

ENERGY SAVINGS PLAN FOR ESIP

Bloomington School District
June 21, 2022

PREPARED FOR

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Honeywell

HONEYWELL PROPRIETARY

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SECTION A

EXECUTIVE SUMMARY

Section A – Executive Summary

Thank you for using your Omnia membership to engage Honeywell to develop an Energy Savings Plan for the Bloomingdale School District (the District).

It is clearly understood for this Energy Savings Plan the District selected Honeywell via the Omnia Cooperative to identify conservation measures and to plan, design, oversee, supervise, and commission the services offered via the Omnia Partnership COOP, but Honeywell is not allowed to perform any “public works” activities as part of this project.

It is understood that, to remain compliant with the services of the COOP for the District, ALL public works in conjunction with the District and in accordance with New Jersey Public Contract Law (NJSA 18A:18A-1 et seq.) will be procured according to State requirements. To clarify further, this applies to public works projects including but not limited to installing electrical, lighting, plumbing, and HVAC systems.

During the development of the Energy Savings Plan, Honeywell has completed a thorough investment grade energy audit of the District’s buildings and grounds. Based on the audit findings and Honeywell’s extensive experience in working with school districts, we can confidently state this plan can identify a project that is financially viable in a comprehensive manner to address the District’s facility concerns and goals.

This Energy Savings Plan includes projects that achieve energy and operational efficiencies, create a more comfortable and productive environment, and are actionable via the New Jersey Energy Savings Improvement Program (NJ ESIP) in accordance with NJ PL2012, c.55.

The Energy Savings Plan is the core of the NJ ESIP process. It describes the energy conservation measures that are planned and the cost calculations that support how the plan will pay for itself through the resulting energy savings. Under the law, the Energy Savings Plan must address the following elements:

- A description of the energy conservation measures (ECMs) that will comprise the program
- An estimate of greenhouse gas reductions resulting from those energy savings
- Identification of all design and compliance issues and identification of who will provide these services
- An assessment of risks involved in the successful implementation of the plan
- Identify the eligibility for, and costs and revenues associated with, the PJM Independent System Operator for demand response and curtail-able service activities
- Schedules showing calculations of all costs of implementing the proposed energy conservation measures and the projected energy savings.
- Maintenance requirements necessary to ensure continued energy savings, and describe how they will be provided

Additionally, the use of Omnia Cooperative in the selection of Honeywell is allowed under New Jersey Public Contracts law as outlined in LFN 2012-10 and consists of the following elements and authorized by DLGS/DCA as well as the following elements:

- An organization (profit or not-for-profit) that coordinates and aggregates contracts from different state and local governments and promotes their use
- In the context of the LPCL and PSCL, the provisions of this notice apply when the aggregate value of the goods or services (see N.J.A.C. 5:34-8.2) exceeds the contracting unit’s bid threshold

- The national cooperative contract must have been advertised as a national or regional cooperative and awarded pursuant to a competitive bidding process that complies with the laws applicable
- The LFN requires that if a national cooperative contract is chosen, the calculation of cost savings from using this approach must be documented: The Law requires that a contracting unit can use national cooperatives only when the contracting unit determines “that the use of the cooperative purchasing agreement shall result in cost savings after all factors, including charges for service, material, and delivery, have been considered.”
- The LFN states that if using an online ordering system, local officials must put “appropriate internal controls” in place to ensure that purchases are documented and that an audit trail exists
- Per the LFN, the Bloomingdale BOE must verify that the selected vendor complies with applicable New Jersey procurement documentation requirements by submitting the following required forms.
 - New Jersey Business Registration Certificate for the contractor and any subcontractors (i.e., copy of certificate)
 - Statement of Corporate Ownership (an original form prepared for the contracting agency awarding the contract)
 - Public Contract EEO Compliance (Employee Information Report form or proof of participation in a federally approved affirmative action program)
 - Non-collusion Affidavit

The purpose of this document is to provide all the information required for the District to determine the best path forward in the implementation of a District-Wide NJ ESIP Project. It is important to note that the Energy Savings Plan provides a comprehensive evaluation of ALL potential ECMs within the District. This is not meant to infer that all the ECMs identified can be implemented. However, if the ECM is part of this plan, it may be implemented later as additional funding becomes available or technology changes to provide for an improved financial return.

This Energy Savings Plan is structured to clearly demonstrate compliance with the NJ ESIP law while also presenting the information in an organized manner that allows for informed decisions to be made. The information is divided into the following sections:

A. Executive Summary (This Section)

- B. Preliminary Utility Analysis** – The Preliminary Utility Analysis (PUA) defines the utility baseline for the District’s buildings included in the Energy Savings Plan. It provides an overview of the current usage and a cost-per-square-foot by building of utility expenses.

The report also compares the District’s utility consumption to that of other districts in the same region on a per-square-foot basis.

- C. Energy Conservation Measures** – This section includes a detailed description of the ECMs we have selected and identified for your School District. It is specific to your facilities in scope, savings methodology, and environmental impact. It is intended to provide a basis of design for each measure in narrative form. It is not intended to be a detailed specification for construction. ALL potential ECMs for the District are identified for the purposes of potential inclusion in the program. Final selected ECMs are to be determined solely by the District and the financial goals outlined within the ESIP program to be self-funding within existing budget guidelines.

- D. Technical and Financial Summary** – This section includes an accounting of all technical and financial outcomes associated with the ECMs as presented. The information detailed on the forms includes projected implementation hard costs, projected energy savings, projected operational savings, and projected environmental impact. Form VI: Annual Cash Flow Analysis provides a “rolled-up” view of the overall project financials, inclusive of financing costs, on an annual basis as well as over the entire 15-year term of the agreement.
- E. Measurement & Verification and Maintenance Plan** – This section identifies the intended methods of verification and measurement for calculating energy savings. These methods are compliant with the International Measurement and Verification Protocols (IMVP), as well as other protocols previously approved by the Board of Public Utilities (BPU) in New Jersey. This section also includes the recommended maintenance requirements for each type of equipment. Consistent maintenance is essential to achieving the energy savings projected in this plan.

Benefits

The measures investigated in this Energy Savings Plan could result in an annual utility savings of 340,467 kWh of electricity. Additionally, these energy savings will result in a net reduction of greenhouse gases and will reduce the school district’s carbon footprint by 228 MTE of CO₂ annually. This is equivalent to removing 48 cars from the road annually and 216 forested acres per year. All these savings are achieved while improving the classroom environment and renewing many items that have been in service beyond useful life expectancy.

Overall, it is evident the District is well-positioned to implement a program that will upgrade your facilities while funding itself within the requirements of the law and with zero impact on your taxpayer base. We appreciate the opportunity to provide the District with this guideline to improve the comfort and efficiency of your facilities through the successful implementation of this Energy Savings Plan should the district decide to move forward with a project.

Sincerely,



Caroline Jackson
Senior Business Consultant



SECTION B

PRELIMINARY UTILITY ANALYSIS (PUA)

Section B – Preliminary Utility Analysis (PUA)

Honeywell

Preliminary Utility Analysis

**Bloomington Schools
Bloomington, NJ**



Helping customers manage energy resources to improve financial performance

Executive Summary

Honeywell would like to thank you for the opportunity of providing you with this Preliminary Utility Analysis. A one year detailed billing analysis was completed for all utility data provided by your staff. The facility's electric and gas consumption were compared to a benchmark of typical facilities of similar use and location. It should be noted however, that some of Buildings which make up the benchmarking standards are not equipped with mechanical cooling (air conditioning). Therefore, these buildings may unjustly appear to be less efficient in comparison.

Through our Energy Services offerings, Honeywell's goal is to form a long term partnership for the purpose of meeting your current infrastructure needs by focusing to:

- ⇒ Improve Operational Cost Structures
- ⇒ Ensure Satisfaction
- ⇒ Upgrade Infrastructure While Reducing Costs
- ⇒ Meet Strategic Initiatives
- ⇒ Leverage Teamwork
- ⇒ Pursue Mutual Interests
- ⇒ Provide Financing Options

How does it work?

Under an energy retrofit solution, Honeywell installs new, energy efficient equipment and optimizes your facility, as part of a multi-year service contract. Most of these improvements are cost-justified by energy and operational savings. Some of the energy conservation measures provide for a quick payback, and as such, would help offset other capital intensive energy conservation measures such as, boilers, package rooftop units, domestic hot water heaters, etc. The objective is to provide you with reduced operating costs, increased equipment reliability, optimized equipment use, and improved occupant comfort.

After review of the utility analysis, you can authorize Honeywell to proceed with the development of a detailed engineering report. The report development phase allows Honeywell to prepare an acceptable list of proposed energy conservation measures, which are specific to the selected facility. Some examples of typical Energy Conservation Measures include:

- ⇒ Lighting
- ⇒ Control Systems
- ⇒ Boilers
- ⇒ AC Units/Condensers
- ⇒ Building Enevelope
- ⇒ Package Rooftop Units
- ⇒ Domestic Hot Water Heaters
- ⇒ Plug Load Management

Why Honeywell?

- ⇒ Honeywell is one of the world leaders in providing infrastructure improvements
- ⇒ With Honeywell as your building partner, you gain the advantage of more than 115 years of leadership in building services
- ⇒ Honeywell has the infrastructure and manpower in place to manage and successfully implement your project
- ⇒ Honeywell has over 30 years experience in the energy retrofit marketplace with over \$5 Billion in customer energy savings
- ⇒ Honeywell provides you with "Single Source Responsibility" - from Engineering to Implementation, Servicing and Financing (if desired)

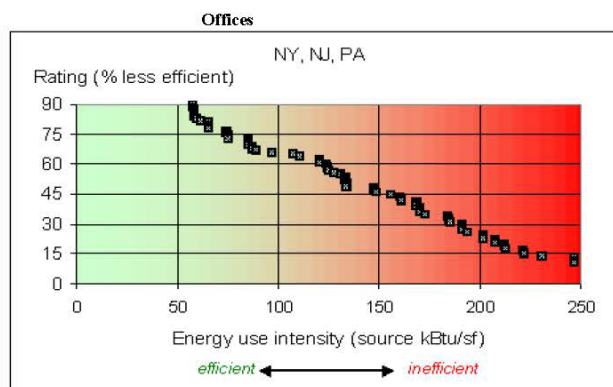
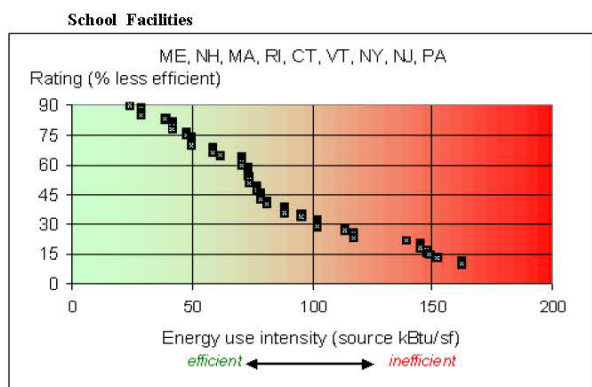
Energy Benchmarking

The calculation of EUI (Energy Use Intensity) is shown below. EUI, expressed in kBtu/sf, is normalized for floor area, the most dominant influence on energy use in most buildings. Its use usually provides a good approximation of how your building's energy performance compares to others. Site EUI indicates the rate at which energy is used at your building (the point of use). Source EUI indicates the rate at which energy is used at the generation sources serving your building (the point of source) and indicates the societal energy penalty due to your building. The lower the EUI, the higher the rating, indicating that the building is more efficient than other buildings. The greater the EUI, the lower the rating, indicating that there is an opportunity for higher potential benefits from operational improvements.

The Source EUI below has been applied to a Department of Energy statistical model from the Oak Ridge National Laboratory. The Department of Energy has estimated energy use and cost reductions for building source EUI ratings (percentiles) in the table below. Please see the DOE Regional Source EUI Comparison graph below to rate your building in relation to the regional distribution of similar type buildings. (Note: The Source EUI includes the inefficiencies of electrical generation and transmission. A reduction in 'electrical' source EUI includes a benefit in terms of reduction of air pollution emissions and green house gases, and is thus an indicator of societal benefit.)

Source EUI Rating for your Building	Energy use and cost reduction potential (%)	Walk-thru energy assessment recommended?
above 60%	below 25%	No
40 to 60%	20 to 35%	Maybe
20 to 40%	35 to 50%	Yes
Below 20%	above 50%	Definitely

Site EUI Rank		Annual Total Electrical Use (kWh)	Annual Total Non-Electrical Fuel Use (Therms)	Building Gross Floor Area (sq-ft)	Site EUI Rating	Source EUI: Annual Total Source Energy Use per Sq-Ft (kBtu/sf)	Rating (Regional Source EUI Comparison)
1	Martha B. Day School	147,744	15,873	28,198	74	110	20%
2	Samuel R. Donald School	160,680	26,173	41,838	76	102	30%
3	Walter T. Bergen Middle School	311,005	23,443	61,937	55	90	35%
		619,429					



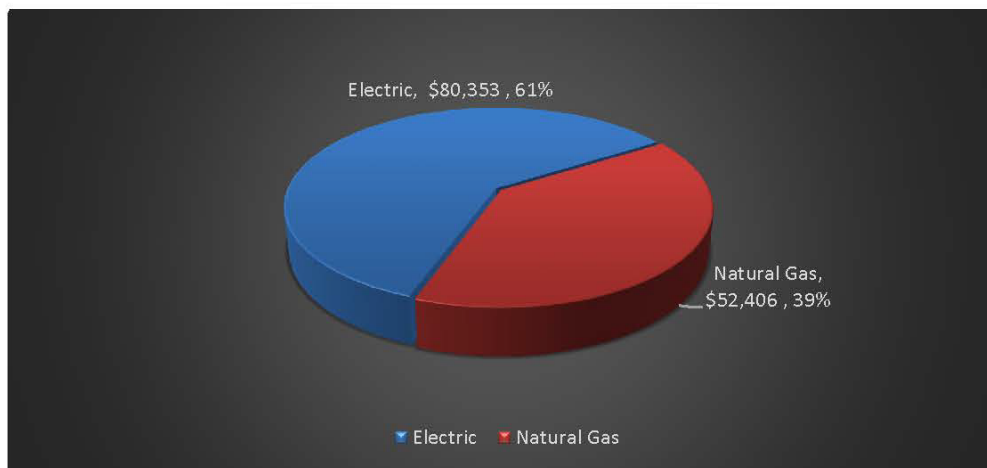
Historical Summary

Utility Analysis Period: November 2020 - October 2021

	Electric	Natural Gas
Utility Costs*	\$80,353	\$52,406
Utility Usage (kWh, Therms)	619,429	65,489
\$ Cost/Unit (kWh, Therms)	\$0.12972	\$0.800
Annual Electric Demand (kW)	0	

* Costs include energy and demand components, as well as taxes, surcharges, etc.

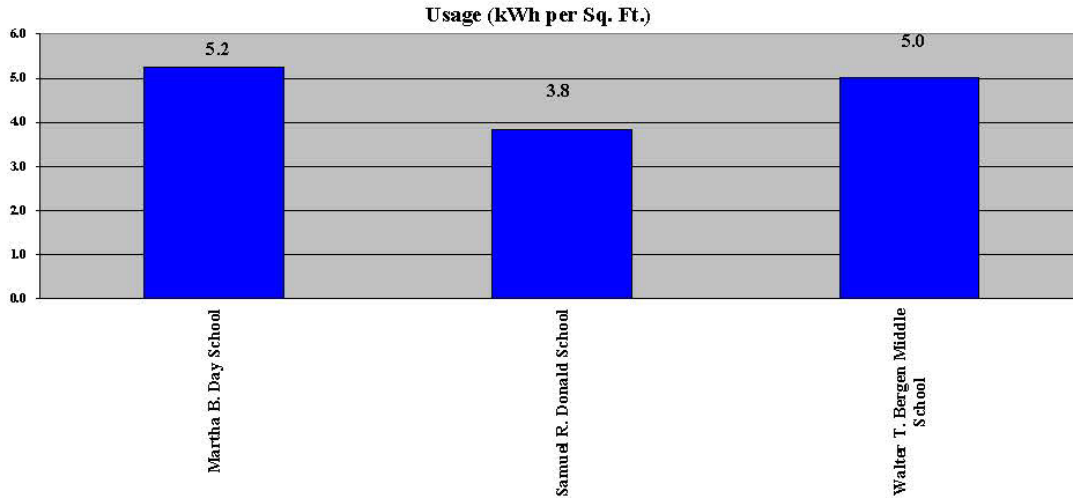
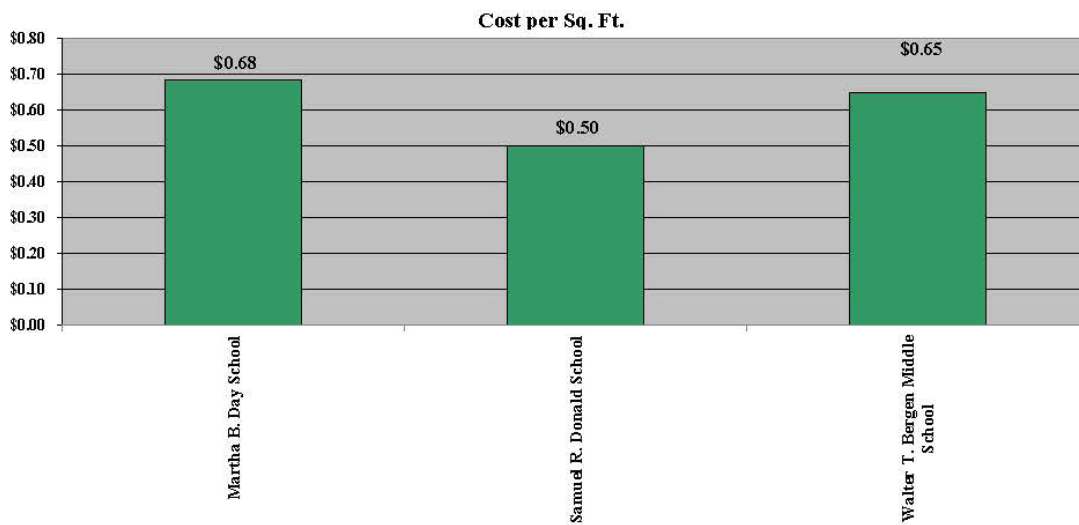
Actual Cost by Utility November 2020 - October 2021



Total Cost
\$132,758

Utility Analysis
Electric

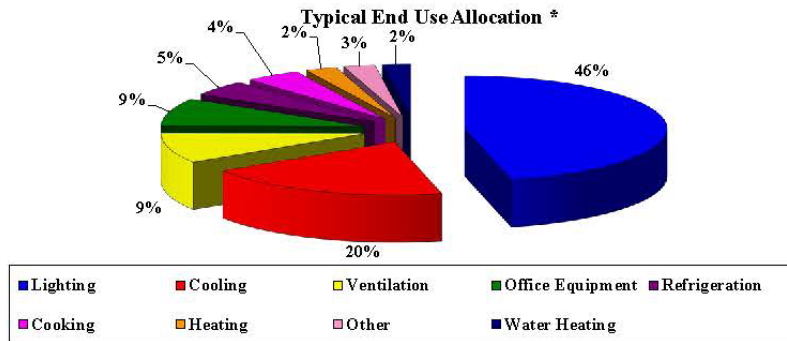
Square Footage Analysis



Note: Average kWh/SF for School buildings in this climate zone is 9.0

Electric

Sources of Electric Consumption



**This allocation is generic and is not a representation of the actual end use in your buildings included in this report.

