Irvington Public Schools
Dr. April Vauss, Superintendent of Schools

LEA PROJECT SITES

Irvington High School
1253 Clinton Avenue
Irvington, NJ 07111

Mt. Vernon Ave. School
54 Mt. Vernon Ave.
Irvington, NJ 07111

Union Ave. Middle
427 Union Ave.
Irvington, NJ 07111

University Middle
255 Myrtle Ave.
Irvington, NJ 07111

MEET OUR TEAM!

Celeste Banks
Director of
Government Programs
Retention
and Recruitment

Mr. Terrance Boyd

Supervisor

Facilities

Mr. Roger Monel

Associate
Business
Administrator

Mrs. Zorana Figueroa

Supervisor
Facilities

ENERGY CLASS PRIZE TRAINING

- The team attended the Energy Class Prize Training Sessions both during live sessions and on the Energy Class Training Portal.
- The sessions that focused on procurement strategies such as “Financing and In Class-Applications” helped the district to identify funding strategies for expensive facilities projects.
- Using knowledge gained from the training sessions, the district contacted the local energy provider PSE&G and is now participating in their Clean Energy Efficiency Program (C&I Engineered Solutions Sub-Program).
- Program will provide 50% Grant for Energy Efficiency Projects. The balance will be financed at 0% interest over a five year period.

FACILITIES BEING ADDRESSED

IRVINGTON HIGH SCHOOL

Built in 1939

221,136 Sq. ft.

Three-Story facility composed of classrooms, office areas, conference rooms, break areas, hallways, mechanical spaces, and storage.

Has not undergone any major renovations since it was built.

Occupies 1,480 students and 300 teachers.

MT. VERNON AVENUE SCHOOL

Built in 2007

94,105 Sq. Ft.

Two-story facility predominately used as educational space and has classrooms, office areas, conference rooms, break areas, hallways, mechanical space, and storage.

Most mechanical equipment and terminal units are original to the building.
Occupies 582 students and 60 staff members

UNION AVENUE MIDDLE

Built in 1931

147,303 Sq. Ft.

Three-Story facility composed of classrooms, office areas, conference rooms, break areas, hallways, mechanical spaces, and storage.

Has not undergone any major renovations since it was built.

Occupies 723 students and 75 staff members

UNIVERSITY MIDDLE SCHOOL

Built in 1931

175,442 Sq. Ft.

Three-Story facility composed of classrooms, office areas, conference rooms, break areas, hallways, mechanical spaces, and storage.

Most mechanical equipment and terminal units are older and need major renovations.

Occupies 758 students and 80 staff members.

SUMMARY OF PROPOSED UPGRADES

#	Table 3.1: Benefits Metrics Energy Efficiency Measure (ECM) /Facility Improvement Measure(FIM)	Total Annual Projected Strategy	% Reduction From Existing Energy	Cost Savings	Lead	Irvington HS	UnionAve. MS	UniversityMS	Mt. VernonES	TimeLine
1	Boiler Replacement	Finance through PSE&G Direct Install Grant	9.3%		Facilities Manager, Business Administrator, Siemens, Inc, PSE&G			X		Finance with PSE&G by October 2024, Construction by Spring 2025
2	AHU Replacement		0.8%				X			
3	RTU Replacement		0.4%				X		X	
4	Make Up Air Unit (MAU) Replacement		6.2%						X	
5	Exhaust Fans Replacement		0.0%				X			
6	Chiller Replacement		1.7%						X	
7	Interior Lighting Retrofit - LED and Controls		15.4%	$18,466		X	X	X	X	
8	Building Envelope Improvements - Weatherization		1.8%			X	X	X	X	
9	Pipe and Valve Insulation		1.2%			X	X	X	X	
10	DDC - Temperature Setback/Trends/Front-End		4.4%			X	X	X	X	
11	DDC - Exhaust Fan Shutdown		2.8%			X	X	X	X	
12	Water Conservation		1.4%			X	X	X	X	
13	Photovoltaic Electric Generation (PV)		19.1%			X	X	X	X	

IRVINGTON HIGH SCHOOL PROPOSED UPGRADES

LED Lighting Retrofits and Occupancy Controls- Few sections of the building have LED Lights. Proposed upgrades will include replacing 2343 fixtures at the recommended lighting upgrade.

Building Envelope and Weatherization- Many leaks were found in the building (around doors, exhaust fans, and other various joints). Will weather strip doors, and seal the perimeter of Rooftop exhaust fans/ventilators. Linear feet of Roof Wall joint will be sealed.

