



Local Law 87 (2009) Report

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Energy

NYC
DCAS

Citywide Administrative
Services



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Local Law 87 of 2009 (“LL87”) calls for the energy auditing and retro-commissioning of public and private sector buildings over 50,000 gross square feet on a 10-year cycle to aid building owners and energy managers understanding of the current energy use intensity of their buildings and the potential retrofits and energy conservation measures that can help make the building energy use more efficient. Since the passage of LL87, the NYC Department of Citywide Administrative Services (“DCAS”) has completed nearly 1,100 energy audits and implemented over 2,870 recommended retro-commissioning and energy efficiency measures in City facilities. Together these measures have resulted in an estimated greenhouse gas (“GHG”) reduction of over 28,600 metric tons, which is the equivalent to removing more than 6,200 cars from the road per year.

In the decade since the passage of LL87, the City has intensified its commitment to a sustainable future through both pioneering policy work and rigorous on-the-ground implementation. In April of 2019, the city council passed the Climate Mobilization Act with Local Law 97 (“LL97”) as the centerpiece legislation. LL97 requires that private buildings meet building emission caps based on the building’s use and typology for a cumulative 40 percent reduction from all buildings in New York City by 2025 (from a 2005 baseline) and also requires that all City government operations reduce emissions by 40 percent by 2025 and 50 percent by 2030 (from a 2006 baseline).¹ To meet the challenge of achieving these emission reduction targets for City government operations, the City’s Office of Management and Budget (“OMB”) has allocated a capital commitment of \$3 billion over ten years to DCAS, which serves as the hub for energy management and emissions reduction across the City’s stationary assets.² With a comprehensive policy framework now in place and a significant financial commitment, the City has laid the foundations for success but has hard work ahead to retrofit and improve operations in thousands of facilities across the City.

About this report

This report reviews annual progress implementing the audit and retro-commissioning requirements of LL87. As prescribed by law, the report addresses the following issues for energy efficiency reports (“EER”) that were completed during fiscal year 2020:

1. Analysis of the most common energy efficiency capital improvements recommended.
2. Analysis of the accuracy of predicted costs of implemented measures.
3. Post-installation analysis of the accuracy of predicted savings for implemented measures; and
4. Recommendations for legislative and administrative actions to strengthen LL87.

Additionally, the report includes data and key findings from measurement and verification (“M&V”) conducted across a broader array of projects by DCAS and its applied research partner, the City University of New York’s Building Performance Lab (“CUNY BPL”).³ The report concludes with a series of recommendations and initiatives that DCAS is implementing to maximize the realization of projected energy savings from energy efficiency projects implemented by DCAS and its partner agencies.

¹ Emissions from City government operations are from the City’s buildings, streetlights and traffic signals, water supply and solid waste facilities, wastewater treatment plants, transportation and also include process and fugitive emissions.

² Emissions from City stationary assets include all City government operations except emissions from the City’s transportation.

³ This M&V data is not required by law and is presented herein for informational purposes only.

Background on DCAS's LL87 Compliance

Each year, DCAS works with qualified energy consultants to conduct energy audits and develop retro-commissioning reports for City buildings that meet and exceed the requirements of LL87. The City then works with agency partners and qualified contractors to implement required retro-commissioning measures ("RCMs"), energy conservation measures ("ECMs"), and operations and maintenance measures ("OMMs") in each building before submitting final documentation in the form of an EER to the NYC Department of Buildings ("DOB").

LL87 stipulates that facilities should be audited for "all reasonable measures, including capital improvements, that would, if implemented, reduce energy use and/or the cost of operating the building."⁴ The law requires the City and private landlords to implement all RCMs that were identified during the course of the audit before filing an EER for compliance with DOB. Additionally, LL87 requires the City to implement all "reasonable capital improvements to the building's base building systems that are recommended in the building's energy audit...having a simple payback of not more than seven years or capital improvements that, when combined, would [have]...a simple payback of not more than seven years."⁵ The City has one year after submission of an EER to complete required capital improvements.

DCAS's Compliance Progress to Date

As of June 30, 2020, DCAS has filed a total of 561 EERs with DOB, including 71 EERs that were filed in Fiscal Year 2020 against a goal of 169 EERs that were estimated at the beginning of the year. DCAS has filed:

- 163 EERs in FY2019;
- 112 EERs in FY2018;
- 37 EERs in FY2017;
- 13 EERs in FY2016;
- 6 EERs in FY2015; and
- 159 remaining EERs in FY2014 as part of LL87's early compliance period.

The prohibition on non-essential construction work, as well as site access restrictions and facilities staff's shifting focus to critical operations, halted on-site work across DCAS's programs during the early months of the COVID-19 pandemic, stopping the implementation of energy efficiency projects, clean energy projects, energy efficient operations, energy audits, maintenance measures, and project measurement and verification.

From the 71 EERs, DCAS has identified 333 ECMs across 71 facilities and if implemented will result in an estimated 7,017 MT emissions reductions, equivalent to 1,525 many cars off the road for a year.⁶ In fiscal year 2021, the City plans to submit an additional 275 EERs, maintaining the aggressive pace that is required to fully comply with the completion of the first 10-year cycle of LL87 by the end of 2022 and to make up for the delay caused by COVID-19. See **Tables 1 and 2 and Figure 1**, as well as the **Appendix**, for details.

⁴ Local Laws for the City of New York For the Year 2009. No. 87.

⁵ The "simple payback" for a project equals the number of years that it would take for the cumulative energy cost savings to equal the upfront capital cost of the ECM, as determined by dividing the upfront cost by the projected annual energy cost savings.

⁶ Out of the 333, 43 were required to be implemented (less than 7 years payback) shown in Table 4. In addition, another 23 ECMs (with paybacks greater than 7 years) were implemented. The remaining 267 will be discretionary.

Figure 1 Shows total EERs Filed over time.

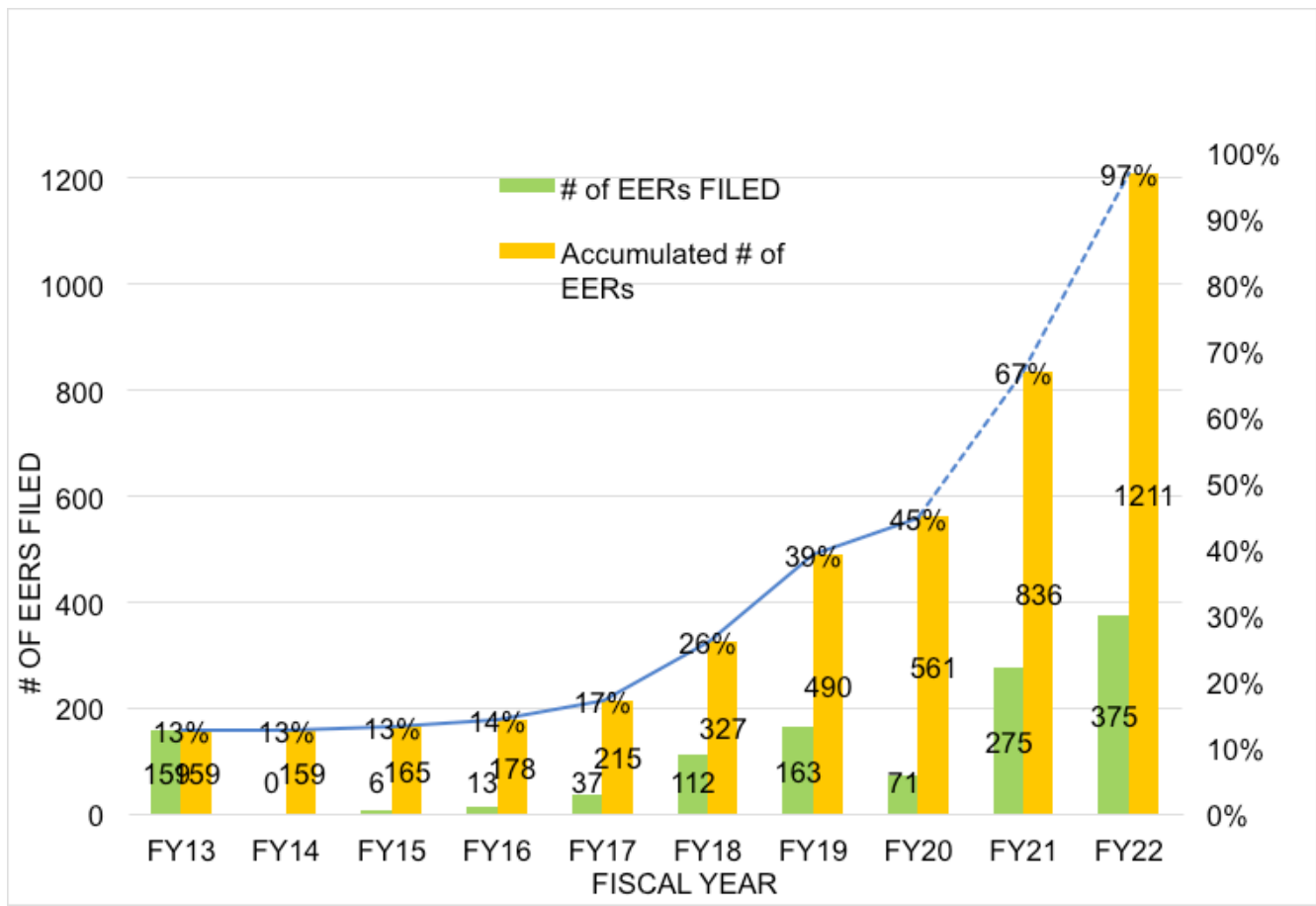


Table 1. EERs Submitted by Borough, FY2020

Borough	FY2020		Total to Date	
	# of EERs	% of Total	# of EERs	% of Total
Bronx	18	18.3%	108	19.2%
Manhattan	13	25.3%	142	25.3%
Brooklyn	20	28.2%	168	30.0%
Queens	12	16.9%	112	20.0%
Staten Island	8	11.3%	31	5.5%
Total	71		561	

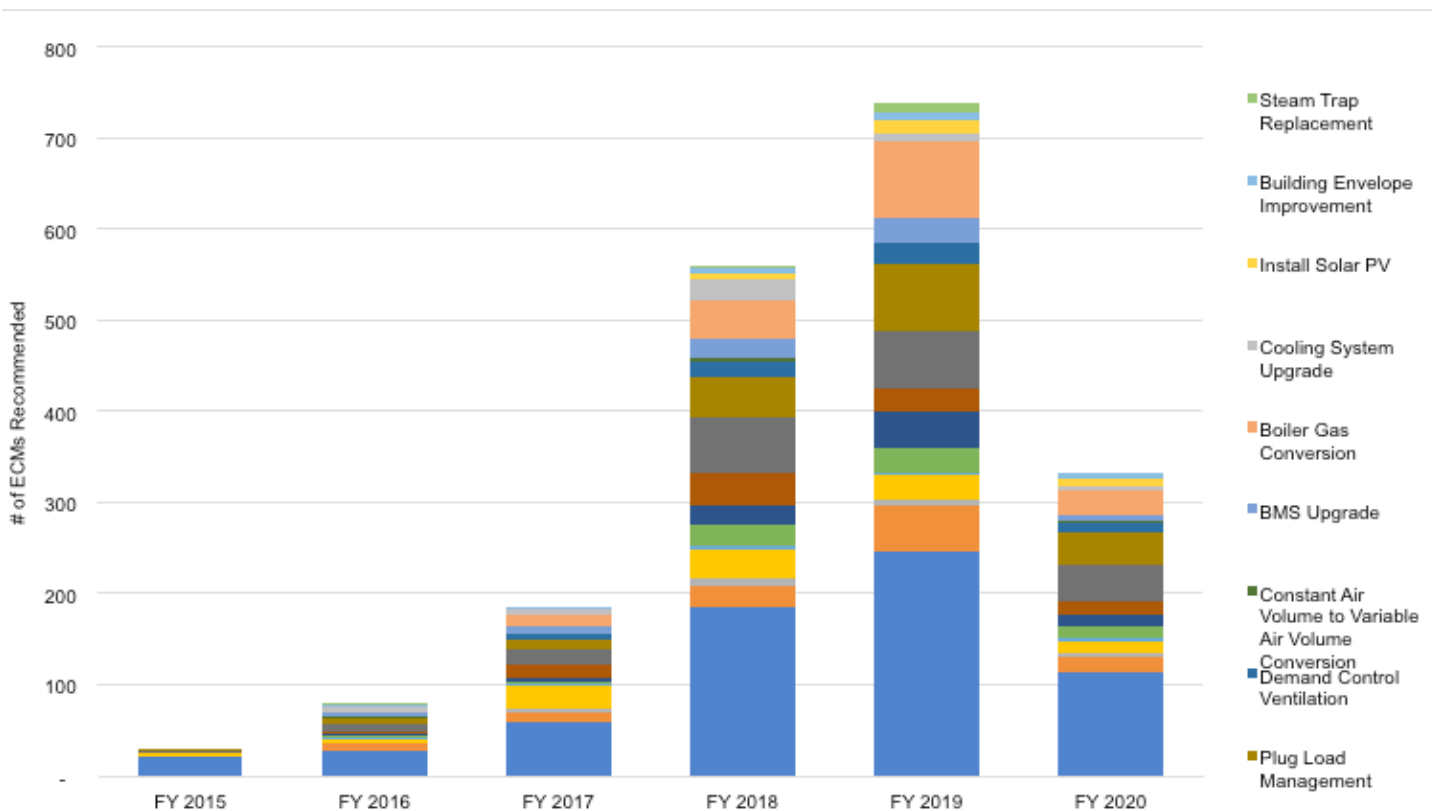
Table 2. EERs Submitted by Fiscal Year and Agency

Agency	FY2014 to FY2017	FY2018	FY2019	FY2020	Total to Date	% of Total Covered
Brooklyn Public Library	2	0	0	0	2	100%
Dept. of Citywide Administrative Services	31	4	1	3	39	100%
Dept. of Homeless Services	14	8	1	0	23	92%
Dept. of Correction	7	0	0	0	7	47%
Dept. of Education	123	99	159	66	447	45%
Dept. of Health and Mental Hygiene	1	0	2	1	4	80%
Dept. of Transportation	2	0	0	0	2	14%
Dept. of Parks and Recreation	8	0	0	0	8	73%
Dept. of Sanitation	9	0	0	0	9	30%
New York Fire Department	3	0	0	0	3	100%
Human Resources Administration	2	0	0	0	2	40%
New York Police Department	11	1	0	1	13	72%
New York Public Library	1	0	0	0	1	50%
Taxi and Limousine Commission	1	0	0	0	1	100%
Total	215	112	163	71	561	48%

Section 1. Most Common ECM Recommendations

DCAS’s consultants recommended 333 ECMs in the 71 EERs that were filed with DOB during fiscal year 2020. The most common ECMs recommended for base building systems, regardless of payback period, were upgrades to lighting, lighting controls, and air handler/fan/pump upgrades. Measures recommended less frequently include constant air volume to variable air volume conversion, heat recovery, and low flow hot water devices. **Figure 2** details the year-to-year ECM recommendations. As shown below, lighting and lighting controls upgrades are the most common recommendation because the majority of city buildings still utilize T8 fluorescents. This is followed by air handler/fan/pump upgrades, boiler gas conversion, plug load management, heating/boiler controls, and pipe/tank/duct insulation.

Figure 2. Most Common ECM Recommendations



As depicted below in **Table 3**, the majority of ECMs recommended in Fiscal Year 2020 EERs are expected to have simple paybacks greater than seven years. In accordance with the requirements of LL87, the City has implemented reasonable and technically feasible measures with simple projected payback periods of seven years or less.⁷ Where other factors made it practical, the City also implemented projects with payback periods longer than those required by law.

⁷ As detailed in **Table 4**, in certain circumstances ECMs that were identified by the EER consultant as having a projected payback of less than seven years were ultimately deemed to be unreasonable and/or not technically feasible for one of the following reasons: lack of compatibility with current equipment components; lack of compatibility with building operation profile as required by agencies; or impact on other building systems requiring an in-depth engineering study or design. Additionally, in some instances DCAS did not implement ECMs for which construction bids led to projected payback periods of significantly greater than seven years or ECMs that pertained to equipment that was owned by building tenants.

Table 3. Measures by Payback Period

	FY2020	
Range of Projected Payback Period	Number of Measures	Percentage of Measures
Paybacks of 7 years or less	43	13%
Paybacks from 7 years to 20 years	158	47%
Paybacks of 20 years or more	132	40%
Total	333	100%

Table 4. Implementation of Recommended ECMs with Expected Paybacks of Seven Years or Less

<i>Expected Paybacks of Seven Years or Less</i>	FY2020	GHG Impact (MT CO ₂ e)
ECMs Implemented	26	457.11
ECMs Not Implemented	17	434.38
Due to field conditions and/or building operations	14	412.62
Equipment owned by tenants	3	21.76
<i>Expected Paybacks of Seven Years or More</i>	FY2020	GHG Impact (MT CO ₂ e)
ECMs Implemented	23	1,020.17
ECMs Not Implemented as of FY2020	267	5,105.14
ECMs implementation in progress	33	1,095.68
ECMs not considered*	234	4,009.46

*Please see table below for full analysis

<i>ECMs Not Considered Analysis</i>	FY2020	GHG Impact (MT CO ₂ e)
ECMs Not Considered	234	4,009.46
Due to field conditions and/or building operations	107	2,214.38
Equipment owned by tenants	32	117.28
Due to high payback (exceeding expected equipment life)	95	1,677.8

Section 2. Cost Prediction Accuracy

LL87 requires an analysis of energy audit accuracy in predicting the costs of recommended measures. DCAS has worked closely with LL87 consultants and agency partners to improve the accuracy of EER cost estimates.

Table 5. Cost Prediction Accuracy for Measures Implemented by DCAS from FY2020 EERs

Recommended Measures	Number of Distinct Sites	Estimated Cost	Actual Cost	Difference between Actual and Estimated Cost	Within AACE Acceptable Range?*
ECM Subtotal	32	\$1,044,829	\$699,569	-33%	Y
Air Handler/Fan/Pump Upgrade	5	\$294,801	\$152,355	-48%	Y
Building Radiator Controls	4	\$199,028	\$147,684	-26%	Y
Demand Control Ventilation	1	\$120,000	\$41,185	-66%	Y
Lighting upgrades and controls	12	\$375,234	\$317,855	-15%	Y
Pipe/Tank/Duct Insulation	4	\$15,743	\$14,043	-11%	Y
Plug Load Management	1	\$10,589	\$16,246	53%	Y
Other	5	\$29,434	\$10,202	-65%	Y
OMM Subtotal	2	\$1,576	\$7,492	375%	N
RCM Subtotal	71	\$8,263,631	\$5,143,709	-38%	Y
Total		\$9,310,036	\$5,850,711	-37%	Y

Table 6. Cost Prediction Accuracy for Measures Implemented by Agencies from FY2020 EERs

Recommended Measures	Number of Distinct Sites	Estimated Cost	Actual Cost	Difference between Actual and Estimated Cost	Within AACE Acceptable Range?*
Boiler Gas Conversion & Hot Water Heater Upgrade	9	\$16,056,128	\$51,776,067	222%	N ⁸

*According to the Association for the Advancement of Cost Engineering (“AACE”) cost estimate classification system 17R-97, the expected accuracy range for a class five cost estimate (screening or feasibility) is -100% to +200%.

