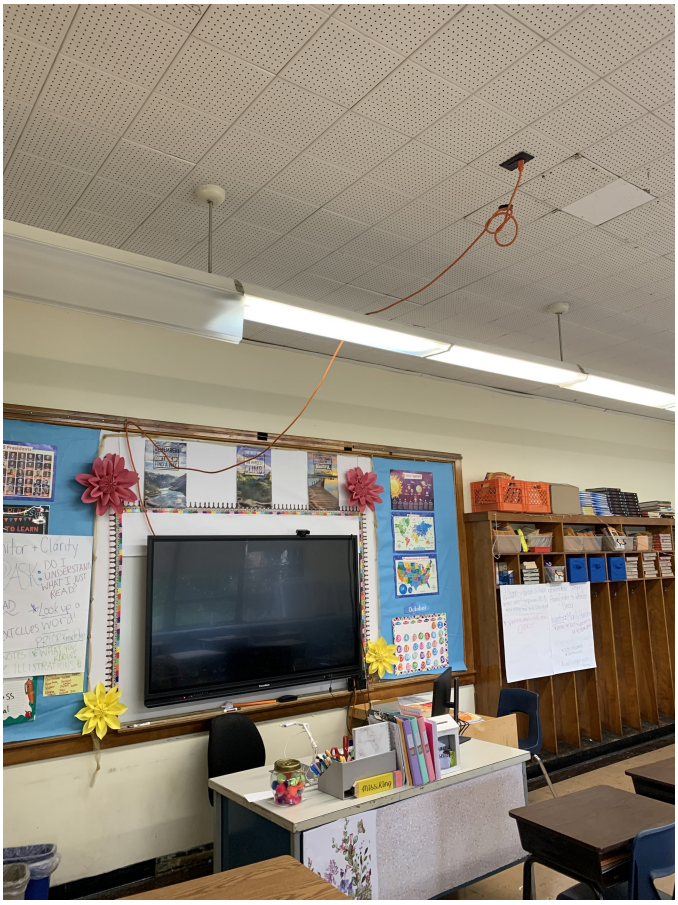

WARNI








fall in LOVE








Citizenship
Responsibility
Fairness
Caring
Trustworthiness
Respect








EXTRA! EXTRA!




Aa Bb Cc Dd
Jj Kk
Qq Rr Ss Tt Uu
IF YOU FOCUS on what YOU have left BEHIND
YOU will never








Listen
Walk
Don't Run
Share
Be a Friend
Help Clean Up


MICKEY






ATS
PNL. DP
MAIN


ATSG
HANDLE WITH CARE
THIS SIDE UP

MECHANICAL PHOTO APPENDIX

Mechanical Equipment Photos







1. Boilers
    a. Location: Mechanical room
    b. Manufacturer: Bryan
    c. Date Installed: 2003
    d. Model Number:AB250-W-FD00
    e. Capacity (MBH): 250 MBH
    f. Quantity: 2



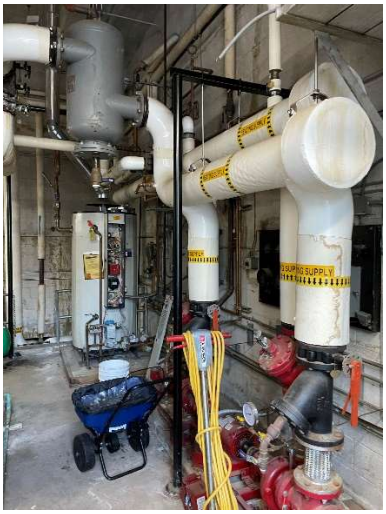
2. Mechanical room ventilation louvers
    a. Location: Mechanical room
    b. Date Installed: 2003
    c. Damper manufacturer: Belimo
    d. Quantity: 2



3. Domestic water booster pump
    a. Location: Mechanical room
    b. Manufacturer: Alyan Pump
    c. Date Installed: 2003
    d. Model Number: F0MD0LE-2-1/2
    e. Capacity: 5 PSI



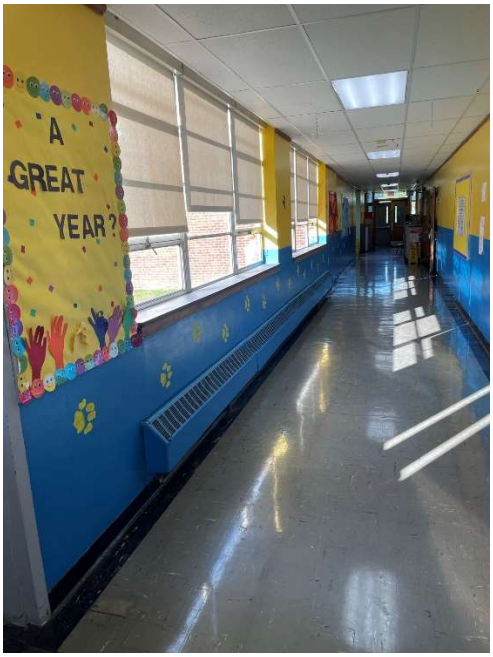
4. Water damage on piping and valves
    f. Location: Mechanical room







5. Heating Hot Water Pumps
    a. Location: Mechanical room
    b. Manufacturer: Bell & Gossett
    c. Date Installed: 2003
    d. Model Number: 1510 SSF 6.875
    e. Size: 300 gpm, 4 ft w.c. 5 HP
    f. Quantity: 2





6. Hot water radiators
    a. Location: Corridors, offices
    b. Manufacturer: -
    c. Date Installed: 1954
    d. Model Number: varies
    e. Capacity (MBH): varies







7. Unit Ventilators
    e. Location: Classrooms, offices
    f. Manufacturer: -
    g. Date Installed: 1954
    h. Model Number: varies
    i. Capacity (MBH): 1-3 tons



8. Kitchen hood
    a. Location: kitchen
    b. Manufacturer: -
    c. Date Installed: -
    d. Model Number: -



9. Dinning Area
    g. Location: Gym



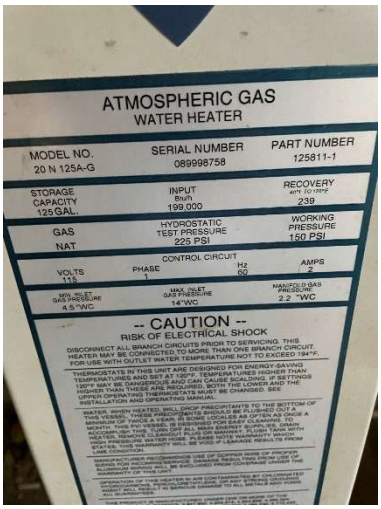




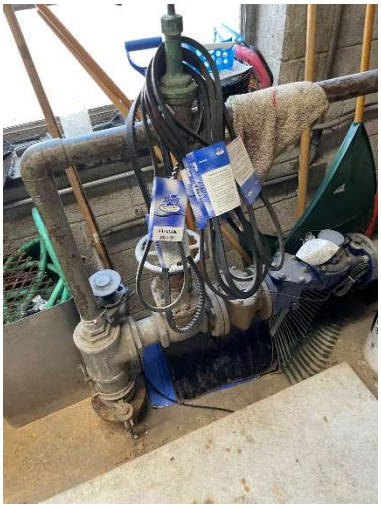
10. PTACs
    g. Location: special education classroom, offices
    h. Manufacturer: Friedrich and others
    i. Date Installed: varies
    j. Model Number: varies
    k. Capacity: 1-2 tons







11. Domestic Water Heater
    l. Location: Mechanical Room
    m. Manufacturer: PVI Industries
    n. Date Installed: 2003
    o. Model Number: 20N125A-G
    p. Capacity: 199 MBH, 125 Gallons



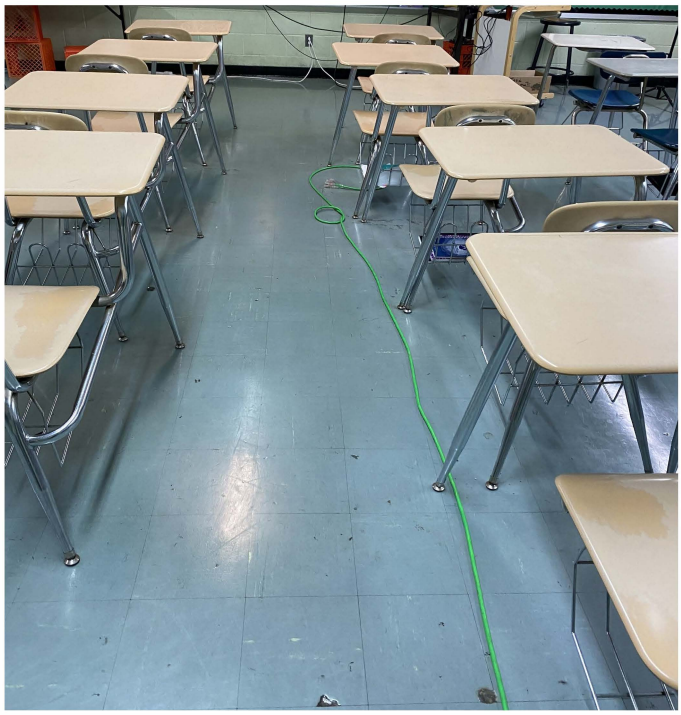


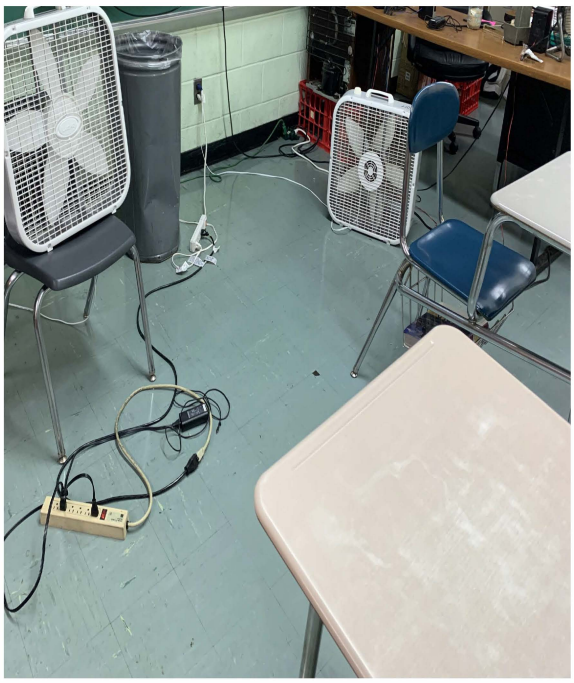
12. Domestic water service
    a. Location: backflow preventor assembly, meter, and building shut-off valve inside mechanical room.
    b. Size: 3”

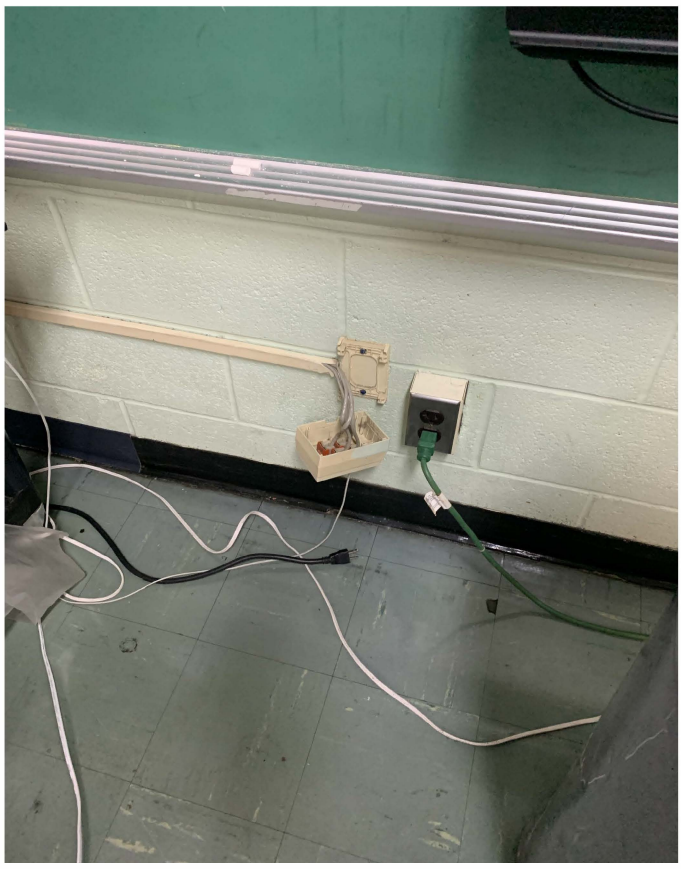


13. Natural gas service
    c. Location: Outdoor, outside of main mechanical room entrance.
    d. Size: 2”
    e. Pressure: < 2” psi

TOBY FARMS SCHOOL PHOTOS





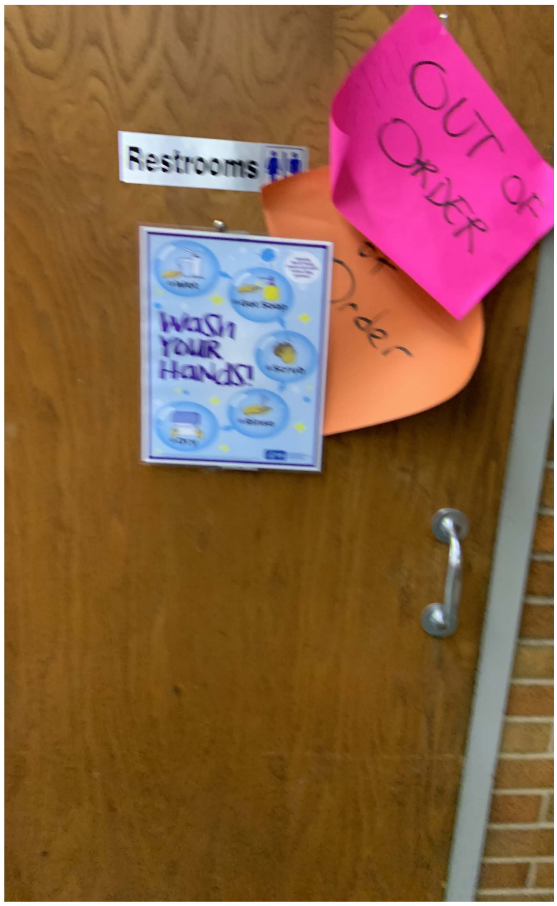











Restrooms
OUT OF ORDER
WASH YOUR HANDS!




PURPOSE / AUDITORIUM
B—WING
C—WING
CAFETERIA
CLASSROOM

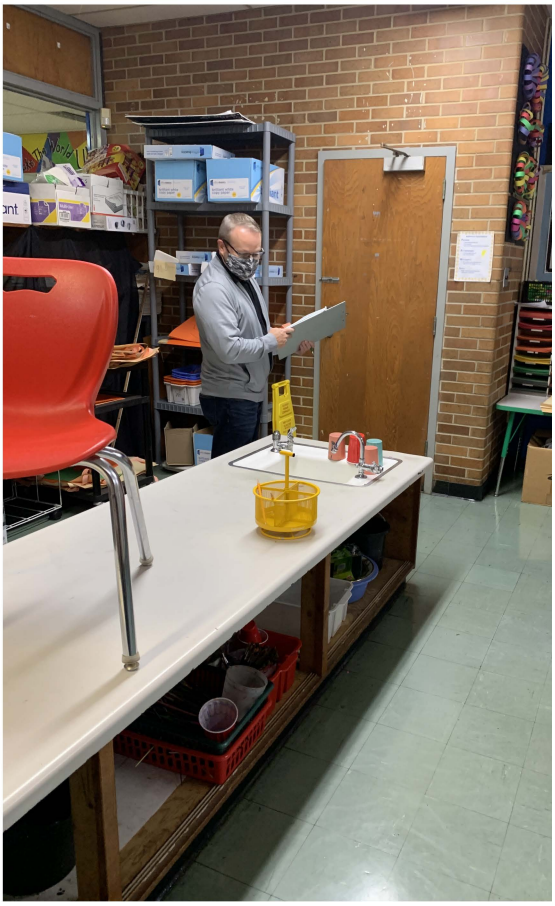

D K R
H V C
N R K S
O C V R Z






Blueprint for Health
Your SKELETON
WAIT HERE UNTIL CALLED
Blueprint for Health
The HEART and BLOOD


FIRE DRIL
STOP



















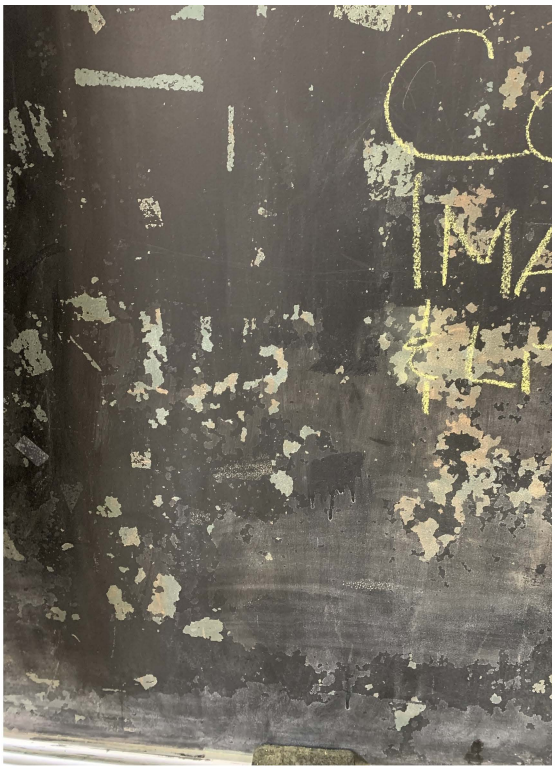




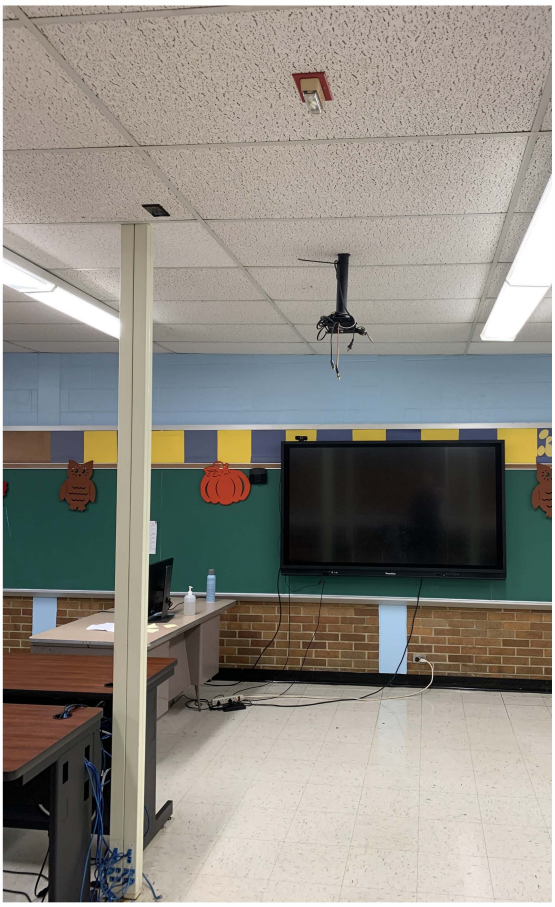








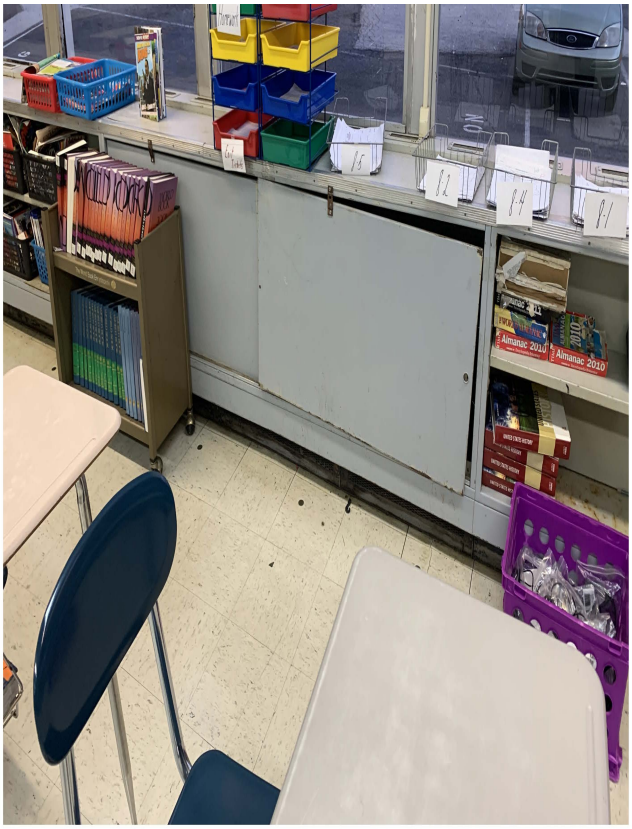









TEACHERS
AT
TEAMMATES


Almanac 2010
Almanac 2010










































OUT
OF
ORDER
Bloom
Where you Are








SCHOOL
STORE










GLASS
AIREX FILTER
FRAGILE
FRAGILE



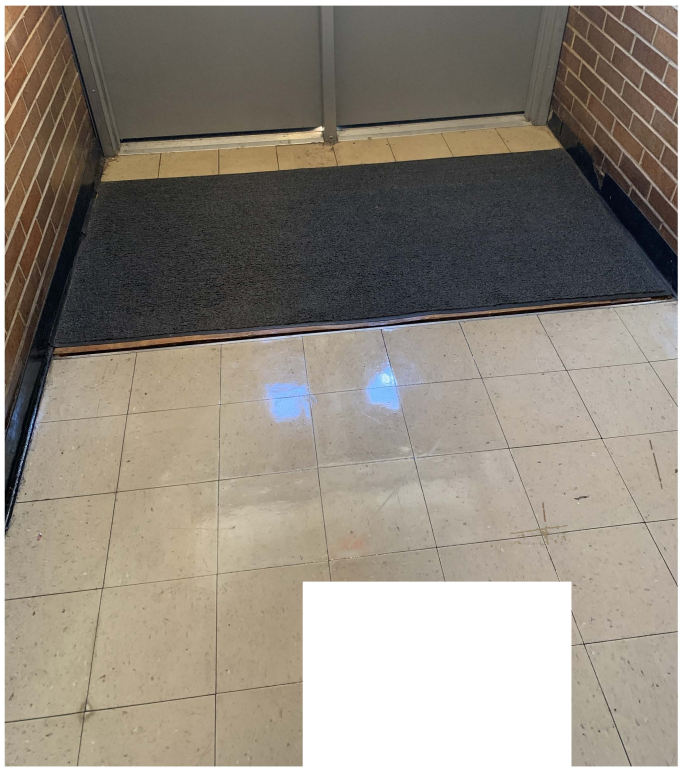















CHESTER UPLAND EDUCATION
SUNROC
SUNROC


WELCOME
CK TO SCHOOL
ANK YOU!
SCHOOLS


WELCOME
BACK TO SCHOOL
THANK YOU!
