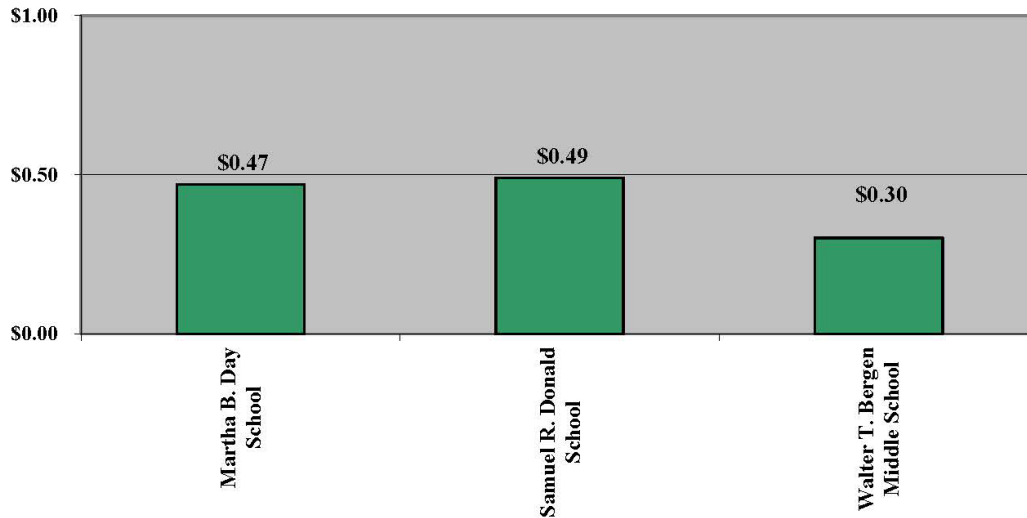
Typical Allocation Applied to Your Electric Cost**

Lighting	\$37,203
Cooling	\$15,749
Ventilation	\$7,392
Office Equipment	\$6,910
Refrigeration	\$3,777
Cooking	\$3,536
Heating	\$2,009
Other	\$2,009
Water Heating	\$1,768
Your Total Cost November 2020 - October 2021	\$80,353

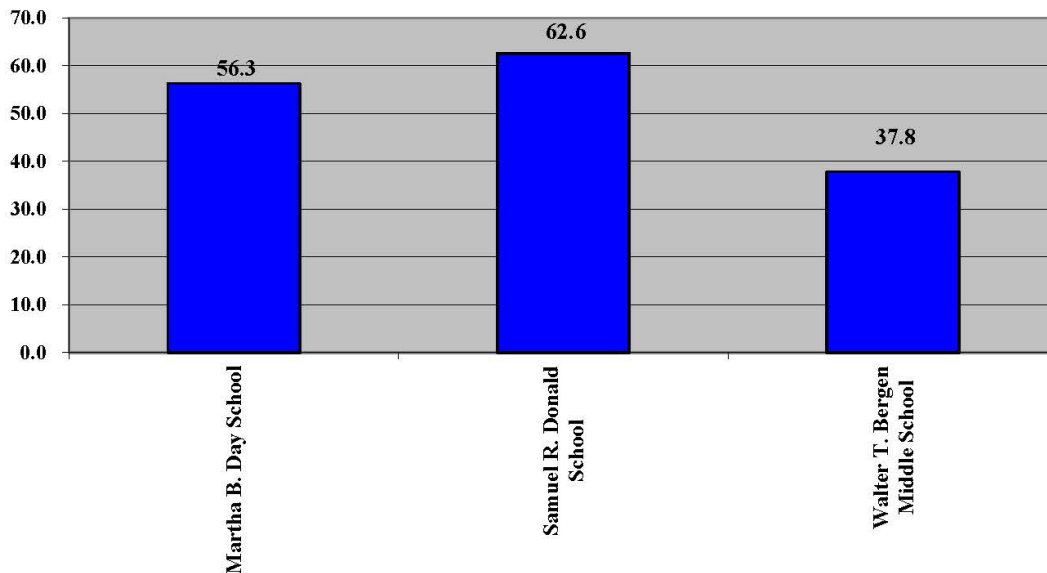
Utility Analysis

Natural Gas

Square Footage Analysis
Cost per Sq. Ft.



Usage (kBtu per Sq. Ft.)

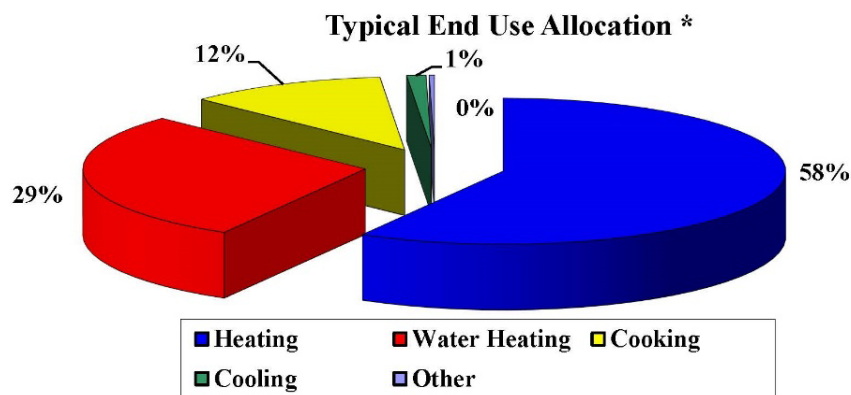


Note: Average kBtu/SF for School buildings in this climate zone is 46.1

Utility Analysis

Natural Gas

Sources of Usage Natural Gas



**This allocation is generic and is not a representation of the actual end use in your buildings included in this report.

Typical Allocation Applied to Your Cost** Natural Gas

Heating	\$30,553
Water Heating	\$15,145
Cooking	\$5,974
Cooling	\$576
Other	\$157
Your Total Cost November 2020 - October 2021	\$52,406

Annual Emissions & Environmental Impact

Bloomingdale Schools November 2020 - October 2021

Based on the US Environmental Protection Agency -
Greenhouse Gas Equivalencies Calculator
<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

The following energy usage, cost and pollution have been quantified:

Total Annual Electric usage	619,429	kWh
Annual Natural Gas usage	65,489	Therms

Electric Emissions	
0.00070742	MTeCO ₂ per kWh saved
Natural Gas Emissions	
0.05302541	MTeCO ₂ per MMBtu saved
Equillivent Cars	
0.214132762	Cars/ 1MTeCO ₂
Forrested Acres	
1.3063142	Forrested Acres Factor/ 1MTeCO ₂

Annual Greenhouse Gas Emissions (Metric tons of equivalent of CO ₂)		
eCO ₂ (Electric)	438	MT
eCO ₂ (Gas)	345	MT
Total eCO ₂	783.453	MT

This is equivalent to one of the following:	
171	No. of passenger vehicles - annual greenhouse gas emissions
1023	No. of acres of U.S. forests - carbon sequestered annually



Potential Retrofits

Retrofit Description	Utility/Fuel Type	Common Recommendations for Action
Lighting Retrofit and Motion Sensors	Electric/Natural Gas	Upgrade lighting and lighting controls
De-Stratification Fans	Electric/Natural Gas	Redistribution of Conditioned Air
Boiler Replacement	Natural Gas	Install high efficient, modular, condensing boilers
DHW Boiler/Tank Replacements	Electric/Natural Gas	Higher Efficiency Units
RTU Replacements	Electric/Natural Gas	Higher Efficiency Units
Building Management System Upgrades	Electric/Natural Gas	Reduce equipment run-time and provide better comfort
Building Envelope Improvements	Electric/Natural Gas	Reduce building leakage
Roof Replacements	Electric/Natural Gas	Reduce building leakage
Computer Controllers	Electric	Put computers to sleep when building is unoccupied
Install Premium Efficient Motors/Variable Frequency Drives	Electric	Provide more efficient motors and variable frequency drives
Transformer Replacements	Electric	Provide more efficient transformers with reduced amounts of excess heat to the spaces
Water Thermal Conservation	Natural Gas	Lower water thermal consumption



SECTION C

ENERGY

CONSERVATION

MEASURES (ECMS)

Section C – Energy Conservation Measures (ECMs)

Section C1 – Energy Savings Plan: Energy Conservation Measures

Introduction

The information used to develop this section was obtained through the independent energy audit building surveys to collect equipment information, interviews with operators and end users, and an understanding of the components to the systems at the sites. The information obtained includes nameplate data, equipment age, condition, the system’s design and actual load, operational practices and schedules, and operations and maintenance history.

Honeywell has done a review of the Energy Conservation Measures (ECMs) which would provide energy and cost savings the District. This report aims to be an assessment of the feasibility and cost effectiveness of such measures, and an indication of the potential for their implementation. The ECMs listed below have been reviewed throughout your facilities for consideration within a complete Energy Savings Plan. What follows is a general description of the energy auditing process and the detailed descriptions of the ECMs for your facilities.

ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
1A LED Lighting	●	●	●
1B De-Stratification Fans	●	●	●
2A Unit Ventilator Upgrades/Repairs	●	●	●
2B Motors and VFDs	●	●	
2C Addition of Cooling to Spaces	●	●	●
2D Split System Replacements			●
2E Exhaust Fan Replacement	●		
3A Building Management Controls	●	●	●
4A Building Envelope Improvements	●	●	●
5A Water Conservation	●	●	●
6A Permanent Load Reduction	●	●	●

ECM 1A LED Lighting

The key benefits of this ECM include:

- **Energy savings** from reducing total energy consumption with more efficient, state of the art technology. Today’s most efficient way of illumination and lighting has an estimated energy efficiency of 80%-90% when compared to traditional lighting and conventional light bulbs. Lighting controls reduce or eliminate reliance on occupants or staff to turn lights off when spaces are unoccupied by automatically turning lighting fixtures off thereby reducing electrical energy consumption.
- **Improved teacher and student performance** from enhanced lighting quality that translates to an enhanced learning working environment.
- **Improved equipment longevity** by reducing amount of light usage and extending the useful life of your lighting system. LED bulbs and diodes have an outstanding operational lifetime expectation of up to 100,000 hours. This is 11 years of continuous operation, or 22 years of 50% operation. Operational savings in terms of bulb and ballast replacement are significant based on this technology.
- **Reduced maintenance and operational costs** by modernizing your lighting system, reducing the runtime of lighting system and components, and providing for longer lasting and technologically advanced lights, without the need to address deficient or bad ballasts.
- **Ecologically friendly** LED lights are free of toxic chemicals. Most conventional fluorescent lighting bulbs contain a multitude of materials like mercury that are dangerous for the environment. LED lights contain no toxic materials and are 100% recyclable and will help to reduce carbon footprint by up to a third. The long operational lifetime span mentioned above means also that one LED light bulb can save material and production of 25 incandescent light bulbs. A big step towards a greener future!

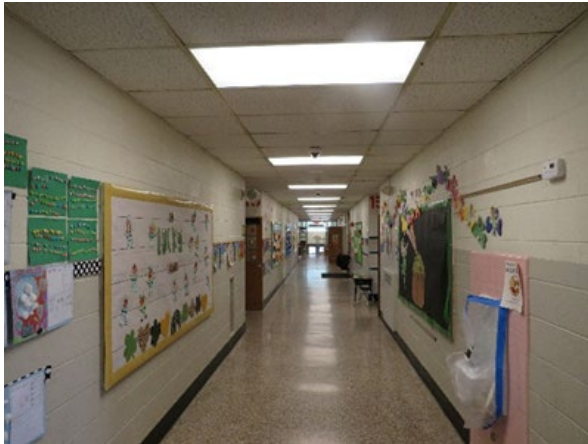
ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
1A LED Lighting	●	●	●

EXISTING CONDITIONS

Indoor lighting at all three schools has been retrofitted with LED bulbs by the district. Honeywell will use savings from LED retrofits to fund other ECMs.

SCOPE OF WORK

N/A



New LED Lighting at Martha B. Day School



New LED Lighting at Samuel R. Donald School

CHANGES IN INFRASTRUCTURE

None

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

None

ENVIRONMENTAL ISSUES

Resource Use	Energy savings will result from reduced electric energy usage. A slight increase in heating energy is resultant from the reduced heat output of more efficient lamps.
Waste Production	None
Environmental Regulations	No environmental impact is expected.

ECM 1B De-Stratification Fans with Air Purification

The key benefits of this ECM include:

- **Improved efficiency and energy savings** through more equal distribution of conditioned air space
- **Equipment longevity** due to lower utilization of equipment to condition air
- **Increased comfort** of students and teachers

ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
1B De-Stratification Fans	●	●	●

EXISTING CONDITIONS

Warm air stratifies close to the ceiling in high ceiling areas such as in a gymnasium or auditorium. Elevated levels of heat transfer through the high walls and roof causes elevated heat loss.



Walter T. Bergen MS Gym



Martha B. Day School Multi-purpose Room

PROPOSED SOLUTION

In areas with 20+ foot ceiling heights, there is approximately a 15°F+ temperature difference between the floor and the ceiling. With higher ceilings, it is even greater. To generate the heat necessary to maintain a comfortable 70°F temperature at the floor level, where student activities occur, the ceiling could be 85°F or higher.

De-stratification fans even out the air temperature to a 0–3°F differential from floor to ceiling and wall to wall. This will allow HVAC systems to run for a shorter duration because of the absence of extreme temperatures to heat or cool, thus allowing the local thermostats to be satisfied for longer periods of time.

Systems Evaluation and Selection

An energy-efficient motor drives a near-silent fan that forces a column of hotter air from the ceiling to the cooler floor below. As this column of warm air nears the floor, it begins to flare out in a circular pattern and rise again creating a torus. While doing so, it warms the cooler air and mixes with air near the floor, increasing the temperature and comfort of occupants. Through the laws of physics, this torus will continue to re-circulate air, mixing warmer air from the ceiling with cooler air near the floor until the ceiling and air temperatures are nearly equal. As this happens, it will require reduced energy to comfortably heat the work area, allowing thermostats to be lowered and energy savings to be realized. Once started, the entire process of “thermal equalization” will take an average of less than 24 hours.

Airius PureAir Series is an air purification and airflow circulation fan system, incorporating the latest in Photohydroionization (PHI) Cell technology to efficiently and effectively neutralize up to 99% of all harmful germs, bacteria, viruses, mold, and other contaminants in any internal environment. The PHI Cell emits ionized hydroperoxides, naturally occurring cleaning agents, which are circulated throughout spaces via the fan. As the fans continue to circulate internal atmosphere, the PHI circulates its neutralizing ionized hydroperoxides, providing 24/7 continuous Air Purification. The PureAir also provides all the features and benefits of the world’s most popular destratification and airflow circulation fan, balancing temperatures, improving comfort, reducing heating and cooling costs, and reducing carbon emissions.

Based on preliminary site investigation conducted by our staff, we propose to install the de-stratification fans as indicated in the table below.