⁸ The large difference between actual and estimated for measures implemented by agency is because full boiler plant conversions were performed. The scope of work encompassed boiler replacement, replacement of all auxiliary equipment, piping, and distribution components. In contrast, EER recommendations included only boiler replacements. It is not possible to breakout the exact cost due to organization of the bid documents.

Second, DCAS tracks design-stage cost estimates that result from EERs. Currently, as shown in **Figure 3** and **Table 6**, there are four projects that are either in the bid procurement or the construction phase. For the two DCAS projects, the bid estimated costs were 90% greater than the costs projected in the EERs but, still within the Association for the Advancement of Cost Engineering (AACE) range of acceptability. There was a considerable variation on a project-by-project basis, consistent with the experience reported above for individual ECM cost projections. At these DCAS-managed courthouses, the EERs proposed the replacement of existing lamps throughout the facility at low cost but, this type of installation doesn't meet the criteria for a capital investment. During the schematic design phase, comprehensive lighting upgrades were studied; however, the estimated costs were beyond reasonable paybacks and consequently scope reductions were made to bring paybacks down to acceptable limits and enable them to be incorporated in the design development. For the two NYC Department of Sanitation ("DSNY") projects under construction, the bid costs were 12% greater than the costs projected in the EERs and in alignment to the AACE recommendations. In addition, the bid costs were 80% less than the final design cost projections and out of range of the AACE recommendations for class 2 and class 1 estimates. This latest variance is due to the utilization of a capital contract that includes pre-negotiated labor and materials cost applied to construction services. This approach leads to a better negotiation process between the City and the contractor and allows the City to reduce implementation costs.

Figure 3. Design Cost Milestone

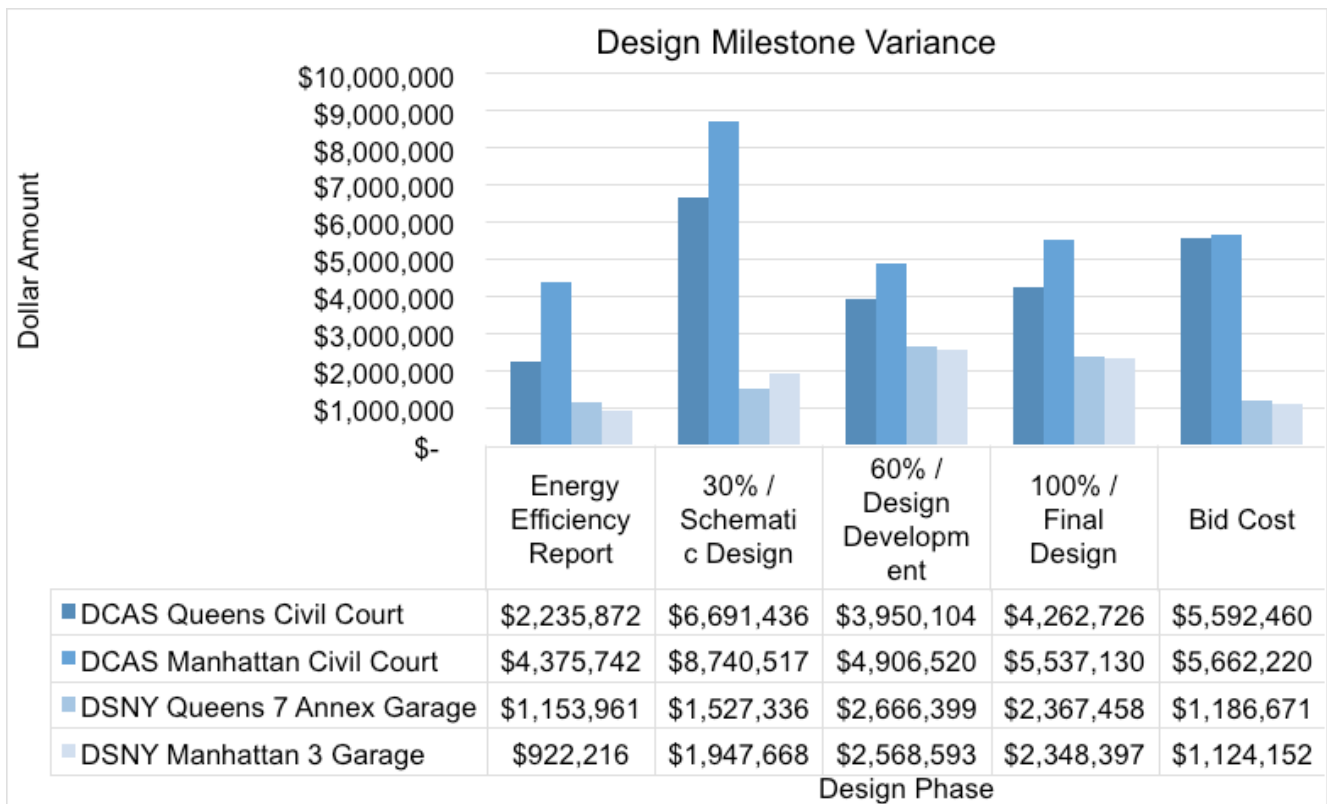


Table 7. Cost Estimates Comparison

Project	Energy Efficiency Report / AACE Class 5 Estimate*	BID Cost	% BID Cost Over or Under EER Projection	Range of Acceptance to AACE Guidelines
DCAS Queens Civil Court	\$2,235,872	\$4,592,460	150%	In
DCAS Manhattan Civil Court	\$4,375,742	\$5,662,220	29%	In
DSNY Queens 7 Annex Garage	\$1,153,961	\$1,186,671	3%	In
DSNY Manhattan 3 Garage	\$922,216	\$1,124,152	22%	In
Total	\$8,687,791	\$13,565,503	56%	In

*According to the Association for the Advancement of Cost Engineering (“AACE”) Cost Classification System 17R-97, the expected accuracy range for a Class 5 cost estimate (screening or feasibility) is -100% to +200%.

Section 3. Savings Prediction Accuracy

Local Law 87 requires an analysis of the accuracy of audits in predicting energy savings for implemented measures. DCAS has engaged the City University of New York’s Building Performance Lab (“CUNY BPL”) to assist in conducting measurement and verification (“M&V”) on a range of measures that are commonly recommended in energy audits and implemented by DCAS and its partner agencies. CUNY BPL utilizes the Efficiency Valuation Organization’s (“EVO”) International Performance Measurement and Verification Protocol (IPMVP; EVO, 2016) as a framework for its M&V activities. Two approaches are utilized to compare post-installation performance to the pre-installation baseline in order to assess the actual impact of projects.

- **Option A/B** – Retrofit isolation key parameter measurement/all parameter measurement: This approach utilizes engineering analysis of equipment-level measurements taken before and after implementation of the EEM, using either a key parameter or all parameters.
- **Option C** – Whole facility analysis: This approach utilizes engineering analysis of overall energy use in a facility from before and after implementation of the ECM.⁹

⁹ For Option C analysis, CUNY BPL utilizes its Building Energy Modeling and Analysis (BEMA) software application, which generates statistically valid energy consumption models using actual energy consumption data according to best practice methodologies. Calculating savings using whole facility energy consumption data often leads to high levels of statistical uncertainty. In these cases, though there may clearly be energy savings, the relative savings is low compared to the monthly consumption, so it is difficult to see the impact of the specific ECM relative to the normal variation in monthly energy consumption. As real-time electricity, gas and steam meters come online in City facilities, shorter duration interval data will be used for M&V, which will also reduce savings uncertainty.

In Fiscal Year 2020, CUNY BPL conducted M&V at 255 projects (19 Option A/B projects and 236 Option C projects). **Table 7** below summarizes the findings of recently completed Option A analysis of two projects that were implemented and evaluated. These were the only two projects that were statistically viable based on IPMVP protocol for FY20, the rest of the Option A/B projects are still ongoing. **Table 9** summarizes the findings of Option C analysis of eight common measures totaling 48 implemented projects. Many Option C projects (170 total) have been removed from the analysis as it was found that other projects were implemented around the same time confounding measurements and making it impossible to isolate the measure of interest.

As both tables illustrate, while the M&V analysis confirmed that significant energy savings accrued from each of the commonly recommended measures, the level of savings realized fell below expectations for some measures and exceeded estimations for other measures. For example, the savings realization rate for a lighting upgrade was found to be 74 percent for the one project analyzed using the Option A methodology and 99 percent among the 17 projects that were analyzed using the Option C methodology.¹⁰ As an example of realized savings below expectations, the Option C savings realization rate for building radiator controls was found to be -173% percent for Electricity savings and -369% for heating fuel savings. Similarly, for air handler/fan/pump upgrade, the Option C savings realization rate was found to be -252% for Electricity savings. See below explanation of causes for realized savings below expectations:

- Building Radiator Controls

When calculating estimated savings for radiator controls, the way in which the equipment failed directly impacts whether the repair will result in energy savings or energy penalties. For example, if the repair addresses a radiator that is overheating a space, there will be an energy savings. If the repair addresses a radiator that isn't providing adequate heat, there will be an energy penalty. Discrepancies in the estimated number of failed-open or failed-closed controls is likely the cause of realized savings below expectations for this measure.

- Air Handler/Fan/Pump Upgrade

When calculating savings for unit repairs, it is important to note whether or not the unit is in use before the repair. It was found that for this AHU project, the unit required repairs that would result in energy savings. This unit however, had been powered down for a long period of time preceding the repair. After the repairs were made, the unit was powered on which resulted in an overall energy penalty.

Based on these M&V findings, CUNY BPL and DCAS have identified several key lessons learned and recommendations, which DCAS has already begun implementing. See **Table 10** for a description of lessons learned and recommendations

¹⁰ Savings realization rate is the ratio of actual measured savings to projected savings.

Table 8. Summary of M&V Findings – Option A

Measures and Impacted Energy Type	# of Projects Analyzed	Initial Estimates from Audits / Proposals*			M&V Findings*			
		Total Baseline Usage (MMBtu)	Projected Energy Savings (MMBtu)	Projected Energy Savings (%)	Normalized Baseline Usage (MMBtu) ***	Measured Energy Savings (MMBtu)	Measured Energy Savings (%)	Savings Realization Rate (%)
Lighting upgrades and controls	1	1,509,311	921,130	61%	23,395,003	682,071	3%	74%
Boiler Replacement / Upgrade	1	147,587	11,330	8%	166,816	26,619	16%	235%

* Estimated / Measured Baseline Energy Use (MMBtu) and Projected / Measured Energy Savings (MMBTU) are aggregated for each measure category. Projected Energy Savings (%) and Measured Energy Savings (%), therefore, represent total energy savings divided by total baseline energy use.

** Indicates weighted average outcomes across all measures impacting electricity use; heating fuels.

*** Modeled electricity/fuel usage in the pre-retrofit period obtained from projecting the baseline usage to normalized temperature conditions per IPMVP protocol.

Table 9. Summary of M&V Findings – Option C

Measures and Impacted Energy Type	# of Projects Analyzed	Initial Estimates from Audits / Proposals*			M&V Findings*			
		Total Baseline Usage (MMBtu)	Projected Energy Savings (MMBtu)	Projected Energy Savings (%)	Normalized Baseline Usage (MMBtu) ***	Measured Energy Savings (MMBtu)	Measured Energy Savings (%)	Savings Realization Rate (%)
Electricity **	23	160,303	10,266	6%	185,659	9,138	5%	89%
Lighting upgrades and controls	17	45,448	5,772	13%	75,145	5,689	8%	99%
Other	1	52,396	1,409	3%	50,433	1,922	4%	136%
Building Radiator Controls	1	438	41	9%	426	-71	-17%	-173%
Air Handler/ Fan/Pump Upgrade	1	8,264	150	2%	7,967	-379	-5%	-252%
BMS Upgrade	2	1,360	174	13%	1,255	55	4%	32%
Cooling System Upgrade	1	52,396	2,719	5%	50,433	1,922	4%	71%
Heating Fuels **	22	25,985	1,873	7%	29,877	1,535	5%	82%
Lighting upgrades and controls	8	4,356	-743	-17%	4,862	-950	-20%	128%
Building Radiator Controls	2	765	52	7%	890	-192	-22%	-369%
BMS Upgrade	2	1,402	156	11%	1,657	177	11%	113%
Steam Trap Replacement	3	18,436	2,262	12%	21,263	2,378	11%	105%
Boiler Replacement / Upgrade	7	1,025	146	14%	1,205	122	10%	84%
Grand Total	45	186,288	12,139	7%	215,536	10,673	5%	88% ¹¹

* Estimated/measured baseline energy use (MMBtu) and projected/measured energy savings (MMBTU) are aggregated for each measure category. Projected energy savings (%) and measured energy savings (%), therefore, represent total energy savings divided by total baseline energy use.

** Indicates weighted average outcomes across all measures impacting electricity use; heating fuels.

*** Modeled electricity/fuel usage in the pre-retrofit period obtained from projecting the baseline usage to normalized temperature conditions.

¹¹ Average realization rate.

Table 10. Summary of M&V Findings for DDC Projects– Option C

		Initial Estimates from Audits / Proposals*			M&V Findings*			
Measures and Impacted Energy Type	# of Projects Analyzed	Total Baseline Usage (MMBtu)	Projected Energy Savings (MMBtu)	Projected Energy Savings (%)	Normalized Baseline Usage (MMBtu) ***	Measured Energy Savings (MMBtu)	Measured Energy Savings (%)	Savings Realization Rate (%)
DDC Projects by Site	3	29,707	4,878	16%	31,866	1,051	3%	22%
67th Precinct & Engine Company 248	1	6,034	2,165	36%	5,960	-767	-13%	-35%
Franklin Women's Shelter	1	13,639	2,406	18%	15,475	1,526	10%	63%
Staten Island Borough Hall	1	10,034	306	3%	10,431	292	3%	95%

* Estimated/measured baseline energy use (MMBtu) and projected/measured energy savings (MMBTU) are aggregated for each measure category. Projected energy savings (%) and measured energy savings (%), therefore, represent total energy savings divided by total baseline energy use

*** Modeled electricity/fuel usage in the pre-retrofit period obtained from projecting the baseline usage to normalized temperature conditions.

Table 11. Lessons Learned from M&V Activities and Future Recommendations

Lessons Learned		Recommendations
1.	Project life cycle and the design and construction process make assessing avoided energy use challenging. Audits that identified the ECMs associated with the projects analyzed dated from the early 2010s. Construction generally started in the mid-2010s and was completed in 2019. Over that period, the facility and its operation likely changed, which impacts the comparison of energy use immediately prior to project implementation and following completion.	Perform facility-level energy analysis periodically over the course of the project. Regression analysis of energy consumption can be undertaken at several points in the audit / design and construction process, which can provide insight into the ongoing energy use in the facility. The installation of real-time metering in many large City facilities allows for more immediate analysis to be undertaken.
2.	Lack of accurate construction start, and end dates leads to inability to properly account for savings. In many cases, construction start, and end dates are estimated or assumed to be the start and end date of the fiscal year. When construction dates are inaccurate (especially when projects span a long period of time), calculated savings may be unreliable or improperly attributed to the project.	DCAS is taking steps to confirm and document construction dates. Through the use of a project tracking system, DCAS is confirming actual construction start and end dates with facility operators or program managers. If these dates cannot be determined, sliding analysis may be conducted and/or other CUNY BPL modeling tools can be utilized.
3.	Substantial completion of a project may not mean that controls are implemented, and full ECM is in place. Previous work has shown that even if a construction project is reported to have been substantially completed, there may be certain energy items on the “punch list” that may not be fully complete. For example, building automation system (BAS) programming may not have been fully commissioned at substantial completion. If the BAS is a key component of the projected avoided energy use, M&V should only take place after all the energy aspects of the project are fully implemented.	Better communications between DDC and DCAS throughout the course of construction, commissioning, and warranty periods. DCAS should work with DDC project managers to identify key milestones in the construction process, particularly around construction start and end dates, and should review final punch list items to confirm when all energy aspects of the project have been completed.
4.	COVID-19 shutdowns introduced bias to savings estimates. Various analyses that CUNY BPL has already conducted in the 2020 calendar year indicate that facility shutdown periods yielded greater savings than expected for projects with post-retrofit periods that last through the middle of 2020. Furthermore, it is expected that consumption after reopening will likely be greater than baseline conditions because of increased ventilation and AHU operations implemented to comply with reopening requirements.	Develop strategies for non-routine adjustments that can refine estimated avoided energy use. The use of real-time meter data may provide the means to develop statistically valid short-term patterns of energy consumption for a facility, which can then be applied as a non-routine adjustment. In addition, the use of building automation system (BAS) data can provide more detailed tracking of individual systems in a facility, which can also be used to perform non-routine adjustments. Measurement of energy usage pre- and post-implementation at the asset level is another potential solution.
5.	Communication between DCAS and the implementing agencies can help determine more reliable data sets for Option C. Many of the Option C sites had multiple projects underway simultaneously that made the reported savings unusable. More robust communication between DCAS and agency personnel has proved necessary in determining Option C sites with no additional active projects that may distort energy savings. Salesforce can also be used as a tool for these determinations.	Communication between DCAS and the implementing agencies should be used to determine both project interactivity and non-routine adjustments. Not being able to account for project interactivity or non-routine adjustments can negate project metric reliability even at low uncertainty percentages. Salesforce is an additional tool that can also be used to determine which projects are best Option C candidates.

Section 4. Recommended Legislative or Administrative Actions

The authors of LL87 had the foresight to anticipate that recommendations for legislative or administrative changes to the law might be necessary, as real-world execution is not always consistent with the law's well-intentioned requirements. Since the passage of the law, DCAS has gained significant practical experience with the benefits and challenges of LL87 compliance. Based on this experience and the City's aggressive new GHG reduction targets from LL97 of 2019, DCAS is already implementing ECMs with longer payback periods than required by LL87. Future legislative action could reexamine the seven-year simple payback requirement for implementing recommended measures in light of LL97 of 2019. DCAS also recommends, as it has in past LL87 annual reports, extending the time limit for implementing capital improvements relative to the filing of the related EER. Given the lead time required in the City's capital budget processes, DCAS recommends increasing the current one-year limit for implementing capital improvements to three years. This will allow the City to implement a greater number of capital measures stemming from EERs without jeopardizing the timeline for submitting EERs to DOB for LL87 compliance.

