TABLE OF CONTENTS

Project Credit Checklist[1]

SCA School Construction Authority

NYC Green Schools Rating System 2019

		SD	DD	60%	100%	Design	Const
Project:	PS 123A					X	
Address | Zip Code:	345 Example St	Date last updated:					
LLW #:	123456	Select if interior fit-out[13]					
Design #:	123456						
Architect:	Architect						

Impact Area	BD&C Reference LEED for Schools v4[2]	CHPS Reference	NYC GSG 2019[3]	Credit Name	Credits with 0 Points Required for all projects[5]	Credit with Points Required for all Projects	Required if Feasible	Additional Credits	Regional Priority[6]	Credit submissions required for Design and Construction[7]: Design Phase	Const. Phase
Integrative Process										1 Point	
	IPc1		P1.1R	Integrative Design Process		1				1	
Integrative Process Category Sub-Total:					0NP	1	0	0	0	1	0
Location & Transportation										16 Points	
Site Selection	LTc2		L1.1R	Sensitive Land Protection		1				1	
	LTc3		L1.2	High Priority Site			2		1	2	
	LTc4		L1.3	Surrounding Density			3			2	
	LTc4		L1.4R	Diverse Uses		2				2	
Transportation	LTc5		L2.1R	Access to Quality Transit		2	2			4	
	LTc6		L2.2	Bicycle Facilities			1			1	
	LTc7		L2.3R	Reduced Parking Footprint		1				1	
			L2.4P	Green Vehicles, Charging Station Infrastructure	NP					N	
	LTc8		L2.5A	Green Vehicles, Charging Station Installation				1		0	
Location & Transportation Category Sub-Total:					1NP	6	8	1	1	13	0
Site										11 Points	
Site Assessment	SSpr2		S1.1P	Environmental Site Assessment	NP					Y	
	SSc1		S1.2R	Enhanced Site Assessment		1				1	
Minimize Site Impact	SSpr1		S2.1P	Construction Activity Pollution Prevention	NP						Y
	SSc3		S2.2	Open Space			1			1	
			S2.3P	Green Infrastructure Assessment	NP					Y	
	SSc4		S2.4	Rainwater Management				3	1	0	
	SSc5		S2.5	Heat Island Reduction			2			2	
	SSc6		S2.6	Light Pollution Reduction			1			1	
Facility Use	SS 8	1.1.2	S3.1R	Joint Use of Facilities, Community Access		1				1	
	IEOpc78		S3.2	Active Design in a School Environment			1			1	
Site Category Sub-Total:					3NP	2	5	3	1	7	0
Water										10 Points	
Outdoor Systems	WEpr1		W1.1P	Outdoor Water Use Reduction, Reduce 30%	NP					Y	
	WEc1		W1.2R	Outdoor Water Use Reduction, Reduce Potable 50%-100%		2				2	
Indoor Systems	WEpr2		W2.1P	Indoor Water Use Reduction, 20% Reduction	NP					Y	
	WEc2		W2.2R	Indoor Water Use Reduction, 25%-50% Reduction		2	1	2		3	
Metering	WEp3		W3.1P	Water Metering, Building Level	NP					Y	
	WEc4		W3.2R	Water Metering, Advanced		1				1	
Cooling Tower	WEc3		W4.1A	Cooling Tower Water Use (only projects with cooling tower)				2		0	
Water Category Sub-Total:					3NP	5	1	4	0	6	0
Energy										35 Points	
Commissioning	EApr1		E1.1P	Fundamental Commissioning & Verification	NP						Y
	EAc1		E1.2A	Enhanced Cx & Monitoring Based Cx				4			0
	EAc1		E1.3A	Envelope Commissioning				2			0
Refrigerant Management	EAp3		E2.1P	Fundamental Refrigerant Management	NP					Y	
	EAc6		E2.2	Enhanced Refrigerant Management			1			1	
Energy Efficiency	EAp2		E3.1P	Minimum Energy Performance	NP					Y	
	EAc2		E3.2R	Optimize Energy Performance, 6%-50% New, 4%-48% Renovations[8]		3		15		6	
		3.1.2	E3.3R	HVAC System Sizing, Avoid Oversizing	NP					Y	
Energy Management		3.3.5	E4.1R	Energy Management System Controls	NP					Y	
	EAc4		E4.2A	Demand Response				2	1		0
Metering	EApr3	3.3.8	E5.1P	Energy Metering, Building Level	NP						Y
	EAc3		E5.2R	Energy Metering, Advanced		1					1
Power	EAc5		E6.1P	Feasibility of Renewable Energy	NP					Y	
			E6.2A	Production of Renewable Energy				4			2
	EAc7		E6.3R	Green Power & Carbon Offsets		1		1		1	
Energy Category Sub-Total:					7NP	5	1	28	1	8	3

Revision I - September 2019
Revision II - February 26, 2021

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Impact Area	BD&C Reference LEED for Schools v4[2]	CHPS Reference	NYC GSG 2019[3]	Credit Name	Credits with 0 Points Required for all projects[5]	Credit with Points Required for all Projects	Required If Feasible	Additional Credits	Regional Priority[6]	Credit submissions required for Design and Construction[7]: Design Phase	Credit submissions required for Design and Construction[7]: Const. Phase
Materials										12 Points	
Efficient Material Use	MRpr1		M1.1P	**Storage & Collection of Recyclables**	NP					Y	
	MRpr2		M1.2P	**Construction & Demolition Waste,** Planning	NP						Y
	MRc5		M1.3R	**Construction & Demolition Waste,** 50%- 75% Diversion		1	1				2
				Long-Term Commitment[14]			0			0	
Materials Reporting & Optimization	MRc3		M2.1A	**Material Extraction Reporting**				1			1
	MRc3		M2.2A	**Material Extraction Optimization**				1			0
	MRc2		M2.3	**Material Environmental Reporting**			1				1
	MRc2		M2.4A	**Material Environmental Optimization**				1			0
	MRc4		M2.5	**Material Ingredient Reporting**			1				1
	MRc4		M2.6A	**Material Ingredient Optimization**				1			0
Material Life-Cycle Impacts	MRc1		M3.1A	**Life-Cycle Impact Reduction,** Whole Building LCA[9]				3	1		0
	MRc1		M3.2	**Life-Cycle Impact Reduction,** Building and Material Reuse[10]			0				0
		4.1.1	M4.1R	**Wallboard & Roof Deck Products,** Mold Resistance	NP					Y	
Materials Category Sub-Total:					3NP	1	3	7	1	0	5
Indoor Environmental Quality										16 Points	
Design Indoor Air Quality	IEQpr1		Q1.1P	**Minimum IAQ Performance**	NP					Y	
	IEQc1		Q1.2R	**Enhanced IAQ Source Control**[11]		1			1	2	
	IEQc1		Q1.3	**Enhanced IAQ Ventilation & Monitoring**[11]				1		1	
Construction Indoor Air Quality	IEQc3		Q2.1R	**Construction IAQ Management Plan**		1					1
	IEQc4		Q2.2R	**Building IAQ Flush-Out**		1					1
Post Construction Indoor Air Quality		5.3.5	Q3.1	**Electric Ignition Stoves**	NP					N	
		6.2.4	Q3.2R	**Post Construction Indoor Air Quality**	NP						Y
Material Emissions	IEQc2		Q4.1	**Low-Emitting Materials,** 3-5 Categories			2				2
	IEQc2		Q4.2A	**Low-Emitting Materials,** 6 Categories				1			0
Thermal Comfort	IEQc5		Q5.1R	**Thermal Comfort**		1				1	
Lighting Quality	IEQc6		Q6.1R	**Interior Lighting,** Control		1				1	
	IEQc6		Q6.2	**Interior Lighting,** Quality			1			1	
		5.2.1	Q6.3R	**Visual Performance,** Artificial Direct-Indirect Lighting	NP					Y	
Daylight and Views	IEQc7		Q7.1	**Daylight,** 55%-75%			3			0	
	IEQc8		Q7.2	**Quality Views**			1			1	
Acoustics	IEQpr3	5.5.1	Q8.1P	**Minimum Acoustical Performance**	NP					Y	
	IEQ 9	5.5.2	Q8.2	**Enhanced Acoustical Performance**			1			0	
IEQ Category Sub-Total:					5NP	5	8	2	1	7	4
Innovation										2 Points	
Accreditation	IDc2		I1.1R	**LEED® Accredited Professional**		1					1
Above & Beyond	IDc1		I1.2A	**Innovation or Pilot Credit**				1		0	
Additional Credits Sub-Total:					0NP	1	0	1	0	0	1
					22NP	26	26	46	5	42	13
LEED® Equivalent Point Total[12]:										103	