Proposed De-Stratification Fans

Building	Location	Type	Qty PureAir	Qty Air Pear
Martha B. Day School	Multipurpose	A-25-P4-STD-120-W/PHI	1	2
Samuel R. Donald School	Multipurpose	A-25-SP-STD-120-W/PHI	1	2
Walter T. Bergen Middle School	Gym	A-25-SP-STD-120-W/PHI	3	3
Walter T. Bergen Middle School	Multipurpose	A-25-P4-STD-120-W/PHI	1	2
Total			6	9

SCOPE OF WORK

Per De-Stratification Fan:

- Shut off the main electric power to the area in which the unit(s) will be installed
- Install new de-stratification fan and wiring
- Re-energize
- Inspect unit operation by performing electrical and harmonics testing

EQUIPMENT INFORMATION

Manufacturer and Type	Several quality and cost-effective manufacturers are available. The District and Honeywell will determine final selections.
Equipment Identification	As part of the ECM design and approval process, specific product selection will be provided for your review and approval.

Energy Savings Plan (ESP) for Energy Savings Improvement Program (ESIP)



CHANGES IN INFRASTRUCTURE

New de-stratification fans will be installed as part of this ECM.

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Coordination efforts will be needed to reduce or limit impact to building occupants.

ENVIRONMENTAL ISSUES

Resource Use	Energy savings will result from reduced thermal energy usage. A slight increase in electrical energy is resultant from the operation of the fan motors.
Waste Production	Proper disposal of any waste generated.
Environmental Regulations	No environmental impact is expected.

ECM 2A Unit Ventilator Upgrades

The key benefits of this ECM include:

- **Reduced energy** usage from improved efficiency resulting from replacement of older equipment.
- **Lower operational costs** through less frequent maintenance and operational issues.

ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
2A Unit Ventilator Upgrades/Repairs	●	●	●

EXISTING CONDITIONS

Honeywell observed that the existing unit ventilators are beyond the useful life with many being inoperable or unrepairable.



Martha B. Day School – Unit Ventilator



Samuel R. Donald School – Unit Ventilator

EXISTING UNIT VENTILATORS TO BE UPGRADED

Ventilation Scope Overview

Building	Existing	New	Qty
Martha B. Day School	Hot Water Unit Ventilators	Replace Hot Water Unit Ventilators with New add Cooling	16
Samuel R. Donald School	Hot Water Unit Ventilators	Refurbish Existing Hot Water Unit Ventilators	18
Walter T. Bergen Middle School	Hot Water Unit Ventilators	Refurbish Existing Hot Water Unit Ventilators	24

PROPOSED SOLUTION

Honeywell proposes to refurbish or replace existing unit ventilators with new units. New units will be equipped with open protocol factory mounted controls which can be tied into existing BMS system.

Ventilation Unit Detailed Scope of Work

Building	Room	Type	Cooling Type	Make	Model	Unit Qty
Samuel R. Donald School	21	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	Teacher	Hot Water		Trane	VUV*075	1
Samuel R. Donald School	22	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	24	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	26	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	28	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	27	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	25	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	23	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	Nurse	Hot Water		Trane	VUV*075	1
Samuel R. Donald School	2	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	4	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	6	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	8	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	7	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	5	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	3	Hot Water		Trane	VUV*125	1
Samuel R. Donald School	1	Hot Water		Trane	VUV*125	1
Walter T. Bergen Middle School	Faculty 151	Hot Water		Trane	VUV*150	1
Walter T. Bergen Middle School	105	Hot Water		Trane	VUV*150	1
Walter T. Bergen Middle School	106	Hot Water		Trane	VUV*150	1
Walter T. Bergen Middle School	113 (Art)	Hot Water		Trane	VUV*150	1
Walter T. Bergen Middle School	115	Hot Water		Trane	HUV*150	2

Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)



Building	Room	Type	Cooling Type	Make	Model	Unit Qty
Walter T. Bergen Middle School	121	Hot Water		Trane	VUV*125	1
Walter T. Bergen Middle School	209 Band Room	Hot Water		Trane	VUV*125	1
Walter T. Bergen Middle School	212 Resource Center	Hot Water		Trane	VUV*125	1
Walter T. Bergen Middle School	213 Resource Center	Hot Water		Trane	VUV*125	1
Walter T. Bergen Middle School	218	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	219	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	220	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	221	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	222	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	228	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	229	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	230	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	234	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	235	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	236	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	205	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	206	Hot Water		Trane	VUV*100	1
Walter T. Bergen Middle School	207	Hot Water		Trane	VUV*100	1
Martha B. Day School	13	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	15	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	17	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	19	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	21	Hot Water	DX	Trane	VUV*125	1

Building	Room	Type	Cooling Type	Make	Model	Unit Qty
Martha B. Day School	22	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	20	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	2	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	16	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	14	Hot Water	DX	Trane	VUV*150	1
Martha B. Day School	12	Hot Water	DX	Trane	VUV*150	1
Martha B. Day School	3	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	4	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	5	Hot Water	DX	Trane	VUV*125	1
Martha B. Day School	6	Hot Water	DX	Trane	VUV*125	1

SCOPE OF WORK

The following outlines the unit ventilator replacements:

1. Disconnect electrical and steam from existing units
2. Install new univents and reconnect, steam and electric
3. Start up, commissioning, and operator training

ENERGY SAVINGS METHODOLOGY AND RESULTS

In general, Honeywell uses the following approach to determine savings for this specific measure:

<i>Existing Univent Efficiency</i>	= Heat Input x Existing Efficiency
<i>Proposed Univent Efficiency</i>	= Heat Input x New Efficiency
<i>Energy Savings \$</i>	= Heating Production (Proposed Efficiency – Existing Efficiency)

EQUIPMENT INFORMATION

Manufacturer and Type	Several quality and cost-effective manufacturers are available. The District and Honeywell will determine final selections.
Equipment Identification	As part of the ECM design and approval process, specific product selection will be provided for your review and approval.

CHANGES IN INFRASTRUCTURE

New unit ventilators will be installed and programmed in the locations listed above; in addition, training for maintenance personnel will be required as well as on-going, annual preventive maintenance.

O&M IMPACT

The new unit ventilators will decrease the O&M cost for maintaining the equipment.

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Minor support will be required for the interruption of utilities for brief tie-in periods. Continuity of service must be maintained for the customer.

ENVIRONMENTAL ISSUES

Resource Use	Minor support will be required for the interruption of utilities for brief tie-in periods. Continuity of service must be maintained for the customer.
Waste Production	Existing units scheduled for removal will be disposed of properly.
Environmental Regulations	Minor support will be required for the interruption of utilities for brief tie-in periods. Continuity of service must be maintained for the customer.

ECM 2B Premium Efficiency Motors and VFDs

The key benefits of this ECM include:

- **Energy savings** from reduced run hours and reduced motor speeds.
- **Equipment longevity** due to more efficient and less wasteful equipment utilization and reduced startup wear.

ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
2B Premium Efficiency Motors and VFDs	●	●	

EXISTING CONDITIONS

Honeywell has identified standard efficiency electric motors on several pumps. Energy savings can be obtained by replacing the standard efficiency motors with premium efficiency motors as well as by installing VFDs on systems that have two-way control valves.



Samuel R. Donald School – Motor



Martha B. Day School – Motor

EXISTING MOTORS TO BE REPLACED

Ventilation Scope Overview

Building	Equipment Description	Qty.	Motor HP	Existing Efficiency	Replace Motor	Add VFD
Martha B. Day School	Primary/Standby	2	5.0	89.0%	Y	Y
Samuel R. Donald School	Primary/Standby	2	5.0	78.0%	Y	Y

PROPOSED SOLUTION

Honeywell observed that several motors and pumps that are sized to meet peak heating or cooling conditions. However, we’ve learned that most operating hours occur during conditions that require less than peak loads.

Honeywell proposes replacement of all above-mentioned single speed standard efficiency motors (that do not have VFDs) with new premium efficiency motors and installing new couplings where applicable. In addition, Honeywell recommends installing VFDs on these pumps. Energy used by the motor can be

Energy Savings Plan (ESP) for Energy Savings Improvement Program (ESIP)



reduced by varying the flow in response to varying loads in the space. Motor speed may be controlled either based on the pressure in the distribution system or based on time of day.

Honeywell recommends fitting unit ventilators with two-way valves (provided that unit ventilators located at end of piping branches are fitted with three-way valves to keep hot water moving through the distribution piping at all times).

Honeywell also recommends installing VFDs on the heating hot water pumps and chilled water pumps to better match pumping output to system requirements and reduce energy waste. Each motor will be equipped with new selector relays that will allow one drive to operate per pump with the VFD drive. Honeywell also recommends installation of new differential pressure sensors and tying them to the control system to allow you to regulate the speed of the pump per load requirements. Lastly, we recommend installation of VFDs on the cooling system pump motors that have higher horsepower. VFDs will maintain temperatures in the unit by adjusting the speed of both the motor and the pump and can be connected to your BMS.

ENERGY SAVINGS METHODOLOGY AND RESULTS

The energy consumed by electric motors varies inversely with the cube of the motor speed. Variable frequency drives reduce motor speed (in response to load) thus reducing energy consumption exponentially.

CHANGES IN INFRASTRUCTURE

New motors will be installed in place of the old motors. No expansion of the facilities will be necessary.

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Coordination of the electrical tie-in will also be required.

ENVIRONMENTAL ISSUES

Resource Use	Energy savings will result from reducing electrical usage by operating higher efficiency motors for the same horsepower output. The equipment uses no other resources.
Waste Production	This measure will produce waste by-products. Old motors shall be disposed of in accordance with all federal, state, and local codes.
Environmental Regulations	No environmental impact is expected.

ECM 2C Addition of Cooling to Spaces

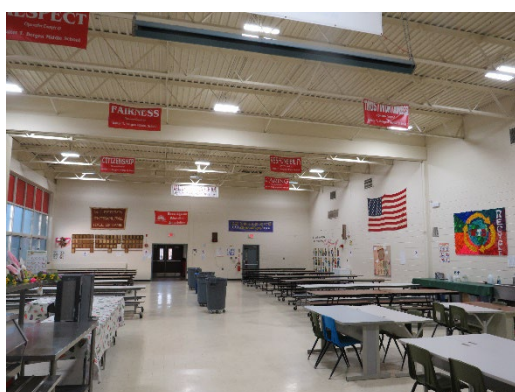
The key benefits of this ECM include:

- **Energy savings** from reduced run hours and reduced motor speeds.
- **Equipment longevity** due to more efficient and less wasteful equipment utilization and reduced startup wear.

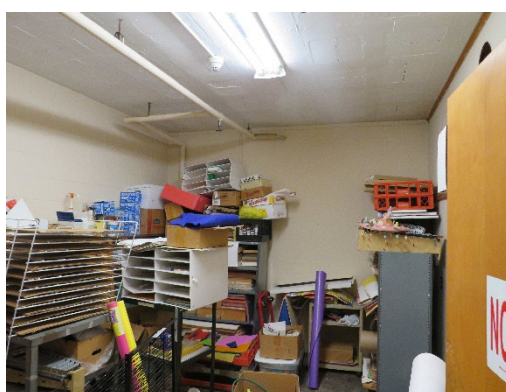
ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
2C Addition of Cooling to Spaces	●	●	●

EXISTING CONDITIONS

Honeywell has identified several areas in schools where addition of cooling is desirable. Although adding cooling increases the energy use of the building, the addition of cooling makes a better learning environment for students by increasing comfort during warmer school days.



Walter T. Bergen MS – Multi-Purpose Room



Martha B. Day School – Room 26

PROPOSED SOLUTION

Table 2C.1 - New Cooling Units

Building	Manufacturer	Area Served	Model	Qty	Tons
Martha B. Day School	Trane	Main Office	YSC-036	1	3
Martha B. Day School	Trane	Room 26	YSC-048	1	4
Martha B. Day School	Trane	Multi-Purpose Room	YHD-20	2	15
Samuel R. Donald School	Trane	Multi-Purpose Room	YHD-20	2	15
Walter T. Bergen Middle School	Trane	Multi-Purpose Room	YHD-30	2	20
Martha B. Day School	Trane	Classrooms	PUHY-P144TSNU-A	4	12

Honeywell proposes installing new cooling units at these schools to add cooling to classrooms, offices, and multi-purpose rooms.

ENERGY SAVINGS METHODOLOGY AND RESULTS

The energy savings for this ECM is realized by the reduction in run time of the cooling compressors and increased quality of the learning environment. In spaces not previously cooled there may be a negative impact on energy savings.

CHANGES IN INFRASTRUCTURE

Addition of roof mounted equipment requiring roof penetrations as required.

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Coordination of the electrical tie-in will also be required. Minor support will be required for the interruption of utilities for brief tie-in periods.

ENVIRONMENTAL ISSUES

Resource Use	Energy savings will result from the reduced electrical consumption of the compressor versus older technology.
Waste Production	Any removed parts will be disposed of properly.
Environmental Regulations	No environmental impact is expected.

ECM 2D Split System Replacements

The key benefits of this ECM include:

- Reduced energy usage from improved boiler efficiency resulting from replacement of older equipment, and in certain instances, oversized boilers.
- Lower operational costs through less frequent maintenance and operational issues.

ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
2D Split System Replacements			●

EXISTING CONDITIONS

Honeywell identified some condensing units as being inefficient and having exceeded their useful service life. Replacing these units with new, high efficiency units will save energy costs over the long term, while reducing repair costs that would otherwise have been necessary to keep the old units in operation.



Walter T. Bergen MS – Split System



Walter T. Bergen MS – Split System

EXISTING CONDENSING UNITS TO BE REPLACED

Table 2D.1 - Existing Condensing Units

Building	Area Served	Manufacturer	Model	Tons	Qty
Walter T. Bergen Middle School	Main Office	Goodman	GSC100903AA	7.5	1

Proposed Solution

Honeywell proposes replacing the existing condensing units in the table above. The new units will be installed in the same location as the existing units. Existing electrical power supply will be reconnected to the new units. The new units will be equipped with factory-installed microprocessor controls that improve unit efficiency. The units will also communicate with the existing or enhanced BMS.

Table 2D.2 - Proposed Condensing Units

Building	Area Served	Manufacturer	Model	Tons	Qty
Walter T. Bergen Middle School	Main Office	Trane	TTA090A300GA	7.5	1

SCOPE OF WORK

The following outlines the scope of work to install the condensing units listed in the Proposed Split Systems table above.

1. Disconnect existing electric connections.
2. Disconnect piping from the unit.
3. Remove unit from the base.
4. Modify base for new unit if necessary.
5. Rig and set new unit at the base.
6. Inspect piping and air ducts before reconnecting them to the unit.
7. Reconnect piping
8. Repair insulation.
9. Connect electric power.
10. Start up and commissioning of new unit.
11. Maintenance operator(s) training.

ENERGY SAVINGS METHODOLOGY AND RESULTS

The savings approach is based on the energy efficiency between the existing and new units. The savings are generally calculated as:

<i>Electric Energy savings</i>	= Existing unit energy consumption (kWh) – replacement unit energy consumption (kWh)
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EQUIPMENT INFORMATION

Manufacturer and Type	Several quality and cost-effective manufacturers are available. The District and Honeywell will determine final selections.
Equipment Identification	As part of the ECM design and approval process, specific product selection will be provided for your review and approval.

**Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)**



CHANGES IN INFRASTRUCTURE

New split systems will be installed in itemized locations; in addition, training for maintenance personnel will be required, as well as on-going, annual preventive maintenance.

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Coordination of the electrical tie-in will be required.

ENVIRONMENTAL ISSUES

Resource Use	Energy savings will result from higher efficiency units.
Waste Production	Existing condensing units scheduled for removal will be disposed of properly.
Environmental Regulations	No environmental impact is expected.

ECM 2E Exhaust Fans

The key benefits of this ECM include:

- **Reduced energy usage** from improved efficiency resulting from replacement of older equipment.
- **Lower operational costs** through less frequent maintenance and operational issues.
- **Occupancy comfort and productivity** by way of enhanced temperature and humidity control throughout your buildings.

ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
2E Exhaust Fans	●		

EXISTING CONDITIONS

The District has multiple exhaust fans on the school roof that are inefficient or do not operate at all. The units which do operate run 24/7 and have no control except for on/off switches located in mechanical rooms with no ability to schedule for occupied and unoccupied building times.