Conclusion

In light of the passage of Local Law 97 of 2019, DCAS is scaling up its work across all programs, including its audit and retro-commissioning efforts. Whereas in past years, DCAS has largely limited implementation of ECMs to those that fall under the required threshold of a seven-year simple payback period, today DCAS is implementing ECMs more aggressively, including those with significantly longer payback periods. For example, DCAS is currently partnering with the NYC Department of Education to implement 85 ECMs across 47 sites that were audited over the past five years. These measures, which are being funded through a \$4.5 million ExCEL Program grant and which have an expected payback period of 18 years, will eliminate over 1,100 metric tons of annual GHG emissions, which is equivalent to removing nearly 250 cars from the road. DCAS is assessing many other opportunities to implement longer payback measures from past EERs and expects to continue to scale up this effort over the coming year. DCAS is also refocusing the EER process from simply complying with LL87 to generating a pipeline of projects that are then rapidly and effectively executed through DCAS's various implementation programs.

LL97 will also require the City to achieve far deeper GHG reductions at many of its facilities and to undertake measures that are not typically contemplated as part of an ASHRAE Level II audit process. For example, ASHRAE Level II audits as required by LL87 do not typically examine building envelope condition or overall building thermal performance. To address this shortfall, DCAS is now commissioning ASHRAE Level III audits and corresponding deep energy retrofit plans for facilities that have the potential to achieve deep GHG reductions through comprehensive building upgrades. DCAS is also working within the ASHRAE Level II framework to identify more systematic energy reduction opportunities in addition to just singular measures.

As indicated in this report's introduction, the LL97 Implementation Action Plan will identify emission reduction pathways for City agencies and the City stationary assets portfolio overall to meet the 40x25 and 50x30 goals. Since FY06, the City's emissions inventory baseline year, stationary assets have reduced emissions 25% (based on the FY19 published inventory). To meet the City's climate change mitigation goals, we must achieve similar reductions over a much shorter timeframe, requiring more robust project identification and faster project implementation. LL87 audits and retro-commissioning will be evermore crucial in bridging the gap between project identification and implementation in order to achieve the City's ambitious emissions reduction goals.

Appendix A: EERs Submitted to DOB Pursuant to Local Law 87

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
City Hall Campus: City Hall	City Hall Park	DCAS	1079147	1001220001	54800	FY20
Construction Shops	390 Kent Ave	DCAS	3063635	3024670001	107450	FY20
Court Square Building	2 Lafayette St	DCAS	1001672	1001550001	363309	FY20
(K213, K893) Campus: K213	580 Hegeman Ave	DOE	3097334	3043240001	86400	FY20
K012	430 Howard Avenue	DOE	3039174	3014570032	119243	FY20
K014	2424 Batchelder St	DOE	3203617	3074240001	166800	FY20
K023	545 Willoughby Ave	DOE	3048818	3017590013	117600	FY20
K046	100 Clermont Ave	DOE	3058088	3020450011	99600	FY20
K069	6302 9th Ave	DOE	3387646	3057350032	101690	FY20
K097 within (K097, K937)	1855 Stillwell Ave	DOE	3177680	3066670024	86989	FY20
K111	35 Starr St	DOE	3072497	3031850001	193200	FY20
K172	825 4th Ave	DOE	3009847	3006690001	56400	FY20
K178	2163 Dean St	DOE	3038718	3014400056	93600	FY20
K233	9301 Ave B	DOE	3104990	3047530001	115200	FY20
K237	50 Ave P	DOE	3396829	3066180001	133624	FY20
K242	10001 Flatlands Ave	DOE	3229773	3081880001	96000	FY20
K252	1084 Lenox Rd	DOE	3101840	3046690037	110400	FY20
K255	1866 East 17th St	DOE	3184034	3068210123	91200	FY20
K259	7305 Fort Hamilton Pkwy	DOE	3148031	3059230001	139197	FY20
K260	875 Williams Ave	DOE	3229155	3081580035	85200	FY20
K405	2893 Bedford Ave (S)	DOE	3205788	3075530041	282690	FY20
K486	1171 65th St	DOE	3142008	3057450029	93600	FY20
M015	333 East 4th St	DOE	1004415	1003740020	72080	FY20
M034	730 East 12th St	DOE	1004564	1003810038	66080	FY20
M083	219 East 109th St	DOE	1052436	1016590012	94900	FY20
M101	141 East 111th St	DOE	1081346	1016390003	142925	FY20

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
M102	315 East 113th St	DOE	1081366	1016840101	82880	FY20
M108	1615 Madison Ave	DOE	1051584	1016140021	105725	FY20
M130	143 Baxter St	DOE	1003086	1002360038	95145	FY20
M175	175 West 134th St	DOE	1058248	1019190006	102175	FY20
M176	4862 Broadway	DOE	1064900	1022340007	91300	FY20
M276	55 Battery Pl	DOE	1087945	1000160040	104400	FY20
Q050 within (Q050, Q850)	143-26 101st Ave	DOE	4214461	4100240012	75680	FY20
Q072	133-25 Guy Brewer	DOE	4270059	4124950270	176600	FY20
Q113	87-21 79th Ave	DOE	4094055	4038460040	97200	FY20
Q134 within (Q134, Q835)	203-06 109th Ave	DOE	4440330	4109060001	82925	FY20
Q138	125-1 Weller Ave	DOE	4288640	4135780001	92639	FY20
Q160 within (Q160, Q958)	109-59 Inwood St	DOE	4258143	4119420302	86925	FY20
Q169	18-25 212th St	DOE	4131147	4058650050	92575	FY20
Q206 within (Q206, Q956)	61-21 97th Pl	DOE	4050414	4020830123	78280	FY20
Q263	222-22 Jamaica Ave	DOE	4231378	4108130005	106800	FY20
Q270	233-15 Merrick Blvd	DOE	4529511	4129730001	87528	FY20
Q520	45-35 Van Dam St	DOE	4003442	4002490001	70000	FY20
R022	1860 Forest Ave	DOE	5107239	5017060001	118925	FY20
R029	1581 Victory Blvd	DOE	5009028	5003310001	74400	FY20
R032	232 Barlow Ave	DOE	5070651	5054440012	110400	FY20
R036	255 Ionia Ave	DOE	5107742	5062620012	99700	FY20
R039	71 Sand Ln	DOE	5045488	5030970014	51680	FY20
R054	1060 Willowbrook Rd	DOE	5034476	5019870104	88800	FY20
R058	77 Marsh Ave	DOE	5145698	5024500305	107125	FY20
R861	280 Regis Dr	DOE	5032481	5016530001	107918	FY20
X004	1701 Fulton Ave	DOE	2009659	2029300001	127325	FY20
X016	4550 Carpenter Ave	DOE	2070894	2050760031	52800	FY20
X035	261 East 163rd St	DOE	2101573	2024460043	54175	FY20

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
X055	450 St. Paul's Pl	DOE	2009463	2029020001	147725	FY20
X061	1550 Crotona Park East	DOE	2009865	2029390045	92500	FY20
X065	677 East 141st St	DOE	2003834	2025710001	91300	FY20
X082	1700 Macombs Rd	DOE	2008460	2028660070	107125	FY20
X094 (in the same BBL with X361)	3530 Kings College Pl	DOE	2018628	2033560042	88739	FY20
X114	1155 Cromwell Ave	DOE	2003022	2024950100	82925	FY20
X116	977 Fox St	DOE	2005660	2027140004	208975	FY20
X126	175 West 166th St	DOE	2003495	2025260083	105700	FY20
X132	1245 Washington Ave	DOE	2001619	2023900001	117725	FY20
X134 within (X134, X834)	1330 Bristow St	DOE	2010273	2029650082	111224	FY20
X140 within (X140, X840)	916 Eagle Ave	DOE	2004469	2026270009	111269	FY20
X160	4140 Hutchinson River Park East	DOE	2072352	2051350200	147600	FY20
X161	628 Tinton Ave	DOE	2004773	2026640029	104525	FY20
X254	2452 Washington Ave	DOE	2103863	2030580003	82880	FY20
X981	1840 Bogart Ave	DOE	2117664	2041250015	61280	FY20
Washington Heights Health Center	600 West 168th St	DOHMH	1063379	1021380024	51050	FY20
Building Maintenance/Quartermaster	59-06 Laurel Hill Blvd	NYPD	4054168	4023440030	101600	FY20
X152	1007 Evergreen Ave	DOE	2023336	2037110001	109300	FY19
K217	1100 Newkirk Ave	DOE	3121072	3052320001	135725	FY19
M490	122 Amsterdam Ave	DOE	1030343	1011570025	524950	FY19
M166	132 West 89th St	DOE	1032308	1012190047	87680	FY19
M088	215 West 114th St	DOE	1055204	1018300019	208925	FY19
Q247	69-10 65th Dr	DOE	4070445	4030270037	67423	FY19
X092	700 East 179th St	DOE	2012620	2030920014	104500	FY19
X021	715 East 225th St	DOE	2063435	2048390039	90080	FY19
Q069 and Q869	77-02 37th Ave	DOE	4029892	4012880001	112900	FY19
R019 and R817	780 Post Ave	DOE	5006175	5002270024	75070	FY19

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
X022	270 East 167th St	DOE	2002410	2024380050	158575	FY19
X470	701 St. Ann's Ave	DOE	2001153	2023590240	122925	FY19
Q475 within (Q475,Q944)	89-30 114th St	DOE	4195688	4093210001	224360	FY19
R061	445 Castleton Ave	DOE	5002227	5001000100	206500	FY19
R075	455 Huguenot Ave	DOE	5079651	5060500002	198175	FY19
K005	820 Hancock St	DOE	3039906	3014900001	108100	FY19
K021	180 Chauncey St	DOE	3047914	3016920017	109325	FY19
K150	364 Sackman St	DOE	3084012	3037440009	114100	FY19
Q099	82-37 Kew Gardens Rd	DOE	4080168	4033600001	74500	FY19
X020	3050 Webster Ave	DOE	2086851	2033300001	156125	FY19
X117	1865 Morris Ave	DOE	2007902	2028270001	136025	FY19
K032	317 Hoyt St	DOE	3007326	3004370001	95580	FY19
K258	141 Macon St	DOE	3053075	3018450001	170525	FY19
K277	2529 Gerritsen Ave	DOE	3242369	3085900650	62480	FY19
Q060	91-02 88th Ave	DOE	4184144	4089290058	108100	FY19
Q194	154-60 17th Ave	DOE	4107342	4047290001	153725	FY19
X150	920 East 167th St	DOE	2005681	2027170005	114175	FY19
K040	265 Ralph Ave	DOE	3041214	3015180001	121325	FY19
K050	183 South 3rd St	DOE	3063128	3024190001	138175	FY19
Q008	108-35 167th St	DOE	4216655	4101780001	187375	FY19
Q037	179-37 137th Ave	DOE	4279864	4129930118	105725	FY19
Q162	201-02 53rd Ave	DOE	4159363	4074100001	194480	FY19
Q200	70-10 164th St	DOE	4146990	4067890001	68080	FY19
X052	681 Kelly St	DOE	2005133	2026860020	164500	FY19
K058	330 Smith St	DOE	3007547	3004490015	133325	FY19
K257	60 Cook St	DOE	3071571	3031140011	106925	FY19
K262	500 Macon St	DOE	3046876	3016710019	98575	FY19
K288	2950 West 25th St	DOE	3189538	3070540045	98480	FY19
K293	284 Baltic St	DOE	3006401	3004020001	189725	FY19

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
K296	125 Covert St	DOE	3079027	3034160001	188575	FY19
K327	111 Bristol St	DOE	3081032	3035200008	157475	FY19
K332	51 Christopher Ave	DOE	3083608	3036930001	114100	FY19
R041	216 Clawson St	DOE	5052791	5036450007	78100	FY19
M033	281 9th Ave	DOE	1012829	1007240023	83100	FY19
M041	116 West 11th St	DOE	1010543	1006060049	97300	FY19
M057	176 East 115th St	DOE	1083184	1016400139	109300	FY19
M187	349 Cabrini Blvd	DOE	1064371	1021790365	80480	FY19
M194	242 West 144th St	DOE	1060432	1020290011	90080	FY19
X001	335 East 152nd St	DOE	2001881	2024110119	115375	FY19
X012	2555 Tratman Ave	DOE	2041864	2039830001	84100	FY19
X014 within (X014, X947)	3041 Bruckner Blvd	DOE	2072754	2053130092	61200	FY19
X023	2151 Washington Ave	DOE	2090472	2030370079	90031	FY19
X036	1070 Castle Hill Ave	DOE	2026706	2038170001	85260	FY19
X048	1290 Spofford Ave	DOE	2006680	2027660001	102060	FY19
X059	2185 Bathgate Ave	DOE	2011538	2030490037	82880	FY19
X060	888 Rev J A Polite Ave	DOE	2005348	2026960085	135700	FY19
X062	660 Fox St	DOE	2005089	2026830065	94880	FY19
X070 within (X070, X870)	1691 Weeks Ave	DOE	2007387	2027930028	173789	FY19
X077 within (X077, X976, X982)	1250 Ward Ave	DOE	2088553	2037750025	130975	FY19
X081	5550 Riverdale Ave	DOE	2084806	2058501550	74460	FY19
X087 within (X087, X945)	1935 Bussing Ave	DOE	2069061	2050180001	58260	FY19
X091 within (X091, X891)	2200 Aqueduct Ave	DOE	2094683	2032070040	86656	FY19
X099	1180 Rev. J.A. Polite Ave	DOE	2005276	2026920014	92400	FY19
X105 within (X105, X935)	725 Brady Ave	DOE	2048794	2042880001	112900	FY19
X106 within (X106, X913)	2120 St Raymond Ave	DOE	2041211	2039460007	101440	FY19

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
X122 within (X122, X822)	260 West Kingsbridge Rd	DOE	2096486	2032390041	103325	FY19
X130	750 Prospect Ave	DOE	2005168	2026880001	81680	FY19
X138 within (X138, X938)	2060 Lafayette Ave	DOE	2022289	2036090016	88375	FY19
X042	1537 Washington Ave	DOE	2009466	2029030023	78175	FY19
M121	232 East 103rd St	DOE	1052384	1016520016	85280	FY19
M133	2121 5th Ave	DOE	1054276	1017550001	81680	FY19
M096	216 East 120th St	DOE	1074333	1017840012	94900	FY19
M190	311 East 82nd St	DOE	1049876	1015450005	50700	FY19
X007	3201 Kingsbridge Ave	DOE	2083564	2057560195	84100	FY19
X024	660 West 236th St	DOE	2085869	2059170140	115325	FY19
X097 within (X097, X917, X997)	1375 Mace Ave	DOE	2052739	2044740001	55080	FY19
X119 within (X119, X915)	1075 Pugsley Ave	DOE	2025696	2037890021	67525	FY19
X006 within (X006, X936)	1000 East Tremont Ave	DOE	2010892	2030050010	108480	FY19
X044	1825 Prospect Ave	DOE	2009957	2029490064	72080	FY19
X050	1550 Vyse Ave	DOE	2010786	2029960010	88900	FY19
X090 within (X090, X890)	1116 Sheridan Ave	DOE	2002745	2024560100	124900	FY19
M093	501-503 West 152nd St	DOE	1087824	1020840129	80600	FY19
X003	2100 Lafontaine Ave	DOE	2099356	2030620043	96080	FY19
X722	2697 Westchester Ave	DOE	2045725	2041330200	78000	FY19
M111	440 West 53rd St	DOE	1026740	1010620003	108080	FY19
X002	1365 Fulton Ave	DOE	2009617	2029250056	91300	FY19
K001 within (K001, K881)	309 47th St	DOE	3011821	3007550022	120000	FY19
K003	50 Jefferson Ave	DOE	3057406	3019980001	100800	FY19
K006	43 Snyder Ave	DOE	3117230	3051030079	81600	FY19
K044	432 Monroe St	DOE	3051540	3018210001	98400	FY19
K119	3829 Ave K	DOE	3215816	3077860001	62400	FY19
K157	850 Kent Ave	DOE	3054671	3018970013	122400	FY19

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
K183	76 Riverdale Ave	DOE	3082253	3035970011	93600	FY19
K184	273 Newport St	DOE	3082391	3036060001	94800	FY19
K198 within (K198, K983)	4105 Farragut Rd	DOE	3113388	3049880066	79480	FY19
K221 within (K221, K892)	791 Empire Blvd	DOE	3038372	3014230014	96080	FY19
Q009	58-74 57th St	DOE	4059130	4026310106	54060	FY19
Q084	22-45 41st St	DOE	4015334	4007940017	58880	FY19
Q095 within (Q095, Q910)	179-01 90th Ave	DOE	4446042	4099140001	114325	FY19
Q130	200-01 42nd Ave	DOE	4137034	4062030001	76800	FY19
Q164	138-01 77th Ave	DOE	4142980	4066060002	90060	FY19
Q172	81-14 257th St	DOE	4178464	4087310004	160975	FY19
Q175	64-35 102nd St	DOE	4051200	4021280014	98500	FY19
Q176 within (Q176, Q992)	120-45 235th St	DOE	4276382	4128200001	74700	FY19
Q186	252-12 72nd Ave	DOE	4173640	4084010375	92575	FY19
Q199 within (Q199, Q938)	39-20 48th Ave	DOE	4002915	4002060003	86518	FY19
Q215	535 Briar Pl	DOE	4301194	4157720031	92500	FY19
Q220	62-10 108th St	DOE	4051290	4021430001	76975	FY19
Q223	125-20 Sutphin Blvd	DOE	4261713	4120510001	122575	FY19
Q595 within (Q595, Q969)	162-02 Hillside Ave	DOE	4209031	4097680022	56560	FY19
R014	100 Tompkins Ave	DOE	5014176	5005450110	96327	FY19
K105	1031 59th St	DOE	3140612	3057020001	130800	FY19
K160 within (K160, K521)	5105 Fort Hamilton Pkwy	DOE	3138276	3056530021	118800	FY19
Q140 within (Q140, Q954)	116-01 116th Ave	DOE	4267260	4123410031	90480	FY19
Q156 within (Q156, Q957)	229-02 137th Ave	DOE	4283015	4131700012	99090	FY19
K206	2200 Gravesend Neck Rd	DOE	3201080	3073810201	130800	FY19
K130	70 Ocean Pkwy	DOE	3124019	3053190001	60000	FY19
Q127	98-01 25th Ave	DOE	4024487	4011090016	111725	FY19