BREAST
AWARENESS
MONTH

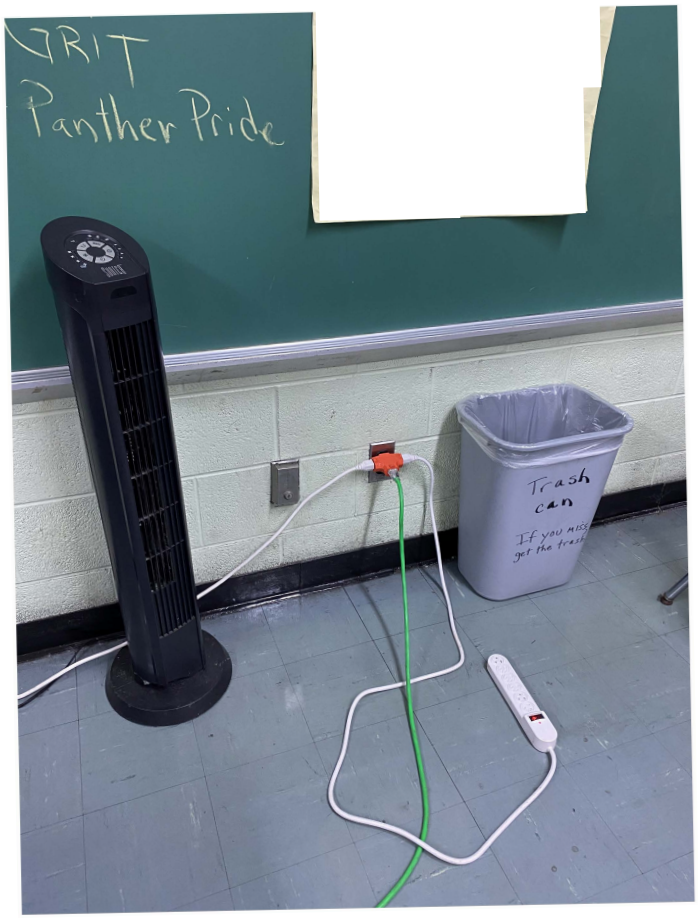






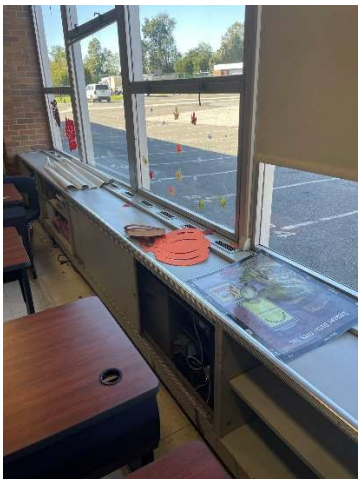





VRIT
Panther Pride
Trash
can

MECHANICAL PHOTO APPENDIX

Mechanical Equipment Photos







1. Unit Ventilators
    a. Location: Classrooms, offices
    b. Manufacturer: -
    c. Date Installed: 1969
    d. Model Number: varies
    e. Capacity (MBH): 1-3 tons







2. Air handling Units
    a. Location: basement mechanical room
    b. Manufacturer: York
    c. Date Installed: 1969
    d. Model Number: -
    e. Capacity (MBH): -
    f. Quantity: 2

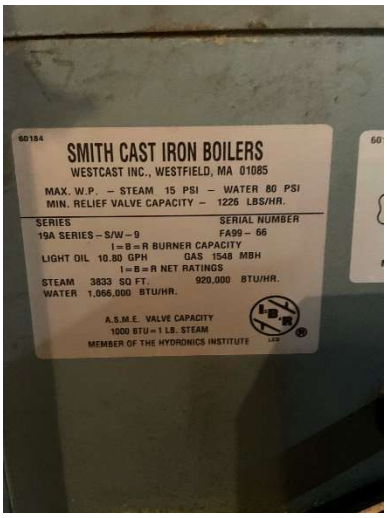


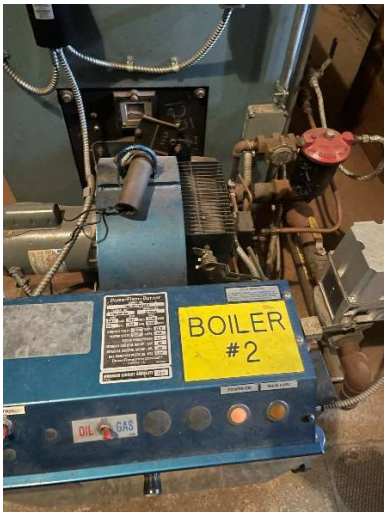




3. Multi-zone ducts with reheat coils
    a. Location: basement mechanical room
    b. Manufacturer: -
    c. Date Installed: 1969
    d. Model Number: -
    e. Capacity: Varies



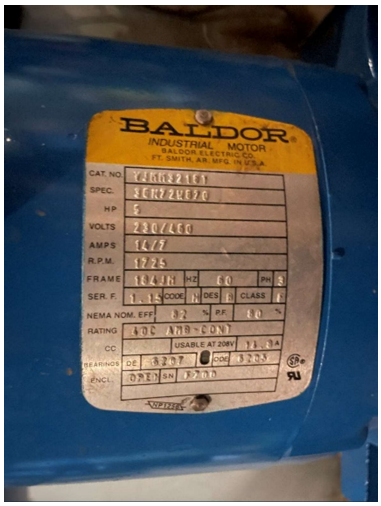




4. Boilers
    a. Location: basement mechanical room
    b. Manufacturer: Smith
    c. Date Installed: 1999
    d. Model Number: 19A-S/W-9
    e. Capacity (MBH): 920 MBH
    f. Quantity: 2

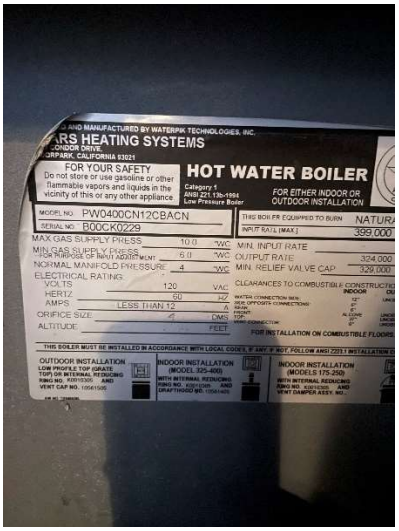






5. Heating Hot Water Pumps
    a. Location: Basement Mech Room
    b. Manufacturer: Teco Westinghouse
    c. Date Installed: Original
    d. Model Number: 404VP-RVE
    e. Size: 100 HP
    f. Quantity: 2







6. Domestic water heater and tanks
   a. Location: basement mechanical room
   b. Manufacturer: Lars
   c. Date Installed: 2000
   d. Model Number: PW0400CN12CBACN
   e. Capacity: 399 MBH

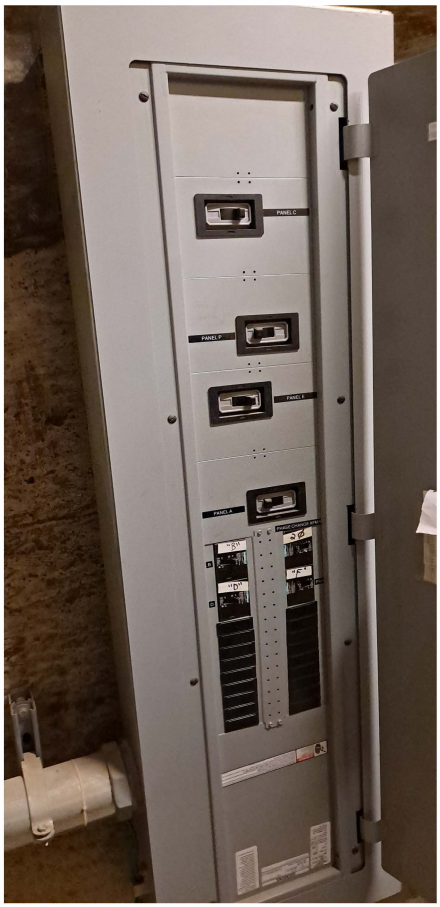


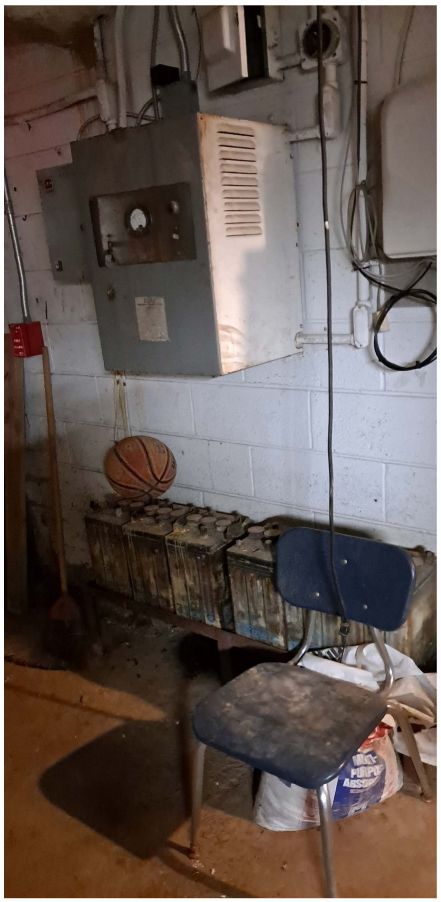


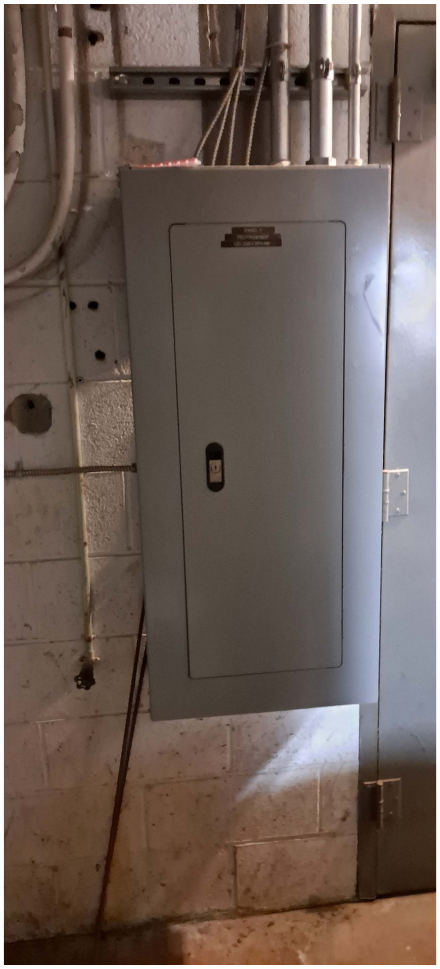
7. Natural gas service
    a. Location: Outdoor, by main mechanical room entrance.
    b. Size: 2”
    c. Pressure: < 2” psi

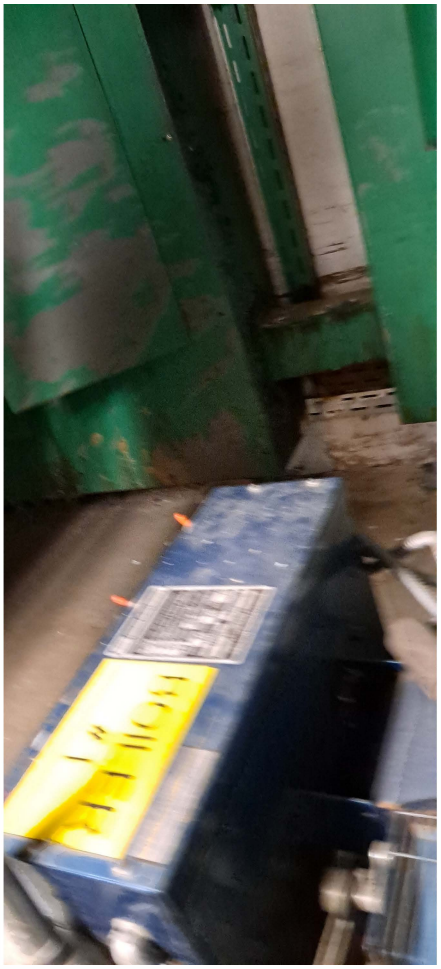
8. Domestic water service
    d. Location: backflow preventor and meter in underground pit outdoors. Building shut-off valve in storage room.
    e. Size: 3”

STETSER SCHOOL PHOTOS







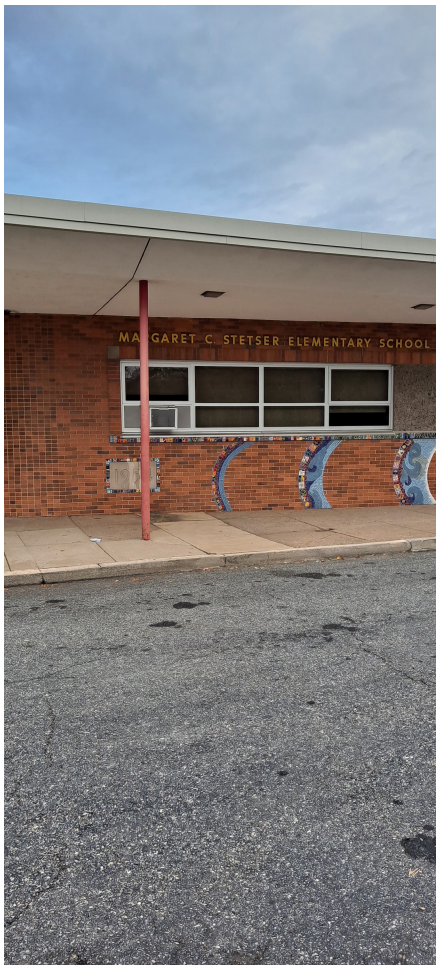


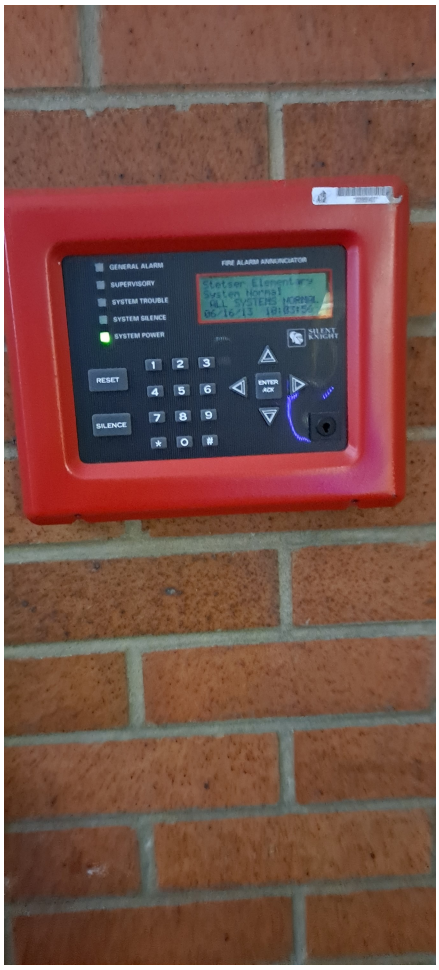

Gym Doors


Gym Doors






MARGARET C. STETSER ELEMENTARY SCHOOL


GENERAL ALARM
SUPERVISORY
SYSTEM TROUBLE
SYSTEM SILENCE
SYSTEM POWER
FIRE ALARM ANNUNCIATOR
RESET
SILENCE
ENTER


SIEMENS
ON
OFF

MECHANICAL PHOTO APPENDIX

Mechanical Equipment Photos

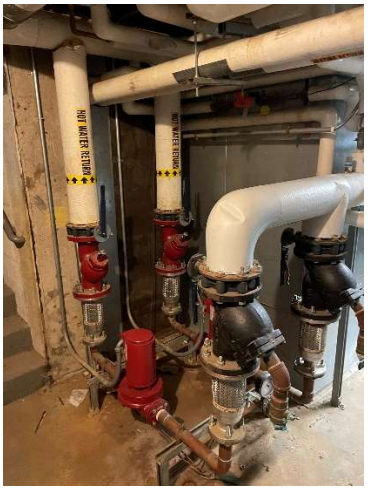


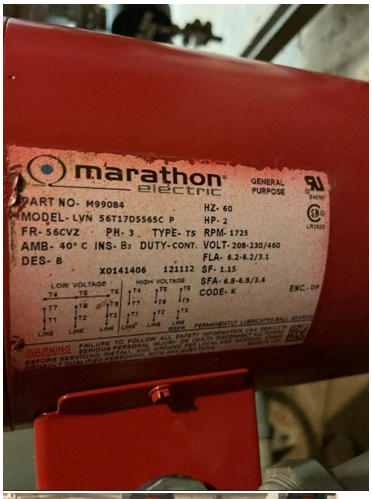


1. Hot water heating zones
    a. Location: mechanical room
    b. Manufacturer: Belimo
    c. Date Installed: 2020
    d. Model Number: varies
    e. Size: 0.75” to 1.25”











2. Heating Hot Water Pumps
    a. Location: Basement Mech Room
    b. Manufacturer: Marathon
    c. Date Installed: 2020
    d. Model Number: LVN 56T17D5565C
    e. Size: 2 HP
    f. Quantity: 2



3. Building Automation System
    a. Location: basement mechanical room
    b. Manufacturer: Alerton controls
    c. Date Installed: 2020



4. Constant volume multi-zone air handling unit
    g. Location: Basement Mech Room
    h. Manufacturer: -
    i. Date Installed: 1954
    j. Model Number: -
    k. Capacity: -

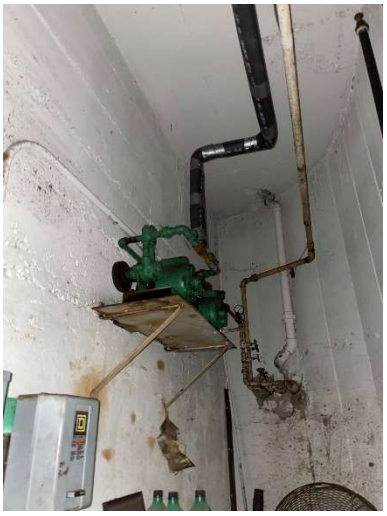


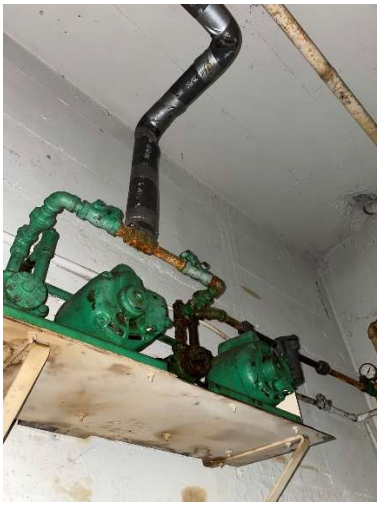






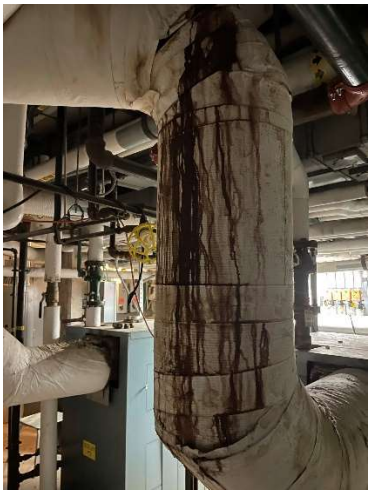
5. Boilers
    a. Location: basement mechanical room
    b. Manufacturer: Smith
    c. Date Installed: 2000
    d. Model Number: 19A-S/W-5
    e. Capacity (MBH): 725 MBH
    f. Quantity: 2







6. Abandoned fuel oil pumping system
    l. Location: Basement Mech Room
    m. Manufacturer: -
    n. Date Installed: 1954