Martha B. Day School – Exhaust Fan



Martha B. Day School – Exhaust Fan

EXISTING EXHAUST FANS TO BE REPLACED

Existing Exhaust Fans

Building	Fan ID	Type	Make	Model	HP
Martha B. Day School	MBD-EF-11A	Down Blast Fan	Greenheck	G-120-VG	0.50
Martha B. Day School	MBD-EF-12	Down Blast Fan	Greenheck	G-120-VG	0.50
Martha B. Day School	MBD-EF-14A	Down Blast Fan	Greenheck	G-120-VG	0.50
Martha B. Day School	MBD-EF-Bathroom	Up Blast Fan	Greenheck	CUE-095-VG	0.17
Martha B. Day School	MBD-EF-6	Down Blast Fan	Greenheck	G-099-VG	0.25

Building	Fan ID	Type	Make	Model	HP
Martha B. Day School	MBD-EF-1	Down Blast Fan	Greenheck	G-130-VG	0.75
Martha B. Day School	MBD-EF-2	Up Blast Fan	Greenheck	CUE-140-VG	0.75
Martha B. Day School	MBD-EF-4	Up Blast Fan	Greenheck	CUE-140-VG	0.75
Martha B. Day School	MBD-EF-11	Up Blast Fan	Greenheck	CUE-140-VG	0.75
Martha B. Day School	MBD-EF-14	Up Blast Fan	Greenheck	CUE-140-VG	0.75
Martha B. Day School	MBD-EF-Gym 1	Up Blast Fan	Greenheck	CUE-140-VG	0.75
Martha B. Day School	MBD-EF-Gym 2	Up Blast Fan	Greenheck	CUE-140-VG	0.75

PROPOSED SOLUTION

Honeywell proposes retro-commission the existing exhaust fans with associated controls for occupied and unoccupied modes for scheduling and to ensure fan is operating properly. Motors, covers and fans will be inspected for condition and proper operation. Repairs and/or replacements will be made as required.

Energy Savings Methodology and Results

The savings approach is based on the energy efficiency between the existing and new units. The savings are generally calculated as:

<i>Electric Energy savings</i>	= Existing unit energy consumption (kWh) – retro-commission/replacement unit energy consumption (kWh)
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EQUIPMENT INFORMATION

Manufacturer and Type	Several quality and cost-effective manufacturers are available. The District and Honeywell will determine final selections.
Equipment Identification	As part of the ECM design and approval process, specific product selection will be provided for your review and approval.

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Coordination of the electrical tie-in will be required.

ENVIRONMENTAL ISSUES

Resource Use	Energy savings will result from increasing existing efficiency or higher efficiency units.
Waste Production	Existing unit scheduled for removal will be disposed of properly.
Environmental Regulations	No environmental impact is expected

ECM 3A Building Management Controls

The key benefits of this ECM include:

- **Improve Air Quality** by more precise control of air filtration, air composition and ultra-violet cleaning to create a healthier school building environment.
- **Operational efficiency** resulting from better control and system wide visibility.
- **Remote operation of HVAC systems** via mobile phone or off-site computer.
- **Energy savings** from reducing total energy consumption with more efficient, state of the art technology.
- **Occupancy comfort and productivity** resulting from enhanced temperature and humidity control throughout your buildings.
- **Deliver a comprehensive open protocol Building Management System.** Verify design is customized for each building yet uniform throughout the district. Assure longevity of control system with proper commissioning and training.

ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
3A Building Management Controls	●	●	●

Bloomington School District Building Management System Overview

Honeywell has performed a survey of the existing temperature controls throughout the Bloomington School District. Upon inspection, it was noted that the level of controls technology applied differs significantly in each of the District school. It is apparent that although limited controls upgrades have been performed where possible, the level of technology employed within each District building is largely dependent on the date of original construction. However, regardless of the systems in place, all of the building controls can benefit from energy conservation enhancements.

Refer to Energy Conservation Measure Matrix for buildings included in this measure.

EXISTING CONDITIONS

Existing Building Management Controls

Building	Existing Building Management System
Martha B. Day School	Pneumatic
Samuel R. Donald School	Pneumatic
Walter T. Bergen Middle School	Johnson Controls

PROPOSED CONDITIONS

Scope Of Work

Building Management Controls

	Building	Scope
1.A	District Infrastructure	Supervisor w/ 100 Field Devices
2.A	Martha B. Day School	One (1) Honeywell Niagara 4 (WEBs) JACE(s)

	Building	Scope
2.B	Martha B. Day School	One (1) New Hot Water System
2.C	Martha B. Day School	Sixteen (16) New UV HW w/DCV / FTR
2.D	Martha B. Day School	Add DCV
2.E	Martha B. Day School	FTR - New Interlock
2.F	Martha B. Day School	Add Cooling (Larger Controller/VRF Wiring)
2.G	Martha B. Day School	One (1) New Roof Top Unit w/DCV (Office)(New DDC)
2.H	Martha B. Day School	One (1) New Roof Top Unit w/DCV (Basement)(New DDC)
2.I	Martha B. Day School	Two (2) New Roof Top Unit w/DCV (MPR)(New DDC)
2.J	Martha B. Day School	One (1) Existing H&V Unit w/DCV (New DDC)
2.K	Martha B. Day School	Five (5) New FTR (MPR)(Interlock)
2.L	Martha B. Day School	Seven (7) New FTR (Classroom)(DDC T-Stat/Valve)
2.M	Martha B. Day School	Two (2) New FTR (Rest Room)(DDC T-Stat/Valve)
2.N	Martha B. Day School	Twelve (12) New FTR (Hallway)(SCV)
2.O	Martha B. Day School	Five (5) New FTR (Kitchen)(SCV)
2.P	Martha B. Day School	Eight (8) New Exhaust Fan (SS/ST)
3.A	Samuel R. Donald School	One (1) Honeywell Niagara 4 (WEBs) JACE(s)
3.B	Samuel R. Donald School	One (1) New Hot Water System
3.C	Samuel R. Donald School	Twenty-Two (22) New UV HW
3.D	Samuel R. Donald School	Add DCV
3.E	Samuel R. Donald School	FTR - New Interlock
3.F	Samuel R. Donald School	Two (2) New Roof Top Unit w/DCV (MPR)(New DDC)(Alternate)
3.G	Samuel R. Donald School	Two (2) Existing H&V w/DCV (Stage)(New DDC)
3.H	Samuel R. Donald School	Two (2) New FTR (MPR)(Interlock)
3.I	Samuel R. Donald School	Three (3) New FTR (Classroom)(DDC Tstat/Valve)
3.J	Samuel R. Donald School	Four (4) New FTR (Rest Room)(DDC Tstat/Valve)
3.K	Samuel R. Donald School	Eighteen (18) New FTR (Hallway)(SCV)
3.L	Samuel R. Donald School	Two (2) New Exhaust Fan (SS/ST)
4.A	Walter T. Bergen Middle School	Upgrade to Current Revision (1) Honeywell Niagara 4 (WEBs) JACE(s)
4.B	Walter T. Bergen Middle School	Twenty-Four (24) UV - Existing HW DDC - New Sylk w/CO2
4.C	Walter T. Bergen Middle School	Two (2) New Roof Top Unit w/DCV (MPR)(New DDC) (Alternate)

ENERGY SAVINGS METHODOLOGY AND RESULTS

The savings approach is based upon reducing the amount of energy that needs to pre-heat or cool the outside air. The savings are generally calculated as:

$$\begin{aligned}
 \text{Existing Heating BTU} &= \text{Metered data from existing meter readings} \\
 \text{Cost per BTU} &= \text{Average site data } \$/\text{CCF or } \$/\text{Gallon} \\
 \text{Cost of Existing Heating} &= \text{Reduction in outside air CFM} \times 1.08 \times \text{Delta T} \times \text{Operating Hours} \\
 \text{Reduction in Heating/Cooling} &= \text{Reduced BTU} \times \text{Cost per BTU} \\
 &\text{BTU} \\
 \text{Cost of Proposed Heating/Cooling} &= \text{Existing Costs} - \text{Proposed Costs} \\
 \text{Energy Savings } \$ &
 \end{aligned}$$

The baseline adjustment calculations are included with the energy calculations.

CHANGES IN INFRASTRUCTURE

None.

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Minor support will be required for the interruption of utilities for brief tie-in periods.

ENVIRONMENTAL ISSUES

Resource Use	Energy savings will result from reduced energy.
Waste Production	Any removed parts will be disposed of properly.
Environmental Regulations	No environmental impact is expected.

ECM 4A Building Envelope Improvements

The key benefits of this ECM include:

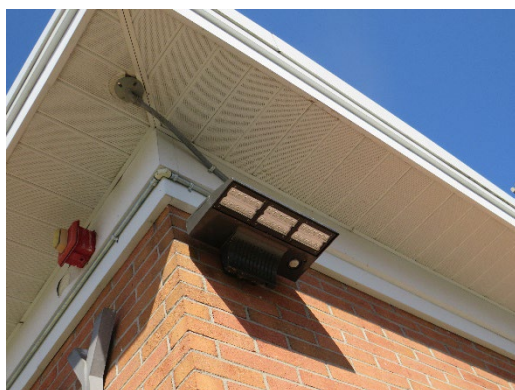
- **Energy savings** from reducing unwanted outside air infiltration.
- **Equipment longevity** due to more efficient and less wasteful equipment utilization.
- **Occupancy comfort and productivity** by way of enhanced temperature and humidity control throughout your buildings.
- **Improved building envelope** from addressing building gaps that allow unconditioned air penetration.

ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
4A Building Envelope Improvements	●	●	●

EXISTING CONDITIONS

Heat loss due to infiltration is a common problem, particularly in places with long and cold winter seasons such as NJ. This problem has been shown to represent the single largest source of heat loss or gain through the building envelopes of nearly all types of buildings. Our work has found 30% to 50% of heat loss attributable to air leaks in buildings.

Honeywell uncovered several leaks that allow for heat loss to occur during the winter season and unwanted heat gains during the summer season. These problems include door gaps, exhaust fans in poor condition, open windows or windows in poor condition, lack of air sealing, and insulation.



Martha B. Day School - Building Envelope Roof Wall Joint Sealing



Sam Donald ES – Building Envelope

Honeywell has helped customers like you to address these problems with a comprehensive and thorough building envelope solution that seals up your buildings to improve occupancy comfort and help eliminate unwanted energy waste. We propose to conduct a comprehensive weatherization job to weatherproof doors and windows, caulk and seal leaks, and install spray foam and rigid foam boards to stop unwanted air movement and provide a thermal barrier between spaces. Part of this process may include decoupling floor-to-floor and compartmentalizing of components of the building to equalize pressure differences.

PROPOSED SOLUTION

Building	Attic Air Barrier Retrofit (SF)	Attic Bypass Air Sealing (SF)	Attic Flat Insulation (SF)	Door Weather Striping - Doubles (Units)	Door Weather Striping - Singles (Units)	Install New Attic Hatch (Units)	Overhang Air Sealing (LF)	Overhead Door Weather Striping (Units)	Retrofit Attic Hatch (Units)	Roof-Wall Intersection Air Sealing (LF)	Wall Air Sealing (LF)
Martha B. Day School				4	4			1		643	
Samuel R. Donald School	120	4,600	4,600	6	1	1	24		1	234	112
Walter T. Bergen Middle School				10	4						
Total Quantity	120	4,600	4,600	20	9	1	24	1	1	877	112

Roof-Wall Joints

- Existing – Buildings throughout Bloomingdale Schools were found to require roof-wall joint air sealing.
- Proposed – Honeywell recommends using a high-performance sealant. In some buildings, two-component foam will be used. Any cantilevers off the buildings will be sealed with backer rod and sealant. Finally, the inside vestibule corners should be sealed with backer rod and sealant.

Roof Penetrations

- Existing - There are many roof top exhaust fans that require damper cleaning, lubrication, and inspection for proper operation and to seal the roof deck to prevent penetration. Some units may be deemed to be too oversized for this service. Some buildings have roof-top AHUs with ducts that may show air leak during an IGA.
- Proposed – Honeywell recommends if there is leak, these duct penetrations will be sealed with two-component polyurethane foam. Skylights will also be sealed. Sealant will be injected behind the drip cap to eliminate airflow.

Roof Overhangs

- Existing – We found that roof overhangs at exterior doors are open to the drop ceilings, providing a pathway allowing heated and cooled air to escape between the interior and exterior of the building.

Energy Savings Plan (ESP) for Energy Savings Improvement Program (ESIP)



- Proposed – Honeywell proposes to install rigid foam boards and seal the perimeter and any penetrations with spray foam to prevent air leak and provide a sufficient thermal barrier between the spaces.

Windows

- Existing - The operable windows in most of your buildings could present air leak issues that require weather stripping with fuzz or gasket type materials.
- Proposed – Honeywell recommends installing weather stripping and door sweeps to prevent air leak.

Doors

- Existing – Doors in this facility need full weather-stripping replacement and/or door sweeps.
- Proposed – Honeywell recommends new weather stripping and door sweeps to be installed where needed.

Benefits

This work will allow for more efficient operation of your buildings by reducing heating and cooling losses throughout the year. In addition, the draftiness of the buildings and hot and cold spots will be significantly reduced. A reduction in air infiltration will also minimize potential concerns for dirt infiltration or indoor air quality concerns including allergies.

ENERGY SAVINGS METHODOLOGY AND RESULTS

The energy savings for this ECM are realized at the buildings' HVAC equipment. The improved building envelope will limit conditioned air infiltration through openings in the building air barrier. Less infiltration means less heating required by the heating system.

EQUIPMENT INFORMATION

Manufacturer and Type	Several quality and cost-effective manufacturers are available. The District and Honeywell will determine final selections.
Equipment Identification	As part of the ECM design and approval process, specific product selection will be provided for your review and approval.

CHANGES IN INFRASTRUCTURE

Building envelope will be improved with little or no noticeable changes.

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Minimal coordination efforts will be needed to reduce or limit impact to building occupants.

ENVIRONMENTAL ISSUES

Resource Use	Energy savings will result from reduced HVAC energy usage and better occupant comfort.
Waste Production	Some existing caulking and weather-stripping will be removed and disposed of properly.
Environmental Regulations	No environmental impact is expected.

ECM 5A Water Conservation

The key benefits of this ECM include:

- **Reduced utility costs.**
- **Reduced energy usage** from improved efficiency resulting from replacement of older equipment.
- **Lower Operational Costs** through less frequent maintenance and operational issues.

ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
5A Water Conservation	●	●	●

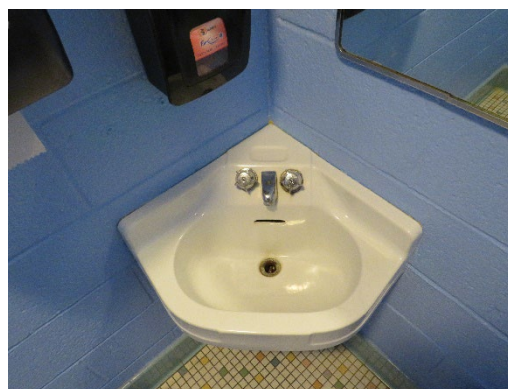
ECM OVERVIEW

This measure evaluates the savings from replacing older less-efficient toilets, urinals, faucets, sinks and showerheads with more water efficient fixtures to reduce overall water flow in general and hot water flow in particular. Low-flow showerheads and faucet aerators reduce the water flow, relative to standard showerheads and aerators, from the fixture. Pre-rinse spray valves often used in commercial and institutional kitchens—are designed to remove food waste from dishes prior to dishwashing. Replacing standard pre-rinse spray valves with low flow valves will reduce water use.

All the low flow devices reduce the overall water flow from the fixture which generally reduces the amount of hot water used to result in energy and water savings.



Samuel R. Donald School water fixtures



Martha B. Day School water fixtures

PROPOSED SOLUTION

Honeywell proposes to replace the water fixtures at the potential buildings listed in the chart below.

Table 5A.1 - Replace Water Fixtures

Building	Urinals	Toilets	Showerheads	Faucets
Martha B. Day School	10	22	1	41
Samuel R. Donald School	7	25	0	24
Walter T. Bergen Middle School	8	24	18	25
TOTAL	25	71	19	90

**Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)**



ENERGY SAVINGS METHODOLOGY AND RESULTS

Savings are based on the difference in flow and amount of thermal energy used to heat water.

CHANGES IN INFRASTRUCTURE

None

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Minor support will be required.

ENVIRONMENTAL ISSUES

Resource Use	None.
Waste Production	None.
Environmental Regulations	Aside from the environmental benefits of increasing energy awareness no other environmental impact is expected.

ECM 6A Permanent Load Reduction

The key benefits of this ECM include:

- **Reduced utility costs.**
- **Reduced energy usage** from improved efficiency resulting from replacement of older equipment.
- **Lower Operational Costs** through less frequent maintenance and operational issues.

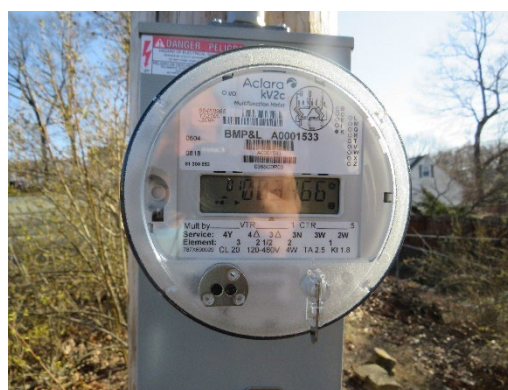
ECM Description	Martha B. Day School	Samuel R. Donald School	Walter T. Bergen Middle School
6A Permanent Load Reduction	●	●	●

ECM OVERVIEW

This measure evaluates the savings from the decrease in power (KW) usage and the rebates associated with that reduction through the PJM Permanent Reduction Program. Honeywell proposes to continue to utilize a registered Demand Response Curtailment Service Provider (CSP) to provide energy response services to the School District. Through the CSP, the School District will participate in the PJM Capacity Market Program and PJM Energy Efficiency Program. These programs are offered through the PJM Regional Transmission Organization (RTO), and Independent System Operator (ISO). The Capacity Market Program allows PJM customers the ability to respond to capacity emergencies when called upon by PJM, and the energy efficiency program pays PJM customers for implementing Energy Conservation measures (ECMs) that result in permanent load reductions during defined hours.