1	The NYC GSG requires that all credits be attempted and proof through calculation for those which are not-feasible.
2	LEED reference numbers are based on the order of credits in the LEED for Schools v4 Rating System.
3	Letter prefix indicates credit section (P, L, S, W, E, M, Q, I) First number indicates the category within the section Second number indicates the specific credit within the section category Suffix "P" is added for credits that are LEED® prerequisites and therefore required of all projects Suffix "R" is added for credits that are required of all projects Suffix "A" indicates credits that are additional and may only be pursued with SCA direction/permission.
4	Select if feasible or not, first, in column F. If feasible complete column G using the drop down options.
5	To be consistent with LEED®, the NYC GSG assigns no point "NP" value to prerequisites or non-LEED® credits.
6	If the referenced Regional Priority Credit is achieved, the project will receive the additional point for "RP".
7	Indicates the submission phase for each credit. Columns will automatically fill with point values for credits being pursued (exception E 3.2 R).
8	This credit requires project-specific energy modeling and can not be achieved by use of proto-typical modeling. Select number of pts pursuing from column F dropdown menu. Since project-specific modeling is based on ASHRAE 90.1-2010 , minimum required threshold is 10%.
9	M3.1A is only applicable to new construction. Regional Priority is earned by achieving either M3.1A or 3.2A.
10	M3.2A is only applicable to renovations/remodels. Regional Priority is earned by achieving either M3.1A or 3.2A.
11	Projects need to achieve both Q1.2R and Q1.3A to earn the Regional Priority point.
12	LL32/16 requires Certified LEED® v4 for Schools or equivalent of a no-less stringent rating system - Minimum 40 Points.
13	Upon selection of interior fit-out, the checklist updates in accordance with Appendix C. Points, drop-down menus and credit applicability update automatically. Long Term Commitment is new credit in the checklist only and applicable to Interior Fit-out projects only.

Revision I - September 2019
Revision II - February 26, 2021

NYC Green Schools Rating System

CREDIT COMPLIANCE NARRATIVES

School Construction Authority

Project:	PS 123A	Submission Date:	5/8/2018
Address:	345 Example St	Architect:	Architect
LLW #:	123456	Preparer:	
Design #:	123456		

P1.1R - Integrative Design Process

This pre-requisite will be met. The IDP Workshop was held on February 15, 2021. The following discoveries were evaluated: energy and daylight-related and water system analysis, preliminary life-cycle assessment, active design, acoustics and climate resiliency analyses. IDP Report was included in Appendix A. Integrative Design Report was revised to include attendance, meeting minutes, design impacts for each discovery and updated IDP report as per meeting minutes.

Supporting Documentation:

P1.1R-Integrative Design Credit Form

Appendix A- IDP Report

L1.1R Sensitive Land Protection

Credit is feasible. Option 1- the development footprint is located on land that has been previously developed. As shown on the aerial map, the area of the project is currently occupied by playground areas located to the east of the existing school.

SCA Design Requirements:

1.1.2.1 Feasibility Study

1.1.3.2. Test Fit/Sketch Studies

Supporting Documentation:

Aerial Map

L1.2 - High Priority Site

Credit is feasible for Option 2 priority designation. Site in not in a historic district & is not a designated brownfield. The site is shown as a Difficult Development Area on the US Dept. of Housing and Urban Development map, qualifying for 1 point. See attached DDA map.

SCA Standards:

02010 Environmental Site Assessment Reports

02090 Environmental Management of Excavated Material

02200 Earthwork

02220 Gas Vapor Barrier (Fluid Applied)

Supporting Documentation:

DDA/QCT Map

L1.3 – Surrounding Density

Credit is feasible. The buildable land area within a 0.25 mile (1,320 SF) radius of the project has sufficient residential unit density and mixed-use and non-residential FAR to achieve 3 points under this credit, as shown in the neighborhood map and tabulation of residential units and lot and building areas below. The buildable land excludes park land, a cemetery, and an LIRR right of way.

SCA Design Requirements:

1.1.2.1 Feasibility Study

Supporting Documentation:

Surrounding Density Credit Form

Density Map

Tabulations of residential, non-residential and mixed use buildings

L1.4R – Diverse Uses

The project complies with the requirements to earn two points for this credit. The following map shows 10 diverse uses, from 4 use categories, and their locations relative to the school. All 10 are less than a 0.5 mile (2,640 ft.) walking distance from the project's main entrance.

SCA Design Requirements:

1.1.2.1 Feasibility Study
1.1.3.2. Test Fit/Sketch Studies

Supporting Documentation:

Diverse Uses Credit Form
Site Vicinity Map
Walking Path Map to each diverse use

L2.1R – Access to Quality Transit

Option 1 will be pursued: There are MTA Subway stations using train line 1. As well as Bus route M100, within the ¼ mile of walking distance from the main entrance and a 'BxM1' Express Bus within the 1/2 mile walking distance from the main entrance (see attached diagram). Subway train station 1 runs every 3 - 6 minutes on the weekdays. During school hours, 7:30am to 3:30pm, there are 38 stops in one direction, for a total of 76 stops. MTA Bus M100 runs every 5 - 8 minutes on the weekdays. During school hours, 7:30am to 3:30pm, there are 54 stops to E Harlem 2 Av-127 St and 52 stops to Inwood 220 St via Amsterdam Via Broadway for a total of 106 stops. MTA Bus BxM1 runs every 16 - 20 minutes on the weekdays. During school hours, 7:30am to 3:30pm, there are 25 stops to one direction, for a total of 50 stops. Based on the above, a total of 232 stops per weekday will earn two (2) credit points.