Pipe and Valve Insulation- Existing Steam/hot water system is not insulated. All bare piping and valves will be insulated with appropriate thickness, usually between 2 to 4 inches.

Figure1:
Old Lighting Fluorescent 28 W
T8 Lamps

Figure 2: Existing Condition of bare piping

Figure 3: Existing Condition Bare Piping

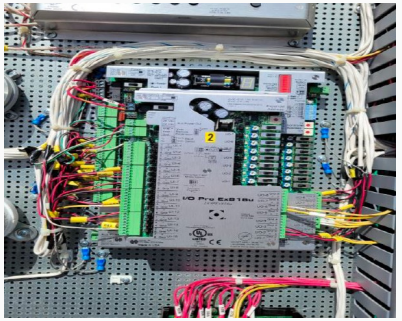
IRVINGTON HIGH SCHOOL
PROPOSED UPGRADES CONTD.

DDC- Temperature Setback/VFDs/Trends/Front-End- Building does not have central BMS. Will install a Building Management Systems.

DDC-Exhaust Fan Shutdown- Exhaust fans run continuously unless manually shut off. Will install fan start/stop controls to execute an occupied/unoccupied schedule control strategy.

Water Conservation- Replace existing water faucets to those with a 0.5 GPM aerator flow-restrictor. General purpose sinks will receive 1.5 GPM aerator flow-restrictor.

Photovoltaic Electric Generation (PV)- Sections of roof have direct sunshine most of day. Install 250-kW photovoltaic system on the roof.



Figures 1 and 2 Locally Controlled Timeclock and Relays

MT. VERNON AVE. SCHOOL
PROPOSED UPGRADES

Rooftop Unit Replacement- 6 RTU's are malfunctioning. Will remove old units and install new units.

Makeup Air Unit- Old MAUs have stand alone controls and does not have scheduling capabilities. Install new MAUs.

Chiller Replacement- Old chiller was installed in 2006 and has a nominal capacity of 150 tons. Will replace with a new energy efficient chiller.

Photovoltaic Electric Generation (PV)- Sections of roof have direct sunshine most of day. Install 250-kW photovoltaic system on the roof.

LED Lighting Retrofits and Occupancy Controls- Few sections of the building have LED Lights. Proposed upgrades will include replacing 1168 fixtures at the recommended lighting upgrade.

Figure 1:
Old RTU

Figure 2:
Old Chiller

Figure 3: Old MAU

MT. VERNON AVE. SCHOOL
PROPOSED UPGRADES CONTD.

Building Envelope and Weatherization- Many leaks were found in the building (around doors, exhaust fans, and other various joints). Will weather strip doors, and seal the perimeter of Rooftop exhaust fans/ventilators. Linear feet of Roof Wall joint will be sealed.

Pipe and Valve Insulation- Existing Steam/hot water system is not insulated. All bare piping and valves will be insulated with appropriate thickness, usually between 2 to 4 inches.

DDC- Temperature Setback/VFDs/Trends/Front-End- Building does not have central BMS. Will install a Building Management Systems.

Water Conservation- Replace existing water faucets to those with a 0.5 GPM aerator flow-restrictor. General purpose sinks will receive 1.5 GPM aerator flow-restrictor.

Figure 1: Exposed Piping

Figure 2: Exposed Piping

UNION AVE. MIDDLE SCHOOL PROPOSED UPGRADES

Rooftop Unit Replacement- RTU's are malfunctioning. Will remove old units and install new units.

Makeup Air Unit- Old MAUs have stand alone controls and does not have scheduling capabilities. Install new MAUs.

Exhaust Fans Replacement- 4 Exhaust Fans are non-functional. Will Replace.

Exhaust Fan Shutdown- Fans were found continuously running. Will install fan start/stop controls.

Photovoltaic Electric Generation (PV)- Sections of roof have direct sunshine most of day. Install 250-kW photovoltaic system on the roof.

LED Lighting Retrofits and Occupancy Controls- Few sections of the building have LED Lights. Proposed upgrades will include replacing 1168 fixtures at the recommended lighting upgrade.

Figure 1: Existing AHU

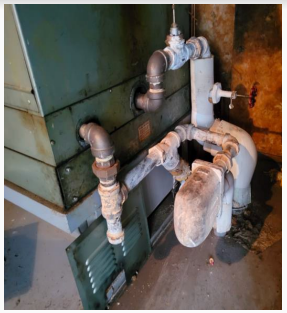


Figure 2: Existing AHU

Figure 3: Existing RTU

Figure 4 and 5: Existing Exhaust Fans

UNION AVE. MIDDLE SCHOOL PROPOSED UPGRADES CONTD.