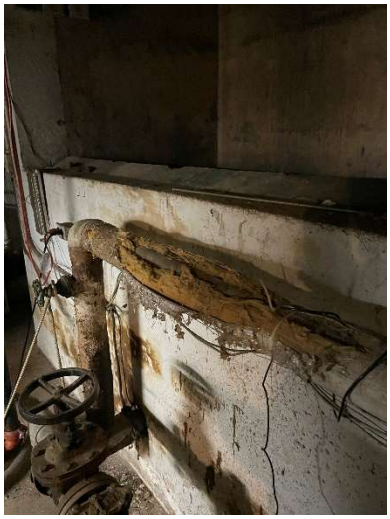




7. Boiler venting ducts
    a. Location: basement mechanical room







8. Domestic water service
    a. Location: backflow preventor and meter in mechanical room.
    b. Size: 3”

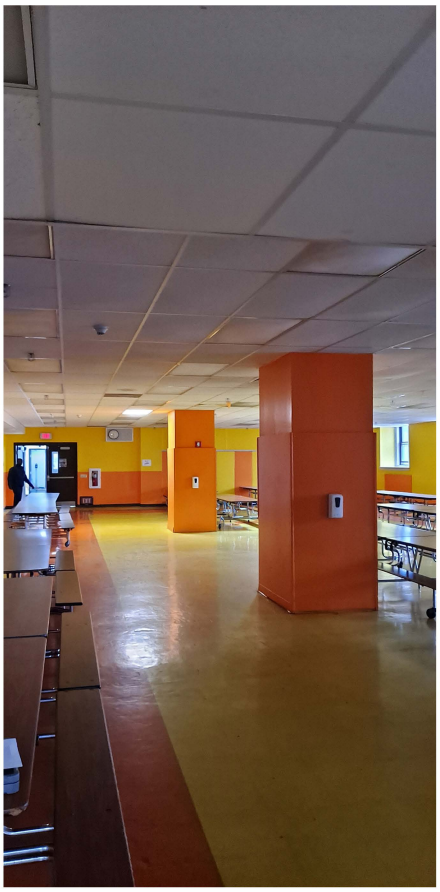




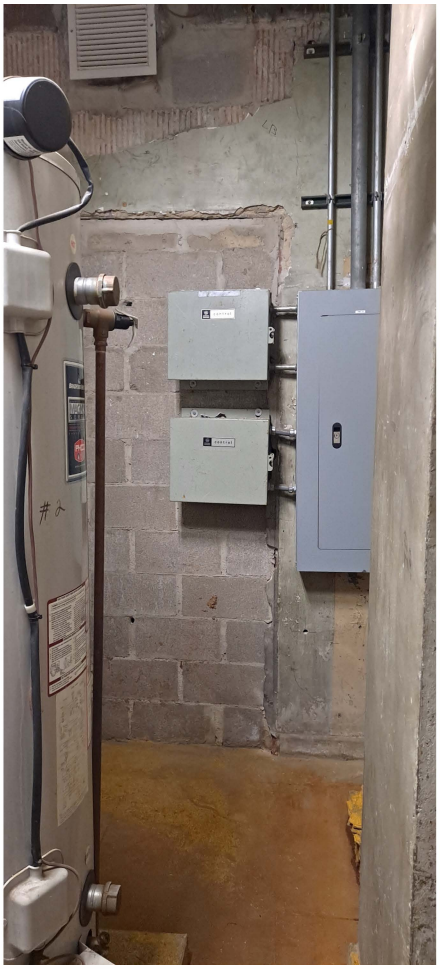


9. Natural gas service
    c. Location: Outdoor, by main mechanical room entrance.
    d. Size: 2”
    e. Pressure: 2” psi

CUSA PHOTOS
















SIEMENS







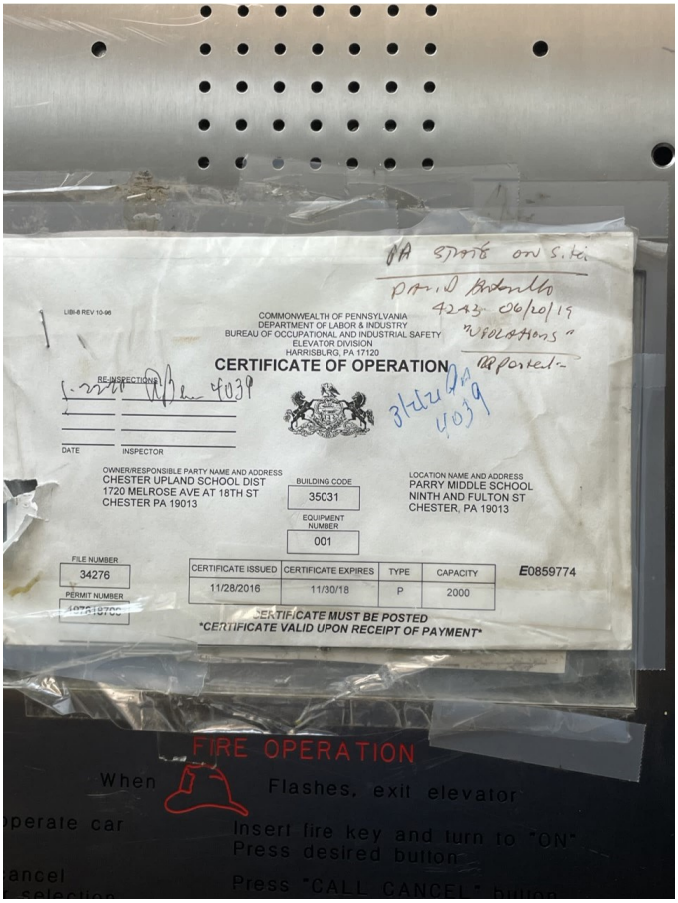











LIBI-8 REV 10-96
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF LABOR & INDUSTRY
BUREAU OF OCCUPATIONAL AND INDUSTRIAL SAFETY
ELEVATOR DIVISION
HARRISBURG, PA 17120
CERTIFICATE OF OPERATION
RE-INSPECTIONS
DATE
INSPECTOR
OWNER/RESPONSIBLE PARTY NAME AND ADDRESS
CHESTER UPLAND SCHOOL DIST
1720 MELROSE AVE AT 18TH ST
CHESTER PA 19013
BUILDING CODE
35031
EQUIPMENT NUMBER
001
LOCATION NAME AND ADDRESS
PARRY MIDDLE SCHOOL
NINTH AND FULTON ST
CHESTER, PA 19013
FILE NUMBER
34276
PERMIT NUMBER
CERTIFICATE ISSUED
CERTIFICATE EXPIRES
TYPE
CAPACITY
11/28/2016
11/30/18
P
2000
E0859774
CERTIFICATE MUST BE POSTED
CERTIFICATE VALID UPON RECEIPT OF PAYMENT
FIRE OPERATION
When
Flashes, exit elevator
Insert fire key and turn to "ON"
Press desired button
Press "CALL CANCEL" button












VIKING
TOTALPAC


WARNING
KATOLIGHT
CORPORATION




SIEMENS

MECHANICAL PHOTO APPENDIX

Mechanical Equipment Photos



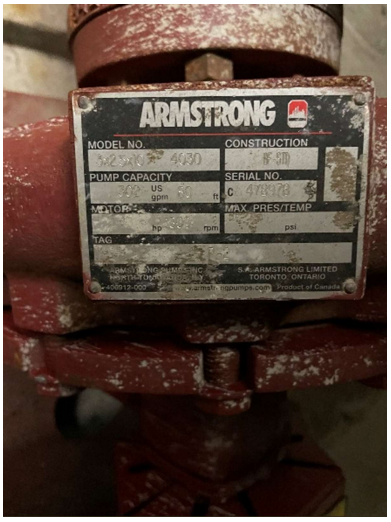




1. Boilers
    a. Location: Ground level mechanical room
    b. Manufacturer: Smith
    c. Date Installed: 2003 and 2019
    d. Model Number: 28HE-10

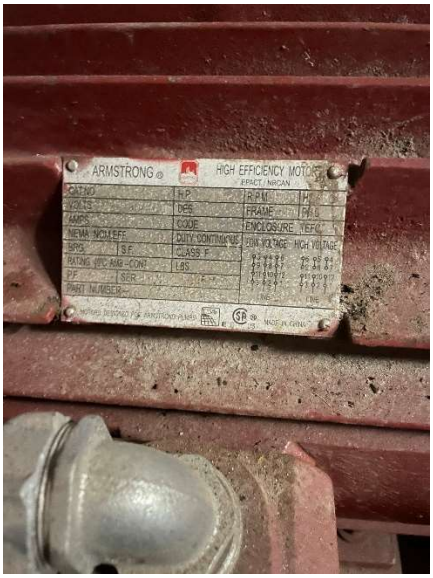
e. Capacity (MBH): 3,033 MBH





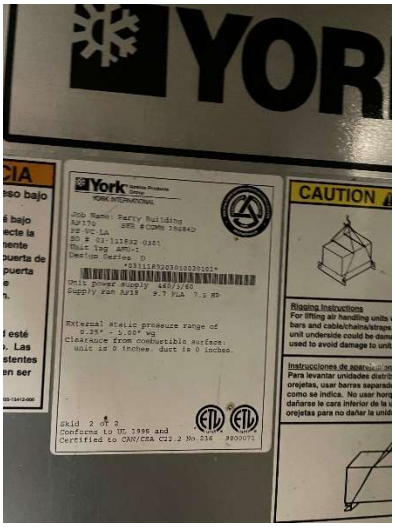
2. Heating Hot Water Pumps
    a. Location: Ground level mechanical room
    b. Manufacturer: Armstrong
    c. Date Installed: 2003
    d. Model Number: 3x2.5x10
    e. Capacity: 302 gpm @ 80 ft
    f. Quantity: 2





3. Chilled water pumps
   a. Location: Ground level mechanical room
   b. Manufacturer: Armstrong
   c. Date Installed: 2003
   d. Model Number: 3x2.5x10
   e. Capacity: -
   f. Quantity: 2

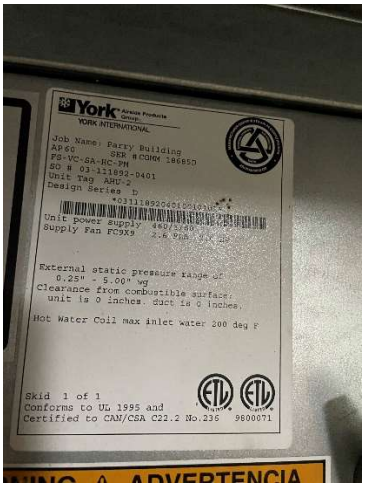






4. Air handling unit AHU-1
   a. Location: Basement Mech Room
   b. Manufacturer: York
   c. Date Installed: 2003
   d. Model Number: APL170
   e. Capacity: 14 Tons





5. Air handling unit AHU-2
    a. Location: Basement Mech Room
    b. Manufacturer: York
    c. Date Installed: 2003
    d. Model Number: AP60
    e. Capacity: 5 tons



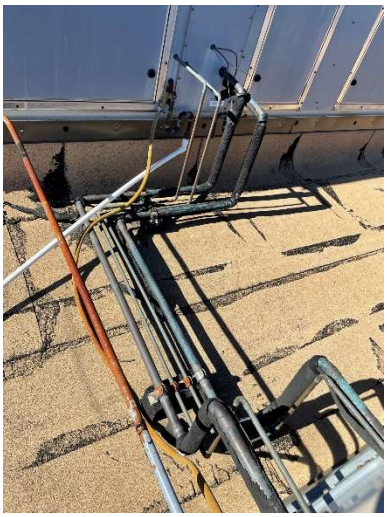




6. Unit Ventilators
    a. Location: Classrooms and offices
    b. Manufacturer: Rittling
    c. Date Installed: 2003
    d. Model Number: H011567-07
    e. Capacity: Varies. 0.5 to 3 tons
    f. Quantity: -







7. RTUs on upper roof
    a. Location: Roof
    b. Manufacturer: York
    c. Date Installed: 2003
    d. Model Number: HBXXXC00A
    e. Capacity: (2) 10 tons, (2) 20 tons, (1) 18 tons
    f. Quantity: 5

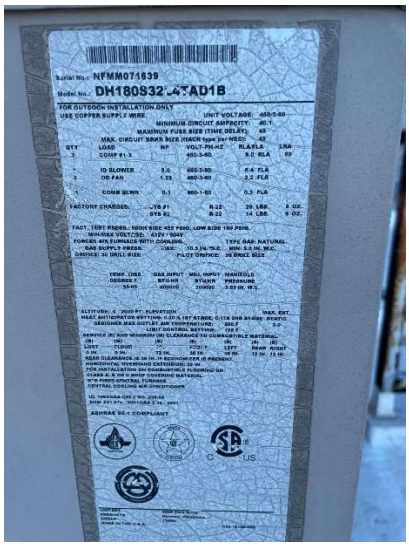






8. RTUs on upper roof
    a. Location: Roof
    b. Manufacturer: York
    c. Date Installed: 2003
    d. Model Number: HBXXXC00A
    e. Capacity: (2) 10 tons, (2) 20 tons, (1) 18 tons
    f. Quantity: 5





9. RTU on lower roof
    a. Location: Roof
    b. Manufacturer: York
    c. Date Installed: 2003
    d. Model Number: DH180S32L4TAD1B
    e. Capacity: 15 tons







10. Air Cooled Chiller
    f. Location: Outdoor, Ground
    g. Manufacturer: York
    h. Date Installed: 2003
    i. Model Number: YCAS0150EC
    j. Capacity: 150 Tons



11. Natural gas service
    a. Location: Outdoor
    b. Size: 3”
    c. Pressure: <2 psi





12. Domestic water service
    d. Location: Underground pit. Sidewalk of Fulton Street.

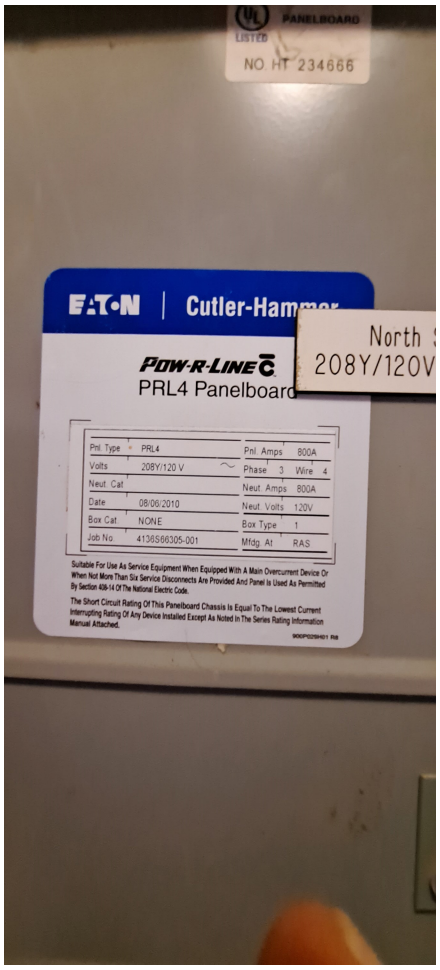
STEM SCHOOL PHOTOS










PANELBOARD
LISTED
NO. HT 234666
EATON | Cutler-Hammer
North
208Y/120V
POW-R-LINE C
PRL4 Panelboard
Pnl Type PRL4
Volts 208Y/120 V
Neut Cat
Date 08/06/2010
Box Cat NONE
Job No 4136566305-001
Pnl Amps 800A
Phase 3 Wire 4
Neut Amps 800A
Neut Volts 120V
Box Type 1
Mfdg At RAS
Suitable For Use As Service Equipment When Equipped With A Main Overcurrent Device Or When Not More Than Six Service Disconnects Are Provided And Panel Is Used As Permitted By Section 408-14 Of The National Electric Code.
The Short Circuit Rating Of This Panelboard Chassis Is Equal To The Lowest Current Interrupting Rating Of Any Device Installed Except As Noted In The Series Rating Information Manual Attached.



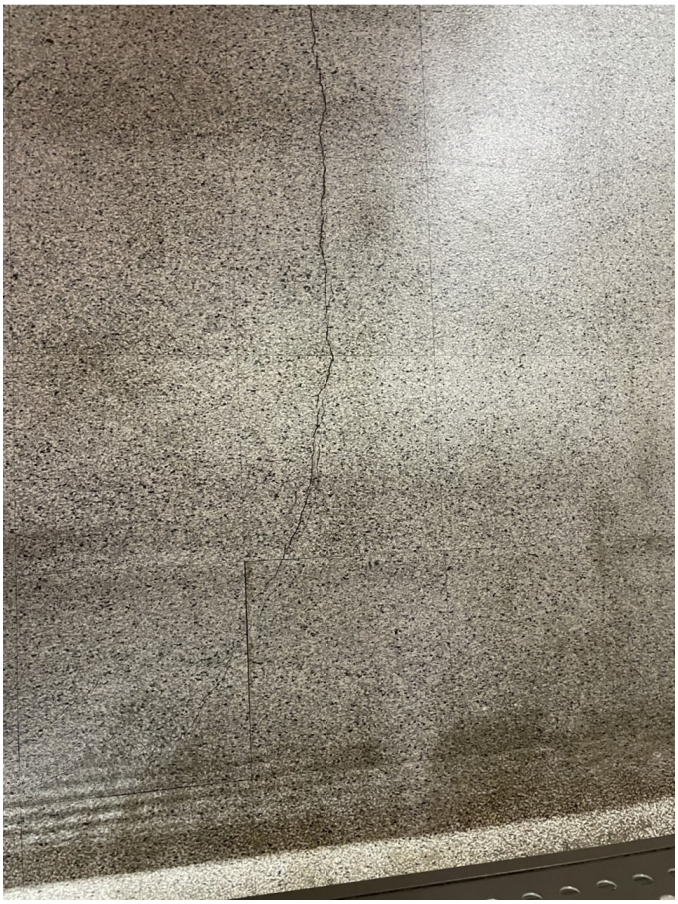





UNIT SUBSTATION
SECTION OF
ISSUE NO. A-4
Cutler-Hammer
DANGER
WARNING - HIGH VOLTAGE - KEEP OUT







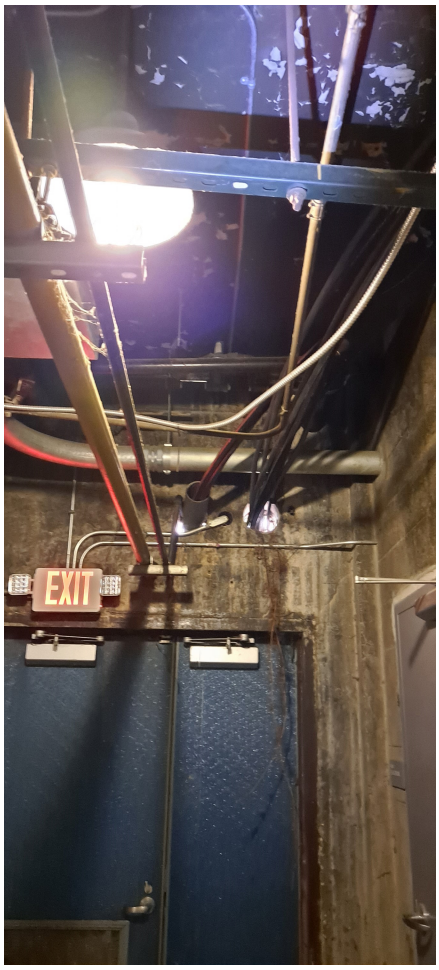







NITTO DENKO
LASERGUARD for Laser Cutting


STEM Academy
at Showalter

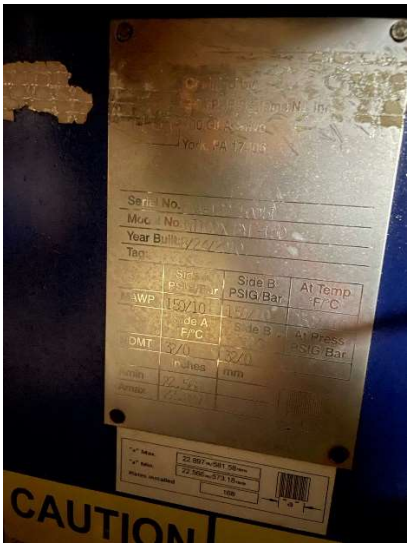

EXIT



MECHANICAL PHOTO APPENDIX

Mechanical Equipment Photos





1. Plate and Frame Heat Exchanger
    a. Location: South mechanical room.
    b. Manufacturer: GEA
    c. Date Installed: 2010
    d. Model Number: NTT00X BYF-150
    e. Capacity (MBH): -



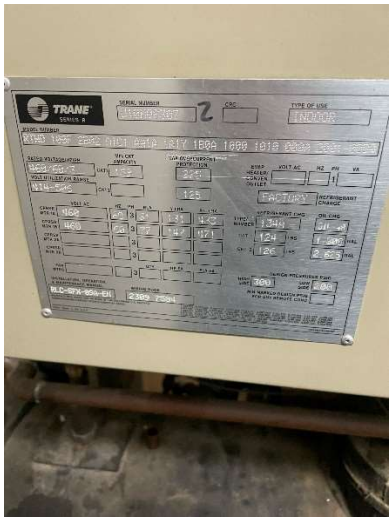




2. Chilled water and condenser water piping in south mechanical room
    a. Location: South mechanical room
    b. Manufacturer: -
    c. Date Installed: 1966