SCA Design Requirements:

1.1.3.2 Test Fit/ Sketch Studies

Supporting Documentation:

Area Plan
Transit Map
Walking Distance Map to bus stops
Transit Schedules

L2.2 – Bicycle Facilities

Credit is feasible and will be pursued.

The project is located less than 700 yards from MTA train station. The proposed school building is 76,883 square feet. By NYC Zoning, 8 bikes will have to be in a secure area (1 bike per 10,000 sq. ft.). A Bike storage room with a capacity of 9 bikes has been allocated on the cellar floor of the building. The required remaining 16 bikes will be in a covered area outside the building on racks. Two (2) shower rooms have been allocated on the cellar floor of the building. All will be in compliance with DR 1.3.1.12 (storage) and DR 2.3.3 (racks) and Specification Sections 02870 and 05700. See calculations below.

Occupancy Calculation:
Student: (Grade 3 and below students are not part of bicycle user calculation)
No. of typical classrooms (4 to 5th grade): 6, 28 occupants =168
No. of SE classrooms: 2, 12 occupants = 24
No. of DS75 classroom & sp. Ed: 8, 12 occupancy = 96
Art Classroom: 1, 28 occupants =28
Music Classroom: 1, 28 occupants =28
Science Resource Room: 1, 28 occupants =28

Subtotal 372

FT Staff: 65
(2 adults for each Pre-kindergarten, kindergarten & DS75 – 4 pre-kindergarten, 3 kindergarten, & 10 DS75 = 34

1 adult for all instruction rooms other than above: 6 grade 1-2, 3 grade 3, 6 grade 4-5, 2 special ed, 1 reading resource, 1 speech resource, 3 DS75 resources, 1 occupational therapy, 1 physical therapy, 1 art classroom, 1 music classroom, 1 multipurpose rm, 1 science resource, 1 gymatorium, 1 library, and 1 exercise) = 31
5 Adults for Lobby 5
1 Adult for every 100sf in each
office 19 (2 D75 Guidance offices -2, 1- D75 Supervisor -1, 1- Health
instructor -1, 1- Guidance office -1, 1- SBST office -1, 1
interview office -1, 1 General office -5, 1 Principal office -3, 1
Parent's rm - 3, & 1 Custodian office -1)
Aids 17 (2.5% of unadjusted POR 684)
Kitchen Staff 10 (1.5% of unadjusted POR 684)
PT Staff 3 (1 FTE of each 200 student occupants)
Visitors 1 (1 FTE visitor of each 500 student occupants)

Subtotal 120
Total FTE = 492
492x0.05 = 25 total bicycles
Shower > 100 adults= 1+ (regular building occupants -100/150) = 2
SCA Design Requirements:
1.3.1.12 Bicycle Storage
2.3.3 Bicycle Racks
SCA Standard Specifications:
02870 Site and Street Furnishings
05700 Ornamental Metal
SCA Standard Details:
1041119b Bicycle Disclaimer Sign
Supporting Documentation:
Bicycle Facilities Credit Form
Site Plan-Bicycle
Shower/Changing Room Plan
Interior Bicycle Storage Plan

L2.3R – Reduced Parking Footprint
Credit is feasible through Option 1 as no new parking is provided on site.
SCA Design Requirements:
1.1.2.1 Feasibility Study
1.1.3.2. Test Fit/Sketch Studies

L2.4P – Green Vehicles, Charging Station Infrastructure
Credit is not feasible as there is no parking provided on site.

L2.5A – Green Vehicles, Charging Station Installation
Credit is not feasible as there is no parking provided on site.

S1.1P – Environmental Site Assessment
Credit is feasible. Phase I and II ESA were conducted. Executive Summaries are attached with recommendations including soil vapor barrier, minimized dewatering, soil excavation disposal, 2' fill covering of landscaped areas, management of any suspected ACM, LBP, or PCB containing materials, and repair of water damaged materials. Additional site investigation is not recommended.
Supporting Documentation:
ESA Phase I, Executive Summary
ESA Phase II, Executive Summary

S1.2R – Enhanced Site Assessment
Credit is feasible. An Enhanced Site Assessment was performed. Topography, Hydrology, Climate, Vegetation, Soils, Human Use, and Human Health Effects were evaluated.
Supporting Documentation:
Enhanced Site Assessment Credit Form
Site Assessment Summary
Additional Maps and documentation

S2.1P – Construction Activity Pollution Prevention
This credit is feasible and will be pursued. The project site is 115,307 SF in total area. The Civil Engineer on the project, KS Engineers, is responsible for developing the /Erosion and Sedimentation Control Plan. Erosion and sedimentation control plan comply with requirements of the 2012 U.S. Environmental Protection Agency (EPA) Construction General Permit (CGP). Soil Erosion control measure addressed the below mentioned objectives:
• Prevent loss of soil during construction by stormwater runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
• Prevent sedimentation of stormwater or receiving streams.
• Prevent polluting the air with dust and particulate matter.
Project Strategy:
The area of concern for the erosion and sediment controls for PS5R will be set around the perimeter of the property including
the DEP Bluebelt Property as found near the area of Eylandt Street and the unimproved area of Stecher Street, which currently is found to be heavily wooded. In order to protect this region, the use of heavy duty silt fence and hay bales will be installs enclosing the various work zones. Per standard erosion control measures once there is a buildup of sediment at the fences and barriers, the sediment will be removed and new fence and hay bales put in place. Keeping the same existing drainage pattern, during construction, the existing site condition has the stormwater flowing overland to the street catch basins. Therefore, we will place inlet filters at all catch basins on the three corners of the streets. Well points will be established to keep the various excavations dry. The water will be filtered before leaving the site. With that said, seeing that 4 test pits for percolation were dug at different locations around the property and all found dry, we anticipate only storm surface runoff will be removed from the site and be well under the City's 10,000 gallons a day permitting ceiling. Additionally, there will also be a stabilized construction entrance pad called for at the construction entrance along Kingdom Avenue. Finally, any stock pile of soils on this site we will be protected with hay bale protection.
SCA Standards:
• S01352 Sustainability Requirements
• S01900 Existing Premises Work
• 02200 Earthwork
Supporting Documentation:
• Notification of Intent for SWPPP application

