City of Springfield, Massachusetts
Springfield Public Schools

PHASE 2, HVAC EVALUATIONS REPORT

Prepared for:
City of Springfield
200 Trafton Road
Springfield, Massachusetts

February 18, 2021

OTO
Industrial Hygiene | Geotechnical | Environmental

O'Reilly, Talbot & Okun
ENGINEERING ASSOCIATES

February 18, 2021
J0949-67-02

Mr. Patrick Sullivan
City of Springfield
200 Trafton Road
Springfield, Massachusetts 01108

Subject: Springfield School Buildings
Covid-19 HVAC Assessment Report

Dear Mr. Sullivan:

O'Reilly, Talbot & Okun Associates, Inc. has completed an industrial hygiene assessment of the City of Springfield School Buildings. This assessment was focused on classroom ventilation and filtration systems to prepare for returning to in-person classroom activities.

The industrial hygiene assessment was performed throughout the City of Springfield's fifty-two school buildings and other administrative and support buildings. The assessment was performed with the assistance of City of Springfield facility personnel who provided access to School buildings, a review of the School's mechanical system, and access to the Heating Ventilation and Air-Conditioning (HVAC) computerized management system.

The results of the assessment identified that forty-six school buildings meet and exceed the Massachusetts Department of Elementary and Secondary Education (DESE) and the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) Covid-19 Guidance Documents for returning to school.

The six school buildings that did not meet the consensus standards are Brightwood, Homer Street, Springfield Public Day Middle, Springfield Alternative Campus (Liberty Preparatory Academy/Springfield High), and Kensington Street School. These schools were constructed in the 1890's to early 1900's and rely on 2-pipe steam radiation heating systems.

The assessment of Springfield Conservatory of the Arts identified there are no provisions to introduce fresh air into the classrooms by mechanical or natural ventilation. We have requested a Professional Engineer (PE) who specializes in HVAC systems to further assess this building.

These six school buildings will require supplemental engineering controls for the Heating, Ventilation and Air-Conditioning (HVAC) systems to meet the consensus standards and minimize the potential for transmission of Covid-19.

The assessment report contains general recommendations to enhance the HVAC operation for all schools and supplemental engineering controls for the schools that did not met the consensus standards.

Please call if you have any questions.

Sincerely,
O'Reilly, Talbot & Okun Associates, Inc.

Robert F. Kirchherr, CSP
Principal

Christine Arruda, CIEC
Senior Project Manager

EXECUTIVE SUMMARY

O'Reilly, Talbot & Okun Associates, Inc. (OTO) performed an assessment of the City of Springfield School Buildings to evaluate the Heating Ventilation and Air Conditioning systems. Specifically, the scope of the assessment was focused on classroom ventilation and filtration systems.

The goal of returning to in-person classroom activities while addressing Covid-19 has placed emphasis on these types of engineering controls. Increased volume of fresh air and higher filtration efficiency are considered a recommended standard for returning students to in person classroom activities and are key strategies that are incorporated into a layered approach to help minimize the potential of Covid-19 spread within the School buildings.

The assessment was performed with assistance of City of Springfield Department of Parks Buildings and Recreational Management (DPBRM) facility personnel. DPBRM Heating Ventilation and Air-Conditioning (HVAC) personnel assisted in providing a review of and access to each school's mechanical system. They also provided a history of maintenance procedures and access to the HVAC computerized management system.

The assessment was performed in each of the City of Springfield's fifty-two (52) school buildings and in other administrative and support buildings. Although the evaluation was performed on a building mechanical system level and not on an individual classroom basis, representative classrooms were used to document and measure building conditions.

The HVAC assessment identified that of the fifty-two schools, forty-six meet or exceed the Department of Elementary and Secondary Education (DESE) and the American Society of Heating Refrigeration and Air-conditioning Engineers (ASHRAE) Covid-19 Guidance Documents for returning to school.

The six schools that did not meet the consensus standards are Brightwood, Homer Street, Springfield Public Day Middle, Kensington Street, Springfield Alternative Campus (Liberty Preparatory Academy/ Springfield High), and Springfield Conservatory of the Arts.

Brightwood, Homer Street, Springfield Public Day Middle and Kensington schools were constructed in the 1890's to early 1900's and rely on 2-pipe steam radiation heating systems. These school buildings will require supplemental engineering controls for the Heating, Ventilation, and Air-Conditioning (HVAC) systems to meet the consensus standards and minimize the potential for transmission of Covid-19.

The Springfield Alternative Campus (Liberty Preparatory Academy and Springfield High) are buildings leased to the City of Springfield. These two schools are located on the same campus site and rely on a 2-pipe steam heating radiation system for heat and rely on natural ventilation. These buildings have limited operable windows and will also require supplemental engineering controls.

The Springfield Conservatory of the Arts School is also a building leased by the City of Springfield. Based on our initial assessment we identified there are no provisions to introduce fresh air into the classrooms by mechanical or natural ventilation. Therefore, we have requested a Professional Engineer (PE) who specializes in HVAC systems to further assess this building.

Overall, the City's School district HVAC systems appear well maintained and operating according to design. The school HVAC systems are monitored and can be controlled by a state of the art

computerized management system that is managed by the Facilities Department. This system allows for real time observation, verification and adjustment of the HVAC system and environmental conditions within the building.

We have included recommendations to further enhance the School district's ventilation and filtration systems to assist in reopening for in person learning.

INTRODUCTION

O'Reilly, Talbot & Okun Associates, Inc. (OTO) was retained by the City of Springfield to perform an assessment of the ventilation and filtration systems in the Springfield public school buildings. This assessment was performed as part of the City's overall COVID-19 response and is specific to gathering information on Heating, Ventilation and Air-conditioning (HVAC) systems within the Springfield schools and in preparation for returning to in person classroom activities.

The Massachusetts Department of Elementary and Secondary Education (DESE) has prepared return to school guidelines for School districts in an effort to minimize the potential for transmission of COVID-19 in the classroom setting. Our assessment was performed by following the DESE return to school guidelines (initial June 25, 2020 and follow up July 22, 2020 documents).

Our assessment and the information presented in this summary report is limited to general HVAC system data for school reopening and is not a comprehensive indoor air quality assessment of the school buildings. Additionally, ventilation and filtration data assessment and response is one component of an overall approach to re-opening as recommended by DESE and other recognized guidelines as presented by organizations like the Center for Disease Control and Prevention (CDC). Other recommendations which are not part of our scope include social distancing, wearing protective face masks and/or coverings, and cleaning and disinfecting measures. The information presented in this document is also subject to Limitations as described herein, and as attached in Appendix A.

ASSESSMENT PROTOCOL

DESE has published several Fall School Reopening Guidance documents to assist school systems in developing policies and preparing the buildings for reopening. The DESE guidance document published July 22, 2020 contains focused guidance on preparing the school space, assessment of building systems, space modifications (i.e. social distancing, cafeterias and group assembly) and developing operational guidelines. The assessment of building systems topic includes operational modification and protocols for increasing outdoor ventilation and filtration of the indoor air. Some of these protocols include:

- Clean the ventilation system and ensure operation according to design parameters.
- One week prior to school reopening, operate the Heating Ventilation and Air-conditioning (HVAC) system with outdoor air dampers open.
- Considering upgrading HVAC filtration to increase the efficiency rating.
- Adjust the HVAC setting to increase the volume of outdoor air introduced into the building.

- In buildings without operational HVAC capability, open window and/or doors in buildings when appropriate and safe to introduce outdoor air.
- Prevent or minimize air recirculation in HVAC systems.
- Provide special attention for student spaces without adequate HVAC capabilities or operable windows.

In summary, DESE recommends evaluating the building mechanical systems to ensure operation in accordance with design parameters, and to increase outdoor ventilation, to increase the filtration efficiency as much as possible, and to limit the return air ventilation circulation. The DESE guidelines provide general concepts for minimizing the potential for COVID-19 transmission. They do not provide specific or objective data or limits to achieve effectiveness.

As a result, OTO in consultation with Department of Parks Buildings and Recreational Management (DPBRM) has incorporated the American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE) Epidemic Task force guidance document (July 7, 2020) into our assessment. ASHRAE is a consensus organization that creates indoor air quality standards for HVAC systems, building ventilation, and thermal comfort. These consensus standards are incorporated into the International Building Code, International Existing Building Code and the Massachusetts Building Code.

The ASHRAE Epidemic Task Force developed a guidance document which was prepared to provide assistance to schools and universities considering in-person reopening activities. This document provides both guidance and objective data on how to reopen schools and universities and minimize the potential for spreading Covid-19. Some of the items included in the ASHRAE assessment protocol include:

- Review the HVAC control sequences to verify systems are operating to maintain the recommended ventilation, temperature, and relative humidity conditions to occupied areas. ASHRAE recommends maintaining indoor temperature and relative humidity in accordance with ASHRAE Standard-55 to achieve a temperature range of 68-78 degrees Fahrenheit (^{o}F) and a relative humidity range of 40-60%. These temperature and relative humidity ranges reduce the potential of airborne pathogens and limits the potential for mold growth in building structures and finishes.
- Verify a minimum of 10 feet of proper separation between outdoor air intakes and exhaust discharge outlets to prevent/limit re-entrainment of potentially contaminated exhaust air.
- Increase outside ventilation to the maximum allowable for the air handling unit without compromising the indoor thermal comfort level of the learning environment.
- Evaluate that mechanical ventilation filtration equipment is properly installed and that the filters in use are properly seated as to prohibit the potential of air bypass. ASHRAE recommends using filters with the highest Minimum Efficiency Reporting Value (MERV) rating respective of equipment capabilities. They recommend the use of MERV 13 level filters if the equipment capabilities allow, while assuring the static pressure drop is less than the equipment fan's capability. The overall goal is to utilize the highest MERV rated filter while maintaining the same volume of ventilation.
- Adjust the Demand-Controlled Ventilation (DCV) which use carbon dioxide sensors to control outside air dampers to ensure increased fresh air ventilation. Typically the carbon

dioxide sensors are set at 800-1,000 parts per million in occupied spaces to ensure the proper volume of fresh air for the space. Temporarily lowering the carbon dioxide sensor to 600-700 parts per million will increase the volume of outside air entering the space.