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
Q135	207-11 89th Ave	DOE	4225816	4105820016	120125	FY19
Q152	33-52 62nd St	DOE	4027102	4011840014	116431	FY19
K212	87 Bay 49th St	DOE	3187407	3069170001	96000	FY19
Q165	70-35 150th St	DOE	4144881	4066970012	98500	FY19
R003	80 South Goff Ave	DOE	5083311	5067960044	83850	FY19
K048	6015 18th Ave	DOE	3132140	3055190001	72000	FY19
K208 within (K208, K972)	4801 Ave D	DOE	3105680	3047690025	90000	FY19
K244	5404 Tilden Ave	DOE	3104513	3047390001	154800	FY19
K313	283 Adams St	DOE	3331741	3001400010	133200	FY19
K485 within (K485, K977)	350 67th St	DOE	3144482	3058500030	144300	FY19
K151	763 Knickerbocker Ave	DOE	3078654	3034060001	67200	FY19
Q013	55-01 94th St	DOE	4437297	4019010040	214800	FY19
Q061	98-50 50th Ave	DOE	4046834	4018910032	237892	FY19
Q177 within (Q177, Q979)	56-37 188th St	DOE	4128231	4056740002	69680	FY19
Q811	61-25 Marathon Pkwy	DOE	4173060	4083610001	70925	FY19
Q166	33-09 35th Ave	DOE	4008220	4006100001	126125	FY19
Q139	93-06 63rd Dr	DOE	4072457	4030950050	80500	FY19
George Daly house	269 East 4th St	DHS	1004651	1003870049	50478	FY19
Morrisania Health Ctr	1309 Fulton Ave	DOHMH	2009620	2029250080	51434	FY19
K235 within (K235, K835, K980)	525 Lenox Rd	DOE	3107846	3048440001	125583	FY19
Q042	488 Beach 66th St	DOE	4302817	4160390014	145200	FY19
Q043 within (Q043, Q920)	160 Beach 29th St	DOE	4467711	4158200001	167480	FY19
Q085	23-70 31st St	DOE	4017485	4008420031	70800	FY19
K239	2401 Neptune Ave	DOE	3188221	3069650140	186000	FY19
K136	1664 Benson Ave	DOE	3167623	3063990026	144000	FY19
City Planning Building	22 Reade St	DCAS	1078613	1001540023	99000	FY19
Tremont Health Center	1826 Arthur Ave	DOHMH	2009891	2029450018	50216	FY19
K054	195 Sanford St	DOE	3049020	3017650015	96000	FY19

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
X843	2641 Grand Concourse	DOE	2013830	2031680027	74480	FY19
K100	2951 West 3rd St	DOE	3196595	3072810001	93600	FY19
X154	333 East 135th St	DOE	2097030	2022980001	105725	FY19
K169	4305 7th Ave	DOE	3011002	3007320001	123600	FY19
K163	1664 Benson Ave	DOE	3167623	3063990026	66000	FY19
K154	1625 11th Ave	DOE	3121871	3052570001	52800	FY19
K284	220 Watkins St	DOE	3081460	3035440135	110400	FY19
K304	280 Hart St	DOE	3049420	3017730014	109200	FY19
(Q174, Q935) Campus: Q174 (LL84)	65-10 Dieterle Crescent	DOE	4073904	4031340024	85200	FY19
K270 (LL84)	241 Emerson Pl	DOE	3331567	3019230001	86400	FY19
K845	330 18th St	DOE	3331274	3008800001	102125	FY19
K088 (LL84)	544 7th Ave	DOE	3331276	3008800001	170400	FY19
K166 (LL84)	800 Van Siclen Ave	DOE	3097675	3043490050	171600	FY19
K281 (LL84)	8787 24th Ave	DOE	3186626	3068910001	183600	FY19
K271 (LL84)	1137 Herkimer St	DOE	3042157	3015500001	228000	FY19
(K209, K941) Campus: K209 (LL84)	2609 East 7th St	DOE	3196224	3072440001	82800	FY19
Q184	163-15 21st Rd	DOE	4129072	4057560001	68400	FY19
Help Women's Center	116 Williams Ave	DHS	2027459	3036990001	55976	FY18
East New York Ave SRO	1385 East New York Ave	DHS	2094549	3014720001	60000	FY18
NYPD Precinct 24th	151 West 100th St	NYPD	2025622	1018550005	74000	FY18
K229	1400 Benson Ave	DOE	2028640	3063910024	109817	FY18
M090	21 Jumel Pl	DOE	2007603	1021120058	193375	FY18
East 119th St Veterans Residence	22 East 119th St	DHS	2086808	1017450005	65510	FY18
X279	2100 Walton Ave	DOE	2094729	2031780014	93516	FY18
X009 and X930	250 East 183rd St	DOE	2074045	2031500010	185360	FY18
M173	306 Fort Washington Ave	DOE	2094734	1021420154	135965	FY18
Pamoja House	357 Sumner Ave	DHS	2046140	3016490001	235200	FY18

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
Q214	31-15 140th St	DOE	2097990	4044130020	72080	FY18
K158	400 Ashford St	DOE	2009540	3040150001	100880	FY18
M183	419 East 66th St	DOE	2021923	1014610007	65287	FY18
M003	490 Hudson St	DOE	2051571	1005850041	121280	FY18
K540 and K541 and K722	50 Ave X	DOE	1005645	3071850020	367395	FY18
M465, M466, and M965	549 Audubon Ave	DOE	2088552	1021600018	337260	FY18
K180	5601 16th Ave	DOE	1055911	3054920001	130975	FY18
K149	700 Sutter Ave	DOE	4438731	3037740016	111660	FY18
K241 and K840	976 President St	DOE	2021972	3011880001	88400	FY18
K145	100 Noll St	DOE	3048352	3031530011	120100	FY18
K286	2525 Haring St	DOE	1063947	3074470001	88900	FY18
K515	6565 Flatlands Ave	DOE	1051497	3079980005	436250	FY18
Q049	79-15 Penelope Ave	DOE	1055111	4029900045	86100	FY18
M131	100 Hester St	DOE	3095254	1003010003	207109	FY18
M063	121 East 3rd St	DOE	4004419	1004310014	102080	FY18
M234	292 Greenwich St	DOE	3182721	1001420001	84903	FY18
K093	31 New York Ave	DOE	1062636	3018680007	92480	FY18
K147	325 Bushwick Ave	DOE	2062883	3030910001	170575	FY18
X041	3352 Olinville Ave	DOE	4031853	2046240015	85280	FY18
K380	370 Marcy Ave	DOE	1081842	3022360009	155529	FY18
K041	411 Thatford Ave	DOE	2090448	3036040001	109325	FY18
Q721	41-15 104th St	DOE	1062792	4019850001	151375	FY18
M006	45 East 81st St	DOE	4014094	1014930021	91300	FY18
Q237	46-21 Colden St	DOE	4149078	4051470001	184975	FY18
Q102	55-24 Van Horn St	DOE	2049999	4028790031	133720	FY18
K275	985 Rockaway Ave	DOE	1083359	3036360007	190975	FY18
X420, X421, and X423	1300 Boynton Ave	DOE	2054933	2038640001	304975	FY18
X109 and X899	1771 Popham Ave	DOE	3031050	2028770393	99512	FY18
X205	2475 Southern Blvd	DOE	5106483	2031150021	66080	FY18

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
X405 and X406	3000 East Tremont Ave	DOE	5037541	2053680001	418550	FY18
X037	360 West 230th St	DOE	5128148	2057160725	68050	FY18
115 Chrystie Street Office Building	115 Chrystie St	DCAS	5131697	1004230022	55000	FY18
Commonwealth Avenue SRO Res	1150 Commonwealth Ave	DHS	5007417	2037520013	60000	FY18
M506	140 West 102nd St	DOE	1001394	1018550009	102100	FY18
Queens Family Court	151-02 Jamaica Ave	DCAS	1001670	4100930001	291000	FY18
X107	1695 Seward Ave	DOE	1079146	2035910050	88925	FY18
K148	185 Ellery St	DOE	2004496	3017260014	108125	FY18
M132	185 Wadsworth Ave	DOE	2102353	1021650026	97300	FY18
M171	19 East 103rd St	DOE	4211112	1016090007	114100	FY18
Q111	37-15 13th St	DOE	3000256	4003630001	104500	FY18
K425 within (K425,K426)	3787 Bedford Ave	DOE	3002558	3067880001	306175	FY18
M164	401 West 164th St	DOE	3338306	1021110024	96100	FY18
X103 within (X103,X923)	4125 Carpenter Ave	DOE	4082076	2048230001	103280	FY18
M008	465 West 167th St	DOE	2011995	1021120001	90100	FY18
M004	500 West 160th St	DOE	3115866	1021180022	84100	FY18
Q151 within (Q151,Q925)	50-05 31st Ave	DOE	2003811	4007520001	93480	FY18
Q216	64-20 175th St	DOE	4148003	4069030001	151325	FY18
X096 within (X096,X912)	650 Waring Ave	DOE	3044657	2043410013	96525	FY18
Life Family Shelter	78 Catherine St	DHS	3153416	1001110150	115659	FY18
X076 within (X076,X926)	900 Adee Ave	DOE	3098664	2045520010	79300	FY18
K289	900 St Marks Ave	DOE	3082726	3012290028	111725	FY18
R450 within (R450,R451,R814)	105 Hamilton Ave	DOE	4076870	5000220001	250100	FY18
R069	144 Keating Pl	DOE	2098380	5023660073	116125	FY18
R056	250 Kramer Ave	DOE	3021057	5070440001	114125	FY18
R006	555 Page Ave	DOE	3196558	5077600001	116525	FY18

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
Jackson Family Residence	691 East 138th St	DHS	1003998	2025670013	72000	FY18
K165	76 Lott Ave	DOE	1055890	3036220023	74480	FY18
Q144	93-02 69th Ave	DOE	1079053	4032120001	80480	FY18
X034	770 Grote St	DOE	1064871	2031000014	117400	FY18
K051	350 5th Ave	DOE	1055908	3009810111	135725	FY18
K090	2840 West 12th St	DOE	1054159	3072660040	88880	FY18
M061	610 East 12th St	DOE	2000114	1003940012	90080	FY18
M098 within (M098, M845)	512 West 212st St	DOE	2004302	1022290012	115375	FY18
M163 within (M163, M919)	163 West 97th St	DOE	2008098	1018520099	85750	FY18
M911	22 East 128th St	DOE	1052999	1017520059	52880	FY18
X027	519 St. Ann's Ave	DOE	2000077	2022740023	86500	FY18
X063 within (X063, X862)	1260 Franklin Ave	DOE	2000308	2026150014	101669	FY18
X064 within (X064, X924)	1425 Walton Ave	DOE	2002299	2028430040	96700	FY18
M146	421 East 106th St	DOE	1052999	1017000001	109300	FY18
X030	510 East 141st St	DOE	1048043	2022670015	100900	FY18
X040	468 East 140th St	DOE	2045344	2022840034	108000	FY18
X053 within (X053, X851, X874)	360 East 168th St	DOE	3001540	2024350075	103300	FY18
M149 within (M149, M207)	34 West 118th St	DOE	3124109	1016010001	151425	FY18
M169	110 East 88th St	DOE	3244470	1015167502	74480	FY18
X083	950 Rhinelander Ave	DOE	4156949	2041250001	96100	FY18
K008	37 Hicks St	DOE	4270056	3002110001	72000	FY18
K230	1 Albermarle Rd	DOE	4091737	3053230032	87440	FY18
Q031	211-45 46th Rd	DOE	4178127	4073160018	68460	FY18
Q080	171-05 137th Ave	DOE	4134525	4124950166	100900	FY18
Q087	67-54 80th St	DOE	5065016	4037820027	83513	FY18
Q115	80-51 261st St	DOE	3203132	4087170001	85280	FY18
Q159	205-01 33rd Ave	DOE	4099925	4060380013	75700	FY18

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R053	330 Durant Ave	DOE	4240503	5051060001	80500	FY18
Q029 within (Q029, Q952)	125-10 23rd Ave	DOE	4153296	4042290014	98342	FY18
Q034 within (Q034, Q834)	104-12 Springfield Blvd	DOE	5004877	4111510081	72260	FY18
Q026	195-02 69th Ave	DOE	3185973	4071170421	103300	FY18
R018	221 Broadway	DOE	4437311	5001760010	104525	FY18
K101	2360 Benson Ave	DOE	2097114	3068750032	80400	FY18
Q014	107-01 Otis Ave	DOE	1082757	4019540037	142925	FY18
Bronx County Hall of Justice	265 East 161st St	DCAS	1059407	2024440001	775000	FY18
Home Life Building	253 Broadway	DCAS	3392969	1001347501	272616	FY18
M129	425 West 130th St	DOE	3026581	1019570010	102125	FY18
Park slope armory shelter	1402 8th Ave	DHS	3246958	3011020012	109556	FY18
K043	1401 Emmons Ave	DOE	3341513	3087670026	170400	FY18
Q032	171-11 35th Ave	DOE	4118954	4052560001	85200	FY18
M117	240 East 109th St	DOE	1052433	1016560100	192175	FY18
Q010	45-11 31st Ave	DOE	4012664	4007140001	111680	FY18
X032	690 East 183rd St	DOE	2012409	2030850001	98400	FY18
Q022	153-33 Sanford Ave	DOE	4438184	4053280001	75600	FY18
X143	120 West 231st St	DOE	2015547	2032530141	159775	FY18
Q136	201-15 115th Ave	DOE	4236757	4110180021	85300	FY18
M124	40 Division St	DOE	1075787	1002890001	111725	FY18
X073 and X873	1020 Anderson Avenue	DOE	1009872	2025040082	90280	FY17
Seneca Houses Residence	1215 Seneca Ave, Bronx	DHS	3194998	2027610043	64315	FY17
M081	212 West 120th Street	DOE	1006546	1019250019	110480	FY17
X306	40 West Tremont Avenue	DOE	1076751	2028620014	202975	FY17
Transportation Repair Shop	48-67 34th Street, LIC	FDNY	3130809	4002540001	92800	FY17
Manhattan Bowery Shelter	8 East 3rd Street, NYC	DHS	3084348	1004580011	55000	FY17

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
K660	145 Pennsylvania Avenue	DOE	3378160	3037040001	180175	FY17
K190	590 Sheffield Avenue	DOE	3071915	3038380018	93660	FY17
K224	755 Wortman Avenue	DOE	3083660	3045300001	126100	FY17
R043	100 Essex Drive	DOE	3113780	5024500320	194208	FY17
Q040 and Q988	109-20 Union Hall Street	DOE	3386003	4121510001	126525	FY17
X047	1794 East 172nd Street	DOE	3127692	2037860016	100925	FY17
X102	1827 Archer Street	DOE	3028281	2039210030	163325	FY17
X028 and X928	1861 Anthony Avenue	DOE	3085491	2028040031	94980	FY17
X046 and X846	279 East 196th Street	DOE	3259250	2032950001	103300	FY17
X008 and X808	3010 Briggs Avenue	DOE	3224139	2032990060	92480	FY17
X071 and X948	3040 Roberts Avenue	DOE	3205780	2041710001	135125	FY17
X058	459 East 176th Street	DOE	3098980	2029090032	74480	FY17
X182	601 Newman Avenue	DOE	4069253	2035640001	102175	FY17
X089 and X919	980 Mace Avenue	DOE	3045047	2044440016	117680	FY17
M113	240 West 113th St	DOE	4037370	1018280015	105100	FY17
K214 within (K214,K949)	2944 Pitkin Ave	DOE	5149609	3042430001	102033	FY17
Q012	42-00 72nd St	DOE	1082489	4013490028	116105	FY17
Mount Eden Avenue SRO Res	50 Mt Eden Ave West	DHS	4263341	2028650049	68185	FY17
R045	58 Lawrence Ave	DOE	1005760	5002760007	87680	FY17
Tweed Courthouse	52 Chambers St	DCAS	1001533	1001220001	170131	FY17
X120	890 Cauldwell Ave	DOE	3053993	2026310048	138175	FY17
X118 (0200016)	577 East 179th St	DOE	3071418	2030690001	115375	FY17
K092	601 Parkside Ave	DOE	2056898	3050490055	134500	FY17
K324	800 Gates Ave	DOE	3061235	3016360001	205375	FY17
K202 within (K202,K958)	982 Hegeman Ave	DOE	3082389	3044770001	135975	FY17
M042	71 Hester St	DOE	4048820	1003090001	74080	FY17
M036	123 Morningside Dr	DOE	1046668	1018500002	85280	FY17

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K253 within (K253, K964)	601 Ocean View Ave	DOE	4116436	3086660610	83000	FY17
K254	1801 Ave Y	DOE	1032754	3074200026	73200	FY17
345 Adams St, Brooklyn	345 Adams St	DCAS	4437597	3001407503	327530	FY17
Abe Stark Ice Rink	Coney Island Boardwalk and West 19th St	DPR	3082940	3070730101	51900	FY17
K152	725 East 23rd Street	DOE	1076741	3075510026	197100	FY16
Webster Avenue SRO	1075 Webster Ave	DHS	1076434	2024250020	174600	FY16
X015	2195 Andrews Avenue	DOE	2103867	2032240009	162125	FY16
K309	794 Monroe Street	DOE	1058447	3016430036	106860	FY16
Manhattan Municipal Building	1 Centre St	DCAS	2096013	1001210001	1070800	FY16
Manhattan Surrogate's Court	31 Chambers St	DCAS	2013561	1001530024	212500	FY16
Q131 within (Q131,Q911)	170-45 84th Ave	DOE	1063503	4098750001	73232	FY16
Q081	559 Cypress Ave	DOE	3045367	4034370001	69000	FY16
Q154	75-02 162nd St	DOE	4100846	4068340001	91260	FY16
Barbara Kleinman Residence	269 Skillman Ave	DHS	2098721	3028850001	97780	FY16
Brooklyn Borough Hall	209 Joralemon St	DCAS	3089176	3001390001	50000	FY16
Brooklyn Municipal Building	210 Joralemon St	DCAS	1045569	3002660030	468000	FY16
M841	466 West End Avenue	DOE	4003451	1012300001	64880	FY16
K185	8601 Ridge Blvd	DOE	2003496	3060430001	64880	FY15
K269	1957 Nostrand Avenue	DOE	3083637	3049940023	97300	FY15
K022	442 St. Marks Avenue	DOE	3319475	3011480050	105925	FY15
K902	62 Park Place	DOE	2006338	3009410050	92480	FY15
Q089	85-28 Britton Avenue	DOE	1055910	4015140001	82288	FY15
K849 and K839	4001 18th Avenue	DOE	3167212	3054160048	57180	FY15
SI 3 District Garage; RBS	Muldoon Ave, entrance to Fresh Kills	DSNY	5066295	5026850100	59798	FY14
R008	100 Lindenwood Rd	DOE	3000534	5052210001	60000	FY14