3. Chillers
    a. Location: South mechanical room
    b. Manufacturer: Trane
    c. Date Installed: 2001
    d. Model Number: RTWD 100F
    e. Capacity: 100 Tons each
    f. Quantity: 2







4. Boilers
    a. Location: South mechanical room
    b. Manufacturer: Lochinvar
    c. Date Installed: 2014
    d. Model Number: KBN800
    e. Capacity: 800 MBH each
    f. Number of Boilers: 3



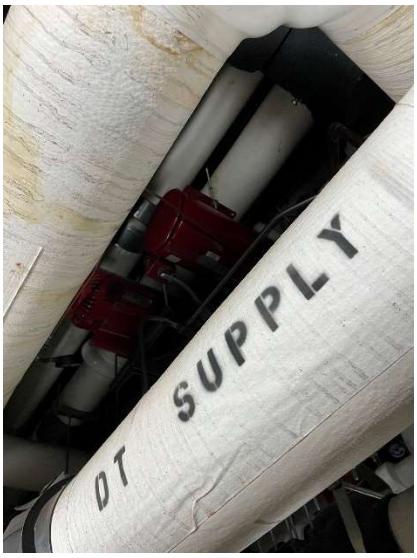




5. Air handling Units in 5th Floor Mech Room
    d. Location: 5th floor
    e. Manufacturer: Trane
    f. Date Installed: Original
    g. Model Number: Varies
    h. Capacity (MBH): -



6. Condenser Water Pumps
    a. Location: South mechanical room
    b. Manufacturer: -
    c. Date Installed: 2001
    d. Model Number: -
    e. Size: -
    f. Quantity: 2



7. Dual Temperature Water Pumps
    g. Location: South mechanical room
    h. Manufacturer: -
    i. Date Installed: 2001
    j. Model Number: -
    k. Size: -
    l. Quantity: 2







8. BMS Control Panels
    a. Location: North and south mechanical rooms
    b. Manufacturer: Trane
    c. Date Installed: 2001







9. AHU-1
    d. Location: North mechanical room
    e. Manufacturer: -
    f. Date Installed: 1966
    g. Model Number: -
    h. Capacity (MBH): -



10. Air distribution in corridors
    a. Location: various



11. Air distribution in classrooms
    b. Location: various







12. Kitchen hood exhaust fan
    c. Location: North roof
    d. Manufacturer: Loren Cook
    e. Date Installed: 2010
    f. Model Number: CUBE-300HP-30-6
    g. Capacity (MBH): -







13. Kitchen / Cafeteria RTU
    h. Location: North roof
    i. Manufacturer: Trane
    j. Date Installed: 2010
    k. Model Number: YHC060E3
    l. Capacity: 5 tons



14. Natural gas service
    a. Location: Outdoor, by north mechanical room entrance.
    b. Size: 3”
    c. Pressure: < 2” psi



15. Domestic water service
    d. Location: backflow preventor and meter in north mechanical room.
    e. Size: 3”





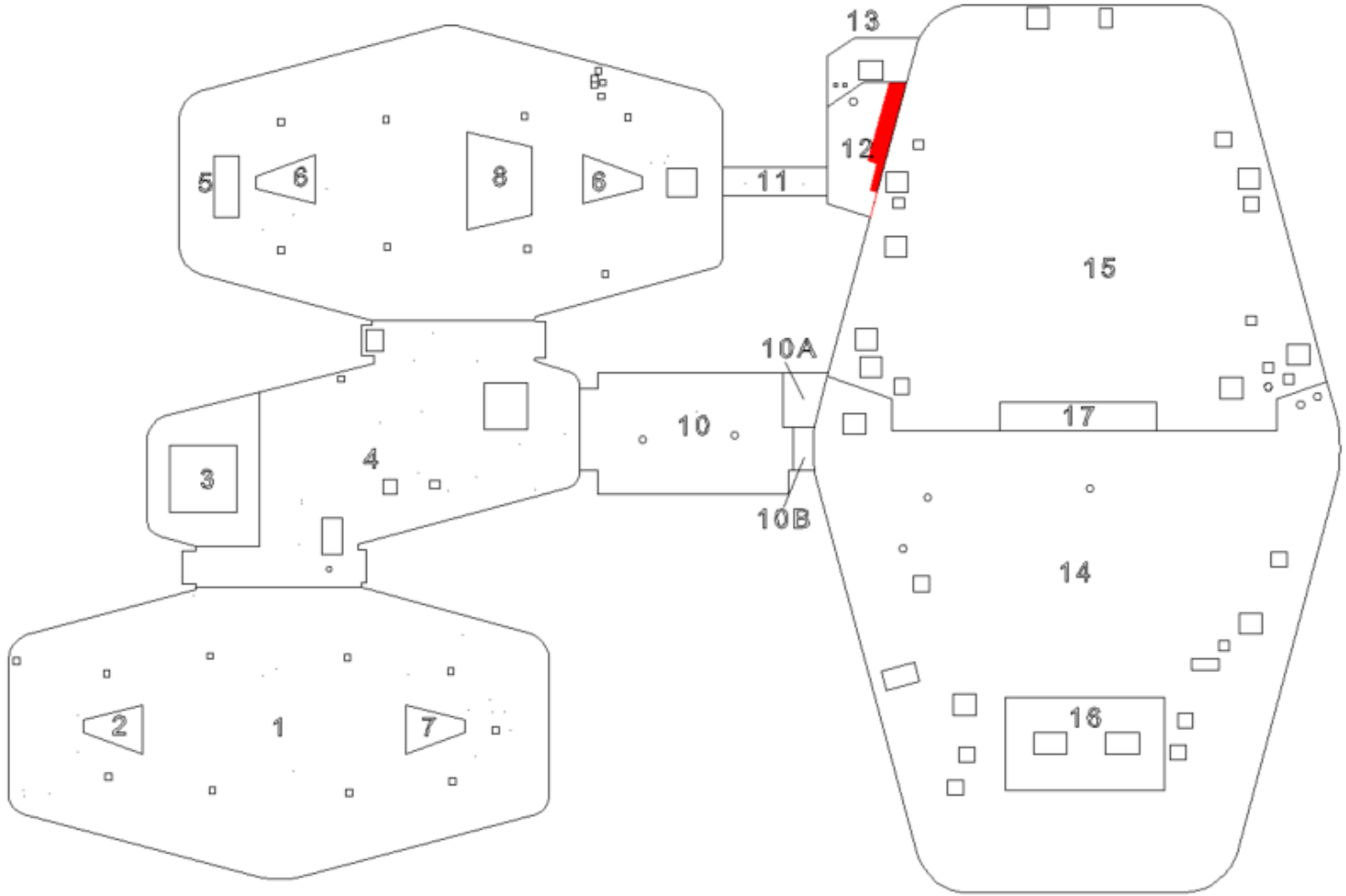
APPENDIX B - ROOF INSPECTION REPORT

Chester Upland School District Roof Inspection

November 2021

High School

Approximately 300 sq ft of Wet Insulation

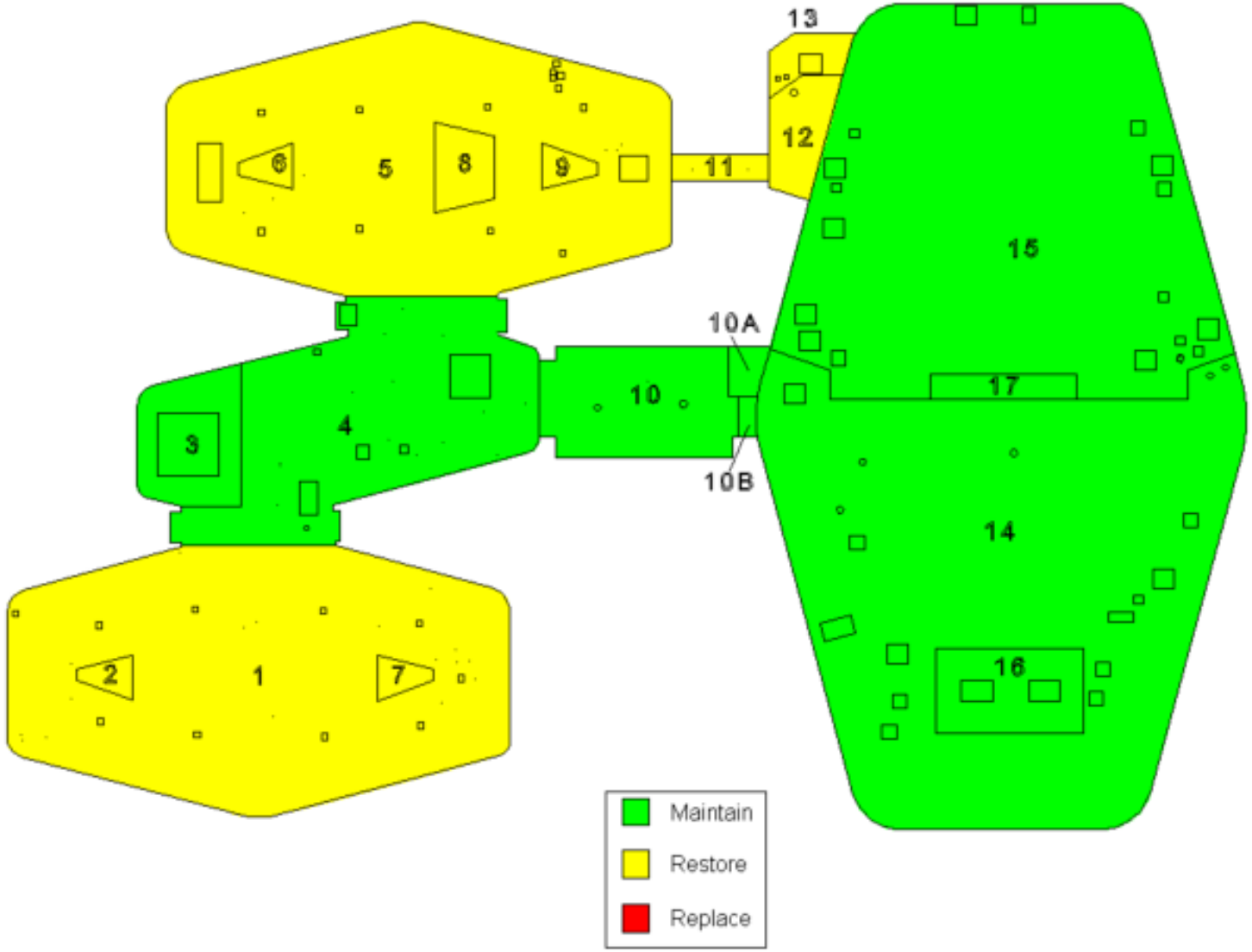


TREMCO

Chester Upland School District
Chester High School

DATE: 10/27/2021
SCALE = Not to scale

DRAWN BY: DC



TREMCO

Chester Upland School District
Chester High School

DATE: 10/27/2021
SCALE = Not to scale

DRAWN BY: DC

TPO Roof Areas 14-17





Overview. Roofs were replaced in 2020.







Seals around windows have failed.





EPDM Roof Areas 11,12 & 13





Overview. Roofs appear to have been installed in 2001.



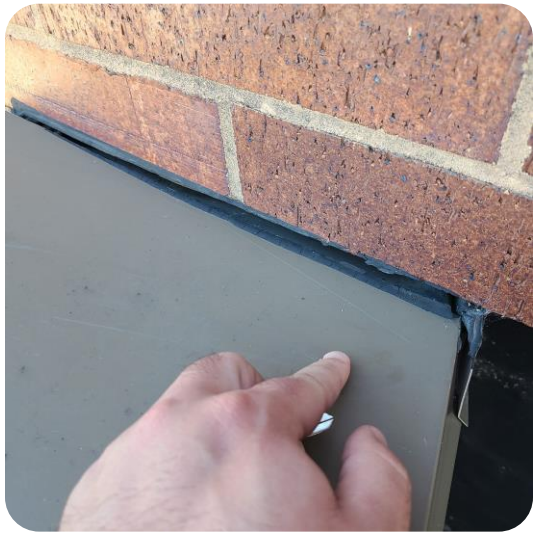






Open seams. Counterflashing sealants are failing.





BUR Roof Areas 1,5 & 8



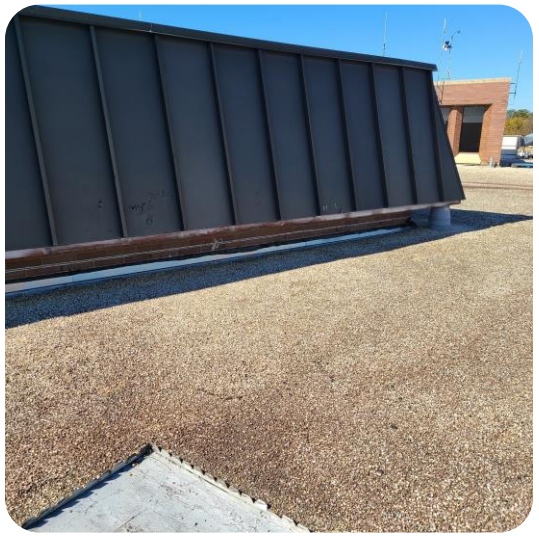


Overview









Flashing heights will have to be raised if the roof is replaced.







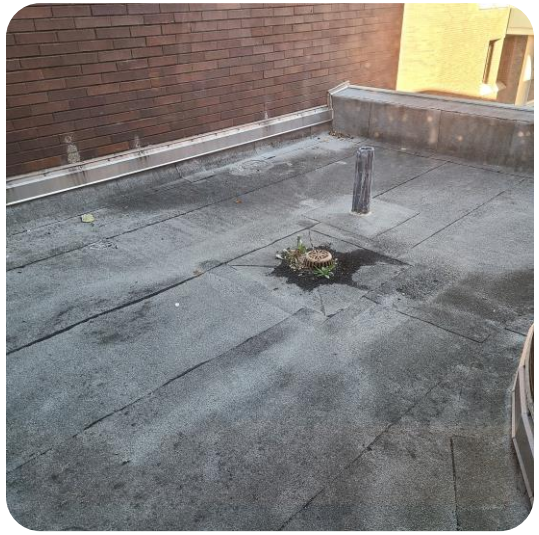


Stone copings are spalling. Window sealants are failing. Boards with nails need to be store properly on the roof to not puncture the roof membrane.





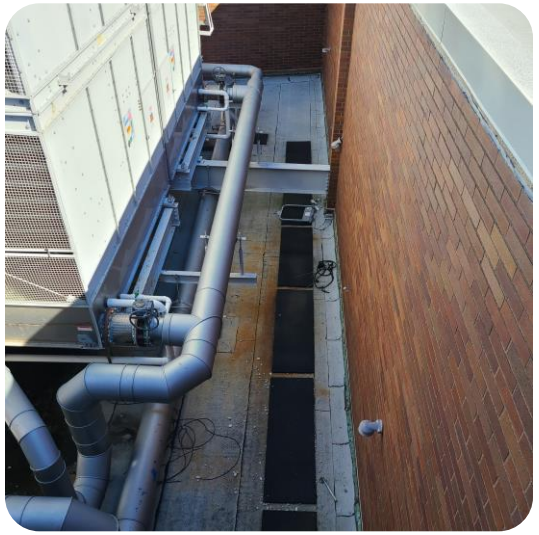
Modified Roof Areas 3,4,10,10A & 10B



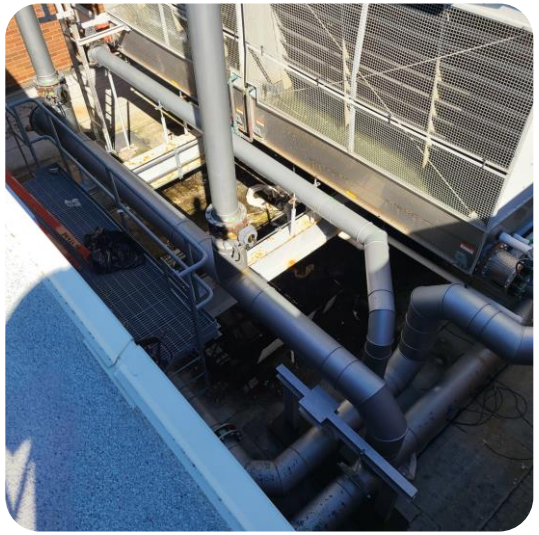


Overview







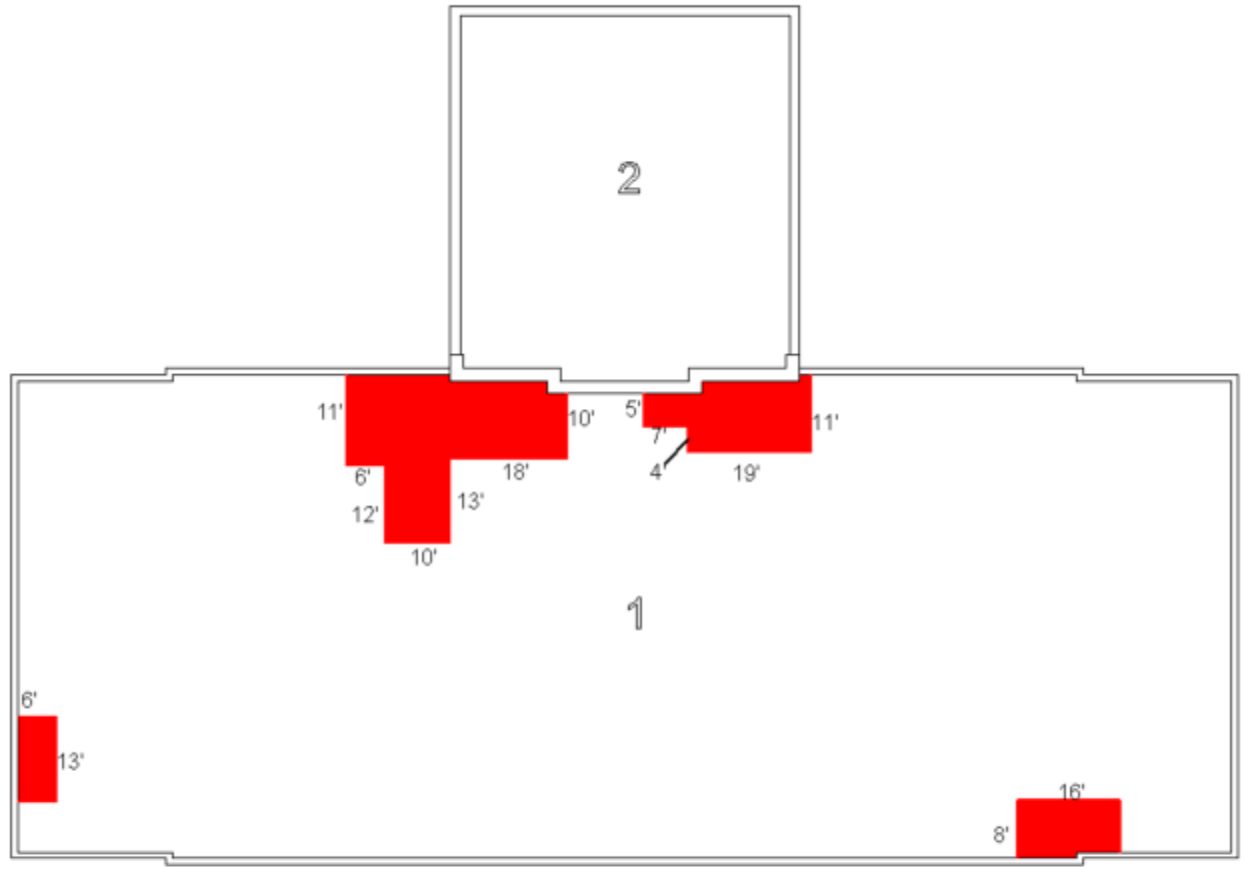


Open hood vent. Cooling tower on Roof 3 is spilling large amounts of water on the roof creating ponding water. Jobsite materials should be properly stored on the roof to not puncture the membrane. Granule loss.