- Perform an initial air flush of outside air (i.e., 100%) for a period of one week for all spaces prior to occupants re-occupying the building. In addition, perform a daily fresh air flush for a 2-hour period prior to occupants re-entering the building. A periodic fresh air flush can also be performed in spaces with limited mechanical ventilation by temporarily opening windows/doors. This periodic flush can be performed during classroom breaks and/or lunch periods.

SPRINGFIELD SCHOOL BUILDINGS

The Springfield Public School District operates 52 school buildings for educational use for its approximately 25,000 students. The school buildings range in age from 1890's (i.e., Brightwood School) to buildings that are new construction (i.e., Elias Brookings School). In addition, numerous Springfield School buildings have been renovated and had their mechanical (heating, ventilation, etc.) systems upgraded. HVAC mechanical systems in new and renovated buildings were constructed according to current ASHRAE HVAC and ventilation standards. Some of these school buildings include Brookings, Chestnut, Commerce, Dryden, Frederick Harris, Rebecca Johnson, Putnam, Science and Technology, STEM, Van Sickle, Boland, Forest Park, Culinary Nutrition Center and the Early Childhood Center. Additionally, other School buildings have upgraded portions or sections of their heating and ventilation systems.

Some of the older buildings (i.e., Brightwood, Homer, Kensington, and Springfield Public Day Middle use perimeter steam radiation for heating. These schools are not equipped with mechanical fresh air ventilation and rely on mechanical local building exhaust in conjunction with natural ventilation by means of opening doors and windows. These school buildings are also not equipped with air filtration systems. These schools will require supplemental engineering controls to achieve the ASHRAE Epidemic Task Force guidance document for Covid-19 response.

The Springfield Alternative Campus (Liberty Preparatory Academy and Springfield High) are buildings leased to the City of Springfield. These schools are located on the same campus site and rely on a 2-pipe steam heating radiation system for heat and rely on natural ventilation. These schools have limited operable windows and will also require supplemental engineering controls.

The Springfield Conservatory of Arts School is also a building leased by the City of Springfield. Based on our initial assessment we identified there are no provisions to introduce fresh air into the classrooms by mechanical or natural ventilation. Therefore, we have requested a Professional Engineer (PE) who specializes in HVAC systems to further assess this building.

The majority of the Springfield school buildings constructed throughout the 1950's through the 1970's utilize perimeter wall unit ventilators that use either steam or hot water for heat. The unit ventilators utilize a fan unit which circulates air throughout the classroom. These units operate by drawing outside fresh air through an exterior wall vent, filtering the air, and discharging it

throughout the space. Local exhaust ventilation units located within the room assist with air circulation and air changes. Large rooms such as auditoriums, gymnasiums and offices utilize mechanical Air Handling Units (AHU). These units use air ducts to supply forced air ventilation and distribute temperature controlled fresh air ventilation throughout the space. These schools include Glickman, Zanetti, Beal, Talmadge, Balliet, Balliet Middle, Brunton, Freedman, Gerena, Glenwood, Dorman, Indian Orchard, Kennedy, Duggan, Liberty, Lincoln, Kiley, Ells, Lynch, Walsh, Pottenger, Milton Bradley, Pace, Bowles, South End Middle, Central, Springfield Public Day High, Public Day Elementary, Stem Middle, Sumner Avenue, Warner, Washington, White and DeBerry.

ASSESSMENT PROCEDURES

The assessment of the Springfield Schools was performed by OTO industrial hygiene and engineering personnel. Each school building was toured by OTO with City of Springfield facility personnel in an effort to collect information on the ventilation and filtration systems of typical classrooms. Mechanical system designs and operation parameters were also reviewed. The size of the classroom and estimated occupancy of students were used to determine recommended ventilation volumes. Unit ventilators were assessed to determine type and level of filtration, actuator controls and operation, fresh air intake, and estimated air volume.

As previously described, some of the older school buildings (i.e., Brightwood, Homer, Kensington, and Springfield Public Day Middle) with original heating systems have no filtration and utilize operable windows/doors and exhaust components for natural / fresh air ventilation. These schools will require supplemental engineering controls to achieve the ASHRAE Epidemic Task Force Covid-19 guidance document.

School buildings with mechanical unit ventilators were previously equipped with a 1-inch filter that have MERV-6 to MERV-8 efficiency. City of Springfield facility personnel have coordinated with vendors and were able to special order MERV-13 filters for all unit ventilators. The MERV-13 filters were being installed while our assessment was ongoing and has since been completed. The MERV-13 filters will require more frequent changes to prevent pressure drop and maintain ventilation volumes.

A review of the design criteria of a typical classroom using unit ventilators indicates the volume of supply air and percentage of fresh air with a 25-30% outside damper opening will provide the air changes and volume of fresh air according to ASHRAE-62.

For example: For a typical classroom of 36 feet by 24 feet by 11 feet,

To achieve 6 air changes per hour the unit ventilator would require:

$$\frac{6 \text{ air changes/hr.} \times (36 \times 24 \times 11)\ \text{ft}^3}{60 \text{ minutes/hour}} = 950 \text{ CFM}$$

A single typical unit ventilator will provide 750-1,500 CFM per unit.

Assuming an educational occupancy of 24 students x 10 CFM of outside air required per person:

240 students x 10 CFM/person = 240 CFM of outside air

With the outside air damper opened to 30%, the unit ventilator (assumed operating at 900 CFM) will provide 270 CFM of fresh air.

The volume of air provided by the unit ventilator along with the local exhaust ventilation will provide the necessary supply of fresh outside air. The volume of fresh air can be increased by the increasing the opening of outside damper opening on each unit. The assessment along with discussions with Springfield Facility personnel identified that the unit ventilator dampers, actuators and controls have received preventative maintenance and are in proper working order.

The occupant load of a classroom can be increased to 30-students (providing the size of the classroom is sufficient to maintain social distancing of 6-feet or 36-square feet per student and will require 300 CFM of outside air. This volume of fresh air can easily be achieved by opening the fresh air damper to 33-35%.

Newer school buildings and schools that have upgraded heating systems use various types of HVAC systems. These buildings provide heat, air-conditioning and ventilation via roof top units (RTUs), internal air handling units (AHUs), variable air volume (VAV) units, and dedicated outside air units (DOAS). The specific operating characteristics will vary with each type. These units will provide the volume of supply air and required air changes to the classrooms. Each of these units have an outdoor fresh air supply inlet that can be adjusted to increase the volume of fresh outside air to the classroom.

Most of these units previously utilized a 2-inch pleated air filter that has a MERV-8 to MERV-12 rating. The air handling units have the capacity to handle the increased pressure drop (approximately 0.1 inches of water column) of the MERV-13 filters. The MERV-13 filters will readily fit the size of the 2-inch filter bank in these units. The MERV-13 filters were being installed while our assessment was ongoing and has since been completed. These filters will require more frequent changes to prevent pressure drop and maintain ventilation volumes.

School buildings and other administrative and support buildings specific forms, reflecting data obtained during on-site assessments, are attached in Appendix B. We have summarized the current ventilation status and have provided filtration status and/or potential for each school in Table 1.

CONCLUSION

The assessment identified that the majority (46 Schools) of the Springfield School Buildings meet or exceed the DESE and ASHRAE guidelines for school ventilation and filtration. These 46 school buildings have the proper volume of fresh air entering the building and have increased the HVAC system filter efficiency to MERV-13.

Schools constructed in the 1950’s -1970’s that utilize unit ventilators provide the necessary air changes and volume of fresh air. These mechanical systems can be modified to increase the volume of fresh air entering the building by adjusting the actuators and controls. School buildings with mechanical unit ventilators were previously equipped with a 1-inch filter that have MERV-6 to MERV-8 efficiency. City of Springfield facility personnel have coordinated with vendors and were able to special order MERV-13 filters for all unit ventilators. The MERV-13 filters were being installed while our assessment was ongoing and has since been completed as of the date of this report.

In summary, MERV-13 filters have been installed in the unit ventilators and central air handling units. The volume of fresh air entering the 46 school building's classroom spaces meets ASHRAE-62 recommendations.

There are several remaining schools (Brightwood, Homer Street, Kensington Street and Springfield Public Day Middle) that do not have mechanical ventilation and rely on natural ventilation via windows/doors in conjunction with building exhaust ventilation systems. These school buildings have operable windows that have openings 4% or greater than the floor surface area. These classrooms meet the design code criteria for natural ventilation and are equipped with local exhaust ventilation in each classroom which creates a negative pressure differential. This combination allows outside air to passively enter each classroom. The ASHRAE Epidemic Task Force Covid-19 guidance document also recommends an initial and periodic air flush of outside air.

School buildings that rely on the 2-pipe steam heating system for heat are not equipped with mechanical air filtration systems. Supplemental air filtration (MERV 13 or greater) will be required for these classrooms to achieve the DESE and ASHRAE guidance documents for COVID-19 filtration.

There may be rooms within these schools that are currently used for classrooms and do not have operable windows, are in basement levels or in rooms not previously designed for educational classrooms (i.e., storage rooms, locker rooms, etc.) that are currently used for teaching. It is likely these isolated classroom spaces will require portable ventilation units be used to introduce and circulate outside air.

The Springfield Alternative Campus (Liberty Preparatory Academy and Springfield High) are buildings leased to the City of Springfield. These two schools are located on the same campus site and rely on a 2-pipe steam heating radiation system for heat and rely on natural ventilation and have windows that are not operable. These schools will also require supplemental engineering controls.

The Springfield Conservatory of the Arts School is also a building leased by the City of Springfield. Based on our initial assessment we identified there are no provisions to introduce fresh air into the classrooms by mechanical or natural ventilation. We have requested a Professional Engineer (PE) who specializes in HVAC systems to further assess this building.