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Brooklyn Central Court	120 Schermerhorn St	DCAS	4052812	3001690017	264000	FY14
Queens Borough Hall	120-55 Queens Blvd	DCAS	5107580	4022740002	261000	FY14
122nd Police Precinct	2320 Hylan Blvd	NYPD	1001388	5039060001	51439	FY14
Murray Bergtraum High School	411 Pearl St	DOE	2003692	1001130100	305000	FY14
St. Mary's Recreational Center	450 St Anns Ave	DPR	1012267	2025570001	56125	FY14
26th Repair Shop	640 West 26th St	DSNY	1079143	1006700050	205000	FY14
Police Headquarters	1 Police Plz	NYPD	1001289	1001190001	751908	FY14
100 Gold St.	100 Gold St	DCAS	4022499	1000940025	594000	FY14
Woodside Inspection Facility	24-55 Brooklyn-Queens Expwy	TLC	1020610	4010160045	51979	FY14
Public Health Lab	455 1st Ave	DOHMH	1034194	1009320017	260308	FY14
Humanities & Social Sciences Library	476 5th Ave	NYPL	1087614	1012570001	600000	FY14
158th St. Fleet Svc's Shop	675 West 158th St	DOT	1079000	1021340218	94200	FY14
Manhattan Criminal Court	100 Centre St	DCAS	3029665	1001670001	795700	FY14
Brooklyn Public Library	10 Grand Army Plz	BPL	1054888	301183002	350000	FY14
East Harlem Multi Service Center	413 East 120th St	HRA	4268835	1018080008	93441	FY14
Roy Wilkins Recreation Center	Baisley Blvd & Merrick Blvd	DPR	2012957	4124060180	60000	FY14
X129	2055 Mapes Ave	DOE	3001939	2031090001	148475	FY14
Brooklyn Heights Branch	280 Cadman Plz West	BPL	2020580	3002390016	62917	FY14
X174	456 White Plains Rd	DOE	2116158	2034780018	202880	FY14
Co-op City (X153, 178, 180, 181 & 455)	650-850 Baychester Ave	DOE	2002869	2051410150	1190650	FY14
Mario Merola Bldg / County Court	851 Grand Concourse	DCAS	1089646	2024680001	555859	FY14
5-Boro Complex	1 Randalls Island	DPR	4206522	1018190203	59664	FY14
Queens Criminal Court	125-01 Queens Blvd	DCAS	3080067	4096530001	648000	FY14
Bushwick Multi Service Center	1420 Bushwick Ave	HRA	4114657	3034440022	52000	FY14

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Q020	142-30 Barclay Ave	DOE	1009757	4050470001	156175	FY14
M721	250 West Houston St	DOE	1030351	1005810054	133325	FY14
M199	270 West 70th St	DOE	2113630	1011580040	105700	FY14
X054	2703 Webster Ave	DOE	3000257	2032780014	98980	FY14
Brooklyn Supreme Court	292-360 Adams St	DCAS	3088357	3001390020	823584	FY14
K302	350 Lindwood St	DOE	3067788	3039690001	209275	FY14
K126	424 Leonard St	DOE	4052874	3027120001	160925	FY14
Q125	46-02 47TH Ave	DOE	3332507	4022840006	164683	FY14
K067	51 Saint Edwards St	DOE	3085070	3020390002	138125	FY14
K013	557 Pennsylvania Ave	DOE	4139491	3038230001	64925	FY14
Q120	58-01 136th St	DOE	1084848	4063730001	111725	FY14
M217	645 Main St	DOE	3102005	1013730001	115085	FY14
K135	686 Linden Blvd	DOE	5113169	3046730001	72280	FY14
R080	715 Ocean Ter	DOE	3028204	5006830001	299200	FY14
K009	80 Underhill Ave	DOE	4042496	3011450026	139375	FY14
Q092	99-01 34 Avenue	DOE	3061328	4017140018	98130	FY14
K318	101 Walton Street	DOE	2025717	3022460001	181375	FY14
X125	1111 Pugsley Avenue	DOE	2060191	2037900040	175325	FY14
X078	1400 Needham Avenue	DOE	4448708	2047190001	109280	FY14
Q219	144-39 Gravett Road	DOE	4108665	4065070001	115450	FY14
Q021	147-36 26th Avenue	DOE	2041247	4048030001	125260	FY14
X127	1560 Purdy Avenue	DOE	3000158	2039480055	153725	FY14
K307	209 York Street	DOE	4003259	3000560007	111744	FY14
Q600	37-02 47th Avenue	DOE	2065992	4002280020	195785	FY14
X111	3740 Baychester Avenue	DOE	2066190	2049160001	105775	FY14
X142	3750 Baychester Avenue	DOE	2067852	2049350001	164751	FY14
X068	4011 Monticello Avenue	DOE	3136085	2049860081	94860	FY14

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
K131	4305 Fort Hamilton Parkway	DOE	1059409	3056030001	103354	FY14
M540	443 West 135 Street	DOE	1063228	1019570078	163000	FY14
M115	586 West 117th Street	DOE	3002557	1021330040	124900	FY14
K801	65 Court Street	DOE	3048517	3002660020	342200	FY14
K033	70 Thompkins Avenue	DOE	1034190	3017430018	175300	FY14
M075	735 West End Avenue	DOE	4212425	1012530065	110575	FY14
Q238	88-15 182nd Street	DOE	2103869	4099190006	240055	FY14
X131	885 Bolton Avenue	DOE	2005616	2036440001	184975	FY14
X039	965 Longwood Avenue	DOE	3327776	2027100001	102100	FY14
K181	1023 New York Avenue	DOE	3245498	3049040010	153725	FY14
K225	1075 Ocean View Avenue	DOE	1004070	3087120056	102000	FY14
M022	111 Columbia Street	DOE	3075413	1003350001	151000	FY14
K383	1300 Greene Avenue	DOE	2088263	3032980001	211375	FY14
X104	1449 Shakespeare Avenue	DOE	1004323	2028730027	124900	FY14
M025	145 Stanton Street	DOE	3232559	1003540080	160000	FY14
K115	1500 East 92 Street	DOE	2065991	3082560001	123000	FY14
X112	1925 Schieffelin Ave	DOE	2012359	2049050500	85325	FY14
X057	2111 Crotona Avenue	DOE	1014174	2030810026	91280	FY14
M600	225 West 24th Street	DOE	1081042	1007740019	363130	FY14
M084	32 West 92 Street	DOE	3095977	1012050006	104525	FY14
K218	370 Fountain Avenue	DOE	1052998	3042780001	181325	FY14
M099	410 East 100th Street	DOE	3012824	1016930001	115000	FY14
K220	4812 9th Avenue	DOE	1059723	3007780023	109000	FY14
M043	509 West 129th Street	DOE	3016509	1019840033	135000	FY14
K010	511 7th Avenue	DOE	3330794	3008690001	77000	FY14
K138	760 Prospect Place	DOE	5027641	3012330026	164525	FY14
R044	80 Maple Parkway	DOE	3043248	5012180001	116500	FY14
K081	990 Dekalb Avenue	DOE	3252759	3016020019	130925	FY14

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
Cioffe Borough Repair Shop	106-01 Ave D	DSNY	2101266	3038710001	75000	FY14
Bronx Housing Court	1118 Grand Concourse	DCAS	1088394	2024620039	99000	FY14
Manhattan House of Detention	125 White St	DOC	5000085	1001670001	514000	FY14
Mark A. Constantino Judicial Ctr	130 Stuyvesant	DCAS	3378180	5000080070	150300	FY14
Brooklyn W11G	1824 Shore Parkway	DSNY	2009911	3069430002	75000	FY14
Bronx Bergen Building	1932 Arthur Ave	DCAS	2099027	2029470018	90000	FY14
Bronx Concourse Plaza	198 East 161 Street	DCAS	3083636	2024430094	231190	FY14
NYPD Command (BNND)	245 Glenmore Ave	NYPD	3000252	3036980032	60000	FY14
84th Precinct & Engine Co 207	301 Gold St	NYPD	1012811	3001340006	50000	FY14
Chelsea Recreational Center	430 West 25th Street	DPR	4462505	1007220057	83940	FY14
Queens West 2,3,4,6 District Garage; CRS	52-35 58th Street	DSNY	4054276	4023610268	550000	FY14
Central Repair Shop (CRS)	53-15 58th St	NYPD	3085992	4023610150	75400	FY14
Brownsville Rec. Ctr	598 Christopher Ave	DPR	2096863	3038680002	72000	FY14
George R. Vierno Center (GRVC)	Riker's Island	DOC	5141714	2026050040	458000	FY14
Otis Bantun Correctional Center (OBCC)	Riker's Island	DOC	2109474	2026050040	344632	FY14
Staten Island Borough Hall	10 Richmond Ter	DCAS	5000063	5000070001	81538	FY14
Manhattan Civil Court	111 Centre St	DCAS	1001833	1001690010	467000	FY14
Franklin Women's Shelter	1122 Franklin Ave	DHS	2004260	2026130001	97000	FY14
Health Building	125 Worth St	DCAS	1001831	1001680032	406109	FY14
Atlantic Avenue Men's Shelter	1322 Bedford Ave	DHS	3029748	3011990015	164320	FY14
Excelsior Building	137 Centre St	DCAS	1002358	1001970017	59000	FY14
Office of Emergency Mgmt. Hdqtrs	165 Cadman Plz East	DCAS	3000172	4000850006	66245	FY14
Bronx Family & Criminal Court	215 East 161st St	DCAS	2002704	2024540001	490000	FY14

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
Fort Washington Armory-Shelter	216 Ft Washington Ave	DHS	1063381	1021380079	88519	FY14
Long Island City Courthouse	25-10 Court Sq	DCAS	4000698	4000830001	59300	FY14
Regent Hotel Shelter	2720 Broadway	DHS	1056586	1018760020	102275	FY14
Sun Building	280 Broadway	DCAS	1079215	1001531002	242062	FY14
NYPD Precinct 67th	2820 Snyder Ave	NYPD	3117400	3051110024	53976	FY14
PATH Office	346 Powers Ave	DHS	2091301	2025720006	72000	FY14
Bellevue Men's Shelter	400 East 30th Street	DHS	1087298	1009620097	277076	FY14
Manhattan Supreme Court	60 Centre St	DCAS	1085748	1001600021	322300	FY14
Manhattan Family Court	60 Lafayette St	DCAS	1001842	1001710031	491000	FY14
Louis J. Lefkowitz Building	80 Centre St	DCAS	1001830	1001660027	472500	FY14
Queens Supreme Court	88-11 Sutphin Blvd	DCAS	4207071	4096910001	308200	FY14
Queens Civil Court	89-17 Sutphin Blvd	DCAS	4448759	4096800001	320535	FY14
Vernon C. Bain Center (VCBC)	1 Halleck St	DOC	2000000	1001190001	310000	FY14
Eric M. Taylor Center (EMTC)	10-10Hazen St	DOC	0000000	2026050040	484407	FY14
Queens 7/11 District Garage Annex	120-15 31st Ave	DSNY	4570021	4043460075	101930	FY14
NYPD Precinct 73rd	1470 East New York Ave	NYPD	3080735	3034970002	50020	FY14
George Motchan Det. Ctr (GMDC)	15-15 Hazen St	DOC	2097042	2026050040	533491	FY14
Rose M. Singer (RMSC)	19-19 Hazen St	DOC	0000000	2026050040	291000	FY14
Brooklyn North 1, 4 District Garage	157-175 Varick St	DSNY	3400387	3029620005	79305	FY14
Bronx 12 District Garage	1643 East 233rd St	DSNY	2090261	2049740028	117344	FY14
Ranaqua Shops and Garage	1900 Birchall Ave	DPR	2101004	2043330001	70000	FY14
Asphalt Green Rec. Ctr	1900 Birchall Ave	DPR	1085696	2043330001	56000	FY14
Borden Avenue Shelter	21-10 Borden Ave	DHS	4000526	4000680002	55000	FY14

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
Police Academy/13th Precinct	230 East 21st St	NYPD	1019613	1009010006	296405	FY14
Manhattan Appellate Court	27 Madison Ave	DCAS	1016743	1008550001	54300	FY14
NYPD Precinct 81st	30 Ralph Ave	NYPD	3044596	3016330039	58745	FY14
NYPD Precinct 48th	450 Cross Bronx Expwy	NYPD	2009509	2029070010	59328	FY14
Maspeth Central Shops	58-50 57th Rd	DOT	4059838	4026750015	117000	FY14
Briarwood Residence	80-20 134th St	DHS	4314908	4096620020	50000	FY14
NYPD Precinct 72nd	830 4th Ave	NYPD	3009843	3006680029	53600	FY14
Manhattan 3 District Garage	South St Pier 36	DSNY	1078939	1002410013	55330	FY14
Fort Totten	Various - See FDNY sheet	FDNY	4453946	4059170001	421996	FY14
Fire Academy - Randalls	Various - See FDNY sheet	FDNY	1088007	1018190015	241200	FY14
M054	103 W 107th St	DOE	1055990	1018620011	137000	FY14
K251	1037 E 54 St	DOE	3214729	3077580001	91280	FY14
K279	1070 East 104 St	DOE	3326733	3082300001	124925	FY14
K276	1070 East 83rd	DOE	3225637	3080340001	282180	FY14
K191	1600 Park Place	DOE	3036635	3013750012	92480	FY14
K321	180 7th Ave	DOE	3337516	3009710028	109444	FY14
M019	185 1st Ave	DOE	1006478	1004530034	84125	FY14
Q225	190 Beach 110th St	DOE	4303853	4161810001	84100	FY14
M661	240 2nd Ave	DOE	1020416	1009210064	55260	FY14
X135	2441 Wallace Ave	DOE	2051313	2044320001	163300	FY14
K650	257 N 6th St	DOE	3062135	3023300011	224525	FY14
X101	2750 Lafayette Ave	DOE	2080231	2055470001	182525	FY14
X121	2750 Throop Ave	DOE	2054253	2045260001	111700	FY14
K329	2929 West 30th St	DOE	3189517	3070510001	122225	FY14
R052	450 Buel Ave	DOE	5053746	5037050001	85699	FY14
M028	475 West 155th St	DOE	1076739	1021070026	122525	FY14
K287	50 Navy St	DOE	3000203	3001110001	98725	FY14

Facility Name	Address	Agency	BIN	BBL	Gross Square Footage	Fiscal Year of Submission of EER to DOB
Q011	54-25 Skillman Ave	DOE	4552510	4012390001	101260	FY14
R031	55 Layton Ave	DOE	5001150	5000490182	92600	FY14
Q205	75-25 Bell Blvd	DOE	4164007	4077530001	120648	FY14
Q191	85-15 258 St	DOE	4180083	4088010014	82620	FY14
University Ave	1041 University Ave, Bronx	DHS	2003051	2025270014	99975	FY14

Appendix B: RCM and OMM Cost Per Measure

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
(K213, K893) Campus: K213 (LL84)	RCM 1	RCM 1 Replace Valve Actuator	\$16,585	\$ 7,973.25
(K213, K893) Campus: K213 (LL84)	RCM 2	RCM 2 Replace/Repair OA Damper	\$16,763	\$ 7,235.83
(K213, K893) Campus: K213 (LL84)	RCM 3	RCM 3 Rewire Fan	\$2,406	\$ 1,051.20
(K213, K893) Campus: K213 (LL84)	RCM 4	RCM 4 Clean Coils	\$745	\$ 714.69
(K213, K893) Campus: K213 (LL84)	RCM 5	RCM 5 Retune Boilers	\$15,972	\$ 2,250.00
(K213, K893) Campus: K213 (LL84)	RCM 7	RCM 7 Install Door Sweeps in Main Building	\$1,666	\$ 1,685.54
(K213, K893) Campus: K213 (LL84)	RCM 8	RCM 8 Install Door Sweeps in Mini School	\$1,608	\$ 721.79
(K213, K893) Campus: K213 (LL84)	RCM 9	RCM 9 Reconnect Radiator Control Valves	\$205	\$ -
Building Maintenance/Quartermaster (LL84)	RCM 1	RCM 1 Retune Boilers	\$10,648	\$ 2,345.31
Building Maintenance/Quartermaster (LL84)	RCM 2	RCM 2 Monitoring Sensor Replacement	\$5,593	\$ -
Building Maintenance/Quartermaster (LL84)	RCM 3	RCM 3 Replace Fan Belts (AC-1 and AC-2)	\$610	\$ 13,237.97
Building Maintenance/Quartermaster (LL84)	RCM 4	RCM 4 OA and RA Damper Repair / Replacement	\$2,380	\$ -
Building Maintenance/Quartermaster (LL84)	RCM 5	RCM 5 Replace T-Stats and Pneumatic Control Valves	\$3,258	\$ -
Building Maintenance/Quartermaster (LL84)	RCM 6	RCM 6 Repair Tear in Canvas of HV-2 Unit	\$165	\$ 1,954.43
City Hall Campus: City Hall	RCM 1	RCM 1 Ventilation System Cleaning	\$1,850	\$ 13,798.55
City Hall Campus: City Hall	RCM 10	RCM 10 Re-arrange the Freezestat Distribution	\$350	\$ -

¹² Measures showing \$0 were completed by the agency in-house staff at no cost to DCAS