Chester School of the Arts



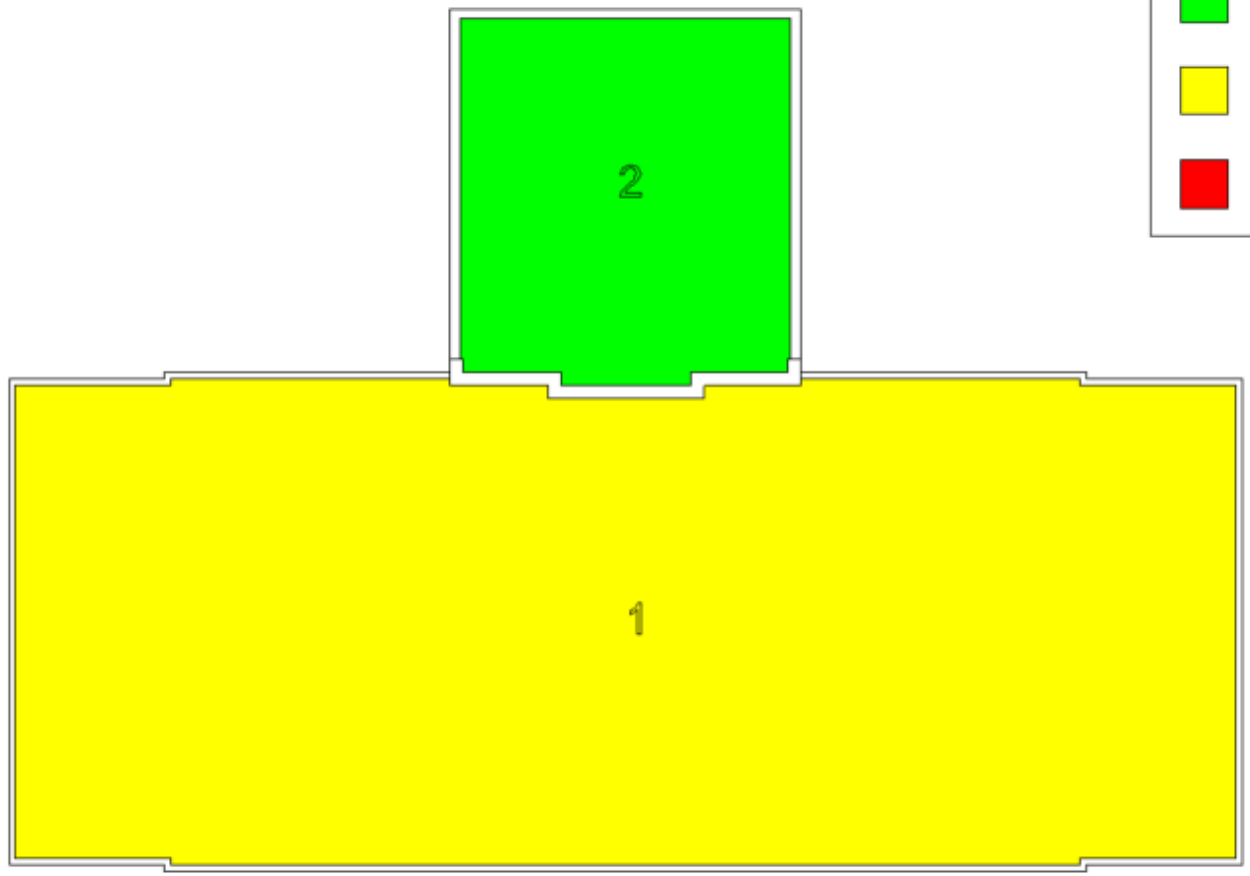
Approximately 1,011 Sq Ft Wet Insulation

TREMCO

Chester Upland School District
School of the Arts

DATE: 10/26/2021
SCALE = Not to scale

DRAWN BY: DC



TREMCO

Chester Upland School District
School of the Arts

DATE: 10/26/2021
SCALE = Not to scale
DRAWN BY: DC

Roof 1





Overview. Low flashing heights will have to be raised if the roof is replaced.







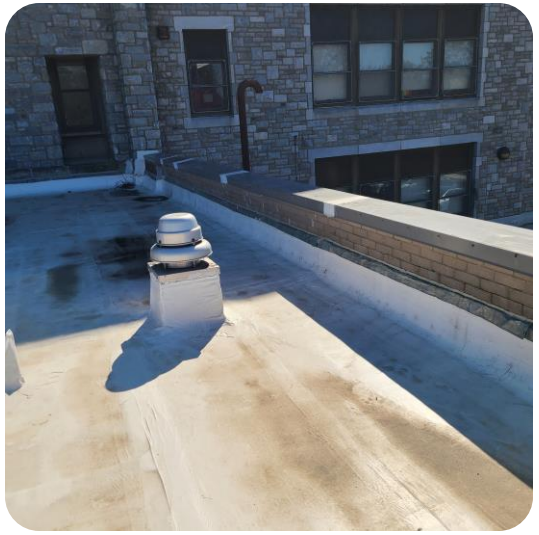
Alligatoring membrane. Scrim is exposed . Open pitch pockets. Granule loss.



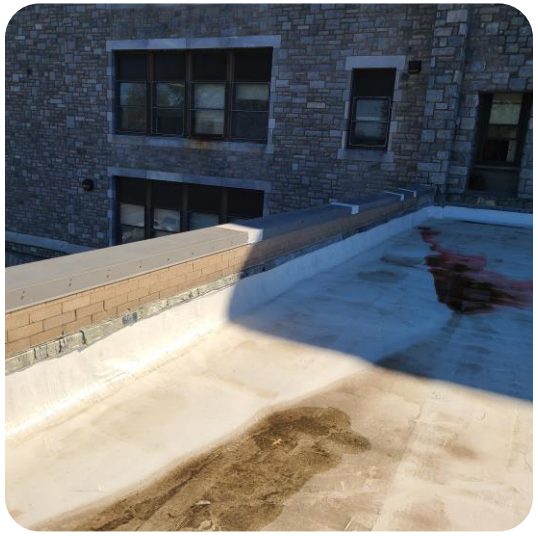


Roof 2





Overview







HVAC unit is leaking. Doors are not secured properly and fall off from vibration of unit. Seals around doors have failed.







Masonry around perimeter of the roof is failing.

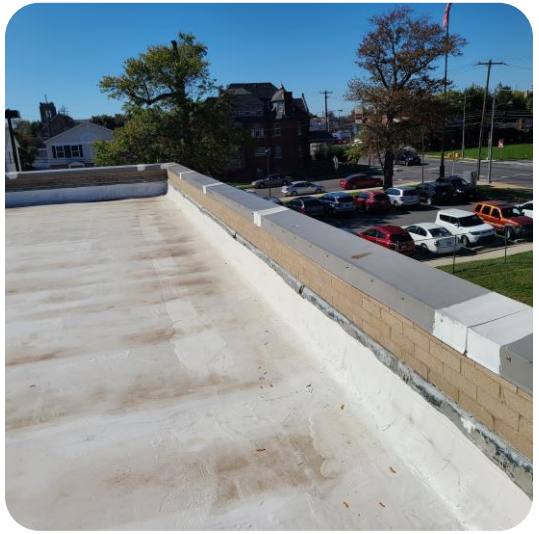






Masonry is failing and open to water entry.









Failing masonry.







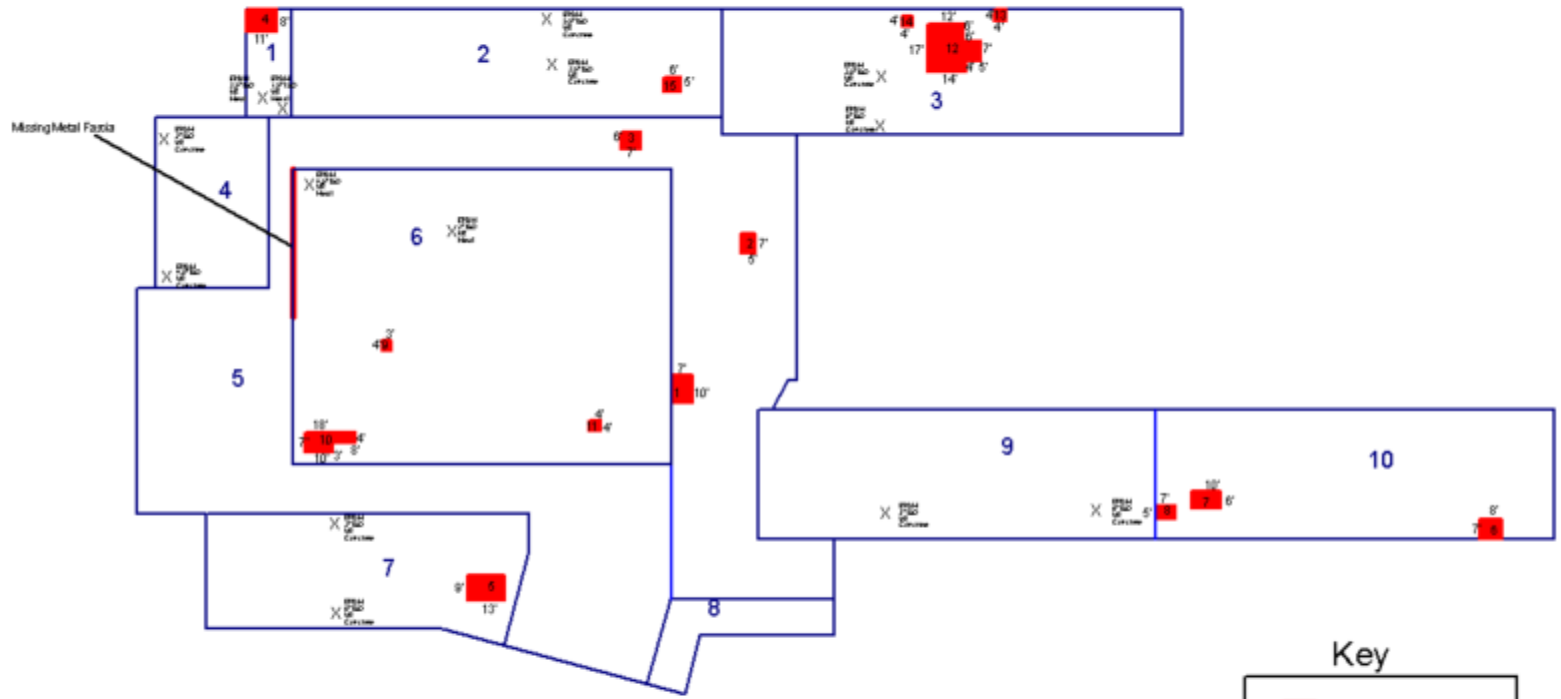


Failing masonry.





STEM Academy



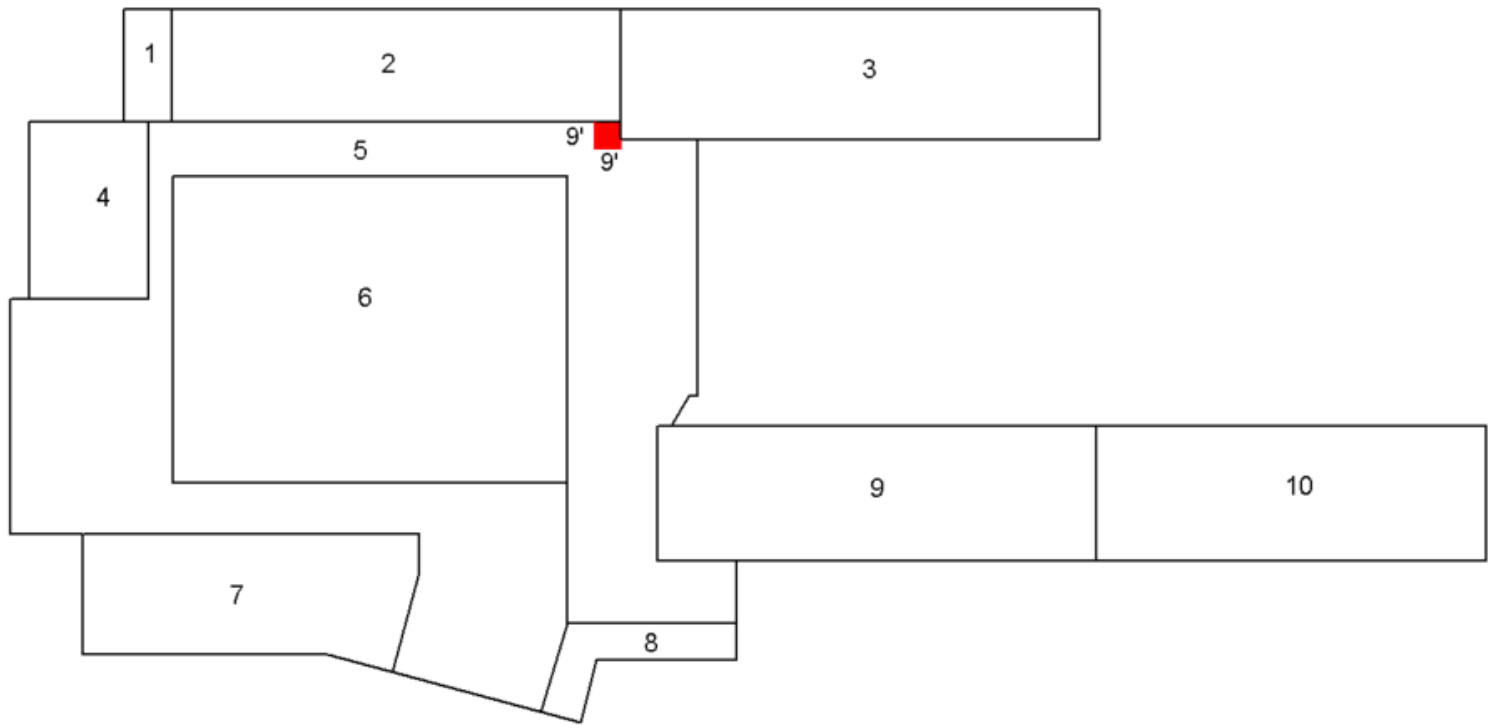
TREMCO

STEM Academy at Showalter
1100 W 10th St,
Chester, PA, 19013

DATE: 10/14/2019
SCALE = To scale

DRAWN BY: LI

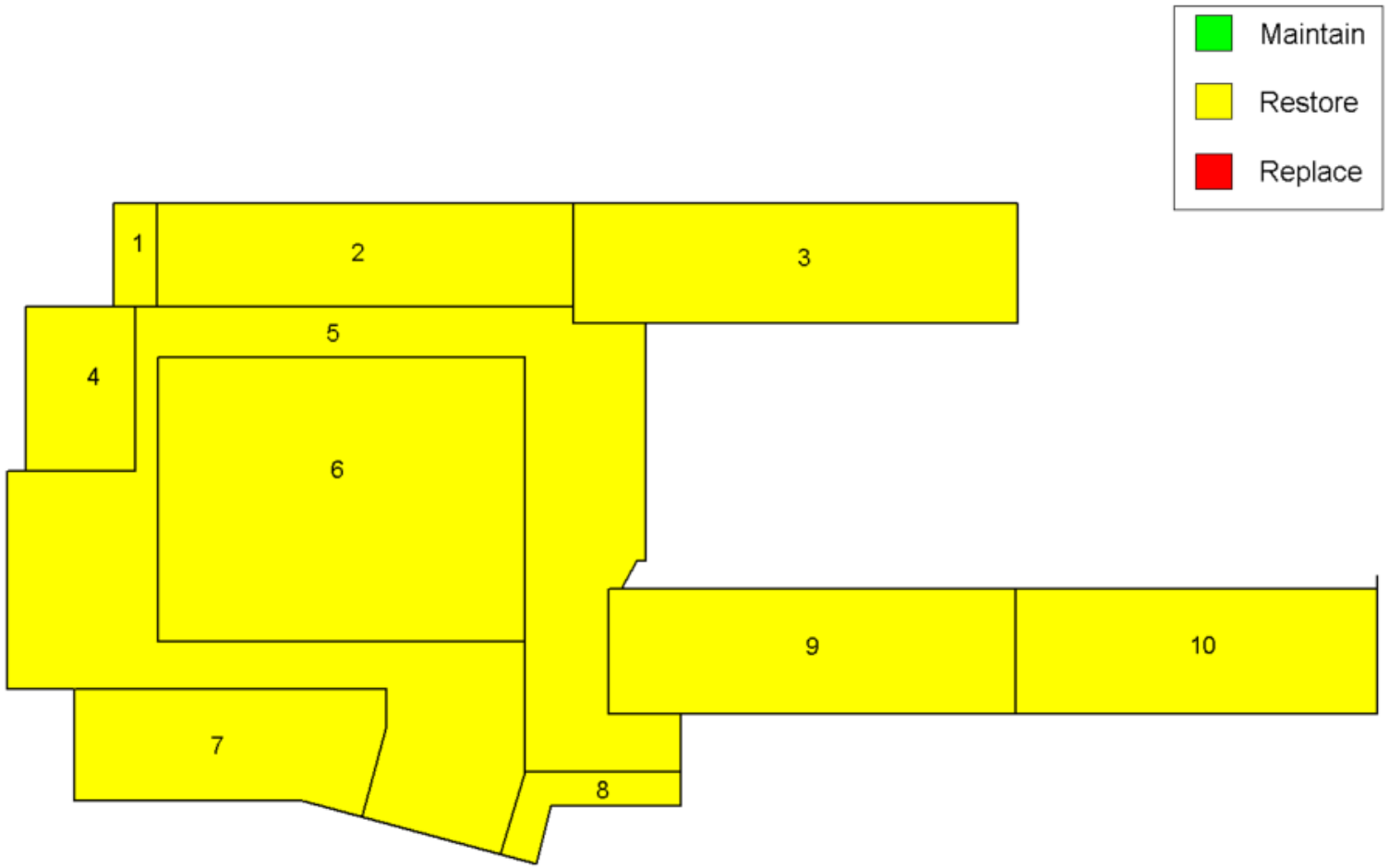
Approximately 100 Sq Ft Wet Insulation



TREMCO

Chester Upland School District
STEM Academy

DATE: 10/28/2021
SCALE = To scale
DRAWN BY: DC



TREMCO

Chester Upland School District
STEM Academy

DATE: 10/26/2021
SCALE = To scale

DRAWN BY: DC





Flashings on BUR roof have failed.



EPDM Roofs



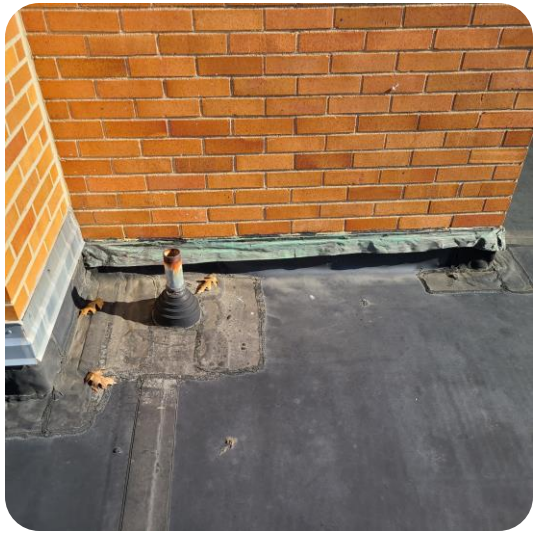


Overview. EPDM roofs appear to have been installed in 2011.









Low flashings will have to be raised if the roof is replaced.







Open seams throughout the building.









Rebar in exposed concrete is rusting casing the concrete to spall. Building sealants are failing.







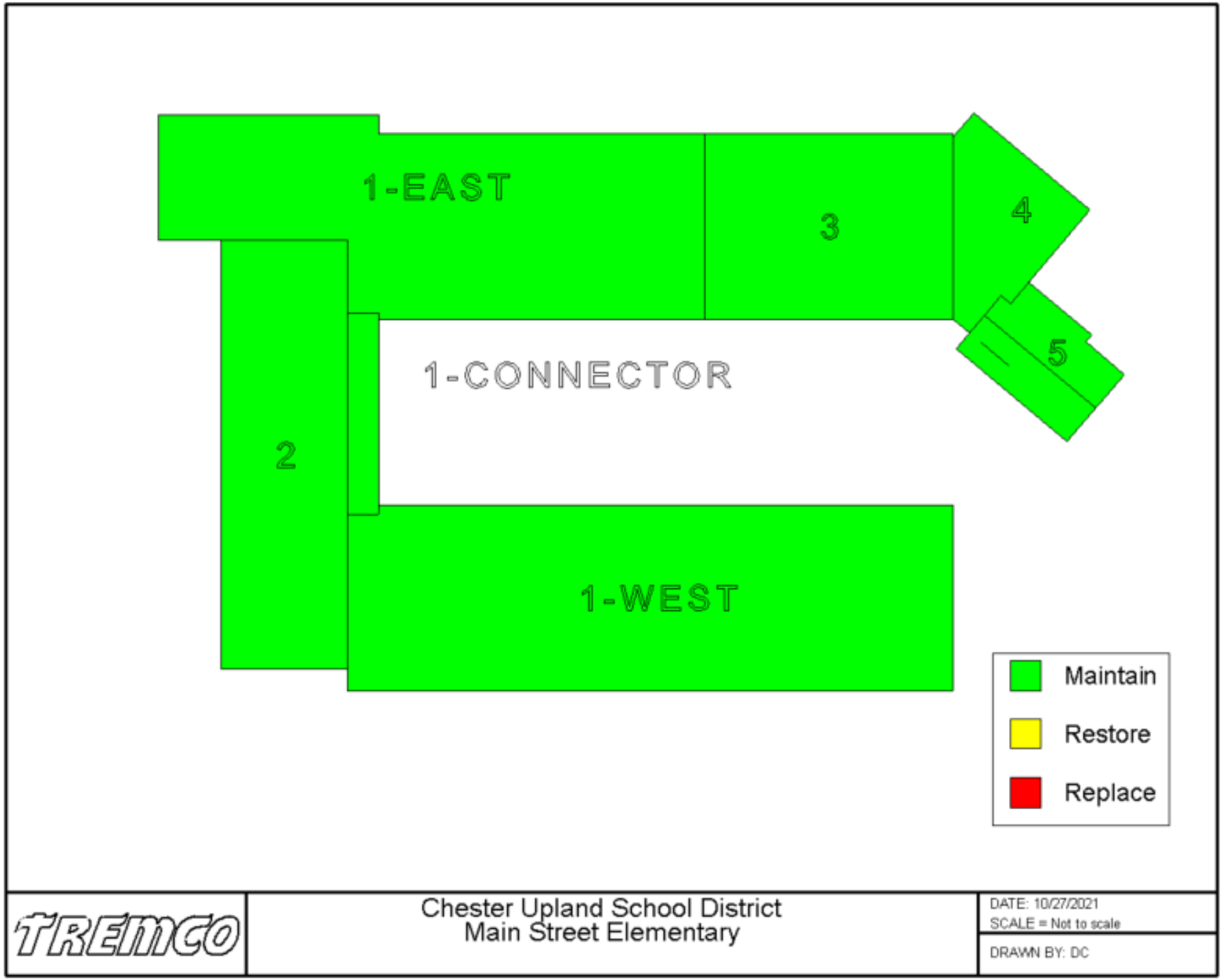


Chimney masonry is failing.