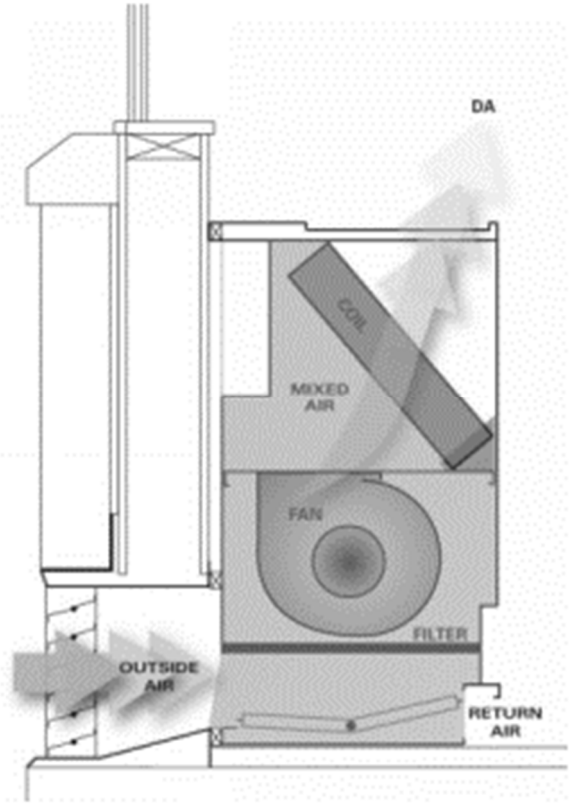
<u>RECOMMENDATIONS</u>

The following recommendations are presented to enhance the school ventilation and filtration systems to assist in school reopening:

1. Modify and adjust the sequence of HVAC operation:
    - Perform an initial air flush for a minimum of one week prior to returning students.
    - Perform daily air flush for a minimum of two hours prior to reentering the building.
    - The initial and daily air flush are especially important for the school buildings that rely on natural ventilation.
    - Adjust and increase the volume of fresh air entering the building. Ideally the minimum percentage should be set at 25% and adjusted based on ambient temperature and relative humidity levels. Depending upon ambient conditions, outside air volumes can

increased to take advantage of “free” heating/cooling. The volume of outside air may need to be reduced due to temperature and relativity extremes to prevent moisture infiltration and condensation and to maintain thermal comfort. These extreme ambient conditions may increase the potential for mold growth and damage to building interiors.

2. Modify and adjust the settings for Demand Controlled Ventilation (DCV) systems. These systems use carbon dioxide as a surrogate for adequate ventilation based on the volume of carbon dioxide being exhaled by occupants. It is recommended the set point be reduced to 700 parts per million.
3. Replace air filters in the air handling systems with MERV-13 filters. The replacement should be performed for all air handlers that can readily accept a MERV-13 filter.
4. Consider using portable HEPA and/or UV filtration units in classrooms where the mechanical systems cannot utilize MERV-13 filters or that rely on natural ventilation. Recommended design guidance is to provide a minimum of 2-air changes/hour for these units.
5. Consider using portable ventilation systems to supply mechanical fresh air ventilation for classrooms that do not have operable windows, are in basement levels, or in rooms not previously designed for educational classrooms (i.e., storage rooms, locker rooms, etc.) that are currently used for teaching.
6. Ensure continuous operation of building exhaust systems. It is recommended that building exhaust system operate a minimum of 2 hours prior to school opening and extend 2 hours after school has closed. The extended operation time will assist in purging air within the building envelope.
7. Update facility preventative maintenance schedules to enhance HVAC operation. It is expected that MERV-13 filters will require more frequent replacement to ensure increased ventilation volumes are maintained.
8. Consider eliminating or restricting use of basement level space and/or space that was originally designed as lockers, storerooms, etc. and are currently used for education use. Many of these spaces were not originally designed to provide the volume of ventilation for educational use. Continued use of these spaces will require supplemental engineering controls to introduce, filter and circulate outside air into the space.

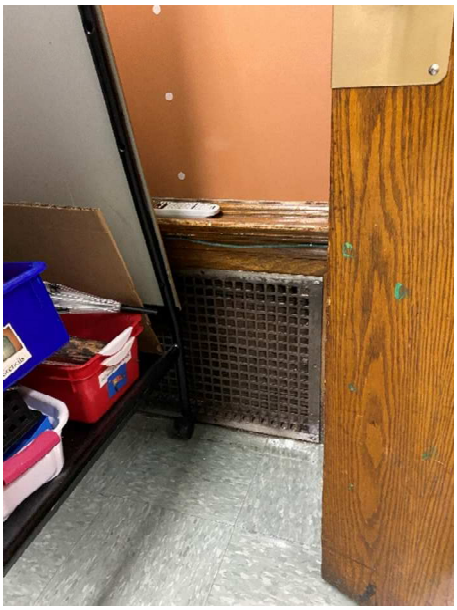


<u>Figure 1</u> Typical Univent (Unit Ventilator) cross section. ("Classroom Unit Ventilator", Trane, p.9, Figure 8).

<u>Figure 2</u> Typical Univent with electronic controls, and two 1" pleated filters.

Figure 3 Pleated 1" Univent filters.

Figure 4 Univent electronic control system.



Figures 5 & 6 Typical Classroom floor-located and closet-located (respectively) exhaust vents.

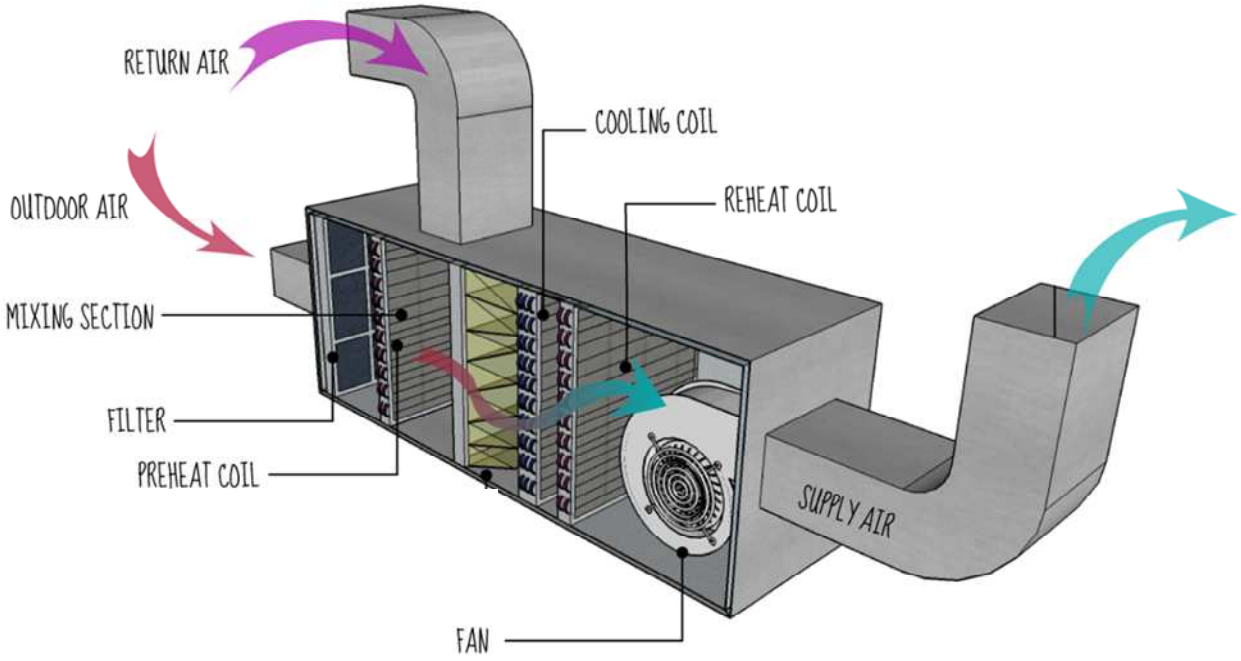


Figure 7 Typical Air Handling Unit (AHU) cross section.

Figure 8 Typical Air Handling Unit (AHU).

Figure 9 AHU 2" pleated filters.

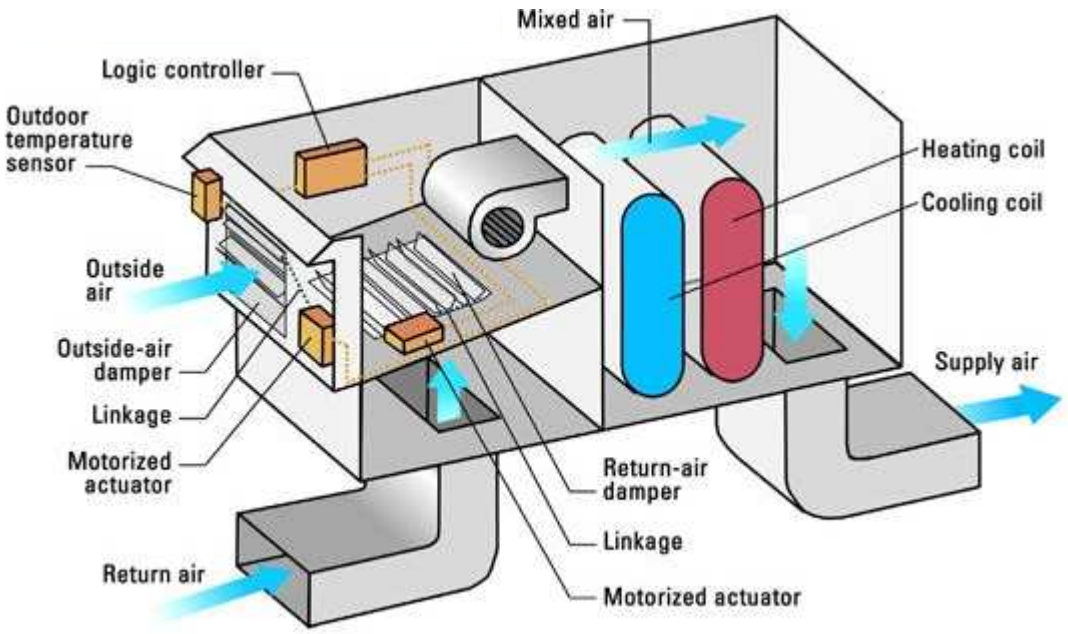


Figure 10 Typical Rooftop Unit (RTU) cross section.