S2.2 – Open Space
Credit is feasible. The site contains more than 30% open space and sufficient vegetated space at the ground plane, as shown on the open space plan. The sidewalks along Lincoln Street and Rockaway Blvd will be replaced (concrete pavement with steel faced concrete curb). A 5' strip of permeable pavers is shown at the sidewalk along both streets. Per Zoning drawing Z-001, proposed FAR for the project is 1.22, permitted FAR is 1.0.
Outdoor space must meet certain criteria (pedestrian or recreation oriented, or a garden space with year round visual interest). Based on 30% of the project area (44,863 sf X 30%) a minimum of 13,459 sf of minimum open space is required of which 25% or 3,365 sf must be vegetated. The hardscape/playground areas are 21,542sf and the vegetated areas total 6,180sf.
SCA Design Requirements:
1.1.2.1 Feasibility Study
1.1.3.2. Test Fit/Sketch Studies
1.3.1.1. Building Location and Orientation
Supporting Documentation:

Planting List/Schedule
Site Plan with Open Space calculations

S2.3P – Green Infrastructure Assessment
Credit is feasible. The Green Infrastructure Study is included in supporting documents. The implementation of green infrastructure practices was determined to be feasible. The proposed design includes both on-site permeable pavers and a subsurface retention system comprised of 8,820cf of precast concrete structures. All stormwater runoff from the site, which previously discharged to the city sanitary sewer, will discharge to the subsurface retention system. This system will retain 100% of stormwater on-site.
SCA Standards Incorporated:
02723 Storm Drainage Systems
02900 Landscaping
Supporting Documentation:
Green Infrastructure Assessment Report

S2.4 Rainwater Management
Credit is not feasible and will not be pursued.
Percolation tests were performed at the site. The samples collected are waiting for lab to open for sieve analysis. Depending upon the results of the percolation test, the design team will explore the use of a Green Roof. The green roof would require the roof structural supporting steel to be heavier or deeper which would have a significant impact on cost. Additionally, the green roof would require maintenance, which would force the owner (DOE) to increase their maintenance budget. This project will utilize an onsite, DEP approved detention system as described below for rainwater/storm water management. The design for rain water management will be per NYC DEP standards as follows:
The total site developed storm flow will be calculated according to NYC DEP guidelines for design and construction of storm water management systems dated July 2012 and LL 97/17. Subsurface system, storage vaults, shall be used for rainwater management. The detention facility (storage vaults) will be designed to provide the maximum volume required for the storm with a 10 year (yr.) return frequency. The allowable flow in cubic feet per second (cfs) is computed in accordance with the Rational Method. The site storm water release rate to the combined sewer will be the greater of 0.25 cfs or 10% of the allowable flow. If allowable flow is less than 0.25 cfs, the storm water release rate shall be the allowable flow. The Design team explored the use of vegetated bio-swales or rain gardens in play yard. The use of bioswales would reduce the size of play area, which is contrary to the gold of providing large recreational spaces to combat obesity in NYC. The rain garden will attract mosquitoes. Mosquitoes require a minimum of 72 hours in standing water for larvae development. Rain gardens are designed to drain in 48 hours or less. If the rain garden does not appear to be drain properly, it will attract mosquitoes. DOE requires regularly to inspect rain garden to prevent the attracting mosquitoes. DOE is responsible for rain garden maintenance. Maintenance crews remove litter, sediment, and weeds from each installation on a regular basis. Crews will also replant the greenery as needed.
This project does not meet all of the NYC DEP requirements to support a full on-site detention system using bio-swales or rain gardens.
SCA Standards Incorporated:
02723 Storm Drainage Systems
02900 Landscaping
Supporting Documentation:
Rainwater Management Credit Form
Civil Engineer Report

S2.5 Heat Island Reduction
Based on current SCA Standards for roof pavers has an SRI of 82. The precast concrete paver will be distributed across the total roof area of 12,890 square feet. The structure of the Photovoltaic panel system will take up roughly 2,532 square feet. We will provide asphalt paving for roughly 9,536 square feet and concrete paving for roughly 641 square feet. The West planting area & Front planting areas will be roughly 4,369 square feet. The West vegetated landscape areas for roughly 2,950 square feet. There is no plan for a vegetated roof.

Supporting Documentation:
Heat Island Reduction Credit Form
Site Plan

S2.6 Light Pollution Reduction
The credit is feasible. The SCA has advised that the lighting zone be determined by code RCNY-5000-01. The building is in a residential area (R-2A) and corresponds with the LZ2 designation for exterior lighting requirements; it will meet the prescriptive requirements for this zone. The project will minimize light trespass from the building and site and reduce the development impact on the local nocturnal environment. The exterior lighting will be provided at the following locations:
• All entrances, exits and walkways including exit discharge
• Building perimeter
Illuminate areas only as required for safety and comfort. This project is in an LZ2 Zone as per RCNY-5000-01 of the New York City Energy Code (All R districts). The design will demonstrate compliance using Option 2 Calculation Method. Light pollution reduction design approach towards meeting this credit include:
• Luminaires will be high efficiency LED.
• Exterior/site/security lighting will be provided around the perimeter of the school for safe passage of students and staff and to deter theft and vandalism.
• Main Entrances and Walkways: 5.0 foot-candle (average). This many times is at odds with the credit requirements for maximum lighting at site boundary, but student safety and security will take precedence although every effort will be made to still earn this credit.
• Building Perimeter: 1.0 foot-candle (average) to a 20-foot depth. This many times is at odds with the credit requirements for maximum lighting at site boundary, but student safety and security will take precedence although every effort will be made to still earn this credit.
• All fixtures will be suitable for exterior use with a hinged and gasketed diffuser/door.
• Lighting Control: All site security lighting will be master controlled by the programmable lighting controller.
SCA Standards Incorporated:
• Design Requirements:
• 7.2.3 Emergency Lighting
• 7.2.5 Exterior/Site/Security Lighting
• Standard Specifications:
• 16145 Lighting Control Devices
• 16520 Illuminated Exit Sign and Emergency Lighting Fixtures
• 16530 LED Site/Security Lighting

S3.1R – Joint Use of Facilities
This project will have a Cafeteria on the first floor, a Gymatorium on the third floor, and a Library on fifth floor that can be used by the public for voting, community meetings, after school activities and similar events. All three spaces are easily accessible by the main stair or elevator. The design will follow Design Requirement 1.3.1.1 Building Location and Orientation and 1.3.5.1 Cafeteria PK to 8th Grade.
SCA Standards Incorporated:
1.3.1.1 Building Location and Orientation
1.3.5.1 Cafeteria PK-8 and HS

S3.2 – Active Design in a School Environment
This project will have a Cafeteria on the first floor, a Gymatorium on the third floor, and a Library on fifth floor that can be used by the public for voting, community meetings, after school activities and similar events. All three spaces are easily accessible by the main stair or elevator. The design will follow Design Requirement 1.3.1.1 Building Location and Orientation and 1.3.5.1 Cafeteria PK to 8th Grade.
SCA Standards Incorporated:
1.3.1.1 Building Location and Orientation
1.3.5.1 Cafeteria PK-8 and HS