Samuel R. Donald School - Electric Meter



Martha B. Day School - Electric Meter

PJM Capacity Market Program

Capacity represents the need to have adequate resources to ensure that the demand for electricity can be met at all times. For PJM, that means that a utility or other electricity supplier, load serving entity, is required to have the resources to meet its consumers' demand plus a reserve amount. Electricity suppliers, load serving entities, can meet that requirement by owning and operating generation capacity, by purchasing capacity from others or by obtaining capacity through PJM's capacity market auctions.

Table 26. Permanent Load Reduction KW per Building

Building	Permanent Load Reduction (KW)
Martha B. Day School	16
Samuel R. Donald School	10
Walter T. Bergen Middle School	56
TOTAL	82

PJM operates a capacity market, called the Reliability Pricing Model (RPM). It is designed to ensure that adequate resources are available to meet the demand for electricity at all times. In the RPM, those resources include not only generating stations, but also demand response actions and energy efficiency measures by consumers to reduce their demand for electricity.

PJM must keep the electric grid operating in balance by ensuring there is adequate generation of electricity to satisfy the demand for electricity at every location in the region both now and in the future. PJM’s markets for energy and ancillary services help maintain the balance now while the PJM market for capacity aims to keep the system in balance in the future. Resources, even if they operate infrequently, must receive enough revenue to cover their costs. Payments for capacity provide a revenue stream to maintain and keep current resources operating and to develop new resources. Investors need sufficient long-term price signals to encourage the maintenance and development of generation, transmission and demand-side resources. The RPM, based on making capacity commitments in advance of the energy need, creates a long-term price signal to attract needed investments for reliability in the PJM region.

PROPOSED SOLUTION

Honeywell proposes to work with a PJM Regional Transmission Organization (RTO), CSR to implement a Demand Response energy curtailment program which will generate revenue streams for the School District. Honeywell’s Demand Response agent acting as the CSP will notify the district prior to potential events in order to advise and coordinate load curtailment participation in accordance with RTO program requirements and will work with the School District to benefit from energy efficiency improvements.

The PJM Markets are further described below.

The PJM Energy Efficiency Program

Energy efficiency measures consist of installing more efficient devices or implementing more efficient processes/systems that exceed then-current building codes or other relevant standards. An energy efficiency resource must achieve a permanent, continuous reduction in demand for electricity. Energy efficiency measures are fully implemented throughout the delivery year without any requirement of notice, dispatch, or operator intervention. A demand response resource can reduce its demand for electricity when instructed; this means PJM considers it a “dispatchable resource”. A demand response resource can participate in the RPM market for as long as its ability to reduce its demand continues. A demand response resource must be willing to reduce demand for electricity up to 10 times each year when called for a reduction. In a year without any reduction calls, the demand response resource is required to demonstrate the ability to reduce demand for electricity during a test of reduction capability. Data will be submitted by the demand response resource to prove compliance with reductions from actual calls or reductions from capability tests. An energy efficiency resource is one that reduced their demand for electricity through an energy efficiency measure that does not require any additional action by the consumer.

**Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)**



ENERGY SAVINGS METHODOLOGY AND RESULTS

Revenue is generated through participation in the PJM DR program.

CHANGES IN INFRASTRUCTURE

None

CUSTOMER SUPPORT AND COORDINATION WITH UTILITIES

Initiation of demand response curtailment will be required.

ENVIRONMENTAL ISSUES

Resource Use	None.
Waste Production	This measure will produce no waste by-products.
Environmental Regulations	None.



SECTION D

TECHNICAL &

FINANCIAL SUMMARY

Section D – Technical & Financial Summary

1. Recommended ESIP Project

Recommended ESIP Project	
Value of Project	\$627,066
Term of Repayment	15
Projected Savings Over Term	\$923,849
Projected Rebates & Incentives	\$3,713
Projected Interest Rate	3.5%

Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)



Form II: Recommended Project — Energy Conservation Measures (ECMs)
Summary Form

FORM II
ESCO's PRELIMINARY ENERGY SAVINGS PLAN (ESP):
ENERGY CONSERVATION MEASUREs (ECMs) SUMMARY FORM
BLOOMINGDALE SCHOOL DISTRICT
ENERGY SAVING IMPROVEMENT PROGRAM

ESCO Name: Honeywell International

Proposed Preliminary Energy Savings Plan: ECMs (Base Project)	Subcontractor Costs	Estimated Annual Savings \$	Estimated Simple Payback (years)
1A LED Lighting	\$ 26,385	\$ 55,555	0.47
1B De-Stratification Fans	\$ 53,866	\$ 1,725	31.22
2D Split System Replacements	\$ 49,725	\$ 449	110.84
2E Exhaust Fan Replacement	\$ 47,815	\$ 30	1,609.48
3A Building Management Controls	\$ 168,827	\$ 2,479	68.11
4A Building Envelope	\$ 16,897	\$ 1,780	9.49
6A Permanent Load Reduction	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
Add additional lines as needed* Project Summary:	\$ 363,515	\$ 62,018	5.86

Optional ECMs Considered, but not included with base project at this time	Estimated Installed Hard Costs ⁽¹⁾	Estimated Annual Savings \$	Estimated Simple Payback (years)
2A Unit Ventilator Upgrades	\$ 704,107	\$ 904	778.65
2B Motors and VFDs	\$ 66,027	\$ 1,813	36.42
2C Addition of Tempered Ventilation	\$ 68,673	\$ 152	450.71
5A Water Conservation	\$ 147,846	\$ 2,162	68.37
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
0	\$ -	\$ -	-
			-
			-
			-

Form III: Recommended Project — Projected Annual Energy Savings Data Form

<p>FORM III ESCO's PRELIMINARY ENERGY SAVINGS PLAN (ESP) PROJECTED ANNUAL ENERGY SAVINGS DATA FORM BLOOMINGDALE SCHOOL DISTRICT ENERGY SAVING IMPROVEMENT PROGRAM</p>
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ESCO Name: Honeywell International

The projected annual savings for each fuel type MUST be completed using the following format. Data should be given in the form of fuel units that appear in the utility bills.

Energy/Water	ESCO Developed Baseline (Units)	ESCO Developed Baseline (Costs \$)	Proposed Annual Savings (Units)	Proposed Annual Savings (Costs \$)
Electric Demand (KW)	0	\$0	987	\$0
Electric Energy (KWH)	619,429	\$80,353	340,467	\$44,077
Natural Gas (therms)	65,489	\$52,406	5,307	\$3,622
Fuel Oil (Gal)	0	\$0	0	\$0
Steam (Pounds)				
Water (gallons)				
Other (Specify Units)				
Other (Specify Units)				
Avoided Emissions (1)	Provide in Pounds (Lbs)			
NOX	331			
SO2	228			
CO2	501,976			

(1) ESCOs are to use the rates provided as part of this RFP to calculate Avoided Emissions. Calculation for all project energy savings and greenhouse gas reductions will be conducted in accordance with adopted NJBPU protocols

(2) "ESCOs Developed Baseline": Board's current annual usages and costs as determined by the proposing ESCO; based off Board's utility information as provided to proposing ESCO.

(3) "Proposed Annual Savings": ESCOs proposed annual savings resulting from the Board's implementation of the proposed ESP, as based upon "ESCOs Developed Baseline".

Form IV: Recommended Project — Projected Annual Energy Savings Data Form
in MMBTUs

<p>FORM IV ESCO's PRELIMINARY ENERGY SAVINGS PLAN (ESP): PROJECTED ANNUAL ENERGY SAVINGS DATA FORM IN MMBTUs BLOOMINGDALE SCHOOL DISTRICT ENERGY SAVING IMPROVEMENT PROGRAM</p>
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ESCO Name: Honeywell International

The projected annual energy savings for each fuel type MUST be completed using the following format. Data should be given in equivalent MMBTUs.

ENERGY	ESCO Developed Baseline	ESCO Proposed Savings Annual	Comments
Electric Energy (MMBTUs)	2,113	1,162	
Natural Gas (MMBTUs)	6,549	531	
Fuel Oil (MMBTUs)	0	0	
Steam (MMBTUs)			
Other (Specify) (MMBTUs)			
Other (Specify)			

NOTE: MMBTU Defined: A standard unit of measurement used to denote both the amount of heat energy in fuels and the ability of appliances and air conditioning systems to produce heating or cooling.

Form VI: Recommended Project — Projected Cost Form For 15 Year @ 3.5% Interest Rate

FORM VI ESCO's PRELIMINARY ENERGY SAVINGS PLAN (ESP); ESCO's PRELIMINARY ANNUAL CASH FLOW ANALYSIS FORM BLOOMINGDALE SCHOOL DISTRICT ENERGY SAVING IMPROVEMENT PROGRAM
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ESCO Name: Honeywell International

Note: Proposers must use the following assumptions in all financial calculations:

(a) The cost of all types of energy should be assumed to inflate at: 2.4% gas, 2.2% electric per year

1. Term of Agreement: 15 (Years) (Months)
 2. Construction Period (months): 12
 3. Cash Flow Analysis Format:

Cost Before Direct Install Rebate:	\$ 469,139
Credit for Direct Install Rebate:	\$ (105,624)
Total ECM Subcontractor Costs	\$ 363,515
Design and Development	\$ 35,008
Construction & Administration	\$ 132,211
Overhead & Profit	\$ 96,331
Sub Total Cost	\$ 627,066
Additional Capital Contribution	\$ -
Professional Fees	\$ 25,000
Financed Value:	\$ 652,066

Interest Rate Used for Proposal: 3.5%

Year	Annual Energy Savings	Annual Operational Savings	RJM Rebate	Total Annual Savings	Annual Project Costs	Board Costs	Annual Service Costs ⁽¹⁾	Net Cash-Flow to Client	Cumulative Cash Flow
Installation	\$ 14,312		\$ -	\$ 14,312	\$ -	\$ -	\$ -	\$ 14,312	\$ 14,312
1	\$ 47,705	\$ 14,319	\$ 1,238	\$ 63,262	\$ (58,880)	\$ (88,346)	\$ (29,466)	\$ 4,382	\$ 18,694
2	\$ 48,762	\$ 14,319	\$ 1,238	\$ 64,319	\$ (59,936)	\$ (59,936)	\$ -	\$ 4,383	\$ 23,076
3	\$ 49,842	\$ 14,319	\$ 1,238	\$ 65,399	\$ (61,017)	\$ (61,017)	\$ -	\$ 4,382	\$ 27,458
4	\$ 50,946	\$ 14,319	\$ -	\$ 65,265	\$ (60,883)	\$ (60,883)	\$ -	\$ 4,382	\$ 31,841
5	\$ 52,075	\$ 14,319	\$ -	\$ 66,394	\$ (62,011)	\$ (62,011)	\$ -	\$ 4,383	\$ 36,224
6	\$ 53,229		\$ -	\$ 53,229	\$ (48,846)	\$ (48,846)	\$ -	\$ 4,383	\$ 40,606
7	\$ 54,408		\$ -	\$ 54,408	\$ (50,025)	\$ (50,025)	\$ -	\$ 4,383	\$ 44,989
8	\$ 55,613		\$ -	\$ 55,613	\$ (51,230)	\$ (51,230)	\$ -	\$ 4,383	\$ 49,372
9	\$ 56,845		\$ -	\$ 56,845	\$ (52,463)	\$ (52,463)	\$ -	\$ 4,382	\$ 53,754
10	\$ 58,105		\$ -	\$ 58,105	\$ (53,722)	\$ (53,722)	\$ -	\$ 4,383	\$ 58,137
11	\$ 59,392		\$ -	\$ 59,392	\$ (55,009)	\$ (55,009)	\$ -	\$ 4,383	\$ 62,519
12	\$ 60,708		\$ -	\$ 60,708	\$ (56,325)	\$ (56,325)	\$ -	\$ 4,383	\$ 66,902
13	\$ 62,053		\$ -	\$ 62,053	\$ (57,670)	\$ (57,670)	\$ -	\$ 4,383	\$ 71,285
14	\$ 63,427		\$ -	\$ 63,427	\$ (59,045)	\$ (59,045)	\$ -	\$ 4,382	\$ 75,667
15	\$ 64,833		\$ -	\$ 64,833	\$ (60,450)	\$ (60,450)	\$ -	\$ 4,383	\$ 80,050
Totals	\$ 852,253	\$ 71,595	\$ 3,713	\$ 927,562	\$ (847,512)	\$ (876,978)	\$ (29,466)	\$ 80,050	\$ 80,050

NOTES:

(1)*Annual Service only applies if customer accepts energy guarantee.

(2) As of July 1, 2021, all of former NJ Clean Energy Program incentive programs transitioned over to the investor-owned gas and electric utility companies. Subsequently, the BPU is requiring that all ESIP projects consult with the DCA and follow all DCA guidance regarding the procurement of all subcontractors.

Total Cash Flow	\$ 80,050
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Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)



Building-by-Building Simple Payback Summary (Hard Costs Only)

Building & ECM	kWh Savings (\$)	kW Savings (\$)	Natural Gas Savings (\$)	Annual Energy Cost Savings (\$)	Annual Operational Savings (\$)	Net Cost (\$)	Simple Payback
Martha B. Day School	\$ 9,787	\$ -	\$ 2,451	\$ 15,298	\$ 3,059	\$ 204,156	11.1
1A LED Lighting	\$ 8,774	\$ -	\$ (272)	\$ 11,562	\$ 3,059	\$ 5,169	0.4
1C De-Stratification Fans	\$ (54)	\$ -	\$ 454	\$ 400	\$ -	\$ 11,067	27.7
2E Exhaust Fan Replacement	\$ 30	\$ -	\$ -	\$ 30	\$ -	\$ 47,815	1,609.5
3A Building Management Controls	\$ 817	\$ -	\$ 1,341	\$ 2,159	\$ -	\$ 128,904	59.7
4A Building Envelope	\$ 220	\$ -	\$ 928	\$ 1,147	\$ -	\$ 11,200	9.8
Samuel R. Donald School	\$ 5,422	\$ -	\$ 286	\$ 10,248	\$ 4,539	\$ 13,575	0.9
1A LED Lighting	\$ 5,476	\$ -	\$ (158)	\$ 9,858	\$ 4,539	\$ 3,167	0.2
1C De-Stratification Fans	\$ (54)	\$ -	\$ 444	\$ 390	\$ -	\$ 10,408	26.7
Walter T. Bergen Middle School	\$ 28,868	\$ -	\$ 885	\$ 36,473	\$ 6,720	\$ 130,435	3.0
1A LED Lighting	\$ 28,241	\$ -	\$ (825)	\$ 34,136	\$ 6,720	\$ 18,048	0.4
1C De-Stratification Fans	\$ (160)	\$ -	\$ 1,096	\$ 936	\$ -	\$ 32,390	34.6
2D Split System Replacements	\$ 449	\$ -	\$ -	\$ 449	\$ -	\$ 49,725	110.8
3A Building Management Controls	\$ 218	\$ -	\$ 102	\$ 320	\$ -	\$ 24,575	76.8
4A Building Envelope	\$ 120	\$ -	\$ 512	\$ 633	\$ -	\$ 5,697	9.0
Project Total	\$ 44,077	\$ -	\$ 3,622	\$ 62,018	\$ 14,319	\$ 348,167	4.6

2. Utility and Other Rebates & Incentives

ENERGY STAR Portfolio Manager



Pay for Performance takes advantage of the ENERGY STAR Program with Portfolio Manager, EPA’s interactive tool that allows facility managers to track and evaluate energy and water consumption across all their buildings. The tool provides the opportunity to load in the characteristics and energy usage of your buildings and determine an energy performance benchmark score. You can then assess energy management goals over time, identify strategic opportunities for savings, and receive EPA recognition for superior energy performance.

Incentives, Rebates and Grants Summary

Honeywell has a great deal of experience in applying for and successfully securing all available incentives, rebates, and grants for our clients. We have been approved and allocated for over \$9M of incentives on behalf of our New Jersey customers alone since the introduction of the Energy Savings Improvement Program legislation in 2009. The New Jersey programs employed primarily included the Office of Clean Energy’s Pay for Performance and Cogeneration Incentives. A table of the incentive amounts on a per project basis is provided below.

NJ Customers	Rebate Amount
Hudson County (Projected)	\$2,369,012
East Brunswick Public Schools (Projected)	\$1,601,318
West Orange Board of Education	\$1,399,747
City of Newark	\$1,242,368
Passaic County (Projected)	\$1,209,061
Old Bridge Board of Education	\$1,085,614
Bridgewater-Raritan Regional District	\$963,034
Elizabeth Schools	\$934,209
Parsippany-Troy Hills Board of Education	\$831,175
Camden County Technical Schools	\$734,803
West Orange Board of Education	\$644,744
Hillsborough Board of Education	\$584,736
NH-Voorhees Regional HS District	\$511,558
School District of the Chathams	\$419,056
West Morris Regional High School (Projected)	\$392,700
Phillipsburg School District	\$274,278
Educational Services Commission of NJ	\$260,603
Somerset County Vocational	\$246,095
Robbinsville Public School District	\$231,015
Bloomfield Board of Education	\$225,868
Mountain Lakes Board of Education	\$194,722
Lower Cape May Regional	\$190,658

NJ Customers	Rebate Amount
Verona School District	\$171,015
Hanover Township School District	\$169,882
City of Perth Amboy	\$137,441
Town of Kearny	\$84,147
Frankford School District	\$30,743

Total Rebates and Incentives

Year	Permanent Load Reduction
Year 1	\$1,238
Year 2	\$1,238
Year 3	\$1,238
Totals	\$3,714

3. Financing the ESIP

In accordance with P.L.2012, c.55, an ESIP can be financed through energy savings obligations. The term refers to the two primary financing tools, debt, and lease-purchase instruments. Each of these options is discussed below.