Figure 11 RTU showing electronic controls, and 2" pleated filters.

Figure 12 RTU showing damper controls (to right) for fresh air, and pre-coil 2" pleated filters.

TABLE 1

CITY OF SPRINGFIELD PUBLIC SCHOOLS
VENTILATION STATUS
AS OF 09/29/2020

SCHOOL	HVAC SYSTEM	EXHAUST SYSTEM	VENTILATION ASSESSMENT STATUS	FILTER ASSESSMENT STATUS
Alfred M. Glickman Elementary School	Two Pipe w/ Univents, 4 AHUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Alfred Zanetti Montessori School	Two Pipe w/ Univents, 3 AHUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Alice B. Beal Elementary School	Two Pipe w/ Univents, 2 AHUs, 2 RTUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Arthur T. Talmadge Elementary School	2 AHUs	Return air to AHUs, Operable	ASHRAE-62	MERV-13
Balliet (Rosewell) Elementary School	Steam, Univents	Gravity Exhaust, Non-Operable	ASHRAE-62	MERV-13
Balliet Middle School (Balliet-Seymour)	Steam, Univents, 4 RTUs	Gravity Exhaust, Non-Operable	ASHRAE-62	MERV-13
Brightwood Elementary School	Steam Univents	Gravity Exhaust, Non-Operable	NATURAL	NONE
Chestnut Accelerated Middle School	Two Pipe (Centrifugal Chiller), w/ Univents, 15 AHUs	Return air to AHUs, Operable	ASHRAE-62	MERV-13
Daniel B. Brunton Elementary School	Two Pipe w/ Univents, 5 AHUS	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Early Childhood Center	5 AHUs, 2 RTUS, VAVs	Return air to AHUs & RTUs, Operable	ASHRAE-62	MERV-13
Edward P. Boland Elementary School	Two Pipe, VAVs, 10-AHUs	Return air to AHUs, Operable	ASHRAE-62	MERV-13
Elias Brookings Middle School	Fan Coil Unit, 5 RTUs incl. 1 Rooftop MAU	Return air to RTUs, Operable	ASHRAE-62	MERV-13
Forest Park Middle School	22 RTUs, VAVs	Return air to RTUs, Operable	ASHRAE-62	MERV-13
Frank H. Freedman Elementary School	Two Pipe w/Univents, 2 AHUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Frederick Harris Elementary School	Two Pipe w/ Univents, 4 AHUs, 2 MAUs	Exhaust Vents to MAUs, Operable	ASHRAE-62	MERV-13
German Gerena Community Elementary School	Two Pipe w/ Univents, 24 AHUs	Return air to AHUs, Operable	ASHRAE-62	MERV-13
Glenwood Elementary School	Steam, Univents	Gravity Exhaust, Non-Operable	ASHRAE-62	MERV-13
High School of Commerce	Two Pipe w/ Univents, 4 AHUS, 9 RTUS, VAVs (A Building)	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Hiram L. Dorman Elementary School	Steam, Univents	Gravity Exhaust, Non-Operable	ASHRAE-62	MERV-13
Homer Street Elementary School	Steam Radiators	Gravity Exhaust, Non-Operable	NATURAL	NONE
Indian Orchard Elementary School	Two Pipe w/ Univents, 4 AHUs, 2 MAUs	Return air to AHUs & MAUs, Operable	ASHRAE-62	MERV-13
John F. Kennedy Middle School	Two Pipe w/ Univents, 6 AHUS	Exhaust Vents to the Roof, Operable	ASHRAE-62	MERV-13
John J. Duggan Middle School	Two Pipe w/ Univents, 12 AHUs, 2 RTUs	Exhaust Vents to Roof, Non-Operable	ASHRAE-62	MERV-13
Kensington Avenue Elementary School	Steam Radiators	Wheel Driven Exhaust, Non-Operable	NATURAL	NONE
Liberty Elementary School	Two Pipe w/Univents (New), 2 AHUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Springfield Alternative Campus	Two Pipe, Steam Radiators Classrooms, 3 AHU Gym Building	Exhaust Vents to Roof, Non-Operable	NATURAL	NONE
Lincoln Elementary School	Two Pipe w/Univents	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
M. Marcus Kiley Middle School	Two Pipe w/Univents, 6 AHUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Margaret C. Ells Elementary School	Two Pipe w/ Univents, 1 AHU	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Mary A. Dryden Veterans Memorial Elementary School	Two Pipe w/Univents, 1 AHU, 2, MUAs	Return air to MAUs, Operable	ASHRAE-62	MERV-13
Mary M. Lynch Elementary School	Two Pipe, Steam w/ Univents, 2 AHUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Mary M. Walsh Elementary School	Two Pipe, Steam w/ Univents, 2 AHUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Mary O. Pottenger Elementary School	Two Pipe, Steam w/ Univents, 2 AHUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Milton Bradley Elementary School	Two Pipe w/ Univents, 7 AHUs, Basement VAVs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Rebecca Johnson Elementary School	Two Pipe w/ Univents, 2 AHUs, 12 RTUs, VAVs	Return air to AHUs & RTUs, Operable	ASHRAE-62	MERV-13
Roger L. Putnam Vocational High School	Four Pipe, 14 RTUs,	Return air to RTUs, Operable	ASHRAE-62	MERV-13
Samuel Bowles Elementary School	Two Pipe, Steam w/ Univents, 2 AHUs	Gravity Exhaust, Non-Operable	ASHRAE-62	MERV-13

TABLE 1

CITY OF SPRINGFIELD PUBLIC SCHOOLS
VENTILATION STATUS
AS OF 09/29/2020

South End Middle School	Two Pipe w/ Univents, 2-AHUs, 1 ERV	Exhaust Vents Outside, Operable	ASHRAE-62	MERV-13
Springfield Central High School	Centrifugal Heating & Cooling, 6 AHUs, 2 MAUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Springfield Conservatory of the Arts	Centrifugal Heating & Cooling, RTU	None Observed	NATURAL	NO MERV RATING
Springfield High School of Science & Technology	Steam Perimeter Heat, 16 AHUs	Return air to AHUs, Operable	ASHRAE-62	MERV-13
Springfield Public Day Elementary School	Two Pipe w/ Univents, 2 AHUs, 1 RTU	None	ASHRAE-62	MERV-13
Springfield Public Day High School	Two Pipe w/ Univents, 2 RTUs	Exhaust Vents to Roof, Operable	NATURAL	MERV-13
Springfield Public Day Middle School	Two Pipe w/ Univents	Gravity Exhaust, Non-Operable	NATURAL	NONE
STEM Middle Academy	2 RTUs, VAVs	Return air to RTUs, Operable	ASHRAE-62	MERV-13
Sumner Avenue Elementary School	Two Pipe w/ Univents, 3 AHUs, 2 MAUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13
Van Sickle Middle School	Four Pipe, 5 AHUs, 13 RTUs	Return air to AHUs & RTUs, Operable	ASHRAE-62	MERV-13
Warner Elementary School	Two Pipe, Steam w/Univents, 2 AHUs	Gravity Exhaust, Non-Operable	ASHRAE-62	MERV-13
Washington Street Elementary School	Steam Radiators	Gravity Exhaust, Non-Operable	ASHRAE-62	MERV-13
White Street Elementary School	Two Pipe, Steam and HW w/ Univents	Gravity Exhaust, Non-Operable	ASHRAE-62	MERV-13
William N. DeBerry Elementary School	Two Pipe, Steam and HW w/ Univents, 3 AHUs	Exhaust Vents to Roof, Operable	ASHRAE-62	MERV-13

TYPES OF HVAC SYSTEMS / DEFINITIONS:

Two Pipe System Only two pipes feed critical equipment making either heating OR cooling possible, not both.

Four Pipe System Both heating and cooling can occur.

Uninvent Each classroom is provided with heating and/or cooling via a rectangular unit positioned on the exterior wall of the classroom. Univents may draw from interior room air and exterior fresh air for filtration, and tempering, prior to discharge into room.

RTU (Roof Top Unit) Heating and/or cooling is provided from a mechanical unit located on the roof which uses an electrical coil or gas burner/compressor and condenser to provide warm or cool air to the occupied space. Each unit contains an economizer which regulates the percentage of outside air brought in. Factors such as outside temperature, relative humidity, and carbon dioxide (monitored by sensor units located in or on the RTU), may affect the volume of fresh air intake and, if needed, may be adjusted.

AHU (Air Handling Unit) Heating and/or cooling is generated by the boiler/chiller and pumped through the mechanical AHU, which may be located in various rooms (i.e. mechanical room) or spaces (i.e. ceiling cavities) within the building. The AHU provides heated or cooled air to the occupied space(s) or to VAVs.

VAV (Variable Air Volume) VAVs provide heated or cooled air to classrooms in newer schools without Uninvents. The VAV uses an actuated damper to control the supplied air to the space. Some have coils which reheat or cool the air to individual occupied area set points.

MAU (Make-up Air Unit) A dedicated mechanical unit that serves the building's fresh air needs.

VENTILATION ASSESSMENT STATUS:

NATURAL Identifies ventilation systems that rely on windows and/or door openings in conjunction with exhaust ventilation for introduction of outside air into the building.

ASHRAE-62 Identifies mechanical ventilation systems that provide fresh air ventilation and air changes according to the system design parameters and have the ability to increase the percentage of fresh air ventilation.