W1.1P Outdoor Water Use Reduction, Reduce Total 30%
The credit is feasible. This project will comply with this credit by Option 1: No irrigation required. The planting palette for the Addition has been selected to eliminate the need for any permanent irrigation beyond a 2-year establishment period. The planting schedule includes canopy trees, understory trees, shrubs, sedges and ferns for ground cover plantings. All plantings have been selected from the NYC Parks' Native Species Planting Guide for New York City , 3rd Ed. (2019). Responding to the school administrators' concern over deer-friendly plantings, which may attract deer with deer tics, species from the "Species Least Preferred by Deer" list were selected.
SCA Standards Incorporated:
• 02900 Landscaping
Supporting Documentation
• Native and adaptive species planting schedule
• Landscape plan

W1.2R Outdoor Water Use Reduction, Reduce Potable 50%-100%
The credit is feasible. This project will comply with this credit by Option 1: No irrigation required. The planting palette for the Addition has been selected to eliminate the need for any permanent irrigation beyond a 2-year establishment period. The planting schedule includes canopy trees, understory trees, shrubs, sedges and ferns for ground cover plantings. All plantings have been selected from the NYC Parks' Native Species Planting Guide for New York City, 3rd Ed. (2019). Responding to the school administrators' concern over deer-friendly plantings, which may attract deer with deer tics, species from the "Species Least Preferred by Deer" list were selected.
SCA Standards Incorporated:
• 02900 Landscaping
Supporting Documentation
• Native and adaptive species planting schedule
• Landscape plan

W3.1P Building Level Water Metering
Credit is feasible. The design will include a permanent water meter in accordance with credit requirements. Building level water meter is located within the water meter room on cellar level and submeters are located in Kitchen CW and HW and HVAC makeup water.
SCA Design Requirements
6.1.1 Water Services for Domestic, Sprinkler and Standpipe Systems
SCA Standard Specifications
15417 Cold Water Supply
15418 Hot Water Supply

W3.2R Enhanced Water Metering
Credit is feasible. The design will include water meters for two or more water subsystems, including boilers and domestic hot water. A sub-meter will monitor makeup water to boilers. A sub-meter for DHW will be located on the make-up water line to the heater and will account for 100% of hot water generated for indoor fixtures.
SCA Design Requirements
6.1.1 Water Services for Domestic, Sprinkler and Standpipe Systems
SCA Standard Specifications
15417 Cold Water Supply
15418 Hot Water Supply

W4.1A Cooling Tower Water Use
This credit is not applicable to this project. A cooling tower is not part of the project scope.

E1.1P – Fundamental Commissioning and Verification (UPDATED for GSG-60% and GSG-100%)
Credit is feasible. The project design complies with the requirements of this credit through compliance with SCA/DOE building commissioning policies. See attached current Specification Table of Contents. The preliminary

Commissioning Plan has been submitted to SCA. CxA 60% design review comments and commissioning requirements have been incorporated into the construction documents.

SCA STANDARD SPECIFICATIONS
S01352 Sustainability Requirements
S01650 Facility Start-up, Demonstration, and Training
S01660 Supplemental Commissioning Requirements
References to Commissioning throughout specifications
15970 Temperature Control System (BACNET BMS/DDC With School Operating Console)
15992 Cleaning and Testing
15993 Balancing of Systems
Supporting Documentation
Spec Sections Table of Contents

E1.2A – Enhanced Cx and Monitoring Base Cx
This credit is not being pursued as it requires permission from SCA

E1.3A – Envelope Commissioning
This credit is not being pursued as it requires permission from SCA

E2.1P Fundamental Refrigerant Management
Credit is feasible and will be pursued. This project will comply with this credit by not using chlorofluorocarbon (CFC)-based and hydrochlorofluorocarbons (HCFC)-based refrigerants in new heating, ventilation, air conditioning and refrigeration (HVAC&R) systems. The Addition will contain an air-cooled water chiller and indoor evaporator units that utilize refrigerant R-410A and split heat pump units that utilize refrigerant R-410A. Other equipment, such as standard refrigerators, small water coolers, and any other equipment that contains less than 0.5 pound of refrigerant, are exempt.
SCA STANDARD SPECIFICATIONS
02070 Selective Removal and Demolition
11400 Food Service Equipment
11450 Domestic Type Equipment
15660 Packaged Modular Outdoor Chillers
15783 Split Heat Pump System
15853 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)

E2.2 Enhanced Refrigerant Management
The credit is feasible. The Addition will contain an air-cooled water chiller and indoor evaporator units that utilize refrigerant R-410A and split heat pump units that utilize refrigerant R-410A. The Refrigerant Impact Form will be completed at the 60% CD GSG submission to confirm compliance with this credit, including kitchen equipment if refrigerant charge is greater than 0.5 lb.
SCA Standards Incorporated:
• 11400 Food Service Equipment
• 15660 Packaged Modular Chillers
• 15783 Split Heat Pump System
Supporting Documentation
• None

E3.1P - Minimum Energy Performance
This credit is feasible and will be pursued.
For LL32/16 Compliance:
Whole Building Energy Simulation
Demonstrate a 5% improvement for new buildings in the proposed building performance rating compared

to the baseline building performance rating per ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda) by a whole building project simulation using the Building Performance Rating Method in Appendix G of the Standard. To meet the credit, the design will comply with:
•The mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4) of ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda).
•Will include all the energy consumption and costs within and associated with the building project.
•Will be compared against a baseline building that complies with Appendix G to Standard 90.1-2010 (with errata but without addenda).
•Will document the energy modeling input assumptions for unregulated loads. Unregulated loads will be modeled accurately to reflect the actual expected energy consumption of the building.
For LL31/16 Compliance:
Case C: For new buildings, a source energy use intensity of 70 kBTU/yr per square foot of floor area or lower if possible as per agreement between SCA and Mayor's Office of Sustainability. See attached Preliminary Assessment of Energy Performance prepared by Consulting Engineer indicating the school source EUI is 67.7 kBtu/sf and 35.8 kBtu/sf site energy which is compliance with Local Law 31 (67.9 EUI); 6.5% energy savings compared to the GSG baseline and 14% to 22% savings in regulated energy costs compared with ASHRAE 92.1.2013 Section 11. 5 to 9 points, may be appropriate for this project. This is preliminary and subject to change as the design progresses.