Energy savings obligations shall not be used to finance maintenance, guarantees, or the required third-party verification of energy conservation measures guarantees. Energy saving obligations, however, may include the costs of an energy audit and the cost of verification of energy savings as part of adopting an energy savings plan or upon commissioning. While the audit and verification costs may be financed, they are not to be considered in the energy savings plan as a cost to be offset with savings.

In all cases, maturity schedules of lease-purchase agreements or energy savings obligations shall not exceed the estimated average useful life of the energy conservation measures.

An ESIP can also include installation of renewable energy facilities, such as solar panels. Under an energy savings plan, solar panels can be installed and the reduced cost of energy reflected as savings.

The law also provides that the cost of energy saving obligations may be treated as an element of the local unit's utility budget, as it replaces energy costs.

Debt Issuance

The law specifically authorizes municipalities, school districts, cities, counties, and fire districts to issue refunding bonds as a general obligation, backed with full faith and credit of the local unit to finance the ESIP. Because an ESIP does not effectively authorize new costs or taxpayer obligations, the refunding bond is appropriate, as it does not affect debt limits, or in the case of a board of education, require voter approval. The routine procedures for refunding bonds found in the Local Bond Law and Public-School Bond Law would be followed for issuance of debt, along with any required Bond Anticipation Notes as authorized pursuant to law.

Regarding bonds for public schools, the Department of Education (DOE) has concluded that debt financed ESIP projects are not covered by State aid for debt service or a “Section 15 EFFCA Grant” as there is no new local debt being authorized.

Tax-Exempt Lease Purchase Financing

The tax-exempt lease is a common form of financing for ESIP projects. Tax-exempt leasing is a tool that meets the basic objectives of debt, spreading the cost of financing over the life of an asset while avoiding constitutional or statutory limitations on issuing public debt. If structured properly, by including non-appropriation language in the financing documents, the tax-exempt lease will not be considered debt for state law purposes but will be considered debt for federal income tax purposes. Thus, for federal purposes, the interest component of the lease payment is tax-exempt.

Under the New Jersey Energy Savings Improvement Program (ESIP), the Bloomingdale School District may authorize a lease purchase agreement between the District and a financier. Ownership of the equipment or improved facilities will pass to the Bloomingdale School District when all the lease payments have been made. There are legal expenses and other minimal closing costs associated with this type of structure. The lease purchase agreement may not exceed 15 years (commencing upon completion of the construction work) or 20 years where a combined heat and power or cogeneration plant is included in the project. The primary benefits of a lease are lower rates and the acquisition of essential use property without creating debt.

Under a lease, there is typically a single investor. The lease may have non-appropriation language that allows the District to access low tax-exempt rates. Some previous customers have chosen to remove the non-appropriation language which has resulted in lower competitive rates.

Repayment of the lease payments is tailored to meet the requirements of the District. Payments are typically scheduled to commence after the construction is complete and acceptance of the project has been received by the Bloomingdale School District. Typically, payment terms are structured so there is no up-front capital expense to the Bloomingdale School District and payments are aligned within your cash flow and fiscal limits.

Certificates of Participation (COPs)

Certificates of Participation (COPs) are another form of a lease purchase agreement with the differentiating factor being that there are multiple investors participating in the purchase of the lease. COPs require financial disclosure and are typically utilized on higher value projects where one investor does not have the capacity to hold a high value lease for a single customer.

Energy Savings Obligations

Energy Savings Obligations can be issued as refunding bonds in accordance with the requirements of N.J.S.A 40A:11-4.6(c)(3). These bonds may be funded through appropriation for the utility services in the annual budget of the contract unit and may be issued as refunding bonds pursuant to N.J.S.40A:2-52 et seq., including the issuance of bond anticipation notes as may be necessary, provided that all such bonds and notes mature within the periods authorized for such energy savings obligations. Energy savings obligations may be issued either through the contracting unit or another public agency authorized to undertake financing on behalf of the unit but does not require bond referendum.



SECTION E

MEASUREMENT &

VERIFICATION AND

MAINTENANCE PLAN

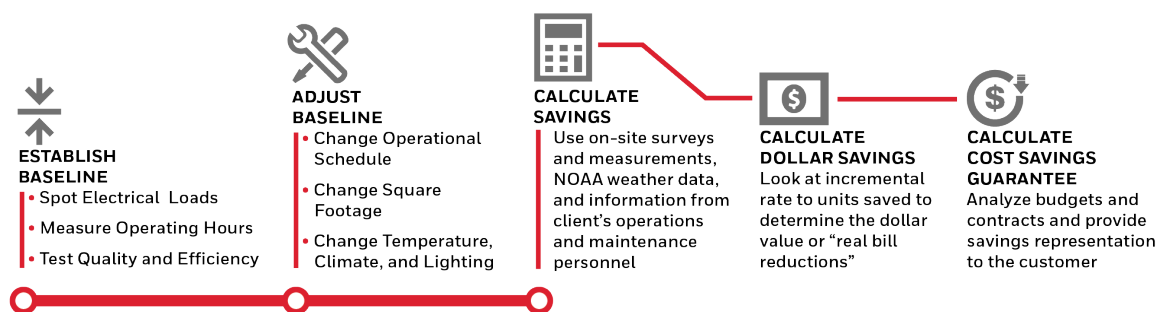
Section E – Measurement & Verification and Maintenance Plan

1. Baseline

The purpose for establishing a baseline for an energy performance project is to accurately predict what the energy consumption and costs would have been as if the energy project was never completed. The baseline can then be used to measure the improvement in efficiency and determine the overall energy savings of the project. Because the energy consumption of all facilities is somewhat affected by variable weather conditions, a baseline for heating and cooling systems is typically dependent on degree-days or outside temperature. A baseline also needs to incorporate changes in facility use, such as a change in hours of operation or increased levels of outside air. Once again, if these changes would have occurred in the absence of the energy project, they should be incorporated into the project's baseline.

Honeywell calculated the baseline based on the systems and operating conditions as they currently exist prior to the pandemic. The baseline was established in accordance with BPU guidelines as being considered a pre-pandemic baseline. Baseline development is most accurate if specific measurements are taken on equipment over a period of time (early in the audit phase) to determine actual kW, kWh, oil and gas consumption, cfm, gpm, hours of use, etc. A summary of some of the methods used by Honeywell to establish baselines and support, calculated savings are listed below.

1. Spot measurements of electrical loads such as lighting, fan and pump motors, chillers, electric heat, etc.
2. Measurement of equipment operating hours using electric data recorders
3. Measurement of existing operating conditions using data recorders for space temperature and humidity, air handler temperatures (mixed, return, cooling, and heating coil discharges), and space occupancy using lighting loggers
4. Spot measurement for boiler efficiencies, water use
5. Running measurements of chiller operation, including simultaneous measurement of input kWh or steam flow and chilled water supply and return temperatures and flow (gpm)
6. Records of operating conditions from building management systems and utility-grade meters



The data from the above is used to calculate existing energy use, which is then reconciled with current facility utility bills and adjusted as required to provide a mutually agreed baseline.

To provide valid savings evaluations, Honeywell maintains a significant inventory of metering equipment utilized by its auditors and Energy Engineers to ascertain critical data about the operation of the facility.

Typically, auditors use the following equipment for their onsite measurements:

1. Recording and instantaneous power and harmonic analyzers
2. Data loggers for pressures, temperatures, flow rates, humidity, and CO2
3. Lighting level and recording profile/run-hour and occupancy meters
4. Multimeters, handheld kW meters
5. Combustion analyzers
6. Ultrasonic flow meters
7. Infrared thermometers

The ECMs installed in many projects allow for energy savings to be identified by direct metering or a combination of metering and calculations with accepted assumptions. In the case of lighting, for example, it is relatively easy to meter representative samples of unique fixture types—both before and after a retrofit—to determine the power consumption difference in Watts. When multiplied by the quantity of each fixture type, the total connected load reduction can be derived. In combination with run time assumptions, or meters, the electrical reduction can be accurately determined. Where possible, direct measurement of ECMs during construction (before and after the retrofit) coupled with energy savings calculations is an accurate and cost-effective method.

Due to the nature of some ECMs, or when a combination of ECMs is installed, individual (discrete) metering may not be either possible or able to fully document a baseline and calculate savings. Many of these situations can be handled by combining results from metering along with either engineering-based calculations or output from nationally recognized building simulation programs such as DOE II, ASEAM, TRACE, or HAP. This method would be used for ECMs such as night setback and where no other ECMs have significant interaction with the setback measure.

Formulas exercised in energy savings calculations follow the laws of physics. Many are included in the ASHRAE Handbook of Fundamentals. However, such calculations (i.e., equipment operation profiles) must be tempered by experience, past retrofit practice, and expectations of future operating conditions to arrive at achievable values in practice. The result is a coupled project where the final savings are equal to or greater than anticipated.

2. Adjustment to Baseline Methodology

The methodology for establishing and adjusting the baseline is determined by the characteristics of the facility, the conservation technology being installed, the technology being replaced, the type of measurement and verification the Bloomingdale School District requires, and the needs of the District for future changes in facility use.

The purpose of this flexible approach is to make the most accurate possible measurement of the changes in energy uses that are specifically attributable to the installed ECMs. This creates the ability over the life of the contract to continue measuring only savings achieved by the ECM and leaves the Bloomingdale School District free to make future changes to the building or systems without affecting the savings agreement. It also necessitates fewer provisions for adjusting the baseline.

Modifications to the energy baseline or savings will be made for any of the following:

3. Energy Savings Calculations

In calculating energy savings, Honeywell's highly experienced audit staff uses onsite surveys and measurements, National Oceanic and Atmospheric Administration weather data, detailed discussions with the client's operations and maintenance personnel and engineers, utility records, and other sources to ensure accurate energy, water, and O&M savings.

Typically, the following data is gathered:

- Local weather data
- Utility bills and sub-metered consumption trends
- Utility rate structure
- Facility use and occupancy data
- Internal equipment loads
- Interviews of operations and maintenance staff and management
- Building construction, age, use, and layout
- Schematics of energy and water distribution systems
- Identification and inventory of HVAC equipment
- Identification and inventory of process equipment
- Design, configuration, and operating characteristics of HVAC systems
- Design, configuration, and operating characteristics of process systems
- Control strategies and sequences of operation for HVAC and other process equipment
- Identification and count of all lighting fixtures and determination of power consumption for each type
- Identification and inventory of lighting control methods
- Measurement of foot-candle levels at sample locations
- Power quality and harmonics, power factor
- Indoor air quality issues

Calculating the units of energy saved is a critical measure of energy efficiency improvements, but it does not indicate the actual dollars saved. To do this, Honeywell has established the base rates that will act as "floor" rates in calculating the savings. These are usually the rates that are in effect at the time of the contract start or rates used for audit estimated savings.

Energy Savings Plan (ESP) for Energy Savings Improvement Program (ESIP)



The equation below will be used to calculate the annual savings in dollars.

$$\text{Annual Savings (\$)} = \sum_{m=1}^{12} \{ (\text{Rate}_{kWH, Base} \times kWH_{saved, m}) + (\text{Rate}_{fuel oil, Base} \times \text{Fuel Oil}_{saved, m}) + (\text{Rate}_{Steam, Base} \times \text{Steam}_{saved, m}) + (\text{Rate}_{NG} \times \text{NG}_{saved, m}) \} + (\text{Agreed} (\$))$$

Where

Rate_{kWH, Base}= defined base rate for kWh consumption
kWh_{saved, m}= calculated kWh savings for month *m*

Rate_{Fuel Oil Base}= defined base rate for fuel Oil Savings (XX/gal.)
Fuel Oil_{saved, m}= calculated chilled water savings in gal. for month *m*

Rate_{Steam, Base}= defined base rate for steam consumption (\$XX/MMBtu.)
Steam_{saved, m}= calculated steam savings in MMBtu. for month *m*

Rate_{NG, Base}= defined base rate for natural gas consumption (\$XX/Therm)
NG_{saved, m}= calculated natural gas savings in Therms for month *m*

Agreed(\$)= Annual savings in dollars (water, sewer, maintenance, etc.)

Honeywell assigns dollar values to the true incremental value of savings for energy and water. In other words, we do not combine, for example, demand and consumptions numbers so there is an average value to savings. Honeywell looks at each incremental rate to units saved to properly determine the value (dollar) to the District or “real bill reductions.” As noted in the cash flow, energy escalation rates will be established in accordance with New Jersey Board of Public Utility guidelines.

Based on this, Honeywell has reviewed all utility bills (hourly data), tariffs, special contracts, and commodity contracts to develop the incremental value (costs) of each utility.

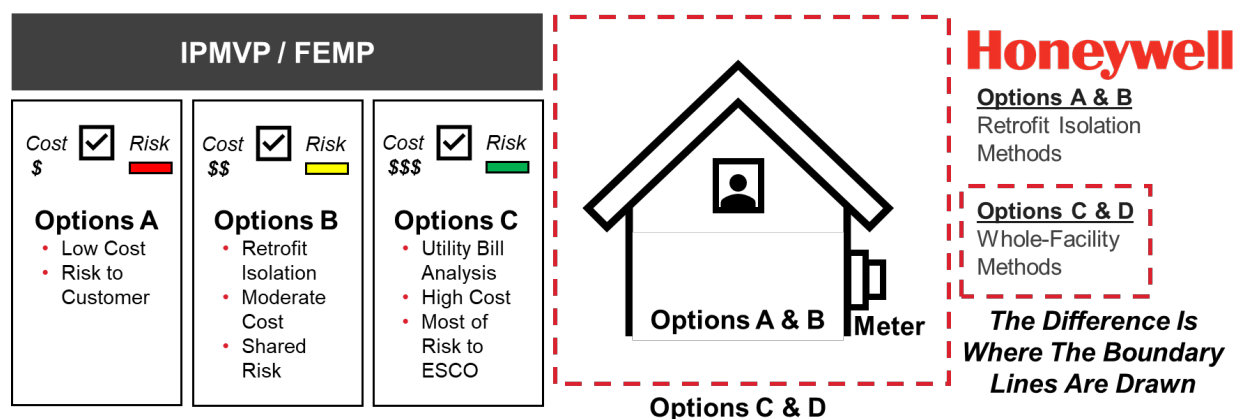
The O&M savings are typically a function of the District’s existing budgets (labor and direct costs), maintenance contracts, and operations (supplier) contracts. Honeywell has analyzed the information to provide a conservative savings representation for the District’s review and acceptance. The information will include all calculations and assumptions.

4. Measurement & Verification

The purpose of performing any monitoring and verification is to establish an agreed-upon process that provides the customer satisfaction that the improvements have been delivered and ongoing information regarding their operation and performance. Additionally, this effort will be used to assess the actual dollars of savings versus the guarantee level.

It is essential for the success of this program that Honeywell and the Bloomingdale School District agree on a mutually acceptable methodology for measuring and verifying energy savings that are attributable to the energy conservation measures (ECMs) Honeywell installs. This M&V plan provides the procedures to document the energy and cost savings of each of the proposed ECMs.

The plan for monitoring and verifying energy savings for the proposed ECMs is based on the methods described in the **International Performance Measurement and Verification Protocol (IPMVP)**¹. Our approach to M&V is directly consistent and in compliance with the IPMVP. This protocol provides a framework for the most widely accepted and used M&V methods by the industry.



Engineering calculations of energy and cost savings for the project are based on operating parameters (such as weather, temperature settings, run hours, occupancy patterns, and space usage) and equipment performance characteristics. The M&V plan uses the operating parameters established in the baseline for all savings calculations during the term of the project. The intent of the M&V plan is to verify that the ECMs installed by Honeywell will provide the expected energy savings. Therefore, Honeywell will collect data and relative information during the post-retrofit period to demonstrate that the installed equipment is performing at expected levels. It is assumed that the Bloomingdale School District will continue to add or renovate buildings and that the District will desire to retain the right to set comfort and operating characteristics. To accommodate this, Honeywell will develop its M&V plan in a way that allows the Bloomingdale School District to adapt to the demands of future campus growth and changes without the need for the District and Honeywell to negotiate energy baseline adjustments.

Our typical M&V plan will utilize broadband Internet access to the appropriate the District's control interfaces to both confirm operating status and to download trend data to verify proper equipment maintenance.

¹ www.ipmvp.org.

One year after the commencement date of the ECMs, Honeywell will submit a report verifying and calculating the energy and cost savings for the first year. This report will be submitted for facility review and approval. For the remaining contract term, Honeywell will provide annual reports. These reports will include results of inspections of the installed equipment/systems, energy and cost savings, and recommendations to provide optimum energy performance.