FILTER ASSESSMENT STATUS:

NONE There is no mechanical building filtration for this HVAC system.

MERV-13 Identifies mechanical systems that can increase the filtration efficiency to MERV 13 without a static pressure drop. The two-inch filter bank on HVAC systems will readily accept two-inch MERV-13 filters.

SCHOOL: Alfred M. Glickman Elementary School DATE: 08/28/2020

City Personnel: John Carignan

General School Information

Year Built 1957

Addition(s) / date(s) Addition, unknown age

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 4
- ☑ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☐ Electronic ☐ Pnuematic ☑ Hybrid

Typical Classroom HVAC (1957 Building)

Room Number: 1

Room Size: 40' Length x 23' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Two Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unknown MERV rating

Windows

Operable Windows & Qty. YES, 3 qty. SIZE: 43" x 17"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam and recirculated hot water univents.

SCHOOL: Alfred M. Glickman Elementary School DATE: 08/28/2020

City Personnel: John Carignan

Typical Classroom HVAC (Building Addition)

Room Number: 17

Room Size: 37' Length x 22' Width x 10' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. Yes, 4 SIZE: 16" x 42"

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Addition rooms heated by forced hot air system, supplied by Variable Air Volume (VAV) units.

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 AHU, Gymnasium, 2" pleated MERV 8 filter
2. 2 AHUs, Addition Classroom, 2" pleated MERV 8 filter
3. 1 AHU, Kindergarten, 2" pleated MERV 8 filter
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Alfred Zanetti Montessori School DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 1950's

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 3

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 111

Room Size: 34' Length x 23' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Four

Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8 filter

Windows

Operable Windows & Qty. YES, 18 qty.

SIZE: 38" x 17"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe recirculated hot water univents.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 AHU, Gymnasium, 2" pleated MERV 8 filters
2. 1 AHU, Cafeteria, 2" pleated MERV 8 filters
3. 1 AHU, Media Center, 2" pleated MERV 8 filters
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Alice B. Beal Elementary School DATE: 08/25/2020

City Personnel: John Carignan

General School Information

Year Built 1963

Addition(s) / date(s) Annex (Pods) in 1998

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 2
- ☐ Variable Air Volume (VAV)
- ☐ Exhaust(s)
- ☑ Rooftop Units (RTUs) & Qty. 2 (Annex?)
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC (1963 Building)

Room Number: 1

Room Size: 40' Length x 24' Width x 9 1/2' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Four Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" Pleated MERV 8

Windows

Operable Windows & Qty. YES, 5 qty. SIZE: 36" x 18"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

SCHOOL: Alice B. Beal Elementary School DATE: 08/25/2020

City Personnel: John Carignan

Typical Classroom HVAC (Annex, 1998)

Room Number: ---

Room Size: 29' Length x 29' Width x 8' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. Yes, 2 SIZE: 36" x 22"

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Rooftop Units (RTUs) provide forced heated and cooled air to Annex classrooms. RTU filtration presumed to be 2" pleated MERV 8.

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____ Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. Gymnasium, 2 AHUs, with 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. Annex, 2 RTUs, with 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Arthur T. Talmadge Elementarry School DATE: 08/19/2020

City Personnel: John Carignan

General School Information

Year Built 1954

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 1

Room Size: 34' Length x 20' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 2 qty.

SIZE: 44" x 28"

Exhaust

Room exhaust? ☐ YES ☐ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? School heated by 2 AHUs (hot deck/cold deck system).

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUS in basement, serve School, 2" pleated MERV 8 filters.
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Balliet Elementary School DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 1947

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☐ Air Handling Units (AHUs) & Qty. _____
- ☐ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☐ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 6

Room Size: 29' Length x 22' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☐ YES ☑ NO

Number of blowers? One Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter Unknown

Windows

Operable Windows & Qty. YES, 5 qty. SIZE: 48" x 46"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Gravity Exhaust System Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe radiant steam and steam univents.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 4 RTUs, Gymnasium, filter rating unknown 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: Balliet Middle School DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 1900

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☐ Air Handling Units (AHUs) & Qty. _____
- ☐ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☑ Rooftop Units (RTUs) & Qty. 4
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☐ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 3

Room Size: 35' Length x 23' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Unknown Actuators/Controls: ☐ Electric ☐ Pnuematic (Unknown)

Type (i.e. pleated, spun fiber, etc.) and Size of Filter Unknown

Windows

Operable Windows & Qty. YES, 5 qty. SIZE: 44" x 28"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Gravity Exhaust System Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe radiant steam and steam univents. Basement areas heated by forced hot air system.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 4 RTUs, Gymnasium, with 2" pleated MERV 8 filters 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: Brightwood Elementary School DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 1898

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators
☐ Air Handling Units (AHUs) & Qty. _____
☐ Variable Air Volume (VAV)
☑ Exhaust(s)
☐ Rooftop Units (RTUs) & Qty. _____
☐ Make-up Air Unit (MAU) & Qty. _____
☐ Economizers
☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 4

Room Size: 32' Length x 26' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Five Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8

Windows

Operable Windows & Qty. YES, 7 qty. SIZE: 43" x 40"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Gravity Exhaust System Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam univents, and what appears to be additional exhaust vent along upper wall.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: Chestnut Accelerated Middle School DATE: 09/01/2020

City Personnel: John Carignan

General School Information

Year Built 1978

Addition(s) / date(s) Addition, unknown date

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 15

☐ Variable Air Volume (VAV)

☑ Exhaust(s) (located in hallway ceilings)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 103

Room Size: 29' Length x 27' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Four

Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8 filter

Windows

Operable Windows & Qty. YES, 6 qty.

SIZE: 46 x 37" and 22" x 37"

Exhaust

Room exhaust? ☐ YES ☑ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Building contains one centrifugal chiller.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 15 AHUs, unknown locations and areas serviced, presumed 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Daniel B. Brunton Elementary School DATE: 08/19/2020

City Personnel: John Carignan

General School Information

Year Built 1950's

Addition(s) / date(s) Addition, 1974

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 5
- ☐ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 5

Room Size: 38 1/2' Length x 24' Width x 11' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Unknown Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unknown MERV rating

Windows

Operable Windows & Qty. YES, 5 qty. SIZE: 41" x 45"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe recirculated hot-water univents.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Pods (2 Pods, 1 AHU each), 2" pleated MERV 8 filters
2. 2 AHUs, Gymnasium, 2" pleated MERV 8 filters
3. 1 AHU, Media Center, 2" pleated MERV 8 filters
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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_____

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_____

SCHOOL: Early Childhood Center DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 1999

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 5

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☑ Rooftop Units (RTUs) & Qty. 2

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: P2

Room Size: 36' Length x 24' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 4 qty.

SIZE: 35" x 17"

Exhaust

Room exhaust? ☐ YES ☐ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? The school is heated and cooled by a forced air system: 5 AHUs and 2 RTUs, each with 1" pleated filters (unknown MERV rating), and Variable Air Volume (VAV) units.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: Edward Boland Elementary School DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 2002

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 10
- ☐ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: B208

Room Size: 35' Length x 35' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 7 qty.

SIZE: 38" x 19"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Ceiling

Exhaust Fans/Equipment location to AHUs

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? The school is heated and cooled by a forced air system: Air Handling Units (10), each with 2" pleated MERV 8 Filters, and Variable Air Volume (VAV) units. First floor does not have operable windows, 2nd floor does.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 AHU, Cafeteria, 2" pleated MERV 8 filter
2. 1 AHU, Main Gym, 2" pleated MERV 8 filter
3. 1 AHU, Courtyard/Plan Area, 2" pleated MERV 8 filter
4. 4 AHUs, all Classrooms, 2" pleated MERV 8 filters
5. remaining 5 AHUs unknown
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Elias Brookings Middle School DATE: 08/26/2020

City Personnel: John Carignan

General School Information

Year Built 2014

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☐ Air Handling Units (AHUs) & Qty. _____

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☑ Rooftop Units (RTUs) & Qty. 5 (1 is MAU)

☑ Make-up Air Unit (MAU) & Qty. 1

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 119

Room Size: 32' Length x 31' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 2 qty.

SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? All areas of school are heated and cooled by RTUs.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 5 total, servicing entire school, with 2" pleated MERV 8 filters. One RTU is dedicated MAU. 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: Forest Park Middle School DATE: 08/24/2020

City Personnel: John Carignan

General School Information

Year Built 1910

Addition(s) / date(s) Renovated (2012-2014)

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☐ Air Handling Units (AHUs) & Qty. _____

☑ Variable Air Volume (VAV)

☐ Exhaust(s)

☑ Rooftop Units (RTUs) & Qty. 22

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 106

Room Size: 46 1/2' Length x 24' Width x 9 1/2' Height

Unit Ventilation (if present) (none)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" Pleated MERV 8

Windows

Operable Windows & Qty. YES, 17 qty.

SIZE: 36" x 36"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Ceiling, Ducted Return

Exhaust Fans/Equipment location To RTU's

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Rooms are also air conditioned, and room air is returned to RTUs located on rooftop. RTU's then supply air to Variable Air Units (VAVs).

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 22 RTUs total, serving entire School including Auditorium and Gymnasium. Filters are 2" and 4" pleated MERV 8. 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: Frank H. Freedman Elementary School DATE: 08/28/2020

City Personnel: John Carignan

General School Information

Year Built 1963

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 9

Room Size: 40' Length x 24' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Four

Actuators/Controls: ☑ Electric ☐ Pnuematic (Unknown)

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated, unknown MERV rating

Windows

Operable Windows & Qty. YES, 3 qty.