For LL06/16 Compliance:
The Geological and Technical Suitability for geothermal showed combined to be feasible on the IDP report. However, when the Geothermal Feasibility Tool was applied, the results show that none of the systems are feasible. See attached Report.
The design will implement the following features to comply with the above:
o Architectural (The values below may be adjusted as per latest SCA standards):
• Glazing Solar Heat Gain Coefficient (SHGC) fenestration = 0.36 max;
• U center of glass= 0.30 max;
• U window composite with frame = 0.34 max
• Precast concrete panel with R-20 cavity (4" RPS), R10 interior partition (2.5" mineral wool), 5/8" Gypsum: total R-30, U factor =0.033 (proposed ECM, included in SCA standards)
• Roof insulation minimum R-40; U=0.025 (proposed ECM, included in SCA standards)
• Provide 3" Polystyrene insulation under slab (proposed ECM, included in SCA standards)
• Provide demand defrost on Kitchen Freezers (proposed ECM, included in SCA standards)
• Provide 6" insulation on walk-in freezer (proposed ECM, included in SCA standards)
o Mechanical (HVAC): (The values below may be adjusted as per latest SCA standards):
Primary Equipment
• Heating System: Central gas-fired condensing boilers with 89% thermal efficiency when operating in condensing mode; located in Boiler Room serving variable air volume air handling units on roofs and HW finned tube radiators in classrooms; separate hot water pumps will provide perimeter hot water to the fin tube radiators via a plate and frame heat exchanger. Boiler discharge water temperature shall be reset based on outdoor temperature.
• Cooling System; Chilled water will provide cooling for the AHUs. Chiller will consist of an outdoor modular air cooled system that is in compliance with NYC SCA Specification 15660; the chilled water will have a 30% glycol solution for freeze protection and will operate on 42°F supply chilled water temperature. Chiller will be provided with variable speed compressors. VFD compressors are an SCA Standard.
• Classroom Systems Terminal Heating System: Standard Hot water fin tube perimeter radiation heating. With VAV Terminal Units
• Classroom Systems Terminal Cooling System: Non-fan powered VAV boxes for cooling for classrooms and offices. Fan powered VAV boxes with electric re-heat for labs.
• Public Assembly Spaces: Single Zone VAV air handling units with 30% Glycol hot water coils and chilled water coils. And Demand Control Ventilation controls
• Classroom and Gymatorium RTU: RTU shall be provided with total energy recovery wheel and by-pass for economizer mode. RTU heating and cooling coil shall be sized and based on the leaving air temperature at the wheel. RTU supply and exhaust fan shall be provide with VFD. Fans shall modulate to meet building heating and

cooling demand. And be equipped with Demand Controlled Ventilation and fans sized to allow for stable fan operation at 15% of total rated volumetric air flow.
• Heating hot and chilled water pumps: shall be provided with VFD. And also critical zone pressure set point reset control.
• Control: building heating and cooling shall be controlled via Building Management System (BMS). The BMS shall control major equipment (boiler, chiller, fans etc.) to meet building minimum heating and cooling load demand.
o Electrical:
• Average Lighting Power Density: Less than 0.5 W/sf using LED lighting throughout.
• Lighting Controls: Lighting control as per SCA DR 7.2.1.
• Occupancy Sensors: In classrooms, offices and gym, restrooms, storage closets
• Daylight harvesting is to be provided in all spaces with windows except when the total lighting power of a daylight zone is less than 100kw or when the total glazing area is less than 20 square feet. Provide manual override of daylight sensors with switches for three lighting levels (on, off, and midlevel) to allow occupant adjustments in classrooms and group spaces. Midlevel lighting should be 30% to 70% of the maximum illumination level.
o Plumbing:
• Water Pumps: VFD on water Pumps
• Hot Water Heater: Service Hot Water heater with min. 80% efficiency and modulating flame controls. Hot water service to toilets will be 90 degrees as per current SCA standard.
• Provide faucets with low flow aerators (proposed ECM)

The SCA Design Standards are:
DR6.2.0 General Overview of Heating Ventilation and Air Conditioning Systems
DR6.2.3 Non-Assembly Spaces
DR6.2.4 Public Assembly Spaces
DR6.2.9 Heating and Cooling Design parameters (Load Calculations)
DR6.2.20 Building Management Control System/DOC Control BMS
DR6.2.28 HVAC Design Requirements for Special Spaces
DR6.2.34 Verification of Air System Design
DR7.2.1 Interior Lighting
DR 7.2.5 Exterior Lighting
Applicable SCA Standard Specifications:
SS08524 Aluminum Windows Projected
SS15540 HVAC Pumps
SS15565 Condensing Boilers
SS15783 Packaged Heat Pump System
SS15853 Custom Packaged Rooftop Heating and Cooling Units (VAV)
SS15930 Variable Air Terminals
SS15970 Temperature Control System
SS15973 Facility Management Systems Integration
SS15985 Sequence of Operations
SS15992 Cleaning and Testing
SS15993 Balancing of System
SS16145 Lighting Control Devices
SS16502 LED Interior Building Lighting
SS16530 Site/Security Lighting
Supporting Documentation:
GSG-DD Preliminary level energy model
Geothermal Feasibility Credit Form
SCA Geothermal System Feasibility Report

E3.2 - Optimized Energy Performance
This credit is feasible and will be pursued.
For LL32/16 Compliance:

Whole Building Energy Simulation
Demonstrate a 5% improvement for new buildings in the proposed building performance rating compared to the baseline building performance rating per ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda) by a whole building project simulation using the Building Performance Rating Method in Appendix G of the Standard. To meet the credit, the design will comply with:
•The mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4) of ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda).
•Will include all the energy consumption and costs within and associated with the building project.
•Will be compared against a baseline building that complies with Appendix G to Standard 90.1-2010 (with errata but without addenda).
•Will document the energy modeling input assumptions for unregulated loads. Unregulated loads will be modeled accurately to reflect the actual expected energy consumption of the building.
For LL31/16 Compliance:
Case C: For new buildings, a source energy use intensity of 70 kBTU/yr per square foot of floor area or lower if possible as per agreement between SCA and Mayor's Office of Sustainability. See attached Preliminary Assessment of Energy Performance prepared by Consulting Engineer indicating the school source EUI is 67.7 kBtu/sf and 35.8 kBtu/sf site energy which is compliance with Local Law 31 (67.9 EUI); 6.5% energy savings compared to the GSG baseline and 14% to 22% savings in regulated energy costs compared with ASHRAE 92.1.2013 Section 11. 5 to 9 points, may be appropriate for this project. This is preliminary and subject to change as the design progresses.