Main Street Elementary



TREMCO

Chester Upland School District
Main Street Elementary

DATE: 10/27/2021
SCALE = Not to scale
DRAWN BY: DC





Wooden soffits are starting to rot. Exposed steal beam is rusting.







Overview. Roofs were replaced in 2017.







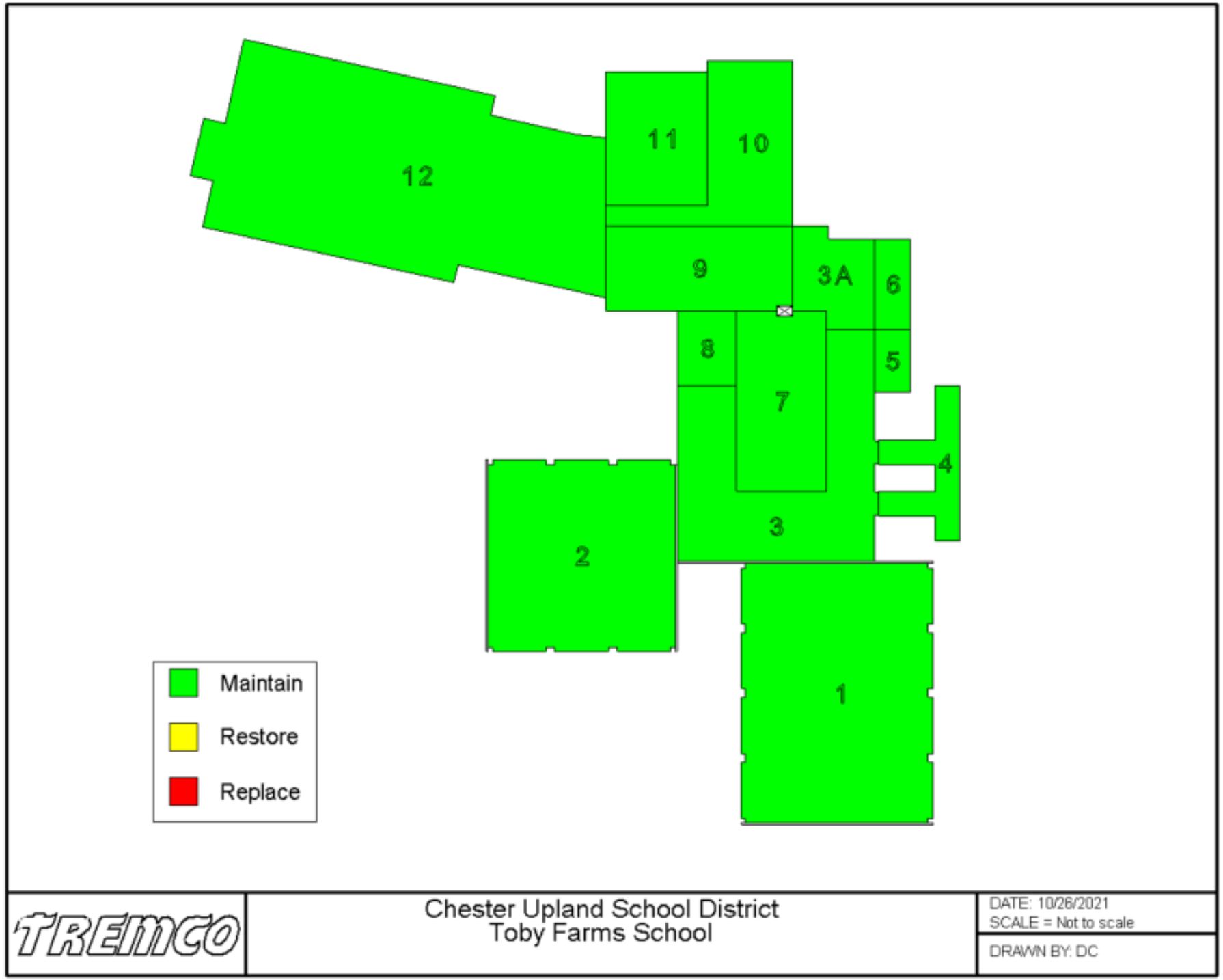


Plants are growing out of debris in the roof. Debris is clogging drains.





Toby Farms School


12
11
10
9
3A
6
8
5
7
4
3
2
1
Maintain
Restore
Replace
TREMCO
Chester Upland School District
Toby Farms School
DATE: 10/26/2021
SCALE = Not to scale
DRAWN BY: DC





Roofs were replaced in 2016.









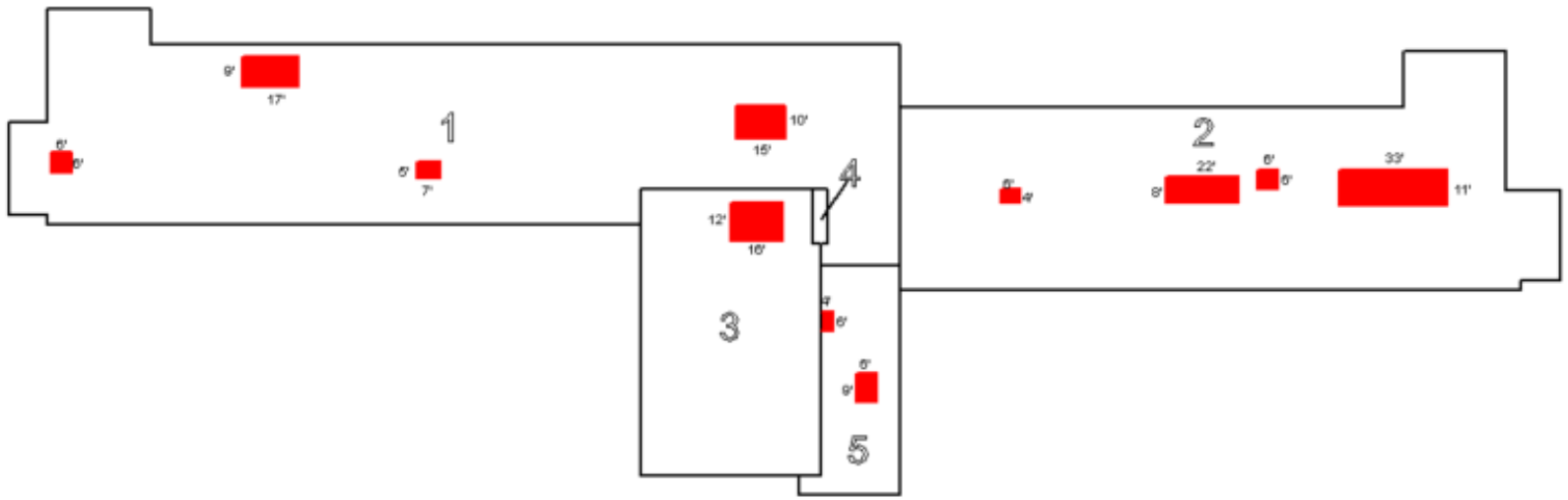
Damaged hood vents should be replaced. Chimney masonry is failing. Debris should be removed from the roof.



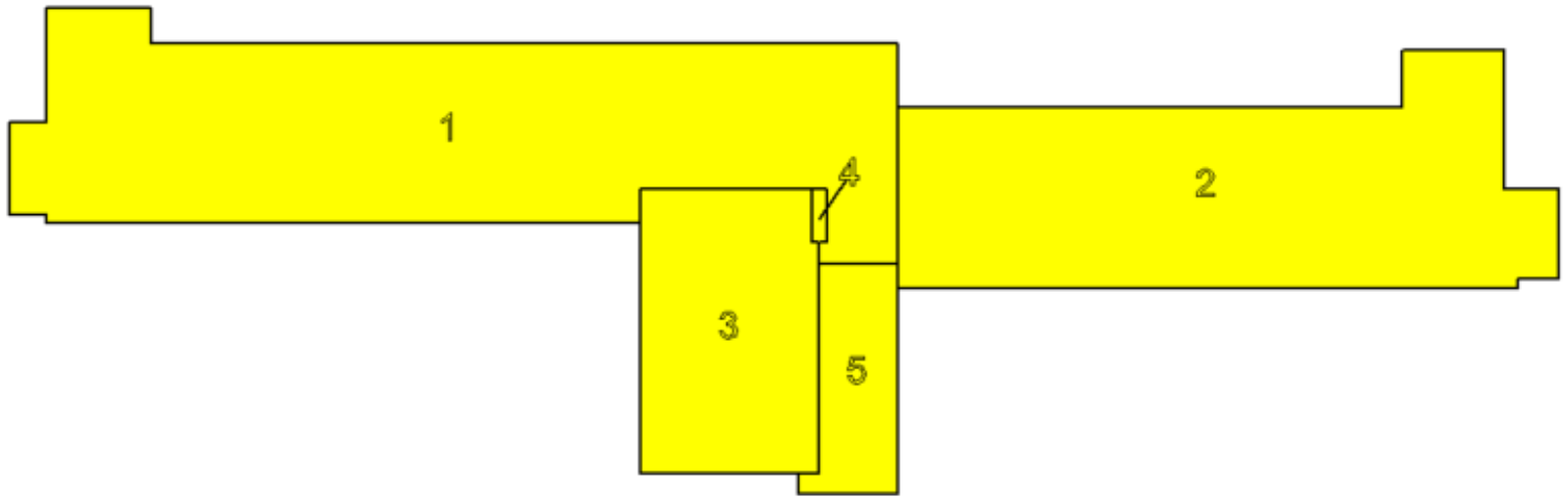


Stetser Elementary

Approximately 1,250 Sq Ft Wet Insulation



TREMCO	Chester Upland School District Stetser Elementary	DATE: 10/28/2021 SCALE = Not to scale DRAWN BY: DC



Maintain

Restore

Replace

TREMCO

Chester Upland School District
Stetser Elementary

DATE: 10/26/2021
SCALE = Not to scale

DRAWN BY: DC

Modified Roof Areas 1,2 & 3





Overview.







Most of granules have worn off the cap sheet, causing the asphalt to oxidize. Scrim is exposed in deteriorated cap sheet.









Previous repairs to seams and flashings. Low flashing heights will have to be raised if the roof is replaced.









Open seams. Improper flashing detail.









Blisters in cap sheet. Chimney masonry and sealants are failing.





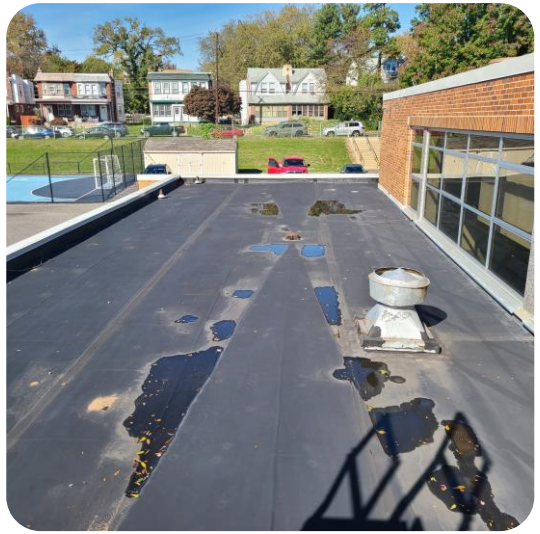




Plants are growing in debris on the roof. Debris is clogging roof drains.



EPDM Roof Areas 4 & 5





Overview.





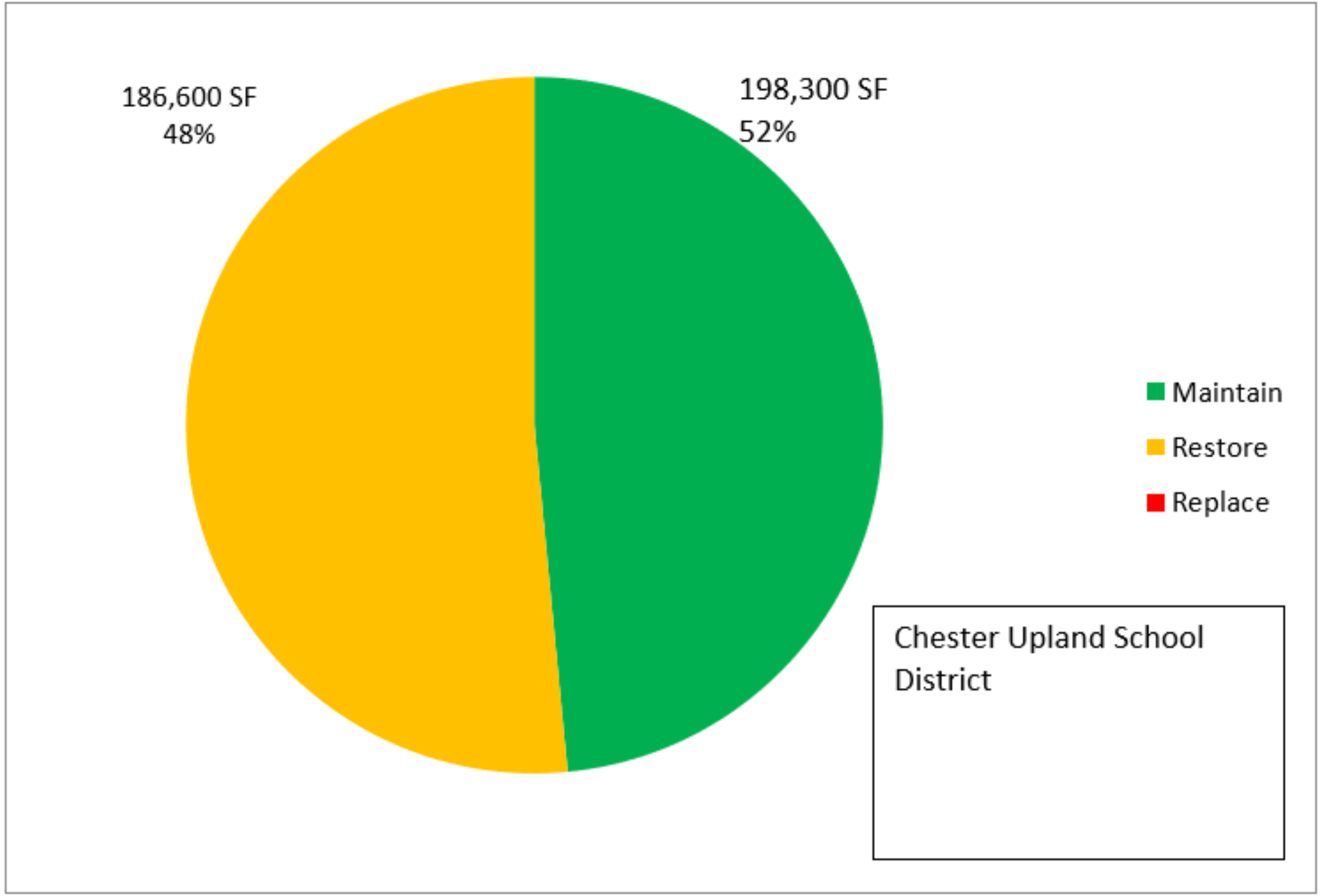
Membrane has deteriorated down to scrim. Punctures in roof.







Low flashing heights would have to be raised if the roof is replaced.


186,600 SF
48%
198,300 SF
52%
Maintain
Restore
Replace
Chester Upland School District

Roof Level / Condition	Square Feet	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
Restore									
Stetser Elementary									
RA 2,3,4,5	18,200	$364,000							
RA 1	14,800		$296,000						
High School									
RA 11,12,13	2,800			$56,000					
CUSA									
RA 1	15,500			$310,000					
STEM Academy									
RA 1,2,3,4,6,7,8,9,10	50,900				$763,500				
RA 5	49,400					$741,000			
High School									
RA 1,2,7	23,200						$348,000		
RA 5,6,8,9	23,500							$352,500	
Capital Totals		**$364,000**	**$296,000**	**$366,000**	**$763,500**	**$741,000**	**$348,000**	**$352,500**	**$0**
Maintain/Repair									
Preventative Maintenance	284,600	$51,228	$51,228	$51,228	$51,228	$51,228	$51,228	$51,228	$51,228
Wet Removal High School	300	$9,000							
Wet Removal CUSA	1,011	$30,330							
Wet Removal Stetser	1,250	$37,500							
Total Square Feet	284,600								
Total Asset	**$8,538,000**								
Maintain/Repair	$449,154								
Capital Totals	$3,231,000								
		$90,558	**$51,228**	**$51,228**	**$51,228**	**$51,228**	**$51,228**	**$51,228**	**$51,228**
		$454,558	**$347,228**	**$417,228**	**$814,728**	**$792,228**	**$399,228**	**$403,728**	**$51,228**

Inflation has not been added to years 2022/2023-2028/2029

APPENDIX C - AHERA 3-YEAR INSPECTION REPORT

AHERA
3 Year Re-Inspection Report

Chester Upland School District

October, 2020

Prepared by:

Environmental Control Systems, Inc.

Environmental Engineers and Management Consultants
Celebrating 50 Years of Providing Professional Environmental Services

950 Sussex Boulevard, Broomall, PA 19008
610-328-2880 | ecs_pa@hotmail.com | www.ecsinfo.net

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Environmental Control Systems, Inc.
Environmental Engineers and Management Consultants

October, 2020

Mr. Marvin Newton
Chester Upland School District
232 West 9th Street
Chester, PA 19013

Re: AHERA 3 Year Re-Inspection Report for Chester Upland School District

Dear Mr. Newtown:

Attached please find the 2020 Asbestos Management Plan 3-year Re -inspection Report for the Chester Upland School District. Asbestos containing materials that remain throughout the school district are in very good condition and require no additional maintenance at this time.

There is a potential for asbestos containing materials behind concealed areas including behind blackboards and should be inspected and sampled prior to future renovations.

We are not required under 40 CFR chapter 763 to report any of the current finding or inventories to PADEP, or the EPA. The districts only requirement is to place copies of this report in each of the school buildings and maintain the original copy with the AHERA Management Plan.

Thank you for the opportunity to provide professional services to you and the Chester Upland School District.

Respectfully submitted:



Wayne R. Pistoia, MSE, NSPE
Designated Person

Enclosure:

950 Sussex Boulevard, Broomall, PA 19008
Ph: 610-328-2880 | www.ecsinfo.net | ecs_pa@hotmail.com

FEDERAL REQUIREMENTS FOR ASBESTOS MANAGEMENT IN SCHOOLS

EPA Regional Asbestos Coordinators

EPA Region 1
One Congress Street
Suite 1100
Boston, MA 02114

EPA Region 2
290 Broadway, 21st Floor
New York, NY 10007

EPA Region 3
1650 Arch Street
Philadelphia, PA 19103

EPA Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

EPA Region 5
77 West Jackson Blvd.
Chicago, IL 60604

EPA Region 6
1445 Ross Avenue
Dallas, TX 75202

EPA Region 7
901 N. 5th Street
Kansas City, KA 66101

EPA Region 8
999 - 18th Street, Suite 300
Denver, CO 80202

EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

EPA Region 10
1200 Sixth Street
Seattle, WA 98101

Information on Compliance with AHERA Requirements for Superintendents of Schools, Headmasters, Directors, Asbestos Inspectors & Management Planners

The Environmental Protection Agency (EPA) has developed this guidance to help Local Education Agencies **(LEAs)** achieve compliance with the **Asbestos-Containing Materials in Schools** regulation **(40 CFR Part 763).**

These regulations, in effect since 1986, require that public and not-for-profit non-public, elementary and secondary schools be inspected to determine the presence of asbestos-containing building materials and that asbestos management plans be developed as a result of those inspections. State requirements may vary. Contact your state agency for more information.

EPA Asbestos Line

1-800-471-7127

EPA Asbestos in Schools Website

http://www.epa.gov/asbestos/asbestos_in_schools.html

Designated Person

The **Local Education Agency** (LEA) must designate a person (designated person) to ensure that the responsibilities of the LEA, as detailed in the regulations, are properly implemented.

- The LEA must verify that this individual has received proper training. The individual is not required to be a licensed asbestos consultant. There is no specific training course for the designated person; however, the EPA has developed a **"Designated Person's Self-Study Guide"** that details the required specific background knowledge the designated person must have. You can find this **guide** at http://www.epa.gov/asbestos/schools.html.
- The **Asbestos Management Plan** (AMP) for schools must include a true and correct statement signed by the designated person certifying that the general responsibilities of the LEA have been or will be met.
- In the event that the designated person leaves his or her position, the LEA *must ensure that a new individual is identified and appropriately trained to serve as the designated person.* The newly identified designated person must then sign the aforementioned statement of certification. The designated person must have a basic knowledge of the health effects of asbestos, the detection, identification and assessment of asbestos-containing material, options for controlling asbestos-containing material, asbestos management programs, and relevant federal and state regulations concerning asbestos.

Reinspection

The LEA must retain the services of a licensed asbestos inspector or management planner to conduct a reinspection every **three** years subsequent to implementation of a management plan.