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
City Hall Campus: City Hall	RCM 2	RCM 2 Repair Outside Air Dampers for Boiler	\$1,500	\$ -
City Hall Campus: City Hall	RCM 3	RCM 3 Repair HVAC Controls	\$13,250	\$ 7,759.37
City Hall Campus: City Hall	RCM 4	RCM 4 Replace Damaged or Missing Insulation	\$1,720	\$ 2,561.45
City Hall Campus: City Hall	RCM 5	RCM 5 Fix Water Leaks	\$800	\$ -
City Hall Campus: City Hall	RCM 6	RCM 6 Replace Dirty Filters and Implement Replacement Protocol	\$450	\$ -
City Hall Campus: City Hall	RCM 7	RCM 7 Install Door Sweeps for Exterior Doors	\$3,400	\$ 5,820.20
City Hall Campus: City Hall	RCM 8	RCM 8 Re-arrange the Outside Air Temperature Sensor	\$750	\$ -
City Hall Campus: City Hall	RCM 9	RCM 9 Adjust Fan Belt Tension	\$420	\$ -
Construction Shops (LL84)	RCM 1	RCM 1 Retune and Repair Boilers	\$10,648	\$ 20,538.21
Construction Shops (LL84)	RCM 2	RCM 2 Weatherstripping on Rooftop Door	\$130	\$ -
Court Square Building	RCM 1	RCM 1 Replace Failed Steam Traps	\$367,750	\$ 104,246.00
Court Square Building	RCM 2	RCM 2 Insulate Exposed Pipes	\$13,290	\$ 23,897.40
Court Square Building	RCM 3	RCM 3 HVAC Equipment Repairs	\$5,900	\$ -
Court Square Building	RCM 4	RCM 4 Lighting Control Repairs	\$1,040	\$ 277.85
Court Square Building	RCM 5	RCM 5 Replace Dirty Filters and Implement Replacement Protocol	\$5,830	\$ 11,018.24
Court Square Building	RCM 6	RCM 6 Boiler/Burner Cleaning and Tuning	\$17,000	\$ 11,627.67
K012	RCM 1	RCM 1 Repair BMS	\$56,166	\$ -
K012	RCM 10	RCM 10 Repair Leak at glycol water pump	\$15	\$ 931.93

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
K012	RCM 11	RCM 11 DHW Heater Tuning	\$6,958	\$ 557.50
K012	RCM 12	RCM 12 Adjust aquastat & mixing valve controls	\$139	\$ -
K012	RCM 2	RCM 2 Repair AHUs	\$45,287	\$ 15,314.53
K012	RCM 3	RCM 3 Repair Heating controls at AHUs	\$3,985	\$ -
K012	RCM 4	RCM 4 Remove flow restrictions @ OA intakes	\$443	\$ -
K012	RCM 5	RCM 5 Balance Variable air flow systems	\$24,668	\$ -
K012	RCM 6	RCM 6 Balance glycol loop distribution system	\$24,668	\$ -
K012	RCM 7	RCM 7 Boiler Tuning & Cleaning	\$3,479	\$ 3,345.00
K012	RCM 8	RCM 8 Pipe Insulation	\$487	\$ 1,638.00
K012	RCM 9	RCM 9 Repair gaps at exterior doors	\$531	\$ 301.03
K014	RCM 1	RCM 1 Tune and Clean Boilers	\$10,436	\$ -
K014	RCM 2	RCM 2 Re-Install and Commission Fuel Economizer Boiler 3	\$455	\$ -
K014	RCM 3	RCM 3 Repair/Replace Failed Steam Traps	\$34,699	\$ -
K014	RCM 4	RCM 4 Reduce Pressure Set Point of Boilers	\$1,202	\$ -
K014	RCM 5	RCM 5 Adjust Aquastat Setpoint	\$253	\$ -
K014	RCM 6	RCM 6 Repair Weather Stripping on Doors	\$5,313	\$ 874.93
K014	RCM 7	RCM 7 Repair Air Handling Systems	\$5,332	\$ -
K014	RCM 8	RCM 8 Repair Water Leaks	\$4,352	\$ -
K014	RCM 9	RCM 9 Repair/Replace Exterior Lighting Photocell	\$164	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
K023 (LL84)	RCM 1	RCM 1 HV1, 2, 3, 4 Controls	\$23,400	\$ -
K023 (LL84)	RCM 2	RCM 2 Replace Failed Steam Trap	\$495	\$ 427.88
K023 (LL84)	RCM 3	RCM 3 Install Door Sweeps on Exterior Doors	\$1,686	\$ 885.93
K023 (LL84)	RCM 4	RCM 4 Repair Condensate Leaks	\$4,866	\$ 46,674.06
K023 (LL84)	RCM 5	RCM 5 Replace HV1, 2, 3, 4 Filter	\$0	\$ -
K046	RCM 1	RCM 1 Repair Damaged Exit Signs	\$1,214	\$ -
K046	RCM 10	RCM 10 Repair Weather Stripping on Doors	\$1,898	\$ 7,424.84
K046	RCM 2	RCM 2 Repair Leaks	\$6,059	\$ 2,817.51
K046	RCM 3	RCM 3 Repair/Replace Steam Traps	\$44,439	\$ 53,529.84
K046	RCM 4	RCM 4 Repair Air Compressor	\$2,530	\$ 8,931.46
K046	RCM 5	RCM 5 Service AHUs	\$8,994	\$ 3,516.34
K046	RCM 6	RCM 6 Repair, Service, and Clean Boilers	\$13,789	\$ -
K046	RCM 7	RCM 7 Adjust House DHW Temperatures	\$633	\$ -
K046	RCM 8	RCM 8 Tune DHW Heater	\$1,075	\$ 672.56
K046	RCM 9	RCM 9 Staff Training	\$12,650	\$ -
K069	RCM 1	RCM 1 Tune Boilers	\$5,313	\$ 1,500.00
K069	RCM 10	RCM 10 Train Cleaning Staff on Proper Boiler Procedures	\$6,325	\$ -
K069	RCM 2	RCM 2 Repair/Replace Steam Traps	\$68,006	\$ 105,153.03
K069	RCM 4	RCM 4 Repair AHUs	\$14,535	\$ 11,822.19
K069	RCM 6	RCM 6 Adjust Aquastat Setpoint	\$127	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
K069	RCM 8	RCM 8 Insulate Bare Piping	\$1,251	\$ 1,096.51
K069	RCM 9	RCM 9 Improve Cafeteria Lighting	\$28,235	\$ -
K097 within (K097, K937)	RCM 1	RCM 1 Repair Water Leaks	\$2,151	\$ -
K097 within (K097, K937)	RCM 2	RCM 2 Repair Boiler Fuel Economizers	\$6,730	\$ -
K097 within (K097, K937)	RCM 3	RCM 3 Repair AHUs	\$3,359	\$ -
K097 within (K097, K937)	RCM 4	RCM 4 Insulate Bare Piping	\$1,138	\$ -
K097 within (K097, K937)	RCM 5	RCM 5 Adjust Hot Water Temperature	\$127	\$ -
K097 within (K097, K937)	RCM 6	RCM 6 Repair/Replace Steam Traps	\$41,037	\$ -
K097 within (K097, K937)	RCM 7	RCM 7 Tune Boilers	\$3,163	\$ -
K097 within (K097, K937)	RCM 8	RCM 8 Repair Classroom Temperature Controls	\$18,026	\$ -
K111 (LL84)	RCM 1	RCM 1 Repair or Replace Controllers and Actuators	\$24,288	\$ 16,412.53
K111 (LL84)	RCM 2	RCM 2 Replace Motor Starter	\$1,649	\$ 4,495.91
K111 (LL84)	RCM 3	RCM 3 Replace Motor	\$2,738	\$ -
K111 (LL84)	RCM 4	RCM 4 Replace Stack Smoke Detector	\$4,438	\$ -
K111 (LL84)	RCM 5	RCM 5 Replace Failed Thermostats	\$7,462	\$ 2,439.84
K111 (LL84)	RCM 6	RCM 6 Replace Failed Steam Traps	\$495	\$ 328.36
K111 (LL84)	RCM 7	RCM 7 Replace Damaged Thermostatic Control Valves	\$9,155	\$ 6,796.95
K172	RCM 1	RCM 1 Replace Thermostats	\$2,750	\$ 1,647.00
K172	RCM 2	RCM 2 Replace Steam Traps and Implement Testing Protocol	\$69,750	\$ 33,552.90

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
K172	RCM 3	RCM 3 Boiler/Burner Cleaning and Tuning	\$7,750	\$ 1,500.00
K172	RCM 4	RCM 4 Insulate Condensate Piping	\$450	\$ 5,937.00
K172	RCM 5	RCM 5 Boiler System Repairs	\$11,900	\$ -
K172	RCM 6	RCM 6 Clean Auditorium Blower Coil	\$1,000	\$ 3,367.00
K178	RCM 1	RCM 1 Tune Boilers	\$1,252	\$ 1,500.00
K178	RCM 2	RCM 2 Tune Domestic Water Heater	\$626	\$ 672.56
K178	RCM 3	RCM 3 Repair AHUs	\$3,112	\$ 23,123.64
K178	RCM 4	RCM 4 Repair Gaps at Doors	\$2,125	\$ 5,208.67
K178	RCM 5	RCM 5 Insulate Bare Piping	\$23,556	\$ 33,961.62
K178	RCM 6	RCM 6 Repair Condensate Line and Fixture Leaks	\$4,301	\$ 11,122.78
K178	RCM 7	RCM 7 Repair/Replace Steam Traps	\$11,638	\$ -
K233	RCM 1	RCM 1 Tune and Clean Boilers	\$7,021	\$ 1,500.00
K233	RCM 2	RCM 2 Repair AHUs	\$10,999	\$ 10,722.13
K233	RCM 3	RCM 3 Repair/Replace Steam Traps	\$28,855	\$ 71,271.98
K233	RCM 4	RCM 4 Repair Steam and Water Leaks	\$8,754	\$ 996.58
K233	RCM 5	RCM 5 Insulate Bare Piping	\$1,163	\$ 2,723.71
K233	RCM 6	RCM 6 Repair Gaps at Doors	\$531	\$ -
K233	RCM 7	RCM 7 Repair Chiller	\$2,479	\$ -
K233	RCM 8	RCM 8 Operate Cooling Equipment to the CFR	\$172	\$ -
K233	RCM 9	RCM 9 Tune Domestic Water Heater	\$653	\$ 672.56

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
K237	RCM 1	RCM 1 Repair BMS	\$56,166	\$ 50,000.00
K237	RCM 2	RCM 2 Repair Rooftop Units to Operate to Proper Control Sequences	\$25,958	\$ -
K237	RCM 3	RCM 3 Adjust Set Points, Schedules, and Setbacks to meet CFR	\$1,518	\$ -
K237	RCM 4	RCM 4 Balance RTUs	\$24,668	\$ -
K237	RCM 5	RCM 5 Adjust Domestic Hot Water Aquastat Set Point	\$253	\$ -
K242	RCM 1	RCM 1 - Replace Damaged / Missing Insulation	\$2,090	\$ 3,444.21
K242	RCM 2	RCM 2 - Steam Trap Replacement	\$99,250	\$ 98,884.11
K242	RCM 3	RCM 3 - Repair/ Recalibrate Thermostats	\$8,030	\$ 4,884.97
K242	RCM 4	RCM 4 - Repair Vacuum Condensate System	\$5,750	\$ 1,211.85
K242	RCM 5	RCM 5 - Boiler Tuning	\$13,000	\$ 2,172.56
K242	RCM 6	RCM 6 - HVAC Repairs	\$6,220	\$ 5,511.60
K242	RCM 7	RCM 7 - Lighting System Repairs	\$12,040	\$ -
K252 (LL84)	RCM 1	RCM 1 Repair Duct Connections	\$16,620	\$ 10,326.26
K252 (LL84)	RCM 2	RCM 2 Repair or replace OA damper	\$2,253	\$ 1,891.26
K252 (LL84)	RCM 3	RCM 3 Replace Fan Belt	\$680	\$ -
K255	RCM 1	RCM 1 - Replace AHUs Steam Controllers	\$503	\$ 7,021.18
K255	RCM 2	RCM 2 - Install Weather-stripping	\$3,988	\$ 1,152.81
K255	RCM 3	RCM 3 - Steam Trap Replacement	\$63,140	\$ 58,430.82
K255	RCM 4	RCM 4 - Piping Insulation	\$3,533	\$ 7,080.70

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
K255	RCM 5	RCM 5 - Repair Condensate Leak	\$2,065	\$ 1,030.86
K255	RCM 6	RCM 6 - Repair Flex Connector	\$177	\$ 2,376.27
K255	RCM 7	RCM 7 - Clean AHUs Coil	\$666	\$ 748.28
K255	RCM 8	RCM 8 - Onsite Documentation	\$0	\$ -
K255	RCM 9	RCM 9 - Steam Trap Protocol	\$0	\$ -
K259	RCM 1	RCM 1 Repair Steam Boilers	\$5,060	\$ -
K259	RCM 2	RCM 2 Tune Steam Boilers	\$8,855	\$ -
K259	RCM 3	RCM 3 Repair/Replace Failed Steam Traps	\$65,110	\$ -
K259	RCM 4	RCM 4 Re-Install and Commission Fuel Economizers	\$1,366	\$ -
K259	RCM 5	RCM 5 Reduce Steam Boiler Pressure Set Point	\$822	\$ -
K259	RCM 6	RCM 6 Repair Vacuum/ Condensate Package	\$1,290	\$ -
K259	RCM 7	RCM 7 Repair Air Handling Systems	\$10,854	\$ -
K259	RCM 8	RCM 8 Repair BMS	\$56,166	\$ -
K259	RCM 9	RCM 9 Repair Hot Water Boilers	\$3,453	\$ -
K259	RCM 10	RCM 10 Train Staff	\$4,175	\$ -
K259	RCM 11	RCM 11 Adjust Outdoor Air Temperature Reset Controls	\$215	\$ -
K259	RCM 12	RCM 12 Adjust HVAC Set Points, Setbacks, and Operating Schedules	\$1,822	\$ -
K259	RCM 13	RCM 13 Tune Gas-Fired Water Heater	\$626	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
K259	RCM 14	RCM 14 Adjust Domestic Hot Water Aquastat Set Points	\$253	\$ -
K259	RCM 15	RCM 15 Insulate Bare Piping	\$1,777	\$ -
K259	RCM 16	RCM 16 Repair Water Leaks	\$8,438	\$ -
K260	RCM 1	RCM 1 Replace Steam Valve Controller	\$872	\$ 1,034.39
K260	RCM 2	RCM 2 Install Missing Weatherstripping	\$8,725	\$ 5,199.71
K260	RCM 3	RCM 3 Tune Boiler 1 and 2	\$11,000	\$ 1,500.00
K260	RCM 4	RCM 4 Insulate Piping	\$535	\$ 212.54
K260	RCM 5	RCM 5 Repair Domestic Hot Water Leaks	\$311	\$ -
K260	RCM 6	RCM 6 Clean Coils	\$756	\$ 7,681.14
K260	RCM 7	RCM 7 Onsite Documentation	\$0	\$ -
K405	RCM 1	RCM 1 Steam Trap Replacement	\$146,465	\$ 91,950.69
K405	RCM 10	RCM 10 Repair BL-1 Steam Leak	\$623	\$ 1,945.11
K405	RCM 11	RCM 11 Insulate Bare Steam and Condensate Pipe	\$8,694	\$ 1,945.11
K405	RCM 12	RCM 12 Clean Interior of HV unit B-1 to B-7 & B-18	\$5,693	\$ -
K405	RCM 2	RCM 2 BL-1 Auditorium H&V Unit - PHC Steam Valve Failure	\$21,018	\$ 9,418.52
K405	RCM 3	RCM 3 BL-3 Cafeteria H&V Unit - PHC Steam Valve Failure	\$21,018	\$ 767.25
K405	RCM 4	RCM 4 BL-5 Boy's Gym H&V Unit - PHC Steam Valve Failure	\$21,018	\$ 793.32
K405	RCM 5	RCM 5 BL-7 H&V Unit - PHC Steam Valve Failure	\$21,018	\$ 720.29

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
K405	RCM 6	RCM 6 BL-18 H&V Unit - PHC Steam Valve Failure	\$21,018	\$ 767.25
K405	RCM 7	RCM 7 B-2 H&V Unit - PHC Steam Valve Failure	\$21,018	\$ 793.32
K405	RCM 8	RCM 8 B-4 H&V Unit - PHC Steam Valve Failure	\$21,018	\$ 762.03
K405	RCM 9	RCM 9 B-6 H&V Unit - PHC Steam Valve Failure	\$21,018	\$ 762.03
K486	RCM 1	RCM 1 Repair Weather Stripping on Windows	\$76,469	\$ 71,297.08
K486	RCM 2	RCM 2 Repair AHUs	\$2,619	\$ -
K486	RCM 3	RCM 3 Tune Boilers	\$1,252	\$ 1,500.00
K486	RCM 4	RCM 4 Insulate Bare Piping	\$579	\$ 650.62
K486	RCM 5	RCM 5 Adjust Aquastat Set Point	\$0	\$ -
K486	RCM 6	RCM 6 Repair Classroom Temperature Controls	\$16,198	\$ 77,492.50
K486	RCM 7	RCM 7 Tune Domestic Hot Water Heater	\$626	\$ -
M015	RCM 1	RCM 1 Repair/Replace the Control Valves for Steam Radiators and H&V Units	\$155,000	\$ -
M015	RCM 10	RCM 10 Repair Oil Leaks Near the Burner	\$3,000	\$ -
M015	RCM 11	RCM 11 Repair Water Leak Near the Boiler # 1 and Condensate Return Tank	\$800	\$ -
M015	RCM 12	RCM 12 Replace Bearings for the Vacuum Condensate Pumps	\$2,000	\$ -
M015	RCM 13	RCM 13 Replace Seals and Flanges for Vacuum Pumps	\$4,000	\$ -
M015	RCM 2	RCM 2 Steam Trap Replacement and Maintenance Program	\$44,750	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
M015	RCM 3	RCM 3 Boiler Burner Cleaning and Tune-up	\$10,000	\$ 1,500.00
M015	RCM 4	RCM 4 Repair Pneumatic System Leaks	\$49,000	\$ -
M015	RCM 5	RCM 5 Repair The Combustion Air Dampers for the Boilers	\$1,500	\$ -
M015	RCM 6	RCM 6 Re-Balance H&V Units and Ventilation System	\$1,800	\$ -
M015	RCM 7	RCM 7 Adjust Domestic Hot Water Temperature Set Point	\$2,700	\$ -
M015	RCM 8	RCM 8 Install Insulation for Boiler # 1 and Auditorium H&V Unit	\$1,500	\$ -
M015	RCM 9	RCM 9 Replace the Flexible Connection for Gymnasium Blower and Exhaust Unit	\$1,600	\$ -
M034	RCM 1	RCM 1 Steam Trap Replacement	\$55,500	\$ -
M034	RCM 11	RCM 11 Weather Proof Windows to Reduce Infiltration	\$18,880	\$ -
M034	RCM 12	RCM 12 Replace Flexible Duct Connections	\$5,050	\$ 2,067.33
M034	RCM 13	RCM 13 Replace Exhaust Fans	\$3,000	\$ -
M034	RCM 14	RCM 14 Restore H&V Unit Controls	\$3,200	\$ -
M034	RCM 2	RCM 2 Boiler Burner Cleaning and Tune-Up	\$6,500	\$ -
M034	RCM 3	RCM 3 Repair Fuel Oil Leaks	\$10,000	\$ -
M034	RCM 4	RCM 4 Repair Steam Heating Plant Equipment	\$6,500	\$ -
M034	RCM 5	RCM 5 Repair Domestic Hot Water Equipment	\$5,000	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
M034	RCM 6	RCM 6 Upgrade Lighting to Correct Lighting Levels	\$63,000	\$ -
M034	RCM 7	RCM 7 Repair Water Infiltration in Boiler Room	\$200	\$ -
M034	RCM 8	RCM 8 Add Air Compressor Tank Drain	\$1,000	\$ -
M034	RCM 9	RCM 9 Clean H&V Unit Coils	\$5,000	\$ 27,704.96
M083	RCM 1	RCM 1 Replace Existing Air Compressor Unit Overall	\$35,700	\$ 6,487.89
M083	RCM 10	RCM 10 Re-insulate Damaged or Missing Piping Insulation	\$8,500	\$ 5,138.06
M083	RCM 2	RCM 2 Repair Boiler Gauges and Alarms	\$500	\$ -
M083	RCM 3	RCM 3 Reconnect Modulating Combustion Air Damper2	\$2,000	\$ 751.41
M083	RCM 4	RCM 4 Testing, Adjusting, and Balancing of Air Side Systems	\$19,110	\$ -
M083	RCM 5	RCM 5 Office Lighting Upgrade	\$350	\$ -
M083	RCM 6	RCM 6 Replace Old Vacuum/Condensate Pump Station	\$29,000	\$ -
M083	RCM 7	RCM 7 Repair Existing Steam and Condensate Leaks	\$10,000	\$ -
M083	RCM 8	RCM 8 Repair H&V Units in Fan Room	\$26,000	\$ 8,060.18
M083	RCM 9	RCM 9 Boiler/Burner Cleaning and Tune-up	\$13,000	\$ 750.00
M102	RCM 1	RCM 1 Replace or Recalibrate Thermostats	\$1,200	\$ 530.91
M102	RCM 2	RCM 2 Replace Oversized Vacuum/ Condensate Pump	\$1,425	\$ 1,067.63
M102	RCM 3	RCM 3 Repair Fans	\$10,300	\$ 636.19