For LL06/16 Compliance:
The Geological and Technical Suitability for geothermal showed combined to be feasible on the IDP report. However, when the Geothermal Feasibility Tool was applied, the results show that none of the systems are feasible. See attached Report
The design will implement the following features to comply with the above:
o Architectural (The values below may be adjusted as per latest SCA standards):
• Glazing Solar Heat Gain Coefficient (SHGC) fenestration = 0.36 max;
• U center of glass= 0.30 max;
• U window composite with frame = 0.34 max
• Precast concrete panel with R-20 cavity (4" RPS), R10 interior partition (2.5" mineral wool), 5/8" Gypsum: total R-30, U factor =0.033 (proposed ECM, included in SCA standards)
• Roof insulation minimum R-40; U=0.025 (proposed ECM, included in SCA standards)
• Provide 3" Polystyrene insulation under slab (proposed ECM, included in SCA standards)
• Provide demand defrost on Kitchen Freezers (proposed ECM, included in SCA standards)
• Provide 6" insulation on walk-in freezer (proposed ECM, included in SCA standards)
o Mechanical (HVAC): (The values below may be adjusted as per latest SCA standards):
Primary Equipment
• Heating System: Central gas-fired condensing boilers with 89% thermal efficiency when operating in condensing mode; located in Boiler Room serving variable air volume air handling units on roofs and HW finned tube radiators in classrooms; separate hot water pumps will provide perimeter hot water to the fin tube radiators via a plate and frame heat exchanger. Boiler discharge water temperature shall be reset based on outdoor temperature.
• Cooling System; Chilled water will provide cooling for the AHUs. Chiller will consist of an outdoor modular air cooled system that is in compliance with NYC SCA Specification 15660; the chilled water will have a 30% glycol solution for freeze protection and will operate on 42°F supply chilled water temperature. Chiller will be provided with variable speed compressors. VFD compressors are an SCA Standard.
• Classroom Systems Terminal Heating System: Standard Hot water fin tube perimeter radiation heating. With VAV Terminal Units
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• Public Assembly Spaces: Single Zone VAV air handling units with 30% Glycol hot water coils and chilled water coils. And Demand Control Ventilation controls

• Classroom and Gymatorium RTU: RTU shall be provided with total energy recovery wheel and by-pass for economizer mode. RTU heating and cooling coil shall be sized and based on the leaving air temperature at the wheel. RTU supply and exhaust fan shall be provide with VFD. Fans shall modulate to meet building heating and cooling demand. And be equipped with Demand Controlled Ventilation and fans sized to allow for stable fan operation at 15% of total rated volumetric air flow.
• Heating hot and chilled water pumps: shall be provided with VFD. And also critical zone pressure set point reset control.
• Control: building heating and cooling shall be controlled via Building Management System (BMS). The BMS shall control major equipment (boiler, chiller, fans etc.) to meet building minimum heating and cooling load demand.
o Electrical:
• Average Lighting Power Density: Less than 0.5 W/sf using LED lighting throughout.
• Lighting Controls: Lighting control as per SCA DR 7.2.1.
• Occupancy Sensors: In classrooms, offices and gym, restrooms, storage closets
• Daylight harvesting is to be provided in all spaces with windows except when the total lighting power of a daylight zone is less than 100kw or when the total glazing area is less than 20 square feet. Provide manual override of daylight sensors with switches for three lighting levels (on, off, and midlevel) to allow occupant adjustments in classrooms and group spaces. Midlevel lighting should be 30% to 70% of the maximum illumination level.
o Plumbing:
• Water Pumps: VFD on water Pumps
• Hot Water Heater: Service Hot Water heater with min. 80% efficiency and modulating flame controls. Hot water service to toilets will be 90 degrees as per current SCA standard.
• Provide faucets with low flow aerators (proposed ECM)

The SCA Design Standards are:

DR6.2.0 General Overview of Heating Ventilation and Air Conditioning Systems
DR6.2.3 Non-Assembly Spaces
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DR6.2.9 Heating and Cooling Design parameters (Load Calculations)
DR6.2.20 Building Management Control System/DOC Control BMS
DR6.2.28 HVAC Design Requirements for Special Spaces
DR6.2.34 Verification of Air System Design
DR7.2.1 Interior Lighting
DR 7.2.5 Exterior Lighting

Applicable SCA Standard Specifications:

SS08524 Aluminum Windows Projected
SS15540 HVAC Pumps
SS15565 Condensing Boilers
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SS15930 Variable Air Terminals
SS15970 Temperature Control System
SS15973 Facility Management Systems Integration
SS15985 Sequence of Operations
SS15992 Cleaning and Testing
SS15993 Balancing of System
SS16145 Lighting Control Devices
SS16502 LED Interior Building Lighting
SS16530 Site/Security Lighting

Supporting Documentation:

GSG-DD Preliminary level energy model
Geothermal Feasibility Credit Form
SCA Geothermal System Feasibility Report

E3.3 - HVAC System Sizing, Avoid Oversizing (UPDATED for GSG-60% submission)
Credit is feasible and will be pursued. This project complies with this credit by the following:
The new HVAC Systems for the new building will be sized per NYCSCA DR 6.2.13 "Arrangement and Sizing of Equipment" and 6.2.9 "Heating and Cooling Design" (Load calculations) and will not be oversized. Ventilation calculations will be based on New York City Building Code. Documentation demonstrating that cooling load calculations were performed for the maximum dry-bulb conditions will be submitted at 60%.The project team has designed the HVAC system to not only efficiently handle peak and design load conditions, but to operate efficiently during a wide range of partial load conditions, which are the most common operating conditions. The heating loads and cooling loads shall be calculated as per Design Requirement 6.2.13 as follows:
Heating Capacity:
-All boilers (condensing) shall be provided with a reserve capacity equal to that as defined in the Engineering
-Criteria for Fuel Oil Burning Equipment of the NYC Department of Environmental Protection Bureau of Air
-Resources, July, 1973 and SCA Standards. Reserve capacity shall be 25% to account for piping losses and pickup. Boiler capacity shall be based on total connected capacity.
Cooling Capacity:
-The cooling capacity for roof top units shall be increased by 10% to account for duct losses (duct insulation losses, duct air leakage) and general building pull-down. The 10% term (i.e. 1.10 multiplier) shall be applied to all terms (transmission, infiltration, lighting loads, equipment loads, people loads, and solar loads). Cooling loads shall include the sensible loads and the latent dehumidification loads (as per Design Requirements 6.2.3 and 6.2.4).
For E3.2R:
The **SCA Design Standards** are:
DR6.2.9 Heating and Cooling Design Parameters (Load Calculations)
DR6.2.13 Arrangement and Sizing of Equipment
DR 6.2.34 Verification of Air System Design
SS15540 HVAC Pumps
SS15565 Condensing Boilers
SS15783 Split Heat Pump System
SS15853 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)

Credit is feasible and will be pursued. This project will comply with the requirements of this credit by designing and installing an open protocol Building Management System (BMS). The BMS system shall control at a minimum the HVAC (heating, cooling, fans), exterior lighting, and hot water systems. Open protocol systems use published/ nonproprietary protocols, open to all manufacturers. RTU's will be sized slightly above ventilation requirements to account for ductwork leakage

SCA STANDARD SPECIFICATIONS
15970 Temperature Control System (BACnet BMS/DDC with School Operating Console)
15973 Facility Management Systems Integration
15985 Sequence of Operations