SIZE: 43" x 17"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe recirculated hot water univents.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Gymnasium, 2" pleated filters, unknown MERV rating
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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_____

SCHOOL: Frederick Harris Elementary School DATE: 08/24/2020

City Personnel: John Carignan

General School Information

Year Built 1929

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 4
- ☑ Variable Air Volume (VAV)
- ☐ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☑ Make-up Air Unit (MAU) & Qty. 2
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 113

Room Size: 40' Length x 30' Width x 10' Height

Unit Ventilation (if present) Not Present

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 6 qty. SIZE: 43" x 44"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Ceiling

Exhaust Fans/Equipment location to MAU's on roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Room air is returned to one of two Makeup Air Units located on rooftop.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. (1) Cafeteria AHU, with 2" pleated MERV 8 filters
2. (1-rooftop) Gymnasium AHU, with 2" pleated MERV 8 filters
3. (2-rooftop) AHUs serving remaining School areas, with 2" pleated MERV 8 filters
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 RTU/MAU's, with 2" MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

Supplemental heat supplied by perimeter radiant heating system (two pipe). Two pipe system for two Variable Air Volume (VAV) units also present.

SCHOOL: German Gerena Community Elementary School DATE: 09/01/2020

City Personnel: John Carignan

General School Information

Year Built 1978

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 24

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 4

Room Size: 31' Length x 29' Width x 10 1/2' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Three

Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" non-pleated filter, MERV rating unknown

Windows

Operable Windows & Qty. YES, 2 qty.

SIZE: 38" x 17"

Exhaust

Room exhaust? ☐ YES ☑ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? School contains dual centrifugal chillers, a two-pipe recirculated water system, and 24 AHUs.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 24 AHUs, locations unknown, serving Gymnasium, Auditorium, Playrooms, Cafeteria, PODS and Common areas. Presumed 2" pleated MERV 8 filters.
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Glenwood Elementary School DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 1950

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☐ Air Handling Units (AHUs) & Qty. _____

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 1950

Room Size: 32' Length x 22' Width x 11' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Unknown

Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8 filter

Windows

Operable Windows & Qty. YES, 5 qty.

SIZE: 39" x 36"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Gravity Exhaust System

Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam univents.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: High School of Commerce DATE: 08/28/2020

City Personnel: John Carignan

General School Information

Year Built 1915

Addition(s) / date(s) Sports Complex, unknown date

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 4
- ☑ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☑ Rooftop Units (RTUs) & Qty. 9
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC (1915 Building)

Room Number: 156

Room Size: 28' Length x 26' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Unknown Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filters, unknown MERV rating

Windows

Operable Windows & Qty. YES, 4 qty. SIZE: 50" x 44"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Ceiling

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated with two-pipe recirculated hot water system.

SCHOOL: High School of Commerce DATE: 08/28/2020

City Personnel: John Carignan

Typical Classroom HVAC (Sports Complex)

Room Number: A220

Room Size: 32' Length x 25' Width x 10' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. Yes, 3 SIZE: 27" x 33"

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Addition rooms heated by forced hot air system, supplied by Variable Air Volume (VAV) units.

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____ Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 4 AHUs, locations not noted, serve VAVs, 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 9 RTUs, serve VAVs, 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Hiram Dorman Elementary School DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 1915

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators
☐ Air Handling Units (AHUs) & Qty. _____
☐ Variable Air Volume (VAV)
☑ Exhaust(s)
☐ Rooftop Units (RTUs) & Qty. _____
☐ Make-up Air Unit (MAU) & Qty. _____
☐ Economizers
☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 8

Room Size: 32' Length x 23' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Two

Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8 filter

Windows

Operable Windows & Qty. YES, 5 qty.

SIZE: 47" x 44"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Gravity Exhaust System

Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam univents.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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_____

SCHOOL: Homer Street Elementary School DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 1950

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☐ Air Handling Units (AHUs) & Qty. 3

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☐ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 2

Room Size: 34' Length x 27' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 8 qty.

SIZE: 43" x 41"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location Gravity Exhaust System

Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Building is heated by radiant steam heat.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: Indian Orchard Elementary School DATE: 09/01/2020

City Personnel: John Carignan

General School Information

Year Built 1901

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☑ Make-up Air Unit (MAU) & Qty. 2

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: A215

Room Size: 30' Length x 22' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☑ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Five

Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter Unknown

Windows

Operable Windows & Qty. YES, 4 qty.

SIZE: 27" x 36"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room _____

Exhaust Fans/Equipment location EF-2

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe univents.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 AHU, Gymnasium, presum. 2" pleated MERV 8 filter
2. 1 AHU, Cafeteria, presum. 2' pleated MERV 8 filter
3. 2 AHU and 2 MAUs, unknown location and areas serviced
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: John F. Kennedy Middle School DATE: 09/01/2020

City Personnel: John Carignan

General School Information

Year Built 1965

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 6
- ☐ Variable Air Volume (VAV)
- ☐ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 108

Room Size: 35' Length x 24' Width x 8' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☐ YES ☑ NO

Number of blowers? Three Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" filter, presumed 4 or 5 MERV rating

Windows

Operable Windows & Qty. YES, 10 qty. SIZE: 23" x 19"

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe univents.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Gymnasium, presumed 2" pleated MERV 8 filter
2. 2 AHUs, Auditorium, presumed 2" pleated MERV 8 filter
3. 2 AHUs, Cafeteria, presumed 2" pleated MERV 8 filter
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: John J. Duggan Middle School DATE: 08/28/2020

City Personnel: John Carignan

General School Information

Year Built 1956

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 12
- ☐ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☑ Rooftop Units (RTUs) & Qty. 2
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☐ Electronic ☐ Pnuematic ☑ Hybrid

Typical Classroom HVAC

Room Number: 7

Room Size: 39' Length x 28' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Four Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated, unknown MERV rating

Windows

Operable Windows & Qty. YES, 8 qty. SIZE: 47" x 20"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Wall vent

Exhaust Fans/Equipment location Roof Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms heated with two-pipe recirculated hot water.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Locker Rooms, 2" pleated MERV 8 filters
2. 2 AHUs, Cafeteria, 2" pleated MERV 8 filters
3. 4 AHUs, Gymnasium, 2" pleated MERV 8 filters
4. 2 AHUs, Auditorium, 2" pleated MERV 8 filters
5. 2 AHUs, Pool, 2" pleated MERV 8 filters
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 RTUs, Science rooms, 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Kensington Avenue Elementary School DATE: 08/26/2020

City Personnel: John Carignan

General School Information

Year Built 1908

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☐ Air Handling Units (AHUs) & Qty. _____

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☐ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 10

Room Size: 33' Length x 27' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 7 qty.

SIZE: 40" x 43"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms heated by radiant steam heating system. Classroom has wood wheel-drive exhaust (not operable).

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: Liberty Elementary School DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 1918

Addition(s) / date(s) Renovation 2014

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 15

Room Size: 31' Length x 21' Width x 11' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Unknown

Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8 filter

Windows

Operable Windows & Qty. YES, 10 qty.

SIZE: 42" x 32"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet, and Wall

Exhaust Fans/Equipment location Roof

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe recirculated hot water univents.

Classrooms also have non-operable gravity exhaust system.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 AHU, Administrative Offices, 2" pleated MERV 8 filters
2. 1 AHU, unknown location
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Lincoln Elementary School DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 1915

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators
☐ Air Handling Units (AHUs) & Qty. _____
☐ Variable Air Volume (VAV)
☑ Exhaust(s)
☐ Rooftop Units (RTUs) & Qty. _____
☐ Make-up Air Unit (MAU) & Qty. _____
☐ Economizers
☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 7

Room Size: 31' Length x 24' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Five Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8

Windows

Operable Windows & Qty. YES, 5 qty. SIZE: 50" x 35"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe recirulated hot water univents, and also contain non-operable gravity exhaust system.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: M. Marcus Kiley Middle School DATE: 08/19/2020

City Personnel: John Carignan

General School Information

Year Built 1956

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 6

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 124

Room Size: 49' Length x 28' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Two

Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8 filter

Windows

Operable Windows & Qty. YES, 15 qty.

SIZE: 45" x 28"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location Roof

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe recirculated hot water univents.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Auditorium, with 2" pleated MERV 8 filters.
2. 2 AHUs, Gymnasium, with 2" pleated MERV 8 filters.
3. 1 AHU, Media Center, with 2" pleated MERV 8 filters.
4. Remaining AHU, Uknown
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Margaret C. Ellis Elementary School DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built Unknown

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 1

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 8

Room Size: 40' Length x 24' Width x 8 1/2' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Two

Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated, unknown MERV rating

Windows

Operable Windows & Qty. YES, 9 qty.

SIZE: 36" x 16"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated with 2-pipe recirculated hot water.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 AHU, Gymnasium, with 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Mary A. Dryden Elementary School DATE: 08/24/2020

City Personnel: John Carignan

General School Information

Year Built 1955

Addition(s) / date(s) Renovated in 2011

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 1
- ☐ Variable Air Volume (VAV)
- ☐ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☑ Make-up Air Unit (MAU) & Qty. 2
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 52

Room Size: 38' Length x 24' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☑ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Four Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" Pleated MERV 8

Windows

Operable Windows & Qty. YES, 9 qty. SIZE: 25" x 41"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location to MAU's on roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Room air is returned to one of two Makeup Air Units located on rooftop.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. Gymnasium AHU, with 2" pleated MERV 8 and/or MERV 13 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 RTU/MAU's, with 2" MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Mary Lynch Elementary School DATE: 08/28/2020

City Personnel: John Carignan

General School Information

Year Built 1963

Addition(s) / date(s) Addition, unknown date

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC (1963 Building)

Room Number: 13

Room Size: 39 1/2' Length x 24 1/2' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? 2 Univents in room, each w/ 5 blowers

Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unknown MERV rating

Windows

Operable Windows & Qty. YES, 8 qty.

SIZE: 46" x 18"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam univents.

SCHOOL: Mary Lynch Elementary School DATE: 08/28/2020

City Personnel: John Carignan

Typical Classroom HVAC (Building Addition)

Room Number: Not Noted

Room Size: 38' Length x 40' Width x 11 1/2' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Unknown Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unkown MERV rating

Windows

Operable Windows & Qty. Yes, 12 SIZE: 46" x 18"

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Addition rooms heated by two-pipe steam radiant heat, and supplemental fan coil units with 2" pleated MERV 8 filters.