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
M108	RCM 1	RCM 1 Replace Vacancy Sensor	\$368	\$ 169.59
M108	RCM 2	RCM 2 Weather Stripping	\$2,568	\$ 14,845.96
M108	RCM 3	RCM 3 Correct Lighting Timer Operation	\$452	\$ 263.77
M130	RCM 1	RCM 1 Steam Trap Replacement	\$32,500	\$ 98,655.62
M130	RCM 10	RCM 10 Rebalance Ventilation Equipment	\$8,450	\$ -
M130	RCM 11	RCM 11 Repair Compressed Air Station	\$10,750	\$ 15,098.97
M130	RCM 12	RCM 12 Repair CW Booster System	\$4,000	\$ 274.11
M130	RCM 2	RCM 2 Repair Steam Heating Plant Equipment	\$11,000	\$ 9,936.48
M130	RCM 3	RCM 3 Repair Fuel Oil Leaks	\$9,000	\$ -
M130	RCM 4	RCM 4 Replace Chemical Feed Unit	\$32,000	\$ -
M130	RCM 5	RCM 5 Insulate Boiler Feed Water Tank and Refrigerant Pipes	\$7,150	\$ 4,629.17
M130	RCM 6	RCM 6 Repair Water Leaks	\$5,000	\$ 877.54
M130	RCM 7	RCM 7 Boiler Burner Cleaning and Tune-Up	\$13,000	\$ 1,500.00
M130	RCM 8	RCM 8 Replace HVAC Controls	\$455,000	\$ 24,437.80
M130	RCM 9	RCM 9 Clean HVAC Coils	\$4,000	\$ 4,193.00
M175	RCM 1	RCM 1 Replace/Calibrate Pneumatic Thermostats and Temperature Sensor	\$33,150	\$ 8,395.50
M175	RCM 10	RCM 10 Insulate Condensate Return Suction Header	\$800	\$ 5,765.57
M175	RCM 2	RCM 2 Boiler Sensors, Gages and Safeties Replacements	\$2,800	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
M175	RCM 3	RCM 3 Pneumatic Controls and Repair and Replacements	\$147,500	\$ -
M175	RCM 4	RCM 4 Repair Combustion Air Dampers	\$2,200	\$ 5,765.57
M175	RCM 5	RCM 5 Implement Seasonal On/Off Schedule For Window A/ Cs	\$3,500	\$ -
M175	RCM 6	RCM 6 Domestic Hot Water System Adjustments	\$1,000	\$ -
M175	RCM 7	RCM 7 Replace Leaking Steam Shut-Off Valves	\$11,550	\$ 3,018.31
M175	RCM 8	RCM 8 HVAC Equipment Cleaning	\$25,500	\$ -
M175	RCM 9	RCM 9 Boiler/Burner Cleaning and Tune-Up	\$13,000	\$ -
M176	RCM 1	RCM 1 Boiler and Domestic Water Heater Burner Tune-Up	\$11,500	\$ 2,172.56
M176	RCM 2	RCM 2 Steam Trap Replacement and Maintenance Program	\$80,000	\$ 40,119.91
M176	RCM 3	RCM 3 Repairs to Pneumatic Control System	\$73,300	\$ -
M176	RCM 5	RCM 5 Repair HV-5-1 and AC-2-2	\$10,000	\$ 3,478.94
M176	RCM 6	RCM 6 Repair Outside Air and Return Air Dampers	\$64,850	\$ 46,206.28
M176	RCM 7	RCM 7 Repair of AC-3-1	\$22,500	\$ 9,486.47
M276	RCM 2	RCM 2 Adjust Outside Air Damper Setpoints	\$7,200	\$ 18,053.00
M276	RCM 3	BMS Troubleshooting		\$ 21,532.00
M276	RCM 4	RCM 4 Replace Fan Bearings and Tighten Belts	\$190	\$ -
M276	RCM 5	RCM 5 Replace AHU-3 Chilled Water Valve	\$850	\$ 639.00

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
M276	RCM 6	RCM 6 Tune Domestic Hot Water Heater	\$1,200	\$ 673.00
Q050 within (Q050, Q850)	RCM 1	RCM 1 Tune Boilers	\$1,879	\$ 1,500.00
Q050 within (Q050, Q850)	RCM 10	RCM 10 Tune Water Heater	\$626	\$ 750.00
Q050 within (Q050, Q850)	RCM 11	RCM 11 Repair Gaps at Doors	\$1,771	\$ 389.77
Q050 within (Q050, Q850)	RCM 2	RCM 2 Repair/Replace Steam Traps	\$30,929	\$ 61,273.96
Q050 within (Q050, Q850)	RCM 3	RCM 3 Repair Air Handling Units	\$16,799	\$ 17,580.35
Q050 within (Q050, Q850)	RCM 4	RCM 4 Repair Classroom Temperature Controls	\$8,729	\$ -
Q050 within (Q050, Q850)	RCM 5	RCM 5 Adjust Thermostat Set Point to 70F	\$316	\$ -
Q050 within (Q050, Q850)	RCM 6	RCM 6 Insulate Bare Piping	\$515	\$ 658.93
Q050 within (Q050, Q850)	RCM 7	RCM 7 Staff Training	\$633	\$ -
Q050 within (Q050, Q850)	RCM 8	RCM 8 Reduce Pressure Set Point on Compressor Storage Tank	\$127	\$ -
Q050 within (Q050, Q850)	RCM 9	RCM 9 Repair Vacuum Pump/Condensate Pump	\$2,151	\$ 15,812.61
Q072	RCM 1	RCM 1 Tune and Clean Boilers	\$2,897	\$ 2,500.00
Q072	RCM 2	RCM 2 Repair/Replace Failed Steam Traps	\$33,130	\$ 83,248.52
Q072	RCM 3	RCM 3 make Repairs to Control Air System	\$10,316	\$ -
Q072	RCM 4	RCM 4 Repair AHUs	\$18,621	\$ 14,537.39
Q072	RCM 5	RCM 5 Insulate Bare Piping	\$12,195	\$ 12,896.07
Q072	RCM 6	RCM 6 Repair Weather Stripping on Doors	\$1,594	\$ 3,329.00
Q072	RCM 7	RCM 7 Reduce Pressure Set Point on Compressor Storage Tank	\$127	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
Q072	RCM 8	RCM 8 Repair Building Leaks	\$3,985	\$ 50,867.05
Q072	RCM 9	RCM 9 Survey and Repair Pneumatic Controls	\$18,159	\$ -
Q113	OMM 2	OMM 2 Repair/Replace Photocell Controlling Lamp Over Basketball Court	\$76	\$ 4,905.45
Q113	RCM 1	RCM 1 Tune Boilers	\$1,518	\$ 1,500.00
Q113	RCM 2	RCM 2 Tune Domestic Water Heater	\$626	\$ 672.56
Q113	RCM 3	RCM 3 Repair/Replace Steam Traps	\$17,621	\$ 29,615.80
Q113	RCM 4	RCM 4 Repair Classroom Temperature Controls	\$4,649	\$ -
Q113	RCM 5	RCM 5 Repair Gaps at Doors	\$1,417	\$ 2,845.80
Q113	RCM 6	RCM 6 Adjust Vacancy Sensor Control Settings	\$405	\$ 1,251.77
Q113	RCM 8	RCM 8 Calibrate BMS and RTU Setpoints	\$5,060	\$ 11,455.00
Q134 within (Q134, Q835)	RCM 1	RCM 1 Tune Boilers	\$1,252	\$ 2,172.56
Q134 within (Q134, Q835)	RCM 10	RCM 10 Adjust Aquastat Set Point	\$127	\$ -
Q134 within (Q134, Q835)	RCM 2	RCM 2 Repair/Replace Steam Traps	\$36,609	\$ 93,638.00
Q134 within (Q134, Q835)	RCM 3	RCM 3 Repair Air Handlers	\$8,823	\$ 10,262.00
Q134 within (Q134, Q835)	RCM 4	RCM 4 Tune Domestic Water Heater	\$626	\$ -
Q134 within (Q134, Q835)	RCM 5	RCM 5 Insulate Bare Piping	\$887	\$ 3,385.00
Q134 within (Q134, Q835)	RCM 6	RCM 6 Repair Leaks	\$6,527	\$ 13,898.00
Q134 within (Q134, Q835)	RCM 7	RCM 7 Reduce Pressure Set Point on Compressor Storage Tank	\$127	\$ 5,499.00

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
Q134 within (Q134, Q835)	RCM 8	RCM 8 Repair Compressed Air Leaks	\$5,028	\$ -
Q134 within (Q134, Q835)	RCM 9	RCM 9 Repair Gaps at Doors	\$1,948	\$ 3,916.00
Q138	RCM 1	RCM 1 Tune Boilers	\$6,325	\$ 1,500.00
Q138	RCM 9	RCM 9 Repair Steam and Water Leak	\$4,099	\$ 8,752.00
Q138	RCM 10	RCM 10 Adjust Aquastat Set Point	\$127	\$ -
Q138	RCM 11	RCM 11 Replace Exterior Lighting Timer	\$645	\$ -
Q138	RCM 12	RCM 12 Control Cooling to NYC Cooling Guidelines	\$1,448	\$ -
Q138	RCM 2	RCM 2 Repair/Replace Steam Traps	\$38,190	\$ 105,549.00
Q138	RCM 3	RCM 3 Adjust Thermostat Set Point to 70F	\$607	\$ -
Q138	RCM 4	RCM 4 Repair AHUs	\$1,050	\$ 3,811.00
Q138	RCM 5	RCM 5 Repair RTUs	\$4,744	\$ -
Q138	RCM 6	RCM 6 Repair Vacuum Pump Controls	\$696	\$ -
Q138	RCM 7	RCM 7 Insulate Bare Piping	\$5,232	\$ 7,361.00
Q138	RCM 8	RCM 8 Repair Compressed Air Leaks	\$2,182	\$ 27,624.00
Q160 within (Q160, Q958)	RCM 1	RCM 1 Tune and Clean Boilers	\$5,693	\$ -
Q160 within (Q160, Q958)	RCM 9	RCM 9 Repair Weather Stripping on Doors	\$2,834	\$ 4,412.53
Q160 within (Q160, Q958)	RCM 2	RCM 2 Repair/Replace Failed Steam Traps	\$46,388	\$ 161,770.00
Q160 within (Q160, Q958)	RCM 3	RCM 3 Adjust Thermostat Set Point to 70 F	\$348	\$ -
Q160 within (Q160, Q958)	RCM 4	RCM 4 Repair Air Handlers	\$13,112	\$ 26,204.74

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
Q160 within (Q160, Q958)	RCM 5	RCM 5 Insulate Bare Piping	\$1,324	\$ -
Q160 within (Q160, Q958)	RCM 6	RCM 6 Repair Steam and Water Leaks	\$5,629	\$ -
Q160 within (Q160, Q958)	RCM 7	RCM 7 Repair Compressed Air Leaks	\$5,028	\$ -
Q160 within (Q160, Q958)	RCM 8	RCM 8 Adjust Aquastat Set Point	\$127	\$ -
Q169	RCM 1	RCM 1 Tune Boilers	\$1,518	\$ 1,500.00
Q169	RCM 10	RCM 10 Adjust Aquastat Setpoint	\$253	\$ -
Q169	RCM 2	RCM 2 Repair/Replace Failed Steam Traps	\$2,872	\$ -
Q169	RCM 4	RCM 4 Repair AHUs	\$7,976	\$ 29,766.00
Q169	RCM 5	RCM 5 Train staff on use of Fuel Economizer	\$316	\$ -
Q169	RCM 6	RCM 6 Repair Weather Stripping on Doors	\$1,328	\$ 1,620.00
Q169	RCM 7	RCM 7 Insulate Bare Piping	\$662	\$ -
Q169	RCM 8	RCM 8 Repair Steam and Water Leaks	\$8,121	\$ 8,866.98
Q206 within (Q206, Q956)	RCM 1	RCM 1 Tune Boilers	\$1,518	\$ -
Q206 within (Q206, Q956)	RCM 2	RCM 2 Replace/ Repair Failed Steam Traps	\$29,664	\$ -
Q206 within (Q206, Q956)	RCM 3	RCM 3 Repair Classroom Temp. Controls	\$4,428	\$ -
Q206 within (Q206, Q956)	RCM 4	RCM 4 Repair Air Handlers	\$1,663	\$ -
Q206 within (Q206, Q956)	RCM 5	RCM 5 Reduce Pressure Set Point on Compressor Storage	\$127	\$ -
Q206 within (Q206, Q956)	RCM 6	RCM 6 Repair Steam and Water Leaks	\$7,476	\$ -
Q206 within (Q206, Q956)	RCM 7	RCM 7 Insulate Bare Piping	\$5,351	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
Q206 within (Q206, Q956)	RCM 8	RCM 8 Re-Install and Commission Fuel Economizer	\$911	\$ -
Q206 within (Q206, Q956)	RCM 9	RCM 9 Adjust Aquastat Set Point	\$127	\$ -
Q263	RCM 1	RCM 1 Repair RTUs and BMS Control Points	\$15,307	\$ -
Q263	RCM 2	RCM 2 Testing and balancing of RTU-2	\$12,650	\$ -
Q263	RCM 3	RCM 3 Repair Gaps at Doors	\$620	\$ 2,493.00
Q263	RCM 4	RCM 4 Adjust Aquastat Setpoint	\$63	\$ -
Q270	RCM 1	RCM 1 Tune Boilers	\$2,340	\$ 1,500.00
Q270	RCM 2	RCM 2 Tune Domestic Water Heater	\$753	\$ 672.56
Q270	RCM 3	RCM 3 Repair/Replace Steam Traps	\$25,604	\$ 75,052.00
Q270	RCM 4	RCM 4 Insulate Bare Piping	\$240	\$ 772.00
Q270	RCM 5	RCM 5 Repair Steam Leaks	\$17,444	\$ 1,924.00
Q270	RCM 6	RCM 6 Repair Air Handlers	\$62,592	\$ -
Q270	RCM 7	RCM 7 Repair Classroom Temperature Controls	\$20,442	\$ 6,622.00
Q270	RCM 8	RCM 8 Provide Training for Custodial Staff	\$1,898	\$ -
Q520	RCM 1	RCM 1 Repair Air Handlers	\$9,488	\$ 13,171.93
Q520	RCM 2	RCM 2 Repair Classroom Temperatures Controls & AHU BMS Controls	\$5,376	\$ 16,707.47
Q520	RCM 3	RCM 3 Repair Boiler Outdoor Reset	\$3,365	\$ -
Q520	RCM 4	RCM 4 Adjust Draft Rate of Boiler 1 Draft Fan	\$759	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
Q520	RCM 5	RCM 5 Repair Water Leaks	\$4,554	\$ -
Q520	RCM 6	RCM 6 Repair Weather Stripping on Doors	\$531	\$ 233.00
R022	RCM 1	RCM 1 Tune Boilers	3,340.00	\$ 1,500.00
R022	RCM 2	RCM 2 Repair/Replace Steam Traps	33,396.00	\$ 98,053.10
R022	RCM 3	RCM 3 Repair Classroom Temperature Controls	7,571.00	\$ -
R022	RCM 5	RCM 5 Repair Air Handlers & Chillers	11,157.00	\$ 11,199.45
R029	RCM 1	RCM 1 Repair Steam Traps	\$605	\$ 500.43
R029	RCM 2	RCM 2 Replace House Blower Motor Starter	\$2,739	\$ -
R032	RCM 1	RCM 1 Repair Steam Traps	\$77,523	\$ 56,925.00
R032	RCM 2	RCM 2 Retune and Repair Boilers	\$18,076	\$ 1,500.00
R032	RCM 3-5	RCM 3-5 Restore Control to H&V Units	\$14,545	\$ 9,680.36
R032	RCM 6	RCM 6 Clean Interior of Playroom, Aud, and Lunch Blower	\$2,235	\$ 6,886.12
R036	RCM 1	RCM 1 Repair AHUs	\$8,861	\$ 6,343.30
R039 (LL84)	RCM 1	RCM 1 SCU-1 Controls Repair	\$16,000	\$ 47,862.59
R039 (LL84)	RCM 2	RCM 2 Steam Traps	\$69,400	\$ 52,406.13
R039 (LL84)	RCM 3	RCM 3 Boiler Tuning	\$6,700	\$ 1,500.00
R039 (LL84)	RCM 4	RCM 4 Weather-stripping	\$1,030	\$ 782.00
R039 (LL84)	RCM 5	RCM 5 Sensor Calibrations	\$1,010	\$ -
R039 (LL84)	RCM 6	RCM 6 SCU-1 Motor Replacement	\$6,300	\$ -
R039 (LL84)	RCM 7	RCM 7 Domestic Water Pipe Repair	\$2,800	\$ 2,519.38
R054 (LL84)	RCM 1	RCM 1 Failed PHT valve	\$3,258	\$ 3,806.43