All permanent measurement equipment will be purchased new with a calibration certificate from the manufacturer. The power multi-meter and the TSI multi-meter will be calibrated annually before using them in the annual inspection.

M&V Options

The IPMVP guidelines classify the M&V procedures into four categories, Options A, B, C, and D. As shown in the table below, these options differ in their approach to the level of complexity of the M&V procedures.

M&V Option	Performance Verification Techniques
<p>Option A Verifying that the measure has the potential to perform and to generate savings.</p>	<p>Option A is appropriate for ECMs that have energy use that can be readily quantified, such as the use of high efficiency lighting fixtures, high efficiency constant speed motors, and other standard engineering calculations. Engineering calculations before and after installation spot measurements and use of EMS data points with stipulated values.</p>
<p>Option B Verifying that the measure has the potential to perform and verifying actual performance by end use.</p>	<p>Option B is appropriate for ECMs that require periodic or on-going measurements to quantify energy use, such as the use of variable frequency drives on pump or fan motors. Engineering calculations with metering and monitoring strategy throughout term of the contract.</p>
<p>Option C Verifying that the measure has the potential to perform and verifying actual performance (whole building analysis.)</p>	<p>Option C is used for ECMs for which the energy use or energy savings cannot be measured directly, such as building envelope modifications. Option C is based on the use of utility meters to quantify building energy use. Utility meter billing analysis-using techniques from simple comparison to multivariable regression analysis.</p>
<p>Option D Verifying actual performance and savings through simulation of facility components and/or the whole facility</p>	<p>Option D is used for ECMs for which the energy use or energy savings cannot be measured directly or savings for individual ECMs are heavily interdependent. Calibrated building simulation is used to separate the energy savings attributable to each ECM. Calibrated energy simulation/modeling, calibrated with hourly or monthly utility billing data, and end-use metering.</p>

In general,

$$ECM \text{ Energy Savings} = \text{Baseline Energy Use} - \text{Post-Installation Energy Use}$$

and

$$Energy \text{ Cost savings } (\$) = \text{Total Energy Savings} \times \text{Contractual Energy Rates}$$

Exceptions to this simple equation are as follows:

Projects where an on/off M&V method is used. For example, after a new energy management system is installed, control features are turned off for a set period of time to recreate baseline conditions. Thus, savings are determined after installation by comparing energy use with and without the control features activated.

Since energy use at a facility is rarely, if ever, constant, another way to define M&V is as a comparison of a facility's post-installation energy use with its usage if the ECM or system had not been installed. This takes into account situations in which baseline energy use must be adjusted to account for changing conditions, such as changes in facility operation, occupancy, or use or external factors such as weather.

Post-Retrofit M&V Activities

There are two components associated with M&V of performance contract projects:

1. Verifying the potential of the ECM to generate savings also stated as confirming that the proper equipment and systems were installed, are performing to specification, and have the potential to generate the predicted savings
2. Determining/verifying energy savings achieved by the installed ECM(s)

Verifying The Potential To Generate Savings

Verifying baseline and post-installation conditions involves inspections (or observations), spot measurements, and commissioning activities. Commissioning includes the following activities:

- Documentation of ECM or system design assumptions
- Documentation of the ECM or system design intent for use by contractors, agencies, and operators
- Functional performance testing and documentation necessary for evaluating the ECM or system for acceptance
- Adjusting the ECM or system to meet actual needs within the capability of the system

Post-Installation Verification

Post-installation M&V verification will be conducted by both Honeywell and the Client to ensure that the proper equipment and systems that were installed are operating correctly and have the potential to generate the predicted savings. Verification methods may include surveys, inspections, and spot or short-term metering.

Regular Interval Post-Installation Verification

At least annually, Honeywell will verify that the installed equipment and systems have been properly maintained, continue to operate correctly, and continue to have the potential to generate the predicted savings. Savings report for all the installed ECMs will be submitted each year after the acceptance date of the work performed by Honeywell.

Computation Of Energy Savings

After the ECMs are installed, energy and cost savings will be determined annually by Honeywell in accordance with an agreed-upon M&V approach as defined in a project-specific M&V plan.

Construction/Interim Savings

Construction or Interim savings are usually measured by using the same methodology as described in the detail M&V plan for each ECM. The start and the completion time for each ECM must be agreed to between Honeywell and the Bloomingdale School District.

Electricity and thermal savings from the ECMs in which no detailed long-term data is required to be collected will be stipulated and based on the starting dates, final completion dates, and verification of the ECMs' operation. For other ECMs in which long-term data collection is required by the M&V plan, data will be used to calculate the savings using the same equations as described in the detail plan. For example, to calculate electricity savings for the installation of a VFD, the kW is spot measured at a set speed for selected motors through a sampling plan. The measured kW is subtracted from the baseline kW to calculating the savings. Thermal savings are tied to the electrical savings in the manner described in the detail M&V plan. The results are extrapolated to cover all the VFDs installed by Honeywell.

The savings for each of the monitored VFD is calculated on an interval basis as follows:

$$kW_{\text{Saved}} = (kW_{\text{Base}} - kW_{\text{Spot Measured}})$$

$$kWh_{\text{Saved}} = \text{Estimated operating hours during the interim period} * kW_{\text{Saved}}$$

The total kWh savings is the sum of the kWh_{Saved} for all the installed VFDs.

1. Changes in the number of days in the annual review cycle
2. Changes in the square footage of the facilities
3. Changes in the operational schedules of the facilities
4. Changes in facility indoor temperatures
5. Significant changes in climate
6. Significant changes in the amount of equipment or lighting utilized in the facility

Examples of situations where the baseline needs to be adjusted are: i) changes in the amount of space being air conditioned, ii) changes in auxiliary systems (towers, pumps, etc.) and iii) changes in occupancy or schedule. If the baseline conditions for these factors are not well-documented, it becomes difficult, if not impossible, to properly adjust them when they change and require changes to payment calculations. To compensate for any addition and deletion of buildings and impact on the baseline model, An M&V report should use sound technical methodologies to adjust the baseline. An example would be to add or delete building energy impact via the calculated cooling load in tons as a percentage of the existing campus tonnage baseline or use indices like W/ft² and Btu/ft² to calculate the energy consumption of the building and then add or subtract the energy usage to or from the baseline energy consumption.

5. Site Specific M&V Plan

ECM # and Name	Summary of ECM	M&V Methodology / Recommendation	Description of M&V – Pre- and Post-Process
1A LED Lighting	<ul style="list-style-type: none"> Upgrade Lighting systems: <ul style="list-style-type: none"> Re-lamp/Re-ballast T8/T12 to LED, Incandescent to LED Metal Halide and Sodium Vapor to LED High Bays 	Option A: <ul style="list-style-type: none"> Pre and Post measurements Line by Line scope and engineering calculations 	<ul style="list-style-type: none"> Pre-M&V: Measurement of kW for 5% sample fixtures in each category Data log usage hours Data Log occupancy schedules Update Line by Line scope with measured kW and usage hours Post M&V: Measurement of kW for 5% sample fixtures in each category Usage Hours to remain same Occupancy schedules to remain same Energy Savings: Update Line by Line scope with measured kW and usage hours and compare to pre-retrofit calculated savings
1C De-Stratification Fans & Disinfection	<ul style="list-style-type: none"> Install De-Stratification fans in Gymnasiums to minimize stratification of hot air and maintain hot air flow below the fan level. 	Option A: <ul style="list-style-type: none"> Electric energy savings - Engineering calculations based on programmed parameters. Option C: <ul style="list-style-type: none"> Fuel Savings Utility Bill Comparison for all fuel related measures 	<ul style="list-style-type: none"> Pre-M&V: Verify existing operating parameters match the baseline calculation assumptions Post M&V: Verify that systems are installed as specified and controls are programmed to match the savings assumptions Electric Energy: Verify savings based on programmed parameters and engineering calculations Fuel: Compare post installation M&V fuel cost based on fuel billing data and Metrix tuned to normalize to heating degree days
2A Unit Ventilators Upgrades	<ul style="list-style-type: none"> Refurbish or replace antiquated Unit Ventilators. 	Option C: <ul style="list-style-type: none"> Engineering calculations based on nameplate and manufacturer supplied data for the existing and replacement Units 	<ul style="list-style-type: none"> Pre-M&V: Verify manufacturer provided data for existing units efficiency Post M&V: Verify manufacturer provided data for new units verify the new equipment and controls are installed and commissioned as recommended by manufacturer

Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)



ECM # and Name	Summary of ECM	M&V Methodology / Recommendation	Description of M&V – Pre- and Post-Process
2B Premium Efficiency Motors and VFDs	<ul style="list-style-type: none"> Install VFDs on select pumps to operate the pump motors in response to the system load. Replace motors with new premium efficiency motors. 	Option A: <ul style="list-style-type: none"> Engineering calculations for VFDs following pump affinity laws. Engineering calculations based on nameplate and manufacturer supplied data for the existing and replacement motors 	<ul style="list-style-type: none"> Pre-M&V: Verify manufacturer provided data for the pump performance data and motor efficiencies. Post M&V: Obtain trend data for VFD operation from the BMS system to verify baseline calculation assumptions on system loads Verify efficiency of new motors Verify manufacturer provided data for new VFDs – verify the new equipment and controls are installed and commissioned as recommended by manufacturer
2C Addition of Cooling	<ul style="list-style-type: none"> Add Cooling with high efficiency VRF units. 	Option A: <ul style="list-style-type: none"> Engineering calculations based on nameplate and manufacturer supplied data for the existing and replacement Units 	<ul style="list-style-type: none"> Pre-M&V: Verify manufacturer provided data for existing unit efficiency (EER) Post M&V: Verify manufacturer provided data for new split system unit (EER) – verify the new equipment and controls are installed and commissioned as recommended by manufacturer
2D Split System Replacements	<ul style="list-style-type: none"> Replace select split systems with new high efficiency units. 	Option A: <ul style="list-style-type: none"> Engineering calculations based on nameplate and manufacturer supplied data for the existing and replacement Units 	<ul style="list-style-type: none"> Pre-M&V: Verify manufacturer provided data for existing unit efficiency (EER) Post M&V: Verify manufacturer provided data for new split system unit (EER) – verify the new equipment and controls are installed and commissioned as recommended by manufacturer
2E Exhaust Fan Replacement	<ul style="list-style-type: none"> Re-Commission existing exhaust fans. 	Option A: <ul style="list-style-type: none"> Stipulated Engineering calculations 	<ul style="list-style-type: none"> Pre-M&V: None Post M&V: Savings stipulated based on engineering calculations for the term of contract
3A Building Management Controls	<ul style="list-style-type: none"> Upgrade Building Management Systems to DDC and integrate all systems to a central platform. 	Option A: <ul style="list-style-type: none"> Electric energy savings - Engineering calculations based on programmed parameters. Option C: <ul style="list-style-type: none"> Fuel Savings Utility Bill Comparison for all fuel related measures 	<ul style="list-style-type: none"> Pre-M&V: Verify existing operating parameters match the baseline calculation assumptions Post M&V: Verify that systems are installed as specified and controls are programmed to match the savings assumptions Electric Energy: Verify savings based on programmed parameters and engineering calculations Fuel: Compare post installation M&V fuel cost based on fuel billing data and Metrix tuned to normalize to heating degree days

Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)



ECM # and Name	Summary of ECM	M&V Methodology / Recommendation	Description of M&V – Pre- and Post-Process
4A Building Envelope Improvements	<ul style="list-style-type: none"> Install weather stripping on doors, seal roof wall joints and roof penetrations. 	Option A: <ul style="list-style-type: none"> Engineering calculations based on nameplate and manufacturer supplied data 	<ul style="list-style-type: none"> Pre-M&V: Verify existing conditions Post M&V: Visual inspection per scope of work.
5A Water Conservation	<ul style="list-style-type: none"> Replace older less-efficient toilets, urinals, faucets, sinks and showerheads with more water efficient fixtures. 	Option A: <ul style="list-style-type: none"> Engineering calculations based on nameplate and manufacturer supplied data for the new unit. 	<ul style="list-style-type: none"> Pre-M&V: Verify existing operating parameters match the baseline calculation assumptions Post M&V: Verify that systems are installed as specified and controls are programmed to match the savings assumptions
6A – Permanent Load Reduction	<ul style="list-style-type: none"> Rebates for Load Reduction (KW) 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A

6. Recommended Preventive Maintenance Services

Per the NJ ESIP program, all services are required to be bid by the Bloomingdale School District for services as desired. Based on Honeywell's vast service organization, we are uniquely qualified to develop design specifications for public bidding per NJ Law.

Honeywell strongly believes that the long-term success of any conservation program is equally dependent upon the appropriate application of energy savings technologies, as well as solid fundamental maintenance and support. One of the primary contributors to energy waste and premature physical plant deterioration is the lack of operations, personnel training, and equipment maintenance.

Honeywell recommends routine maintenance on the following systems throughout the Bloomingdale School District for the duration of an energy guarantee of savings.

Maintenance, Repair and Retrofit Services

- Mechanical Systems
- Building Automation Systems
- Temperature Control Systems
- Air Filtration

Honeywell will work with the Bloomingdale School District to evaluate current maintenance practices and procedures. This information will be the basis of a preventive maintenance and performance management plan designed to maximize building operating efficiencies, extend the useful life of your equipment, and support the designed Energy Savings Plan.

At a minimum, we recommend the following tasks be performed on a quarterly basis with the District Wide Building Management System.

System Support Services

1. Review recent mechanical system operation and issues with customer primary contact on a monthly basis.
1. Review online automation system operation and event history logs and provide summary status to the customer primary contact. Identify systemic or commonly re-occurring events.
2. Check with customer primary contact and logbook to verify that all software programs are operating correctly.
3. Identify issues and prioritize maintenance requests as required.
4. Provide technical support services for trouble shooting and problem solving as required during scheduled visits.
5. Provide ongoing system review and operations training support, including two semi-annual lunches and learn sessions.
6. Establish dedicated, site-specific emergency stock of spare parts to ensure prompt replacement of critical components. These will be stored in a secure location with controlled access.

Configuration Management

1. Update documentation and software archives with any minor changes to software made during maintenance work.
2. Verify and record operating systems and databases.
3. Record system software revisions and update levels.
4. Archive software in designated offsite Honeywell storage facility on an annual basis.
5. Provide offline software imaging for disaster recovery procedures to be updated on a regular basis.

Front End / PC Service

1. Verify operation of personal computer and software.
2. Check for PC errors on boot up.
3. Check for Windows errors on boot up.
4. Check for software operations and performance, responsiveness of system, speed of software.
5. Routinely backup system files on an annual basis.
6. Trend data, alarm information and operator activity data.
7. Custom graphics and other information.
8. Ensure disaster recovery procedures are updated with current files.
9. Clean drives and PC housing on an annual basis.
10. Open PC and remove dust and dirt from fans and surfaces.
11. Open PC interface assemblies and remove dust and dirt.
12. Clean and verify operation of monitors.
13. Verify printer operation by checking ribbon or ink.
14. Initiate and check log printing functions.
15. Verify modem operation (if applicable).
16. Review IVR schedule for alarms and review (if applicable).

Temperature Controls

Unit Vents

Services Performed

Annual Inspection

1. Inspect motor and lubricate.
2. Lubricate fan bearings.
3. Inspect coil(s) for leaks.
4. Vacuum interior.
5. Test operation of unit controls.

Pumps

Services Performed

Preseason Inspection

1. Tighten loose nuts and bolts.
2. Check motor mounts and vibration pads.
3. Inspect electrical connections and contactors.

Seasonal Start-up

1. Lubricate pump and motor bearings per manufacturer's recommendations.
2. Visually check pump alignment and coupling.
3. Check motor operating conditions.
4. Inspect mechanical seals or pump packing.
5. Check hand valves.

Mid-season Inspection

1. Lubricate pump and motor bearings as required.
2. Inspect mechanical seals or pump packing.
3. Ascertain proper functioning.

Seasonal Shut-down

1. Switch off pump.
2. Verify position of hand valves.
3. Note repairs required during shutdown.

Packaged Air-Conditioning Systems

Services Performed

Preseason Inspection

1. Energize crankcase heater.
2. Lubricate fan and motor bearings per manufacturer's recommendations.
3. Check belts and sheaves. Adjust as required.
4. Lubricate and adjust dampers and linkages.
5. Check condensate pan.

Seasonal Start-up

1. Check crankcase heater operation.
2. Check compressor oil level.
3. Inspect electrical connections, contactors, relays, and operating and safety controls.
4. Start compressor and check operating conditions. Adjust as required.
5. Check refrigerant charge.
6. Check motor operating conditions.
7. Inspect and calibrate temperature, safety, and operational controls, as required.
8. Secure unit panels.
9. Pressure wash all evaporator and condenser coils (if applicable).
10. Log all operating data.

Mid-season Inspection

1. Lubricate fan and motor bearings per manufacturer's recommendations.
2. Check belts and sheaves. Adjust as required.
3. Check condensate pan and drain.
4. Check operating conditions. Adjust as required.
5. Log all operating data.