- *Triennial reinspections must include an inspection of each area of every building that is leased, owned, or otherwise used as a school building.*

Written Notification Regarding Availability of the AMP



At least once each school year, the LEA must provide written notification to parent, teacher, and employee organizations regarding the availability of the Abestos Management Plan and any response actions taken or planned.

- *This notice must be dated and a copy placed in the AMP.*
- *The AMP must describe the steps taken to notify parents, teachers and employee organizations. Acceptable methods of notification include placing a notice in the school handbook, mailing a letter to each household, or placing an ad in a local paper.*



Periodic Surveillance

After the AMP has been implemented, the LEA must conduct periodic surveillance in each building that it leases, owns, or otherwise uses as a school building at least once every **six** months.



The purpose of surveillance is to look at all known or suspect asbestos-containing building materials (ACBM) and note any changes in the material.

Periodic surveillance does not need to be conducted by a licensed consultant. It is often conducted by custodial or maintenance personnel.



Custodial & Maintenance Training and Short-Term Worker

All maintenance and custodial staff who may work in a building that contains asbestos-containing building materials (ACBM) must receive at least **two** hours of asbestos awareness training whether or not they are required to work with ACBM.

- *Maintenance and custodial staff conducting any activities that will result in the disturbance to ACBM must receive an additional **fourteen** hours of training.*

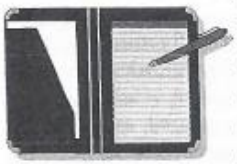


- *The LEA must ensure that new custodial and maintenance employees are trained within **sixty** days after commencement of employment.*
- *The LEA must ensure that short-term workers who may come in contact with asbestos (e.g. utility repair workers) are informed of the location of ACBM.*



Record-Keeping Requirement

The LEA must maintain records required by the regulations to be included in the Asbestos Management Plan. This includes:



- *a copy of prior inspection and/or reinspection reports;*
- *documentation related to the training provided to custodial and maintenance employees;*
- *periodic surveillance forms;*
- *dated statements regarding operations and maintenance activities;*
- *a copy of the annual notice of the management plan availability;*
- *a copy of all reports on response actions taken; and*
- *a copy of the updated management plan in each school.*

Compliance/Enforcement

EPA is committed to providing assistance to LEAs to ensure compliance with regulatory requirements. While it is the goal of EPA to provide LEAs with assistance in achieving regulatory compliance voluntarily, **LEAs that fail to comply with existing regulatory requirements will be subject to enforcement action.** Contact your Regional Asbestos Coordinator for more information.



Environmental Control Systems, Inc.
Environmental Engineers and Management Consultants

AHERA Three Year Re-Inspection Report

October 2020

Mr. Marvin Newton
Chester Upland School District
232 West 9th Street
Chester, PA 19013

During the month of October 2020, all six (06) of the Chester Upland School District buildings were surveyed for the presence and condition of asbestos-containing materials (ACBM's). The following is a listing of the districts buildings:

Chester Upland High School
STEM School
Toby Farms Intermediate School
Main Street Elementary School
Stetser Elementary School
Chester Upland School of the Arts

The three year re-inspection was conducted in compliance with 40 CFR 763.85 and includes inspection of all homogeneous areas of ACBM's that had been identified in the original asbestos inspection of 1988.

Having recently completed the Chester Upland School District's "Three Year Re-Inspection Report as required by the Federal Environmental Protection Agency and governed by the law known as; Asbestos Hazard Emergency Response Act (AHERA) and defined in the Federal Code of Registry 40 CFR 763.85, we offer the following summary:

The Chester Upland School District buildings as listed above are currently in full compliance.

The Three Year Re-Inspection was performed by:

Mr. Raymond Giordano, Building Inspector Certification #031038.

1. AHERA COVER LETTER, SCHOOL LISTING & SUMMARY

Environmental Control Systems, Inc.

Environmental Engineers and Management Consultants

October, 2020

Mr. Marvin Newton
Chester Upland School District
232 West 9th Street
Chester, PA 19013

Dear Mr. Newton:

In October 2020, the CHESTER UPLAND SCHOOL DISTRICT (CUSD) was surveyed for the presence and condition of asbestos-containing materials (ACBM's) within and outside the buildings.

The Three-Year Re-Inspection was conducted in compliance with 40 CFR part 763.85 and includes inspections of all homogeneous areas of ACBM's that had/have been identified. There are no past building inspections in the file to access or reference. CUSD personnel stated that the roof had collapsed in the building where the records were kept. Subsequently, the files were lost in the clean up.

Mr. Raymond Giordano, Building Inspector Certification #031038 performed the Three-Year Re-Inspection. During the Re-Inspection Mr. Giordano visited all accessible areas of the school buildings. Bulk samples were not collected and suspect ACBM's was noted. There is no information on previous Asbestos abatements and response actions except where noted in the High School boiler room.

If you or your staff has any question regarding this report, please do not hesitate to contact me at any time.

Cordially,

Wayne R Pistoia, MSE, NSPE
Operations Director

FACILITY LISTING

Chester Upland School District
232 West 9th Street
Chester, PA 19013

During the month of October, 2020, all buildings owned by the CHESTER UPLAND SCHOOL DISTRICT buildings were surveyed for the presence and condition of asbestos-containing materials (ACBM's). The following is a listing of the districts' buildings:

School/Program Name	Address	Own/Lease
Chester Upland High School	232 West 9th Street, Chester PA 19013	Own
STEM Building	1100 West 10th Street, Chester PA 19013	Own
Toby Farms Intermediate School	201 Bridgewater Road, Brookhaven PA 19015	Own
Main Street Elementary School	704 Main Street, Upland PA 19015	Own
Stetser Elementary School	808 East 17th Street, Chester PA 19013	Lease
Chester Upland School of the Arts	501 West 9th Street, Chester PA 19013	Own

The three-year re-inspection was conducted in compliance with 40 CFR 763.85 and includes inspection of all suspected homogeneous areas of ACBM that can be identified as the original asbestos inspection of 1988 was not available.

INSPECTION REPORT - SUMMARY

CHESTER UPLAND SCHOOL DISTRICT
AHERA 3-YEAR ASBESTOS REINSPECTION REPORT
October, 2020

A. AHERA Three Year Re-Inspection Summary Report

The 3-Year Re-inspection by Environmental Control Systems, Inc. revealed that the asbestos containing materials remaining are in very good condition. Maintenance procedures are consistent with good practices to keep ACBM in non-friable condition.

The CHESTER UPLAND SCHOOL DISTRICT is also required to annually notify parents, teachers, staff and students of the availability of the Asbestos Management Plan and 3-Year Re-inspection for review.

The three-year Re-inspection was conducted in compliance with 40 CFR 763.85. It does not include inspection of all homogeneous areas of ACBM's that had been identified in the original asbestos inspection of 1988 as those records are not available due to previous building damage.

Having recently completed the District's "Three Year Re-Inspection Report as required by the Federal Environmental Protection Agency and governed by the law known as; Asbestos Hazard Emergency Response Act (AHERA) and defined in the Federal Code of Registry 40 CFR 763.85, we offer the following summary:

The CHESTER UPLAND SCHOOL DISTRICT's buildings as listed above are currently in compliance.

Asbestos containing building materials do not need to be removed unless they become damaged or affected by renovations or normal activity.

Six (6) month inspections of ACBM should continue until the next three (3) year re-inspection in 2023.

The three-year Re-inspection was performed by:

Mr. Ray Giordano, Management Planner, Building Inspector, Number as issued by PA is 031038.

REMAINING KNOWN ACBM & COST ASSOCIATED WITH REMOVAL
(APPROX)

Toby Farms Intermediate School - Functional Space Record – 10-2020										
Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic					X		No	Maintain O&M	Presumed
Throughout	Fittings		Not Quantified						Maintain O&M	Presumed
1	9"x9" Tile & Mastic (Brown)	952		X		X		No	Maintain O&M	Presumed
2	9"x9" Tile & Mastic (Brown) UC	952		X		X		No	Maintain O&M	Added Aug 2019
3	9"x9" Tile & Mastic (Brown)	952		X		X		Yes	Maintain O&M	Presumed
4	9"x9" Tile & Mastic (Brown)	952		X		X		No	Maintain O&M	Presumed
5	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
6	9"x9" Tile & Mastic (Green)	952		X		X		Yes	Maintain O&M	Presumed
7	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
8	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
9	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
10	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
11	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
12	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
13	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed

14	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
Nurse	9"x9" Tile & Mastic	646		X		X		No	Maintain O&M	Presumed
Main Office Area & Offices	9"x9" Tile & Mastic	692		X		X		No	Maintain O&M	Presumed
Cafeteria	9"x9" Tile & Mastic (green/blue)	2800		X		X		No	Maintain O&M	Presumed
Cafeteria	Roof Drains							No	Maintain O&M	2
Cafeteria	Stage Lighting							No	Maintain O&M	Presumed
Room Across from Caf	9"x9" Tile & Mastic (Green) UC	119		X		X		No	Maintain O&M	Presumed
Room Across from Caf	9"x9" Tile & Mastic (Green)	119		X		X		No	Maintain O&M	Presumed
Room Across from Caf (Fac Lounge)	9"x9" Tile & Mastic (Green)	720		X		X		No	Maintain O&M	Presumed
Hallway & rooms adjacent to kitchen	9"x9" Tile & Mastic (Tan)	347		X		X		No	Maintain O&M	Presumed
Hallway next to Caf (Back Side)	9"x9" Tile & Mastic (Tan)	888		X		X		No	Maintain O&M	Presumed
Main Hall	9"x9" Tile & Mastic	700		X		X		No	Maintain O&M	Presumed
A Wing Hallway	9"x9" Tile & Mastic (Tan)	936		X		X		No	Maintain O&M	Presumed
B Wing Hallway & Cubbys	9"x9" Tile & Mastic (Tan)	1246		X		X		No	Maintain O&M	Presumed
Back Hall Leading to C Wing	9"x9" Tile & Mastic (Tan)	340		X		X		No	Maintain O&M	Presumed
Library	9"x9" Tile & Mastic (Tan) UC	1368		X		X		No	Maintain O&M	Presumed
Additional area by library	9"x9" Tile & Mastic (Tan)	224		X		X		No	Maintain O&M	Presumed
Back Hall by Gym	9"x9" Tile & Mastic (Tan)	624		X		X		No	Maintain O&M	Presumed
Room C	9"x9" Tile & Mastic (Green)	656		X		X		No	Maintain O&M	Presumed
Boiler Room	Boiler s							No	Maintain O&M	Presumed

	Fittings							No	Maintain O&M	Presumed Not Quantified
	Fittings							Yes		(11) 1" Domestic Water Fittings Damages need to be removed ASAP
	Breaching							No	Maintain O&M	Presumed Not Quantified
Total		25,753								
Floor Tile Dollar Value for Removal		$ 128,765.00								

Main Street ES - Functional Space Record

Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic								O&M	Presumed
Throughout	Fittings								O&M	Presumed
1	9"x9" Tile & Mastic	408		X		X		Yes	O&M	Presumed
2	9"x9" Tile & Mastic	880		X		X		Yes	O&M	Presumed
3	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
9	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
10	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
11	9"x9" Tile & Mastic UC	300		X		X		No	O&M	Presumed
Hallway	9"x9" Tile & Mastic	960		X		X		No	O&M	Presumed
Main Hall	9"x9" Tile & Mastic	470		X		X		No	O&M	Presumed
Main Offices & Teachers' Lounge	9"x9" Tile & Mastic	1500		X		X		No	O&M	Presumed
Multipurpose Hallway	9"x9" Tile & Mastic	988		X		X		No	O&M	Presumed
Custodial Office	9"x9" Tile & Mastic	150		X		X		No	O&M	Presumed
Gym Teachers Office	9"x9" Tile & Mastic	200		X		X		No	O&M	Presumed

Transite window sills										Presumed Not Quantified
Stage Lighting										Presumed Not Quantified
Back Hall	9"x9" Tile & Mastic	1536		X		X		No	O&M	Presumed
12	9"x9" Tile & Mastic UC	264		X		X		No	O&M	Presumed
13	9"x9" Tile & Mastic UC	264		X		X		No	O&M	Presumed
14	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
15	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
16	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
17	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
18	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
19	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
20	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
21	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
22	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
Transite Lid at Crawlspace								No	O&M	Presumed
Total		18,480								
Floor Tile Dollar Value for Removal		$ 92,400.00								

Stetser ES - Functional Space Record

Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic	Not Quantified						No	O&M	Assumed
Throughout	Fittings	Not Quantified						No	O&M	Assumed
Hallway Cubby	9"x9" Tile & Mastic	560		x		x		No	O&M	Presumed
Room left of stage	9"x9" Tile & Mastic	104		x		x		No	O&M	Presumed
Boiler Room	Oversized Breaching							No	O&M	40 SF Presumed

Total		664								
Floor Tile Dollar Value for Removal		$ 3,320.00								

CUSA - Functional Space Record

Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic	Not Quantified						No	O&M	Assumed
Throughout	Fittings	Not Quantified						No	O&M	Assumed
128	9"x9" Tile & Mastic	80		x		x		No	O&M	Presumed
130	9"x9" Tile & Mastic	100		x		x		No	O&M	Presumed
Plan Room/Offices	9"x9" Tile & Mastic	1568		x		x		No	O&M	Presumed
Nurses/Copy Offices	9"x9" Tile & Mastic	630		x		x		No	O&M	Presumed
203	9"x9" Tile & Mastic UC	1000		x		x		No	O&M	Presumed
205	9"x9" Tile & Mastic UC	1000		x		x		No	O&M	Presumed
303	9"x9" Tile & Mastic UC	312		x		x		No	O&M	Presumed
3rd Floor Transite Tables										Presumed & not quantified
Boiler Room										3 Fittings
17										12 Fittings
6										Fittings
Total		4,690								
Floor Tile Dollar Value for Removal		$ 23,450.00								

DAMAGED ASBESTOS CONTAINING BUILDING MATERIALS (ACBM)

Chester Upland School District - Items needing attention										
Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Toby Farms Intermediate School										
Boiler Room	**1" Domestic Water Fittings**						11	**Yes**	**Remove**	**Loose/Cracked**
Main Office Area & Offices	Wall Mastic (Encapsulated)					X		No	Maintain O&M	Presumed

The ECS inspector did not inspect inaccessible areas such as behind walls, within chases, above permanent ceilings or any other areas requiring destruction to determine if ACBM was present. ECS did not collect bulk samples during the 3 Year Re-Inspection. Professional experience was used to determine asbestos content.

The AHERA law allows for the accredited inspector to take reasonable steps to locate ACBM, however, in most cases, EPA does not intend that the accredited inspector undertake destructive steps (e.g., tearing down a wall) in an attempt to locate ACBM. Intrusive or destructive investigative techniques were not performed at the Site to access and to observe inaccessible or concealed areas that may contain suspect ACBM that were hidden or obstructed from normal view.

In accordance with federal and state regulations, the materials present in the inaccessible area(s) listed above must be assumed as ACBM until access is provided and by additional sampling and laboratory analysis of such materials.

Note: Prior to conducting any renovations and/or demolition activities, inaccessible or concealed areas should be investigated by an accredited inspector to determine if ACBM may be present.

In addition, all boilers, which are concealing potential ACBM contents should be opened and contents analyzed for presence of ACBM prior to renovations.

2. AHERA ACCREDITATION, MANAGEMENT PLANNER & ASBESTOS SITE COORDINATOR

With respect to the person or persons who inspects for ACM and/or those who design carry-out response actions other than operations and maintenance. The CUSD has used and shall use persons who have been accredited by a state which has adopted a contractor accreditation plan under section 206(b) of Title II of the Act or is accredited by an EPA-approved course under section 206(b) of Title II of the Act.

CHESTER UPLAND SCHOOL DISTRICT's Designated Person is: Mr. Marvin Newton

AHERA MANAGEMENT PLANNER

The management planners listed below are responsible for reviewing the results of the three-year re-inspection and up-dating the management plan for the CUSD.

Name: Wayne R Pistoia, MSE, NSPE.
EPA Region III
Certificate Number #AMP02-0061
EPA/PA License No: 017588

Address: Environmental Control Systems, Inc.
950 Sussex Blvd
Broomall, PA 19008
Phone: 610-328-2880

Accrediting Agency: University City Science Center
University of Pennsylvania
Environmental Resource Center
3624 Market Street
Philadelphia, PA 19104
215-387-4265

NAME: Raymond J. Giordano
EPA Region III
EPA/PA License No: 031038

Address: Environmental Control Systems, Inc.
950 Sussex Blvd
Broomall, PA 19008
Phone: 610-328-2880

Accrediting Agency: Access Training Services, Inc.
7921 River Road
Pennsauken, NJ 08110
856-665-3449

* A copy of the Management Planners EPA/PA licenses upon request.

ASBESTOS SITE COORDINATOR

The Asbestos Coordinator for the CHESTER UPLAND SCHOOL DISTRICT is:

Mr. Marvin Newton
Director of Operations

Pertinent information necessary to understand the Management Plan is as follows:

The Management Plan is not on file due to records being lost during building damage.

Previous assessments and or sampling under AHERA of previously identified ACM are not available.

There The information in this three-year re-inspection was completed by Environmental Control Systems, Inc. This re-inspection report is an effort to utilize all information and set-up the procedures and schedules to best service the school district.

Mr. Marvin Newton
Asbestos Site Coordinator
CHESTER UPLAND SCHOOL DISTRICT

3. AHERA PUBLIC NOTICES

Environmental Control Systems, Inc.

Environmental Engineers and Management Consultants

October 12, 2020

Mr. Paul Thompson
Chester County Intermediate Unit
455 Boot Road
Downingtown, PA 19355

Re: AHERA Management Plan Annual Announcement for Chester Upland School District

Dear Mr. Thompson:

We want to remind you that it is time for an annual announcement to parent, teacher, and employee organizations of the availability of your AHERA Management Plan. We would suggest this be done by posting on the School District web site, newspaper advertisement, a certified letter to the chairperson of each group or distribution at a meeting of each group with inclusion in the minutes of the meeting.

A copy of Federal Register Rules and Regulations (763.93 Management Plans) which mandates this action is enclosed.

The Federal Register under 763.92(a) also states that custodial and maintenance workers must receive two hours of awareness training within (60) days of hire. We are available to provide this training when needed.

Mr. Thompson, should you or your staff have any questions on the above outlined Rules and Regulations, please don't hesitate to contact us.

Cordially,

Wayne R. Pistoia, MSE, NSPE
Director of Operations

4. SIX MONTH PERIODIC SURVEILLANCE

As of the date of this inspection, there are no Six Month Periodic Surveillances' available or in file.

5. TRAINING RECORDS

As of the date of this inspection, there are no training records available or in file.

6. BUILDING LISTING

A. CHESTER UPLAND HIGH SCHOOL

Building Location: 232 West 9th Street, Chester PA 19013

High School - Functional Space Record										
Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic					X		No	Maintain O&M	Presumed
	All known asbestos was removed during PREVIOUS capital projects. ACBM fittings and insulation may still exist behind hard walls and pipe chases. Prior to conducting renovations and/or demolition activities, inaccessible and/or concealed areas should be investigated and affected building material sampled by an accredited inspection to determine if ACBM is present.									

ENVIRONMENTAL CONTROL SYSTEMS
950 SUSSEX BLVD
BROOMALL, PA 19008
610-328-2880

Inspection Date: October, 2020

Name: Ray Giordano

Certification: EPA/AHERA/PA: ACC-0612-10-005

Reviewed by: Wayne Pistoia, MSE, NSPE

Note: Prior to conducting any renovations and/or demolition activities, inaccessible or concealed areas should be investigated by an accredited inspector to determine if ACM may be present.

Notice to Short Term Workers

All workers entering this Chester Upland School District Building must sign in, thereby acknowledging the presence and locations of asbestos containing building materials in the School. No work will be allowed in the areas listed below without prior approval from the AHERA Designated Person.

Sign in sheets will be picked up at the time of the six-month periodic surveillance and will be placed in the building's asbestos management plan.