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
R054 (LL84)	RCM 2	RCM 2 Clean both Auditorium preheat coils	\$2,215	\$ 876.46
R054 (LL84)	RCM 3	RCM 3 Aud HV OAD	\$431	\$ 1,680.02
R054 (LL84)	RCM 4	RCM 4 Retune and Repair Boiler #1 and Boiler #2	\$10,648	\$ 1,500.00
R054 (LL84)	RCM 5	RCM 5 Repair Steam Traps	\$83,028	\$ -
R054 (LL84)	RCM 6	RCM 6 Replace Failed TSTATS	\$482	\$ 1,509.66
R058	RCM 1	RCM 1 Tune and Clean Boilers	\$6,958	\$ 1,500.00
R058	RCM 3	RCM 3 Repair Water Leaks	\$4,807	\$ 1,249.73
R058	RCM 4	RCM 4 Adjust DHW Aquastat Set Point and Repair Re-circulation Pump	\$506	\$ 3,901.89
R058	RCM 5	RCM 5 Repair Gaps at Doors and Repair Cracked Window	\$2,505	\$ 464.63
R058	RCM 7	RCM 7 Repair AHUs	\$53,434	\$ 16,200.79
R058	RCM 8	RCM 8 Repair/Replace Steam Traps	\$20,518	\$ 24,781.59
R058	RCM 9	RCM 9 Balance Ventilation System	\$24,668	\$ -
R861	RCM 1	RCM 1 Repair RTUs	\$2,454	\$ 723.97
R861	RCM 2	RCM 2 Repair BMS	\$56,166	\$ -
R861	RCM 3	RCM 3 Perform Airside Balancing	\$17,078	\$ -
R861	RCM 4	RCM 4 Adjust RTU Set Points	\$1,822	\$ -
R861	RCM 5	RCM 5 Tune Domestic Hot Water Heater	\$626	\$ 672.56
R861	RCM 6	RCM 6 Adjust Domestic Hot Water Temperature Settings	\$253	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
Washington Heights Health Center	RCM 1	RCM 1 Replace Existing Manual Valves with New	\$4,200	\$ -
Washington Heights Health Center	RCM 2	RCM 2 Steam Trap Replacement and Maintenance Program	\$14,560	\$ -
Washington Heights Health Center	RCM 3	RCM 3 Replace Steam Control Valve for Domestic Hot Water	\$1,700	\$ -
X004 (LL84)	RCM 1	RCM 1 Valve Insulation >3 Inches	\$3,700	\$ 3,113.65
X004 (LL84)	RCM 2	RCM 2 Replace Steam Traps	\$139,200	\$ 163,385.03
X004 (LL84)	RCM 3	RCM 3 Pool Heater Tuning	\$3,400	\$ 672.56
X004 (LL84)	RCM 4	RCM 4 Weather-Stripping	\$5,200	\$ 913.34
X004 (LL84)	RCM 5	RCM 5 Repair Leaks	\$7,900	\$ 3,268.47
X004 (LL84)	RCM 6	RCM 6 Replace HVAC Sensors	\$1,300	\$ 3,071.50
X016	RCM 1	RCM 1 Boiler, DHW, and Heating Controls Repairs	\$3,000	\$ 112,402.00
X016	RCM 2	RCM 2 Replace Burnt Out Ballasts	\$14,800	\$ -
X016	RCM 3	RCM 3 Repair and Replace DHW Equipment	\$28,000	\$ -
X016	RCM 4	RCM 4 Fix Leaking Plumbing Fixtures and Condensate Piping	\$5,000	\$ 54,759.97
X016	RCM 6	RCM 6 Insulate Exposed Condensate Piping	\$625	\$ -
X035	RCM 1	RCM 1 Boiler/Burner Cleaning and Tuning	\$9,200	\$ 1,500.00
X035	RCM 2	RCM 2 Steam Leak Repair at Boiler	\$810	\$ 472.55
X035	RCM 3	RCM 3 Replace Damaged or Missing Insulation	\$2,700	\$ 7,920.05
X035	RCM 4	RCM 4 Replace Auditorium Thermostat	\$730	\$ 621.92

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
X055	RCM 1	RCM 1 Tuning of Combustion Equipment	\$11,500	\$ 112,402.00
X055	RCM 10	RCM 10 Boiler Control Repairs	\$4,000	\$ -
X055	RCM 11	RCM 11 Test and Balance Systems	\$7,000	\$ -
X055	RCM 2	RCM 2 Controls Repairs and Calibration	\$29,450	\$ 61,660.41
X055	RCM 3	RCM 3 Steam Trap Replacement and Maintenance Program	\$123,750	\$ 110,440.75
X055	RCM 4	RCM 4 Auditorium H&V Unit Repairs	\$3,950	\$ -
X055	RCM 5	RCM 5 Vacuum Condensate Units Repair	\$19,000	\$ -
X055	RCM 6	RCM 6 Steam Coil Repairs in H&V#5	\$2,250	\$ -
X055	RCM 7	RCM 7 Repair Water Leaks in Mechanical Cellar	\$9,200	\$ 12,711.32
X055	RCM 9	RCM 9 Domestic Hot Water Set Point Adjustments	\$1,650	\$ -
X061	RCM 1	RCM 1 Boiler Burner Cleaning and Tune-Up	\$19,500	\$ 112,402.00
X061	RCM 10	RCM 10 Repair Exhaust Fans	\$4,800	\$ -
X061	RCM 2	RCM 2 Repair Fuel Oil Leaks	\$7,000	\$ -
X061	RCM 3	RCM 3 Repair Steam Heating Plant Equipment	\$7,350	\$ 487.67
X061	RCM 4	RCM 4 Repair Steam Leaks	\$1,800	\$ 7,609.04
X061	RCM 5	RCM 5 Steam Trap Replacement	\$130,000	\$ 84,934.38
X061	RCM 6	RCM 6 Recalibrate Pneumatic Thermostats	\$15,000	\$ 45,078.34
X061	RCM 7	RCM 7 Repair Domestic Hot Water System	\$2,000	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
X065	RCM 1	RCM 1 Repair Perimeter Radiator Temperature Controls	\$8,400	\$ 5,173.88
X065	RCM 2	RCM 2 Install Modulating Pressuretrols for Boilers	\$3,000	\$ -
X065	RCM 3	RCM 3 Adjust Boiler Operating Setpoints	\$2,400	\$ -
X065	RCM 4	RCM 4 Repair Exterior Lighting Controls	\$300	\$ 10,853.95
X065	RCM 5	RCM 5 Repair Float Switch at Boiler Feed Tank	\$1,500	\$ -
X065	RCM 6	RCM 6 Steam Trap Replacement and Implement Testing/Replacement Protocol	\$128,000	\$ 58,905.00
X065	RCM 7	RCM 7 Boiler/Burner Cleaning and Tune-Up	\$11,580	\$ 2,172.56
X082	RCM 1	RCM 1 Replace Burner Gauges	\$2,000	\$ -
X082	RCM 10	RCM 10 Boiler/Burner Cleaning and Tune-Up	\$16,500	\$ 3,790.00
X082	RCM 11	RCM 11 Insulate Suction Header and Condensate Piping	\$10,500	\$ 5,565.10
X082	RCM 2	RCM 2 Repair H&V Units and Exhaust Fans	\$27,600	\$ 1,001.93
X082	RCM 3	RCM 3 Repair Unit Ventilators	\$313,000	\$ -
X082	RCM 4	RCM 4 Repair Vacuum Pumps	\$1,500	\$ -
X082	RCM 5	RCM 5 Replace Fuel Oil Pumps	\$3,000	\$ -
X082	RCM 6	RCM 6 DHW System Adjustments	\$2,000	\$ -
X082	RCM 7	RCM 7 Fix Steam and Condensate Leaks	\$15,000	\$ -
X082	RCM 8	RCM 8 Repair Boiler Feed Pumps	\$850	\$ 2,478.82

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
X082	RCM 9	RCM 9 Steam Trap Replacement and Implement Testing/Replacement Protocol	\$171,250	\$ 16,903.69
X094 (in the same BBL with X361)	RCM 1	RCM 1 Repair Heating Plant Controls	\$7,000	\$ -
X094 (in the same BBL with X361)	RCM 10	RCM 10 Boiler/Burner Cleaning and Tune-Up	\$10,000	\$ 112,402.00
X094 (in the same BBL with X361)	RCM 11	RCM 11 Insulate Suction Header and Condensate Piping	\$3,000	\$ -
X094 (in the same BBL with X361)	RCM 2	RCM 2 Repair H&V Units and Exhaust Fans	\$81,600	\$ -
X094 (in the same BBL with X361)	RCM 3	RCM 3 Repair Classroom Unit Ventilators and Radiators	\$99,500	\$ 68,399.07
X094 (in the same BBL with X361)	RCM 4	RCM 4 Implement Seasonal On/Off Schedule for Window A/Cs	\$3,500	\$ -
X094 (in the same BBL with X361)	RCM 5	RCM 5 Repair Exterior Light Time Clock	\$600	\$ -
X094 (in the same BBL with X361)	RCM 6	RCM 6 DHW System Adjustments	\$2,500	\$ -
X094 (in the same BBL with X361)	RCM 7	RCM 7 Repair Condensate Return Unit	\$9,500	\$ 20,870.94
X094 (in the same BBL with X361)	RCM 8	RCM 8 HVAC Equipment Cleaning	\$25,500	\$ -
X094 (in the same BBL with X361)	RCM 9	RCM 9 Steam Trap Replacement and Implement		
Testing/Replacement Protocol	\$102,500	\$ 85,173.55		
X114	RCM 1	RCM 1 Boiler/Burner Tuning and Cleaning	\$14,000	\$ -
X114	RCM 8	RCM 8 Steam Leak Repairs	\$540	\$ -
X114	RCM 2	RCM 2 Pneumatic Controls Repairs	\$62,750	\$ -

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
X114	RCM 3	RCM 3 Boiler Controls Repair	\$18,000	\$ -
X114	RCM 4	RCM 4 Exterior Lighting Repairs	\$1,700	\$ -
X114	RCM 5	RCM 5 Domestic Hot Water Steam Valve Replacement	\$10,000	\$ -
X114	RCM 6	RCM 6 Insulate Condensate Header	\$680	\$ -
X114	RCM 7	RCM 7 H&V and Duct Work Cleaning	\$8,500	\$ -
X116	RCM 1	RCM 1 Replace Chilled Water Temperature Gauges	\$700	\$ -
X116	RCM 2	RCM 2 Operate Fans for Proper Ventilation	\$0	\$ -
X116	RCM 3	RCM 3 HVAC Equipment Cleaning	\$18,500	\$ 7,329.72
X116	RCM 4	RCM 4 Boiler and Fan Repair Work	\$7,475	\$ -
X116	RCM 5	RCM 5 Steam Trap Replacement and Implement Testing/ Replacement Protocol	\$37,500	\$ 111,465.65
X116	RCM 6	RCM 6 Burner Cleaning and Tune-up	\$15,500	\$ 2,172.56
X116	RCM 7	RCM 7 Replace Missing/ Damaged Insulation	\$350	\$ 4,171.61
X126	RCM 1	RCM 1 Boiler-Burner Repairs and Tuning	\$36,000	\$ 1,500.00
X126	RCM 10	RCM 10 MDF Room Temperature Controls	\$2,800	\$ -
X126	RCM 2	RCM 2 Steam Trap Replacement and Maintenance	\$65,000	\$ 77,098.49
X126	RCM 3	RCM 3 Repair Pneumatic Controls	\$102,000	\$ 24,847.34
X126	RCM 4	RCM 4 Repair H&V Units in Fan Room	\$15,500	\$ 84,300.21

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
X126	RCM 5	RCM 5 Repair Steam Leaks in Crawl Space	\$7,000	\$ 5,622.33
X126	RCM 6	RCM 6 Repair Vacuum Condensate Unit	\$2,000	\$ -
X126	RCM 7	RCM 7 DHW Set Points and Repairs	\$6,700	\$ -
X126	RCM 8	RCM 8 Repair Combustion Air Damper	\$2,000	\$ -
X126	RCM 9	RCM 9 Replace Fuel Oil Pump Motor	\$2,000	\$ -
X132	RCM 1	RCM 1 Repair Heating Plant Controls	\$8,500	\$ -
X132	RCM 10	RCM 10 Boiler/Burner Cleaning and Tune-Up	\$13,000	\$ 1,500.00
X132	RCM 11	RCM 11 Replace Weather Stripping on Exterior Door	\$300	\$ 1,126.76
X132	RCM 2	RCM 2 Repair H&V Units and Exhaust Fans	\$62,350	\$ -
X132	RCM 3	RCM 3 Recalibrate Pneumatic Radiator Thermostats	\$36,000	\$ -
X132	RCM 4	RCM 4 Replace Fuel Oil Pumping System	\$61,500	\$ -
X132	RCM 5	RCM 5 DHW System Repairs	\$5,500	\$ -
X132	RCM 6	RCM 6 Replace Condensate Return Unit	\$65,000	\$ 48,435.53
X132	RCM 7	RCM 7 Fix Steam and Condensate Leaks	\$13,000	\$ -
X132	RCM 8	RCM 8 HVAC Equipment Cleaning	\$25,500	\$ -
X132	RCM 9	RCM 9 Steam Trap Replacement and Implement Testing/Replacement Protocol	\$145,000	\$ 80,627.32
X134 within (X134, X834)	OMM 4	OMM 4 Repair Flexible Connections Between Blowers and Supply Air Ducts	\$1,500	\$ 2,587.00

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
X134 within (X134, X834)	RCM 1	RCM 1 Repair and Recalibrate Pneumatic Thermostats and Valves	\$4,950	\$ 11,984.00
X134 within (X134, X834)	RCM 10	RCM 10 Repair the Broken Air Compressor	\$1,000	\$ -
X134 within (X134, X834)	RCM 11	RCM 11 Repair Broken Air Filter System for the Blowers	\$2,900	\$ -
X134 within (X134, X834)	RCM 2	RCM 2 Repair Steam and Condensate Leaks on H&V Unit Heating Coils	\$4,000	\$ -
X134 within (X134, X834)	RCM 3	RCM 3 Steam Trap Replacement and Maintenance Program	\$96,000	\$ 94,225.00
X134 within (X134, X834)	RCM 4	RCM 4 Boiler Burner Cleaning and Tune-Up	\$13,000	\$ 2,172.56
X134 within (X134, X834)	RCM 5	RCM 5 Repair Flue Smoke Opacity Monitor for Boiler B-1	\$450	\$ -
X134 within (X134, X834)	RCM 6	RCM 6 Repair Low Water Cutoff Safety System for Boilers	\$900	\$ -
X134 within (X134, X834)	RCM 7	RCM 7 Insulate Steam Piping	\$3,700	\$ 2,691.00
X134 within (X134, X834)	RCM 8	RCM 8 Repair Non-Functional Freezestats	\$5,250	\$ 4,535.00
X134 within (X134, X834)	RCM 9	RCM 9 Repair Broken Damper Controls for the Blowers	\$3,500	\$ 6,632.00
X140 within (X140, X840)	RCM 1	RCM 1 Repair Steam Leak in Boiler Rm	\$2,500	\$ 4,938.00
X140 within (X140, X840)	RCM 2	RCM 2 Steam Traps Repairs	\$37,500	\$ 64,048.00
X140 within (X140, X840)	RCM 3	RCM 3 Pipe Insulation	\$3,600	\$ 976.00
X140 within (X140, X840)	RCM 4	RCM 4 Recalibrate H&V Unit Controls	\$1,000	\$ 3,710.00
X140 within (X140, X840)	RCM 5	RCM 5 Boiler Tuning	\$16,500	\$ 2,172.56
X160	RCM 1	RCM 1 Limited Repair of Pneumatic Controls	\$6,500	\$ 6,635.08

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
X160	RCM 2	RCM 2 H&V unit Repairs	\$12,000	\$ 54,100.87
X160	RCM 3	RCM 3 Repair Damaged Insulation	\$160	\$ 352.52
X161	RCM 1	RCM 1 Replace Flue Smoke Opacity Monitors for the Boilers	\$1,700	\$ -
X161	RCM 10	RCM 10 Steam Trap Replacement and Maintenance Program	\$60,000	\$ 95,819.55
X161	RCM 2	RCM 2 Boiler Burner Cleaning and Tune Up	\$9,000	\$ -
X161	RCM 3	RCM 3 Insulate Exposed Steam and Condensate Pipes	\$1,440	\$ -
X161	RCM 4	RCM 4 Repair Broken Air Filter System for the Blowers	\$2,600	\$ 5,031.48
X161	RCM 5	RCM 5 Replace Non-Functional Freezestats	\$5,250	\$ 4,054.15
X161	RCM 6	RCM 6 Repair Broken Damper Controls for the Auditorium Blower	\$1,400	\$ -
X161	RCM 7	RCM 7 Replace Old Pneumatic Thermostats and Valves	\$2,900	\$ 17,359.72
X161	RCM 8	RCM 8 Rebalance Blowers and Ventilation Systems	\$4,500	\$ -
X161	RCM 9	RCM 9 Repair Drive For the Partition Door Between Gymnasium and Cafeteria	\$1,700	\$ -
X254	RCM 1	RCM 1 Reprogram BMS Controls	\$3,000	\$ -
X254	RCM 2	RCM 2 Clean Coils in HVAC units	\$4,000	\$ 7,188.18
X254	RCM 3	RCM 3 Replace Damaged Bearings & Belts on Fans	\$2,400	\$ 11,555.67
X254	RCM 4	RCM 4 Rebalance Ventilation Systems	\$14,300	\$ 7,872.76

Building Name	Measure	Measure Description	Estimated Installation Cost (\$)	Actual Cost Incurred by DCAS ¹²
X254	RCM 5	RCM 5 DHWH Tuning	\$1,500	\$ 695.00
X981	RCM 1	RCM 1 Replace Existing Duct-Mounted Temperature Sensors	\$2,560	\$ -
X981	RCM 2	RCM 2 Replace Existing Exterior Door Weather-Stripping	\$1,400	\$ 5,052.24
X981	RCM 3	RCM 3 Repair RTU-3	\$68,870	\$ -
X981	RCM 5	RCM 5 Repair Outside Air Dampers	\$18,000	\$ -
X981	RCM 7	RCM 7 Implement Proper Day/Night Setbacks for RTUs	\$160	\$ -

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