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Gymnasium, 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Mary M. Walsh Elementary School DATE: 08/28/2020

City Personnel: John Carignan

General School Information

Year Built 1940

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: Not Noted

Room Size: 40' Length x 24' Width x 11' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Two

Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unknown MERV rating

Windows

Operable Windows & Qty. YES, 9 qty.

SIZE: 39" x 14"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam univents.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Gymnasium, 2" pleated filters, unknown MERV rating
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Mary O. Pottenger Elementary School DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 1950s

Addition(s) / date(s) Addition, unknown date

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 8

Room Size: 36' Length x 24' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Three or four

Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8 filter

Windows

Operable Windows & Qty. YES, 9 qty.

SIZE: 36" x 19"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam or recirculated hot water univents.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Gymnasium, 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Milton Bradley Elementary School DATE: 08/26/2020

City Personnel: John Carignan

General School Information

Year Built 1965

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 7
- ☑ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 114

Room Size: 38' Length x 26' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? Four Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated, unknown MERV rating

Windows

Operable Windows & Qty. YES, 2 qty. SIZE: 48" x 34"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 AHU for Basement, with 2" pleated MERV 8 filters and Variable Air Volume (VAV) units,
2. 1, for Cafeteria, with 2" pleated MERV 8 filters
3. 5 remaining AHUs: uknown which areas are serviced
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Rebecca Johnson Elementary School DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 1992

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☑ Variable Air Volume (VAV)

☐ Exhaust(s)

☑ Rooftop Units (RTUs) & Qty. 12

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 117

Room Size: 35' Length x 31' Width x 8' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 8 qty.

SIZE: 36" x 18"

Exhaust

Room exhaust? ☐ YES ☐ NO

Exhaust location(s) in room Ceiling

Exhaust Fans/Equipment location _____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? The school is heated and cooled by a forced air system: Air Handling Units (12 located on the rooftop/RTUs), each with 2" pleated MERV 8 Filters, and Variable Air Volume (VAV) units.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter (Filters in each are 2" pleated MERV 8)

1. AHU 1, Pool
2. AHU 2, Combustion Air
3. AHUs 3 & 4, Gymnasium
4. AHUs 5, 6 and 7, Classrooms
5. AHU 8, Library
6. AHU 9, Admin. and Health Offices

Additional: AHU 10, Control AHU 11, Music AHU 12, Locker Room AHU 13, Control AHUs 15 & 16, Kitchen
(note: AHU 14 not identified in information provided by City)

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. (see above: 12 of the AHUs are located on the Rooftop; it's unknown specifically which ones)
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Roger L. Putnam Vocational High School DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 2012 (Major Renovations)

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☑ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☐ Air Handling Units (AHUs) & Qty. _____

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☑ Rooftop Units (RTUs) & Qty. 14

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC (Standard Classroom)

Room Number: F129

Room Size: 34' Length x 27' Width x 13' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 3 qty., 2 styles (horizonal, vertical)

SIZE: 54" x 20" (horizontal), and 17" x 65" (vertical)

Exhaust

Room exhaust? ☐ YES ☐ NO

Exhaust location(s) in room Ceiling

Exhaust Fans/Equipment location _____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? The school is heated and cooled by a forced air system: 12 Rooftop Units, each with 2" pleated MERV 8 Filters.

SCHOOL: Roger L. Putnam Vocational High School DATE: 08/27/2020

City Personnel: John Carignan

Typical Classroom HVAC (Shop Classroom)

Room Number: Sheet Metal Shop

Room Size: 80' Length x 66' Width x 18' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. Yes, 10 SIZE: 26" x 30"

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Classroom also contains bay door (14 1/2' x 13'), and has two dedicated Heat Recover Units (HRUs) with 100% makeup air.

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____ Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter (Filters in each are 2" pleated MERV 8)

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 12 RTUs, serving School areas, each with 2" pleated MERV 8 filters 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: Samuel Bowles Elementary School DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 1920s/30s

Addition(s) / date(s) Annex, 1954 and Addition, 1970s

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 2
- ☐ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC (1920s/30s Building)

Room Number: 17

Room Size: 39' Length x 24' Width x 8' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Unknown Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8

Windows

Operable Windows & Qty. YES, 9 qty. SIZE: 40" x 24"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location Gravity Exhaust System Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam with hot water converter univents.

SCHOOL: Samuel Bowles Elementary School DATE: 08/31/2020

City Personnel: John Carignan

Typical Classroom HVAC (Building Annex, 1954)

Room Number: 14

Room Size: 40' Length x 22' Width x 10' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Two Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unknown MERV rating

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Corner

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam with hot water converter univents.

Typical Classroom HVAC (Addition, 1970s)

Room Number: 2

Room Size: 32' Length x 22' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Unknown Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unknown MERV rating

Windows

Operable Windows & Qty. Yes, 6 SIZE: 46" x 46"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location Gravity Exhaust System Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam with hot water converter univents.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 AHU, Gymnasium, 2" pleated MERV 8 filter
2. 1 AHU, Cafeteria, 2" pleated MERV 8 filter
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: South End Middle School DATE: 08/26/2020

City Personnel: John Carignan

General School Information

Year Built 1947

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 2
- ☐ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☑ Make-up Air Unit (MAU) & Qty. _____
- ☑ Energy Recovery Units (ERV) 1
- ☐ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 2

Room Size: 28' Length x 23' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Two Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated, unknown MERV rating

Windows

Operable Windows & Qty. YES, 5 qty. SIZE: 48" x 30"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Closet

Exhaust Fans/Equipment location (see note below) Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Classroom air exhausts either directly outside or to ERV. ERV contains 2" pleated filter (MERV rating unknown).

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 for Gymnasium, 1" pleated MERV 8 filters _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

Additional: _____

NOTES:

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_____

SCHOOL: Springfield Alternative Campus DATE: 08/25/2020

City Personnel: John Carignan

General School Information

Year Built Between 1909 and 1924

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 1
- ☐ Variable Air Volume (VAV)
- ☐ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC (Liberty Preparatory Bldg.)

Room Number: A6

Room Size: 31' Length x 26' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Four Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" Pleated MERV 8

Windows

Operable Windows & Qty. YES, 8 qty. SIZE: 44" x 32"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Exhaust vents in classrooms are boarded up.

_____

SCHOOL: Springfield Alternative Campus DATE: 08/25/2020

City Personnel: John Carignan

Typical Classroom HVAC (High School Completion Bldg.)

Room Number: LP1

Room Size: 25' Length x 23' Width x 9' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. Yes, 3 SIZE: 25" x 23"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classroom heated by radiant, two-pipe heating. Exhaust vents non-operable.

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____ Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. Gymnasium AHU, with 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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_____

SCHOOL: Springfield Central High School DATE: 09/01/2020

City Personnel: John Carignan

General School Information

Year Built 1985

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 6

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☑ Make-up Air Unit (MAU) & Qty. 2

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 124

Room Size: 30' Length x 24' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Three

Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated MERV 8 filter

Windows

Operable Windows & Qty. YES, 9 qty.

SIZE: 34" x 20"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Building is heated and cooled by Centrifugal system that operates to temper air (heating or cooling) by the removal of heat and cold.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 6 AHUs and 2 MAUs in operation for building. Presumed 2" MERV 8 filters in place.
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Springfield Conservatory of the Arts DATE: 08/28/2020

City Personnel: John Carignan

General School Information

Year Built 1924

Addition(s) / date(s) Renovated 2019

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☐ Air Handling Units (AHUs) & Qty. _____

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☑ Rooftop Units (RTUs) & Qty. 2

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☐ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: Average Sized Classroom

Room Size: 32' Length x 22' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. No (not operable)

SIZE: _____

Exhaust

Room exhaust? ☐ YES ☑ NO

Exhaust location(s) in room No

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Building is heated and cooled by Centrifugal system that operates to temper air (heating or cooling) by the removal of heat and cold.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. Unknonwn number, provide fresh air to stairwells. 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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_____

SCHOOL: Springfield High School of Science & Technology DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 1951

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 16

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 222

Room Size: 32' Length x 24' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 2 qty.

SIZE: 76" x 62"

Exhaust

Room exhaust? ☐ YES ☐ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are either located along the perimeter, exterior wall (and include operable windows, or are located along interior walls or the basement, neither of which have windows. The school is heated and cooled by a forced air system: 16 Air Handling Units, each with 2" pleated MERV 8 Filters, and Variable Air Volume (VAV) units. Building also utilizes steam and hot water perimeter heating.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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_____

SCHOOL: Springfield Public Day Elementary School DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 1965

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☑ Rooftop Units (RTUs) & Qty. 1

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 117

Room Size: 13' Length x 11' Width x 8' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☑ NO

Number of blowers? Unknown

Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter Fan coil units, no filter

Windows

Operable Windows & Qty. YES, 1 qty.