Seasonal Shut-down *

1. Shut down per manufacturer's recommendations.

* If no shut-down is required then two (2) mid-season inspections are performed

Boilers

Services Performed

Preseason Inspection

1. Inspect fireside of boiler and record its condition.
2. Brush and vacuum soot and dirt from flues (not chimneys) and combustion chamber.
3. Inspect firebrick and refractory for defects.
4. Visually inspect boiler pressure vessel for possible leaks and record condition.
5. Disassemble, inspect, and clean low-water cutoff.
6. Check hand valves and automatic feed equipment. Repack and adjust as required.
7. Inspect, clean, and lubricate the burner and combustion control equipment.
8. Reassemble boiler.
9. Check burner sequence of operation and combustion air equipment.
10. Check fuel piping for leaks and proper support.
11. Review manufacturer's recommendations for boiler and burner start-up.
12. Check fuel supply.
13. Check auxiliary equipment operation.

Seasonal Start-up

1. Inspect burner, boiler, and controls prior to start-up.
2. Start burner and check operating controls.
3. Test safety controls and pressure relief valve.
4. Perform combustion analysis.
5. Make required control adjustments.
6. Log all operating conditions.
7. Review operating procedures and owner's log with boiler operator.

Mid-season Inspection

1. Review operator's log.
2. Check system operation.
3. Perform combustion analysis.
4. Make required control adjustments.
5. Log all operating conditions.
6. Review operating procedures and log with boiler operator.

Seasonal Shut-down

1. Review operator's log.
2. Note required repairs.



APPENDICES

Appendices

Appendix 1: ECM Calcs and Lighting

Please see Appendix 1 provided as a separate accompaniment to this document entitled “Bloomingdale Schools Calc Book 5_25_2022 ESIP ECM.”

Appendix 2: Cutsheets

Please see following cutsheets for selected products

Appendix 3: Omnia Cooperative / NJ Procurement Documentation

Since the Bloomingdale Board of Education is a member in good standing with the Omnia Cooperative, use of Omnia Cooperative in the selection of Honeywell under contract # 171201 is allowed under NJ Public Contracts law as outlined in LFN 2012-10 and consists of the following elements and authorized by DLGS/DCA as well as the following elements:

- “an organization (profit or not-for-profit) that coordinates and aggregates contracts from different state and local governments and promotes their use.”
- “in the context of the LPCL and PSCL, the provisions of this notice apply when the aggregate value of the goods or services (see N.J.A.C. 5:34-8.2) exceeds the contracting unit’s bid threshold.”
- the national cooperative contract must have been advertised as a national or regional cooperative and awarded pursuant to a competitive bidding process that complies with the laws applicable.
- The LFN requires if a national cooperative contract is chosen, the calculation of cost savings from using this approach must be documented: The Law requires a contracting unit can use national cooperatives only when the contracting unit determines “ the use of the cooperative purchasing agreement shall result in cost savings after all factors, including charges for service, material, and delivery, have been considered.”
- The LFN states if using an online ordering system, local officials must put “appropriate internal controls” in place to ensure purchases are documented and that an audit trail exists
- Per the LFN, the Bloomingdale BOE must verify the selected vendor complies with applicable New Jersey procurement documentation requirements by submitting the following required forms.
 - New Jersey Business Registration Certificate for the contractor and any subcontractors (i.e., copy of certificate)
 - Statement of Corporate Ownership (an original form prepared for the contracting agency awarding the contract)
 - Public Contract EEO Compliance (Employee Information Report form or proof of participation in a federally approved affirmative action program)
 - Non-collusion Affidavit

This document will certify Honeywell and the use of this cooperative purchasing agreement will **remain compliant with the services of the COOP for the Bloomingdale School District; that ALL public works in conjunction with the School District and in accordance with NJ Public Contract Law (NJSA 18A:18A-1 et seq.) will be procured according to State requirements. To clarify further, this applies to a public works projects including and not limited to installing electrical, lighting, plumbing, HVAC, BMS systems etc. Additionally, that no on-line ordering system will be used as part of this process.**

It is estimated the cost savings to the Bloomingdale School District by using the Cooperative Agreement will save approximately \$5000 in legal fees, 100-man hours as well as significant lost energy savings per month for every month waiting to administer the RFP process on their own. Because Omnia has undertaken the competitive process on the district’s behalf, the savings can be achieved as outlined in this plan approximately 10 months sooner than via a local competitive contracting approach.

Resolution to Select ESCO

**BLOOMINGDALE BOARD OF EDUCATION OF THE BOROUGH OF BLOOMINGDALE,
PASSAIC COUNTY, NEW JERSEY AS RECORDED IN THE OFFICIAL MINUTE BOOK**

The Board of Education of the Borough of Bloomingdale, in the County of Passaic, New Jersey, convened in a regular meeting on March 16, 2022 at 7:00 pm.

The following members were present: Mr. Caraballo, Mrs. Marcus, Mrs. Grecco, Mrs. Hussain, Mrs. Santana, Mrs. Spenser, Mrs. Wilson, Mr. Ollenschleger and Ms. Arabia.

Also present: Dr. Michael Nicosia, Superintendent of Schools
Ms. Donna Alonso, Interim Business Administrator/Board Secretary
Mr. Jeffrey Merlino, Board Attorney

The following resolution was moved by Mrs. Arabia and seconded by Mrs. Grecco and adopted by the Board of Education by the following:

Roll call vote:

Yes: Mr. Caraballo, Mrs. Marcus, Mrs. Grecco, Mrs. Hussain, Mrs. Santana, Mrs. Spenser, Mrs. Wilson, Mr. Ollenschleger and Ms. Arabia.

Fl. 7. - Acceptance of The School and Small Business and Energy Efficiency Verification and Repair Program Grant

WHEREAS, in September 2021, the Bloomingdale Board of Education granted approval for the design phase of a full HVAC (heating and air condition) replacement at Martha B. Day School; and

WHEREAS, in January 2022, Honeywell submitted grant applications to the School and Small Business and Energy Efficiency Verification and Repair Program Grant on behalf of the district for additional funding sources; and

WHEREAS, in February 2022 Honeywell notified the district that it has been awarded grants for all three schools;

THEREFORE, BE IT RESOLVED that the Bloomingdale Board of Education accept the grant awards in the amounts listed below;

School	Project Budget	Purpose	75% Grant	25 % BOE Funded
Walter T. Bergen	\$342,467	HVAC Repairs	\$256,851	\$85,616
Samuel R. Donald	\$208,366	HVAC Repairs	\$156,275	\$52,096
Martha B. Day School	\$710,051	HVAC Replacement	\$532,538	\$177,513

STATE OF NEW JERSEY

COUNTY OF PASSAIC

I, Donna Alonso, Interim Business Administrator/Board Secretary of the Board of Education of the Borough of Bloomingdale, in the County of Passaic, State of New Jersey, hereby certify that

the foregoing extract from the minutes of the meeting of the Board of Education of said district duly called and held on March 16, 2022, has been compared by me with the original minutes as officially recorded in my office in the minute book of said Bloomingdale Board of Education and is a true, complete copy thereof and of the whole of said original minutes so far as the same relate to the subject matter referred to in said extract in witness, I have hereunto set my hand and affixed the corporate seal of said Board of Education this 17th day of March 2022.

Donna Alonso
Interim Business Administrator/Board Secretary



**BLOOMINGDALE BOARD OF EDUCATION OF THE BOROUGH OF BLOOMINGDALE,
PASSAIC COUNTY, NEW JERSEY AS RECORDED IN THE OFFICIAL MINUTE BOOK**

The Board of Education of the Borough of Bloomingdale, in the County of Passaic, New Jersey, convened in a regular meeting on February 9, 2022 at 7:00 pm.

The following members were present: Mr. Caraballo, Mrs. Marcus, Mrs. Grecco, Mrs. Hussain, Mrs. Santana, Mrs. Spenser, Mrs. Wilson, Mr. Ollenschleger and Ms. Arabia.

Also present: Dr. Michael Nicosia, Superintendent of Schools
Ms. Donna Alonso, Interim Business Administrator/Board Secretary
Mr. Jeffrey Merlino, Board Attorney

The following resolution was moved by Ms. Arabia and seconded by Mrs. Hussain and adopted by the Board of Education by the following:

Roll call vote:

Yes: Mr. Caraballo, Mrs. Marcus, Mrs. Grecco, Mrs. Hussain, Mrs. Santana, Mrs. Spenser, Mrs. Wilson, Mr. Ollenschleger and Ms. Arabia.

FI.4. - Selection of ESCO For The Implementation of An Energy Savings Improvement Project (ESIP)

WHEREAS; N.J.S.A. P.L.2011, c.139 (LFN2012-10) enables local contracting units to utilize national cooperative contracts as a method of procurement, the Bloomingdale Board of Education (BOE) being a member of the Omnia Partners Public Sector National Cooperative (Omnia) and;

WHEREAS; Energy Savings Performance Contract Services are available via contract No. 171201 within the Omnia portfolio;

WHEREAS; Omnia utilized a competitive bidding process in the selection of contractors capable of implementing an Energy Savings Performance Contract; and

WHEREAS; Honeywell International under contract # 171201 has competed and has been selected as a provider of Energy Savings Performance Contracts under Omnia; and

WHEREAS; Honeywell International is also designated under the Department of Management and Construction (DPMC) in the State of New Jersey under a CO36 classification as a qualified Energy Services Company (ESCO) and;

WHEREAS; Honeywell International has implemented multiple Energy Savings Performance Contracts within New Jersey as titled the Energy Savings Improvement Program (ESIP); and

WHEREAS; the BOE has selected Honeywell International, 534 Fellowship Rd., Mt. Laurel Township, NJ 08054 the qualified Energy Service Company (ESCO) to detail, design and implement an Energy Saving Plan and ESIP project for the BOE in accordance with P.L.2012, c.55 (P.L.209, c.4); and

WHEREAS, Honeywell will provide an Energy Savings Plan, including engineering, construction, project management as part of their proposal and that the total cost of services will be a predetermined amount and paid for out of the energy savings as calculated in accordance with P.L. 2012, c.55; and

WHEREAS, there is no cost for the Energy Savings Plan and the BOE will have an option to continue the process to full implementation of the ESIP project once the ESP has been reviewed and approved by an independent 3rd party in accordance with P.L.2012, c.55, and adopted by the BOE;

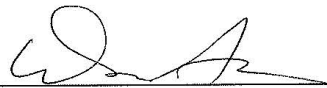
NOW, THEREFORE, BE IT RESOLVED, that the Board of Education authorizes the Interim School Business Administrator/Board Secretary to execute a Project Development Agreement with Honeywell upon review and approval from the Board Attorney.

STATE OF NEW JERSEY

COUNTY OF PASSAIC

I, Donna Alonso, Interim Business Administrator/Board Secretary of the Board of Education of the Borough of Bloomingdale, in the County of Passaic, State of New Jersey, hereby certify that the foregoing extract from the minutes of the meeting of the Board of Education of said district duly called and held on February 9, 2022, has been compared by me with the original minutes as officially recorded in my office in the minute book of said Bloomingdale Board of Education and is a true, complete copy thereof and of the whole of said original minutes so far as the same relate to the subject matter referred to in said extract in witness, I have hereunto set my hand and affixed the corporate seal of said Board of Education this 17th day of March 2022.

Donna Alonso
Interim Business Administrator/Board Secretary



**Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)**



Award Advertisement for National COOP

This award was advertised as per requirement the record of advertisement is on file with Bloomingdale Board of Education.

Appendix 4: Non Collusion Affidavit & Other Documents

EXHIBIT A:

NON-COLLUSION AFFIDAVIT

TO: **Bloomington School District Board of Education**

DATE: June 1, 2022

FROM: Honeywell International, Inc.

TELEPHONE: 856-437-1856

E-MAIL: caroline.jackson@honeywell.com

FACSIMILE: 908-292-1061

In signing this proposal, we certify that we have not, either directly or indirectly, entered into any agreement or otherwise colluded in any manner with any other person, or otherwise taken any action that would restrain or impede open and free competition and competitive bidding for this project; that no attempt has been made to induce any other person or firm to submit or not to submit a proposal; that this proposal has been independently arrived at without agreement or collusion with any other Proposer, competitor, potential competitor or other person; and that this proposal has not been knowingly disclosed prior to the opening of proposals to any other Proposer, competitor or person not affiliated with Proposer.

We further certify that no requirement or commitment, direct or indirect, was made to any person, or elected official and that no undisclosed benefit of any kind was promised to anyone connected with this project.

We further certify that no person or selling agent has been employed or retained to solicit or secure the contract that is the subject of this RFP upon an agreement or understanding for a commission, percentage, brokerage or contingent fee.

We certify that the foregoing statements are true and accurate under penalty of perjury.

The undersigned, by submitting this proposal, hereby agrees with all the terms, conditions, and specifications required by the New Jersey School District Board of Education in this Request for Proposal, and declares that the attached proposal and pricing are in conformity therewith.

SIGNATURE: Caroline Jackson

DATE: June 1, 2022

TYPE OR PRINT NAME: Caroline Jackson

TITLE: Senior Business Consultant

FEIN or TAX ID NUMBER: 22-2640650

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Certification

CERTIFICATE OF EMPLOYEE INFORMATION REPORT
RENEWAL

This is to certify that the contractor listed below has submitted an Employee Information Report pursuant to N.J.A.C. 17:27-1.1 et. seq. and the State Treasurer has approved said report. The approval will remain in effect for the period of 15 MAY 2021 to 15 MAY 2024.

HONEYWELL INTERNATIONAL, INC.
115 TABOR ROAD
MORRISPLAINS NJ 07950


ELIZABETH MAHER MUOIO
State Treasurer

	STATE OF NEW JERSEY BUSINESS REGISTRATION CERTIFICATE
Taxpayer Name:	HONEYWELL INTERNATIONAL INC.
Trade Name:	ADI GLOBAL DISTRIBUTION
Address:	101 COLUMBIA RD MORRISTOWN, NJ 07960-4640
Certificate Number:	0073401
Effective Date:	August 19, 1985
Date of Issuance:	August 25, 2021
For Office Use Only:	20210825150427681

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE

N.J.S.A. 10:5-31 et seq., N.J.A.C. 17:27

CONSTRUCTION CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, Available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex..

The contractor or subcontractor, where applicable, will send to each labor union or representative of workers will) which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of (the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq. as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B and C, as long as the Division is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Division , that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2.

The contractor or subcontractor agrees that, a good faith effort shall include compliance with the following procedures:

(A). If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities to minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines or is so notified by the Division that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

(B). If good faith efforts to meet targeted employment goals have not or cannot be met for each construction grade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

1. To notify the public agency compliance officer, the Division, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;
2. To notify any minority and women workers who have been listed with it as awaiting available vacancies;
3. Prior to commencement of work, to request that the local construction trade union refer minority and , women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;
4. To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;
5. If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and non-discrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;

6. To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:
 - a. If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work: of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Division, [if necessary, the contractor or subcontractor shall hire *or* schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below,
 - b. The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in paragraph (i) above, whenever vacancies occur. At the request of the Division, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.
 - c. If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Division.
7. To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Division and submitted promptly to the Division upon request.

(C). The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction total, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that,

in implementing the procedures of (B) above it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Division an initial project workforce report (Form A 201) provided to the public agency by the Division for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly project Workforce Report once a month thereafter for the duration of this contract to the Division and public agency compliance officer

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

(D). The contractor and its subcontractors shall furnish such reports or other documents to the Division of Public Contracts Equal Employment Opportunity Compliance as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Public Contracts Equal Employment Opportunity Compliance for conducting a compliance investigation pursuant to Subchapter 10 of New Jersey Administrative Code at N.J.A.C. 17:27.

Honeywell acknowledges the Mandatory Equal Opportunity Language requirements.



Caroline Jackson
Senior Business Consultant

**Energy Savings Plan (ESP) for
Energy Savings Improvement Program (ESIP)**



HONEYWELL INTERNATIONAL INC
115 TABOR ROAD
MORRIS PLAINS, NJ 07950

State of New Jersey



**DEPARTMENT OF THE TREASURY
DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION
33 WEST STATE STREET - P.O. BOX 034
TRENTON, NEW JERSEY 08625-0034**



NOTICE OF CLASSIFICATION

In accordance with N.J.S.A. 18A:18A-27 et seq (Department of Education) and N.J.S.A. 52:35-1 (Department of the Treasury) and any rules and regulations issued pursuant hereto, you are hereby notified of your classification to do State work for the Department (s) as previously noted.

Aggregate Amount	Trade(s) & License(s)	Effective Date	Expiration Date
Unlimited	C043 -CONTROL SYSTEMS	04/01/2021	03/31/2023
	C098 -ENERGY MANAGEMENT SYSTEMS	04/01/2021	
	C036 -ENERGY SERVICES/ESCO	04/01/2021	
	C049 -FIRE ALARM/SIGNAL SYSTEMS license #: P00968	04/01/2021	
	C032 -HVACR license #: 19HC00404900	04/01/2021	
	C050 -SECURITY/INTRUSION ALARMS	04/01/2021	

A woman with dark hair and glasses is looking intently at a laptop screen. The screen displays various data visualizations, including a bar chart, a world map with glowing nodes, and a pie chart. The background is dark with some bokeh light effects.

**THE
FUTURE
IS
WHAT
WE
MAKE IT.**

Thank you for considering our proposal. We look forward to working with you in the future.