Date	Name	Company

B. STEM ACADEMY

Building Location: 1100 West 10th Street, Chester PA 19013

STEM Academy - Functional Space Record										
Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic					X		No	Maintain O&M	Presumed
	All known asbestos was removed during PREVIOUS capital projects. ACBM fittings and insulation may still exist behind hard walls and pipe chases. Prior to conducting renovations and/or demolition activities, inaccessible and/or concealed areas should be investigated and affected building material sampled by an accredited inspection to determine if ACBM is									

ENVIRONMENTAL CONTROL SYSTEMS
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BROOMALL, PA 19008
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Date	Name	Company

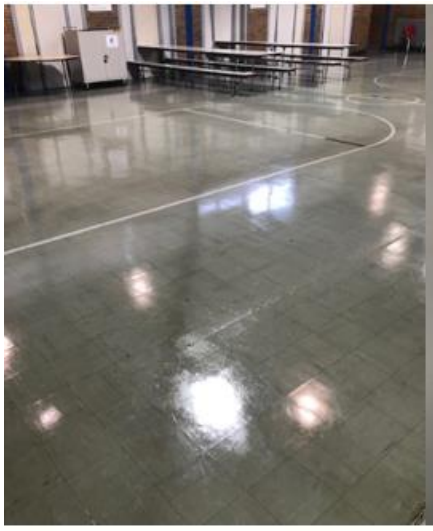
C. TOBY FARMS INTERMEDIATE SCHOOL

Building Location: 3609 East Lincoln Highway Thorndale PA 19372

Toby Farms Intermediate School - Functional Space Record										
Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic					X		No	Maintain O&M	Presumed
Throughout	Fittings		Not Quantified						Maintain O&M	Presumed
1	9"x9" Tile & Mastic (Brown)	952		X		X		No	Maintain O&M	Presumed
2	9"x9" Tile & Mastic (Brown) UC	952		X		X		No	Maintain O&M	Added Aug 2019
3	9"x9" Tile & Mastic (Brown)	952		X		X		Yes	Maintain O&M	Presumed
4	9"x9" Tile & Mastic (Brown)	952		X		X		No	Maintain O&M	Presumed
5	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
6	9"x9" Tile & Mastic (Green)	952		X		X		Yes	Maintain O&M	Presumed
7	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
8	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
9	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
10	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
11	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
12	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
13	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed
14	9"x9" Tile & Mastic (Green)	952		X		X		No	Maintain O&M	Presumed

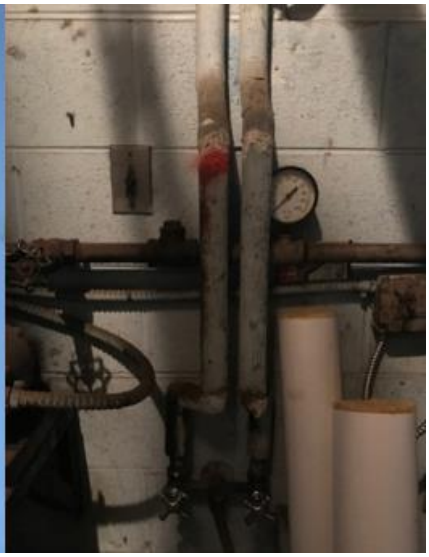
Nurse	9"x9" Tile & Mastic	646		X		X		No	Maintain O&M	Presumed
Main Office Area & Offices	9"x9" Tile & Mastic	692		X		X		No	Maintain O&M	Presumed
Main Office Area & Offices	Wall Mastic (Encapsulated)					X		No	Maintain O&M	Presumed
Cafeteria	9"x9" Tile & Mastic (green/blue)	2800		X		X		No	Maintain O&M	Presumed
Cafeteria	Roof Drains							No	Maintain O&M	2
Cafeteria	Stage Lighting							No	Maintain O&M	Presumed
Room Across from Caf	9"x9" Tile & Mastic (Green) UC	119		X		X		No	Maintain O&M	Presumed
Room Across from Caf	9"x9" Tile & Mastic (Green)	119		X		X		No	Maintain O&M	Presumed
Room Across from Caf (Fac Lounge)	9"x9" Tile & Mastic (Green)	720		X		X		No	Maintain O&M	Presumed
Hallway & rooms adjacent to kitchen	9"x9" Tile & Mastic (Tan)	347		X		X		No	Maintain O&M	Presumed
Hallway next to Caf (Back Side)	9"x9" Tile & Mastic (Tan)	888		X		X		No	Maintain O&M	Presumed
Main Hall	9"x9" Tile & Mastic	700		X		X		No	Maintain O&M	Presumed
A Wing Hallway	9"x9" Tile & Mastic (Tan)	936		X		X		No	Maintain O&M	Presumed
B Wing Hallway & Cubbys	9"x9" Tile & Mastic (Tan)	1246		X		X		No	Maintain O&M	Presumed
Back Hall Leading to C Wing	9"x9" Tile & Mastic (Tan)	340		X		X		No	Maintain O&M	Presumed
Library	9"x9" Tile & Mastic (Tan) UC	1368		X		X		No	Maintain O&M	Presumed
Additional area by library	9"x9" Tile & Mastic (Tan)	224		X		X		No	Maintain O&M	Presumed
Back Hall by Gym	9"x9" Tile & Mastic (Tan)	624		X		X		No	Maintain O&M	Presumed

Room C	9"x9" Tile & Mastic (Green)	656		X		X		No	Maintain O&M	Presumed
Boiler Room	Boiler s							No	Maintain O&M	Presumed
	Fittings							No	Maintain O&M	Presumed Not Quantified
	Fittings							Yes		(11) 1" Domestic Water Fittings Damages need to be removed ASAP
	Breaching							No	Maintain O&M	Presumed Not Quantified
Total		25,753								









Notice to Short Term Workers

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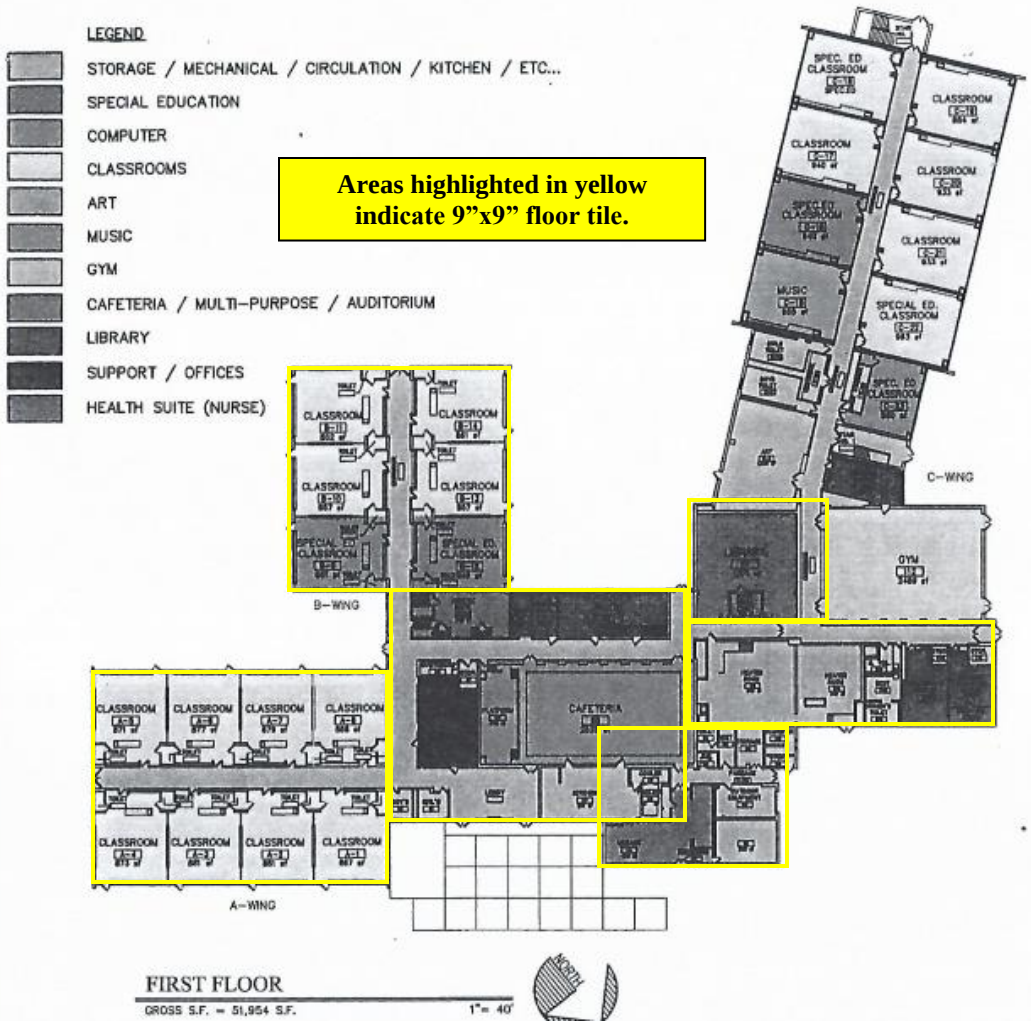
Sign in sheets will be picked up at the time of the six-month periodic surveillance and will be placed in the building's asbestos management plan.

Date	Name	Company

LEGEND

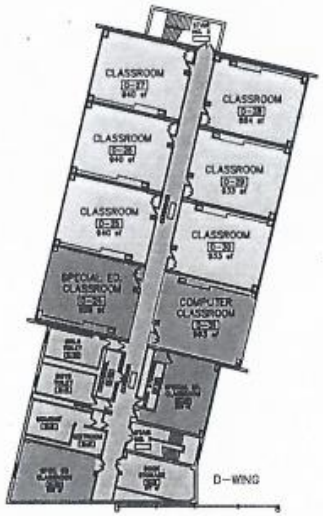
- STORAGE / MECHANICAL / CIRCULATION / KITCHEN / ETC...
- SPECIAL EDUCATION
- COMPUTER
- CLASSROOMS
- ART
- MUSIC
- GYM
- CAFETERIA / MULTI-PURPOSE / AUDITORIUM
- LIBRARY
- SUPPORT / OFFICES
- HEALTH SUITE (NURSE)

Areas highlighted in yellow indicate 9"x9" floor tile.



FIRST FLOOR

GROSS S.F. = 51,954 S.F. 1"= 40'



SECOND FLOOR

GROSS S.F. = 13,764 S.F. 1"= 40'

Toby Farms PK-6th grades			
grade	# of classrooms	Average class size	Students per grade
PK	3	19	57
K	3	25	75
1	3	25	75
2	3	19	57
3	3	21	64
4	3	24	72
5	3	25	75
6	3	20	60
Spec Ed	7		
Total	31		535

Note: The above numbers are based on May 1, 2013 Enrollment

Student counts are moved up a grade to account for the 2013-14 school year

Kindergaten numbers are assumed the same as 2012-13 school year

BA

BONNETT ASSOCIATES INCORPORATED

ARCHITECTS PLANNERS ENGINEERS

PK, K, 1st, 2nd, 3rd, 4th, 5th and 6th GRADES

PROPOSED CONFIGURATION PLAN

MAY 6, 2013

CHESTER UPLAND SCHOOL DISTRICT

TOBY FARMS ELEMENTARY SCHOOL

TF-02

D. MAIN STREET ELEMENTARY SCHOOL

Building Location: 704 Main Street, Upland PA 19015

Main Street ES - Functional Space Record										
Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic								O&M	Presumed
Throughout	Fittings								O&M	Presumed
1	9"x9" Tile & Mastic	408		X		X		Yes	O&M	Presumed
2	9"x9" Tile & Mastic	880		X		X		Yes	O&M	Presumed
3	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
9	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
10	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
11	9"x9" Tile & Mastic UC	300		X		X		No	O&M	Presumed
Hallway	9"x9" Tile & Mastic	960		X		X		No	O&M	Presumed
Main Hall	9"x9" Tile & Mastic	470		X		X		No	O&M	Presumed
Main Offices & Teachers Lounge	9"x9" Tile & Mastic	1500		X		X		No	O&M	Presumed
Multipurpose Hallway	9"x9" Tile & Mastic	988		X		X		No	O&M	Presumed
Custodial Office	9"x9" Tile & Mastic	150		X		X		No	O&M	Presumed
Gym Teachers Office	9"x9" Tile & Mastic	200		X		X		No	O&M	Presumed
Transite window sills										Presumed Not Quantified
Stage Lighting										Presumed Not Quantified
Back Hall	9"x9" Tile & Mastic	1536		X		X		No	O&M	Presumed
12	9"x9" Tile & Mastic UC	264		X		X		No	O&M	Presumed
13	9"x9" Tile & Mastic UC	264		X		X		No	O&M	Presumed
14	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
15	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed

16	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
17	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
18	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
19	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
20	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
21	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
22	9"x9" Tile & Mastic	880		X		X		No	O&M	Presumed
Transie Lid at Crawlspace								No	O&M	Presumed
Total		18,480								

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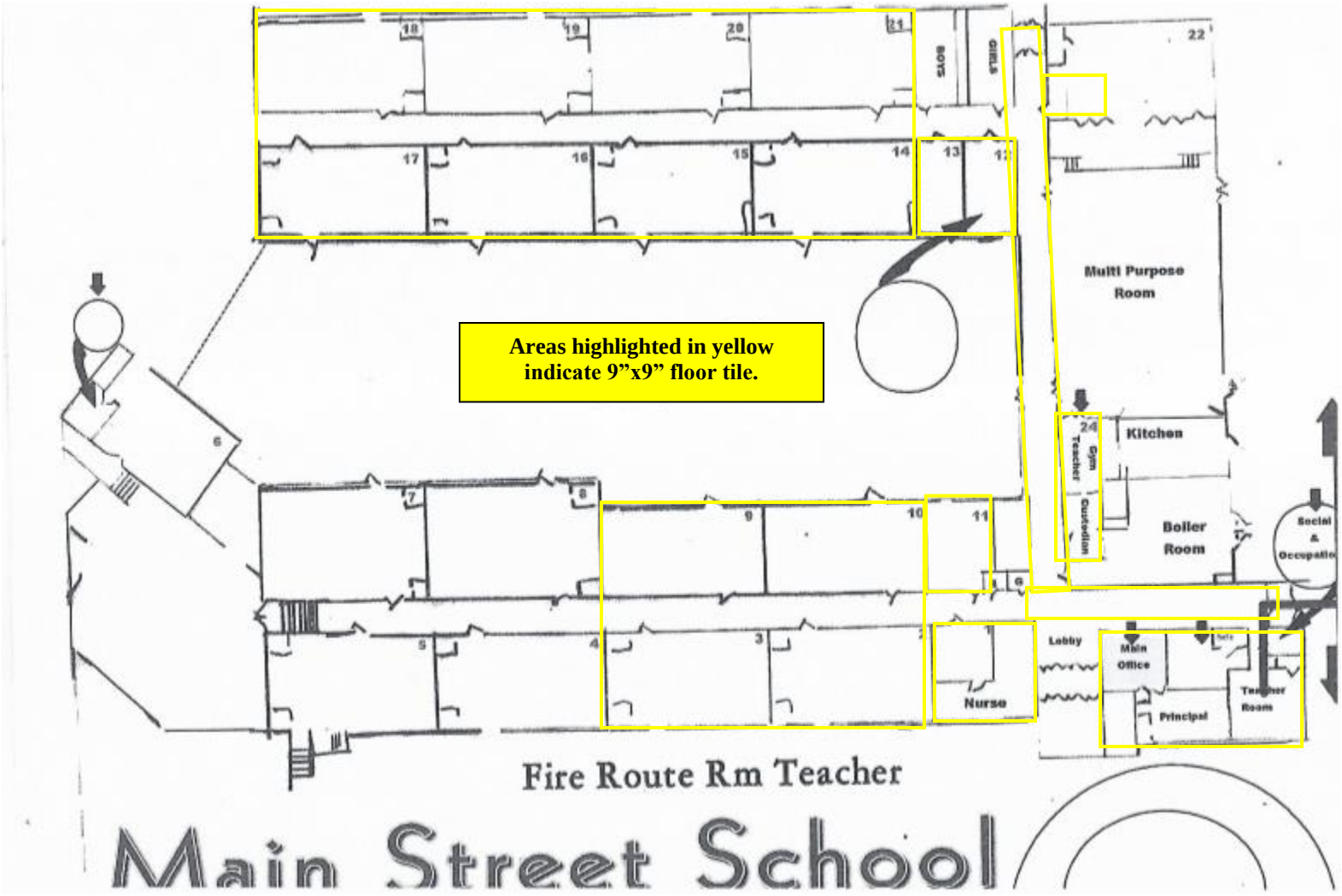
Sign in sheets will be picked up at the time of the six-month periodic surveillance and will be placed in the building's asbestos management plan.

Date	Name	Company


Areas highlighted in yellow indicate 9”x9” floor tile.
Multi Purpose Room
Kitchen
Boiler Room
Nurse
Lobby
Main Office
Principal
Fire Route Rm Teacher
Main Street School

E. STETSER ELEMENTARY SCHOOL

Building Location: 808 East 17th Street, Chester PA 19013

Stetser ES - Functional Space Record										
Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic	Not Quantified						No	O&M	Assumed
Throughout	Fittings	Not Quantified						No	O&M	Assumed
Hallway Cubby	9"x9" Tile & Mastic	560		x		x		No	O&M	Presumed
Room left of stage	9"x9" Tile & Mastic	104		x		x		No	O&M	Presumed
Boiler Room	Oversized Breaching							No	O&M	40 SF Presumed
Total		664								

Notice to Short Term Workers

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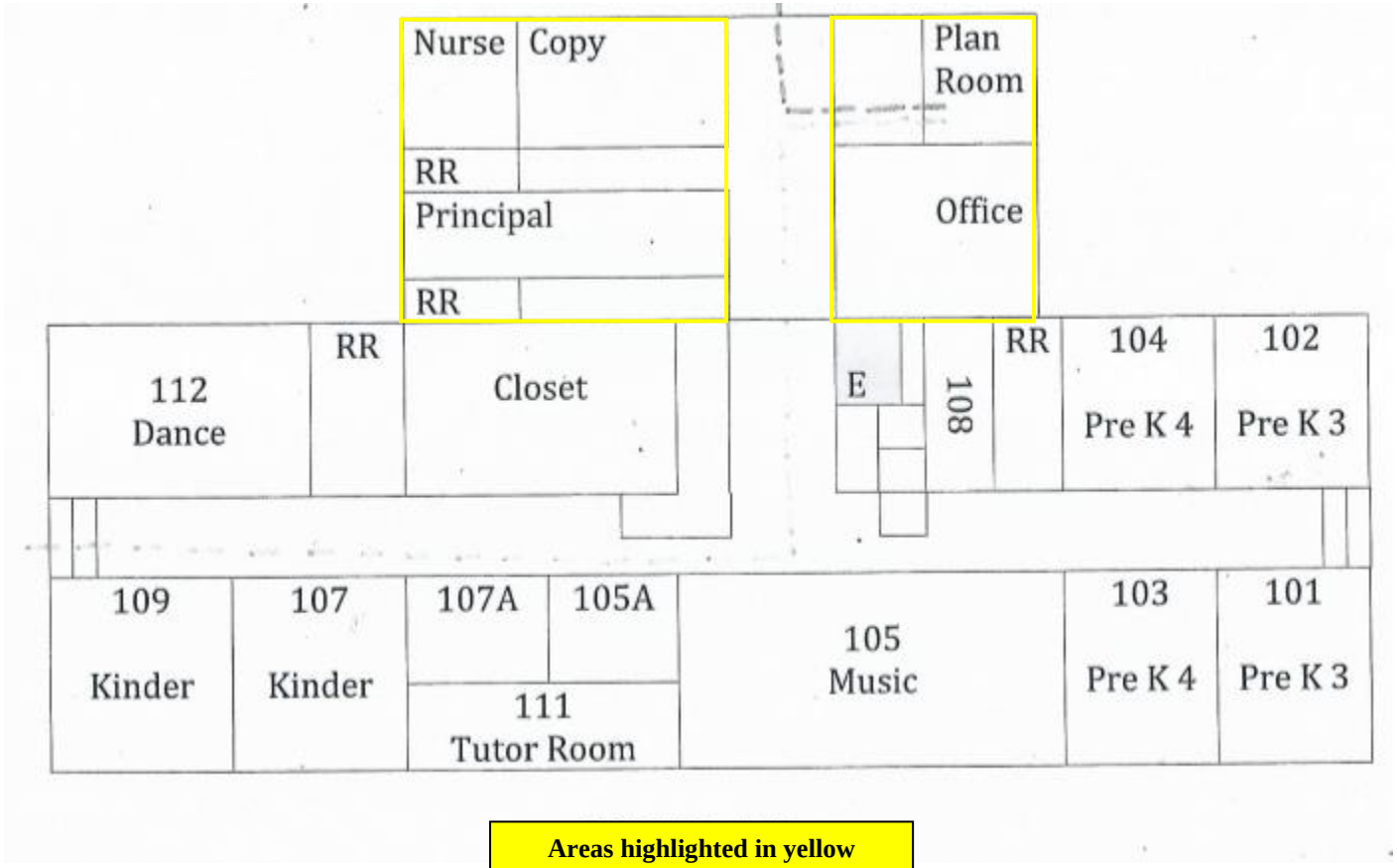
Sign in sheets will be picked up at the time of the six-month periodic surveillance and will be placed in the building's asbestos management plan.

Date	Name	Company

F. CHESTER UPLAND SCHOOL OF THE ARTS (CUSA)

Building Location: 501 West 9th Street, Chester PA 19013

CUSA - Functional Space Record										
Room Location	Material	Amount		VAT	VCT	Mastic	Fittings Insulation	Damage	Response Action	Comments
		SF	LF							
Throughout	Blackboard Mastic	Not Quantified						No	O&M	Assumed
Throughout	Fittings	Not Quantified						No	O&M	Assumed
128	9"x9" Tile & Mastic	80		x		x		No	O&M	Presumed
130	9"x9" Tile & Mastic	100		x		x		No	O&M	Presumed
Plan Room/Offices	9"x9" Tile & Mastic	1568		x		x		No	O&M	Presumed
Nurses/Copy Offices	9"x9" Tile & Mastic	630		x		x		No	O&M	Presumed
203	9"x9" Tile & Mastic UC	1000		x		x		No	O&M	Presumed
205	9"x9" Tile & Mastic UC	1000		x		x		No	O&M	Presumed
303	9"x9" Tile & Mastic UC	312		x		x		No	O&M	Presumed
3rd Floor Transite Tables										Presumed & not quantified
Boiler Room										3 Fittings
17										12 Fittings
6										Fittings
Total		4,690								



Areas highlighted in yellow indicate 9”x9” floor tile.

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Date	Name	Company

7. 2020, 2021, 2022, 2023 REPORTS, PUBLIC NOTICES & ANALYSIS

8. 2020, 2021, 2022, 2023 AHERA PUBLIC NOTICES

9. 2020, 2021, 2022, 2023 ANALYTICAL/REPORTS

10. MISCELLANEOUS INFORMATION