SIZE: 32" x 20"

Exhaust

Room exhaust? ☐ YES ☑ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe perimeter radiant heat, and fan coil units.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 AHU Activity Room 113, 2" pleated MERV 8 filter
2. 1 AHU, area served unknown
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 1 RTU, area served/type of filter unknown
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

_____

_____

_____

_____

SCHOOL: Springfield Public Day High School DATE: 09/01/2020

City Personnel: John Carignan

General School Information

Year Built 1963

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators
☑ Air Handling Units (AHUs) & Qty. 2
☐ Variable Air Volume (VAV)
☑ Exhaust(s)
☐ Rooftop Units (RTUs) & Qty. _____
☐ Make-up Air Unit (MAU) & Qty. _____
☐ Economizers
☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 3

Room Size: 35' Length x 24' Width x 9 1/2' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Four Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter presumed 1" filter, unknown MERVrating

Windows

Operable Windows & Qty. YES, 8 qty. SIZE: 23" x 44"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe univents.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 RTUs, Gymnasium, presumed 2" pleated MERV 8 filter 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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_____

SCHOOL: Springfield Public Day Middle School DATE: 08/26/2020

City Personnel: John Carignan

General School Information

Year Built 1900

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators
☐ Air Handling Units (AHUs) & Qty. _____
☐ Variable Air Volume (VAV)
☐ Exhaust(s)
☐ Rooftop Units (RTUs) & Qty. _____
☐ Make-up Air Unit (MAU) & Qty. _____
☐ Economizers
☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 5

Room Size: 37' Length x 19' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Unknown Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated, unknown MERV rating

Windows

Operable Windows & Qty. YES, 3 qty. SIZE: 26" x 36"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location Gravity Exhaust System Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Gravity exhaust vents are blocked off. Classrooms on each floor share unit ventilators, with 4 unit ventilators each on the first and second floors. Fan coil units used for supplemental heat.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: STEM Middle Academy DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 1979

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☐ Air Handling Units (AHUs) & Qty. _____

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☑ Rooftop Units (RTUs) & Qty. 2

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 209

Room Size: 40' Length x 18' Width x 8 1/2' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____

SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? The school is heated and cooled by a forced air system: 2 Rooftop Units each with 2" pleated MERV 8 Filters, and Variable Air Volume (VAV) units.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Gymasium, with 2" pleated MERV 8 filters
2. 1 AHU, Health Area, with 2" pleated MERV 8 filters
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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_____

_____

SCHOOL: Sumner Avenue Elementary School DATE: 08/25/2020

City Personnel: John Carignan

General School Information

Year Built 1915

Addition(s) / date(s) Addition (unknown date)

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 3
- ☑ Variable Air Volume (VAV)
- ☐ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☑ Make-up Air Unit (MAU) & Qty. 2
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC (Original, 1915 Building)

Room Number: 133

Room Size: 32' Length x 24 1/2' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? Three Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" Pleated MERV 8

Windows

Operable Windows & Qty. YES, 4 qty. SIZE: 36" x 36"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Ceiling

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

SCHOOL: Sumner Avenue Elementary School DATE: 08/25/2020

City Personnel: John Carignan

Typical Classroom HVAC (Addition)

Room Number: A24

Room Size: 28' Length x 34' Width x 10' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. Yes, 4 SIZE: 24" x 36"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Ceiling (to MAUs)

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms are heated and cooled by Variable Air Volume (VAVs) units. Room air exhausts to Makeup Air Units located on the Addition rooftop.

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____ Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. Cafeteria & Kitchen, 1, with 2" pleated MERV 8 filters
2. Gym, 1, with 2" pleated MERV 8 filters
3. Addition, 1, with 2" pleated MERV 8 filters (providing heated and cooled air).
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 RTU/MAU's, with 2" MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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_____

SCHOOL: Van Sickle Middle Academy DATE: 08/31/2020

City Personnel: John Carignan

General School Information

Year Built 1930s

Addition(s) / date(s) Various additions (unknown ages), Extensive renovation 2000's

Overall Heating (and/or cooling) System

☐ Two-pipe ☑ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☐ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 5

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☑ Rooftop Units (RTUs) & Qty. 13

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 202

Room Size: 29' Length x 29' Width x 9' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 6 qty.

SIZE: 25" x 29"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet, and Wall

Exhaust Fans/Equipment location Plenum Return to AHUs/RTUs

Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? School is heated and cooled by forced air provided by four-pipe system supplying AHUs and RTUs. Some AHUs feed VAV units.

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 5 AHUs, unknown which areas they serve, 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 13 RTUs, unknown which areas they serve, 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Warner Elementary School DATE: 08/28/2020

City Personnel: John Carignan

General School Information

Year Built 1930

Addition(s) / date(s) Addition, unknown date

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☑ Air Handling Units (AHUs) & Qty. 2

☐ Variable Air Volume (VAV)

☑ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC (1930 Building)

Room Number: 1

Room Size: 32' Length x 22' Width x 10' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☑ NO

Number of blowers? Unknown

Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter No filter

Windows

Operable Windows & Qty. YES, 5 qty.

SIZE: 41" x 45"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Gravity Exhaust System

Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? Classrooms are heated by two-pipe steam univents.

SCHOOL: Warner Elementary School DATE: 08/28/2020

City Personnel: John Carignan

Typical Classroom HVAC (Building Addition)

Room Number: 11

Room Size: 40' Length x 24' Width x 10' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☐ YES ☑ NO

Number of blowers? Four Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unknown MERV rating

Windows

Operable Windows & Qty. Yes, 8 SIZE: 41" x 45"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Closet

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? Addition rooms heated with two-pipe recirculated hot water system.

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____ Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. _____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room _____

Exhaust Fans/Equipment location _____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Gymnasium, 2" pleated MERV 8 filters
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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SCHOOL: Washington Street Elementary School DATE: 08/25/2020

City Personnel: John Carignan

General School Information

Year Built 1910

Addition(s) / date(s) _____

Overall Heating (and/or cooling) System

☐ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators

☐ Air Handling Units (AHUs) & Qty. _____

☐ Variable Air Volume (VAV)

☐ Exhaust(s)

☐ Rooftop Units (RTUs) & Qty. _____

☐ Make-up Air Unit (MAU) & Qty. _____

☐ Economizers

☐ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC

Room Number: 9

Room Size: 32' Length x 21' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO

Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____

Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. YES, 12 qty.

SIZE: 33" x 22"

Exhaust

Room exhaust? ☑ YES ☐ NO

Exhaust location(s) in room_____

Exhaust Fans/Equipment location Gravity Exhaust System

Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Classrooms heated by radiant steam heating system.

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: White Street Elementary School DATE: 08/24/2020

City Personnel: John Carignan

General School Information

Year Built 1926

Addition(s) / date(s) Detached building, unknown construction

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

☑ Unit Ventilators (Newer, detached building only)
☐ Rooftop Units (RTUs) & Qty. _____
☐ Air Handling Units (AHUs) & Qty. _____
☐ Make-up Air Unit (MAU) & Qty. _____
☐ Variable Air Volume (VAV)
☐ Economizers
☐ Exhaust(s)
☐ Electronic ☑ Pnuematic ☐ Hybrid

Typical Classroom HVAC (Detached, newer building)

Room Number: 11

Room Size: 30' Length x 22' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO
Interior Intake/Return Air? ☐ YES ☑ NO

Number of blowers? _____
Actuators/Controls: ☐ Electric ☑ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" non-pleated filters, unknown MERV rating.

Windows

Operable Windows & Qty. Yes, 5
SIZE: 24 1/2 " x 36 1/2"

Exhaust

Room exhaust? ☑ YES ☐ NO (Gravity Exhaust)
Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____
Are they operating? ☐ YES ☑ NO

Other type of HVAC in classroom (describe)? _____

_____

SCHOOL: White Street Elementary School DATE: 08/24/2020

City Personnel: John Carignan

Typical Classroom HVAC (Original, 1926 building)

Room Number: - No univents are located in Original Building)

Room Size: _____ Length x _____Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? Building is heated by two-pipe radiant heating system.

_____

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty._____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room_____

Exhaust Fans/Equipment location_____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1._____ 2._____

3._____ 4._____

5._____ 6._____

Additional:_____

NOTES:

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SCHOOL: William N. DeBerry Elementary School DATE: 08/27/2020

City Personnel: John Carignan

General School Information

Year Built 1950

Addition(s) / date(s) Annex, 1960

Overall Heating (and/or cooling) System

☑ Two-pipe ☐ Four-pipe

Types of overall HVAC Equipment & Power (check all that apply)

- ☑ Unit Ventilators
- ☑ Air Handling Units (AHUs) & Qty. 3
- ☐ Variable Air Volume (VAV)
- ☑ Exhaust(s)
- ☐ Rooftop Units (RTUs) & Qty. _____
- ☐ Make-up Air Unit (MAU) & Qty. _____
- ☐ Economizers
- ☑ Electronic ☐ Pnuematic ☐ Hybrid

Typical Classroom HVAC (Original, 1950 building)

Room Number: (Not noted)

Room Size: 35' Length x 23' Width x 12' Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unknown MERV rating

Windows

Operable Windows & Qty. YES, 8 qty. SIZE: 36" x 18"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Ceiling

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? School heated by two-pipe radiant steam or recirculated hot water.

SCHOOL: William N. DeBerry Elementary School DATE: 08/27/2020

City Personnel: John Carignan

Typical Classroom HVAC (Annex, 1960 Building)

Room Number: 18

Room Size: 37' Length x 24' Width x 9' Height

Unit Ventilation (if present) None

Exterior Intake/Return Air? ☑ YES ☐ NO Interior Intake/Return Air? ☑ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☑ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter 1" pleated filter, unknown MERV rating

Windows

Operable Windows & Qty. Yes, 7 SIZE: 38" x 18"

Exhaust

Room exhaust? ☑ YES ☐ NO Exhaust location(s) in room Ceiling

Exhaust Fans/Equipment location Roof Are they operating? ☑ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

Typical Classroom HVAC

Room Number: _____

Room Size: _____ Length x _____ Width x _____ Height

Unit Ventilation (if present)

Exterior Intake/Return Air? ☐ YES ☐ NO Interior Intake/Return Air? ☐ YES ☐ NO

Number of blowers? _____ Actuators/Controls: ☐ Electric ☐ Pnuematic

Type (i.e. pleated, spun fiber, etc.) and Size of Filter _____

Windows

Operable Windows & Qty. _____ SIZE: _____

Exhaust

Room exhaust? ☐ YES ☐ NO Exhaust location(s) in room _____

Exhaust Fans/Equipment location _____ Are they operating? ☐ YES ☐ NO

Other type of HVAC in classroom (describe)? _____

_____

AHU & RTU Details

AHUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. 2 AHUs, Gymasium, with 2" pleated MERV 8 filters
2. 1 AHU, Health Area, with 2" pleated MERV 8 filters
3. _____
4. _____
5. _____
6. _____

Additional: _____

RTUs

Location in School, Area(s) of School served, and Type/Size of Filter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Additional: _____

NOTES:

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