Building Envelope and Weatherization- Many leaks were found in the building (around doors, exhaust fans, and other various joints). Will weather strip doors, and seal the perimeter of Rooftop exhaust fans/ventilators. Linear feet of Roof Wall joint will be sealed.

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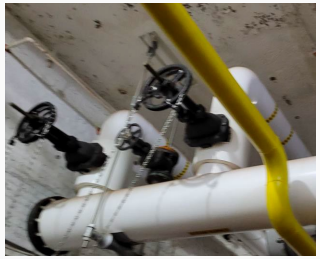


Figures 1 and 2: Existing Exposed Pipes

Figure 3: Existing BMS

UNIVERSITY MIDDLE SCHOOL PROPOSED UPGRADES

Boiler Replacement- Boilers are malfunctioning. Will remove old units and install new units.

Makeup Air Unit- Old MAUs have stand alone controls and does not have scheduling capabilities. Install new MAUs.

Pipe and Valve Insulation- Existing Steam/hot water system is not insulated. All bare piping and valves will be insulated with appropriate thickness, usually between 2 to 4 inches.

Exhaust Fan Shutdown- Fans were found continuously running. Will install fan start/stop controls.

DDC- Temperature Setback/VFDs/Trends/Front-End- Building does not have central BMS. Will install a Building Management Systems.

Figure 1 and 2: Old Boilers

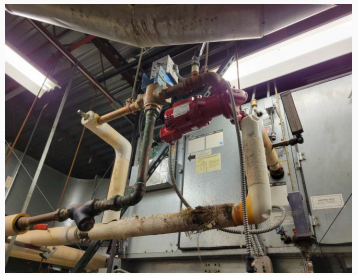
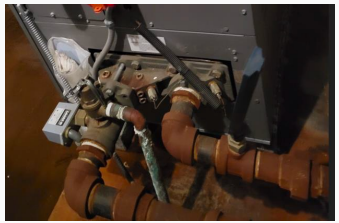


Figure 3: Old AHU



Figures 4&5: Bare piping

Figure 6: Old Boiler Controller

UNIVERSITY MIDDLE SCHOOL PROPOSED UPGRADES CONTD.

Photovoltaic Electric Generation (PV)- Sections of roof have direct sunshine most of day. Install 250-kW photovoltaic system on the roof.

LED Lighting Retrofits and Occupancy Controls- Few sections of the building have LED Lights. Proposed upgrades will include replacing 1168 fixtures at the recommended lighting upgrade.

Building Envelope and Weatherization- Many leaks were found in the building (around doors, exhaust fans, and other various joints). Will weather strip doors, and seal the perimeter of Rooftop exhaust fans/ventilators. Linear feet of Roof Wall joint will be sealed.

Water Conservation- Replace existing water faucets to those with a 0.5 GPM aerator flow-restrictor. General purpose sinks will receive 1.5 GPM aerator flow-restrictor.

Figure 1: Section of Roof for Photovoltaic System

Figure 1: Original Fluorescent Lighting 28 W T-8 Lamps

SUMMARY OF IMPACTS

The proposed energy improvements will substantially support the district's goals by:

1. Improving air quality of all facilities
2. Increase energy efficiency in all facilities by 20% to 30%
3. Reducing energy costs district-wide by 15% to 3-%
4. Improving productivity of students and staff
5. Reducing the transmission of airborne illnesses
6. Improving staff and student attendance
7. Significantly advancing the decarbonization objectives towards cleaner, electrified operations that are more sustainable over the long term

NEXT STEPS FOR IMPLEMENTATION FINANCING

The Next Steps for Implementation includes financing the proposed projects

Financing:

1. The district is in the process of securing financing through the PSE&G Engineered Sub Program. This program offers a 50% Grant for eligible projects. The remaining balance is financed at 0% interest over a five year period.
2. The district will apply for the 2nd round of Renew America's School Grant.
3. The district will utilize funds from the School Development Authority to address some of the smaller projects
4. Funds received from the Energy Class Prize Grant will go towards the completion of these projects.

NEXT STEPS FOR IMPLEMENTATION STAKEHOLDER ENGAGEMENT

The Next Steps for Implementation includes financing and stakeholder engagement:

Stakeholder/Community Engagement:

1. The district distributed a survey to all stakeholders in response to facilities issues in the fall of 2023. Once the district receives feedback from PSE&G, the district will share this information to all stakeholders during the May 2024 board meeting. Surveys will also be distributed to obtain feedback about the presentation. This information will assist district leadership in prioritizing projects.