E4.1R – Building Management System Controls
Credit is feasible and will be pursued. This project will comply with the requirements of this credit by designing and installing an open protocol Building Management System (BMS). The BMS system shall control at a minimum the HVAC (heating, cooling, fans), exterior lighting, and hot water systems. Open protocol systems use published/nonproprietary protocols, open to all manufacturers

SCA STANDARD SPECIFICATIONS
15970 Temperature Control System (BACnet BMS/DDC with School Operating Console)

15973 Facility Management Systems Integration
15985 Sequence of Operations
Credit is feasible and will be pursued

E4.2A - Demand Response
This credit is not being pursued as it requires permission from SCA

E5.1P – Building Level Energy Metering
Credit is feasible and will be pursued. This project will comply with the requirements of this credit by designing and installing building level energy meters or sub-meters based on SCA standards, that can be aggregated to provide building level data representing total building energy consumption (electricity, natural gas, chilled water). Utility-owned
meters capable of aggregating building-level resource can also be used. All utility meters are to be connected to the building's BMS system.
SCA DESIGN REQUIREMENTS
6.2.20 Building Management Control System/ Direct Digital Control BMS/DDC
SCA STANDARD SPECIFICATIONS
15416 Gas Piping System
15970 Temperature Control System (BMS/DDC With School Operating Console)
15973 Facility Management Systems Integration
15985 Sequence of Operations
SCA STANDARD DETAILS
15985 HVAC Standard Detail Series

E5.2R – Advanced Energy Metering
Credit is feasible and will be pursued. This project adheres to NYCECC 2020, Section C405 - Electrical Power and Lighting System. This project will comply with the requirements of this credit by designing and installing advanced energy metering for the following:
• All whole-building energy sources used by the building; and
• Any individual energy end uses that represent 10% or more of the total annual consumption of the building.
• The energy metering systems will require the following characteristics.
• Meters will be permanently installed, record at intervals of one hour or less, and transmit data to a remote location.
• Electricity meters will record both consumption and demand. Whole-building electricity meters should record the power factor, if appropriate.
• The data collection system will use a local area network, building automation system, wireless network, or comparable communication infrastructure.
• The system will be capable of storing all meter data for at least 36 months.
• The data will be remotely accessible.
• All meters in the system will be capable of reporting hourly, daily, monthly, and annual energy use.
SCA DESIGN REQUIREMENTS
6.2.20 Building Management Control System/ Direct Digital Control BMS/DDC
SCA STANDARD SPECIFICATIONS
15416 Gas Piping System
15970 Temperature Control System (BMS/DDC With School Operating Console)
15973 Facility Management Systems Integration
15985 Sequence of Operations
SCA STANDARD DETAILS
15985 HVAC Standard Detail Series

E6.1P – Renewable Energy Feasibility

Credit is feasible. A study was performed in the SD phase to determine the feasibility of designing and constructing the project as a Net Zero Energy Building as per Local Law 31/16 since it is 3 stories above grade. The solar PV system proposed in the Net Zero Energy Building Feasibility report has been sized to cover the estimated annual electricity demand for the building (323,781 kWh/year) and contains a 119 kW(DC) rooftop mounted array and 150kW(DC) canopy/ground mounted array. The combined generation potential for the two systems is 330,159 kWh/year. A solar PV system capable of generating enough electricity to cover the equivalent amount of natural gas energy would require a significantly larger canopy or ground mounted system. Installation of a solar PV system will result in immediate carbon footprint reductions and potentially maintain the building's compliance with Local Law 97 of 2019 (LL97/2019) until the mid-2040s. At some point before 2050, the project may need to consider carbon offsets, increased solar PV capacity and/or electrification to mitigate fines due to LL97/2019. Based on the potential for on-site solar PV electricity generation, the project is well placed to pursue credit E6.2 Renewable Energy Production to its highest threshold of 15% of building energy use.

SCA Standards:

13602 Photovoltaic System

Supporting Documentation

Net Zero Energy Building Feasibility report
Onsite Energy Generating Building

E6.2 – Renewable Energy Production

Credit is feasible. A study was conducted in accordance with LL 31/2016 and submitted during the SD phase to determine areas that can be utilized for onsite PV generation. See Roof plan in drawing set, which show proposed areas available for PV array, as part of the sustainable roofing zone as well as annotated mechanical equipment layout with all applicable areas and exceptions as per Local Law 94/19.

Ballasted solar PV panels are proposed. The main roof and elevator bulkhead roof have 3,675 sf available for solar PV panels, excluding clearances for FDNY access (4,830 sf) and mechanical equipment (2,330 sf, including bulkhead door access). The remaining 3,224 sf of usable main roof area (excluding the stair bulkhead), the entry vestibule roof, and other setbacks below the main roof are comprised of spaces unsuitable for solar PV panels because they are too small, narrow, or isolated or because they are occupied by roof fans or vents.

SCA Standards:

SCA STANDARD SPECIFICATIONS 13602 Photovoltaic System
SCA STANDARD DETAILS 13602 Series

Supporting Documentation:

Roof Plan with dimensions

E6.3- Green Power & Carbon Offsets

Credit is feasible for 50%, 1 point. SCA will determine if 100% credit is pursued. The project will provide at least 50% of its energy from green power, carbon offsets, or RECs engaging in at least a five-year renewable energy contract. The allocation of green power will be calculated using the annual consumption from the energy model.

M1.1P Storage & Collection of Recyclables

Credit is feasible. The architect will provide infrastructure to enable recycling for paper, corrugated cardboard, glass, plastic and metal with sufficient space for collection bins, compactors and balers. Additionally, these materials will be collected with bins placed throughout the spaces. The Refuse/Recycling Room will have nine (9) 73" x 34" x 44" (63 cbf total) tilt trucks for centralized collection and easy storage, handling and removal. The cafeteria will have designated bins for recyclables, organic waste, trash and liquid waste. Wall mounted signage will display recycling instructions. The kitchen area will have space for both glass/plastic/metal, organics and trash. There is a Refuse Room located at the ground floor which can also accommodate temporary storage of cardboard to be recycled. The project will also follow school guidelines for the safe collection, storage, and disposal of batteries and electronic waste.

SCA Standards:

• 11172 Waste Handling Equipment
1.3.1.2 Planning Guidelines for New Schools and

Additions
1.3.1.8 Refuse and Recycling Storage
1.3.5.01 Cafeterias PK-8 and HS

M1.2P Construction Waste Management Plan
Credit is feasible. A Construction and Demolition Waste Management Plan will be developed by the Contractor in coordination with the project team for the Addition in accordance with SCA Standard Specifications S01352, S01524, 02060 and 02070. The Plan will identify at least 5 targeted material streams for diversion and outline steps to achieving a goal diversion rate of 75%. The construction manager and contractor will create the CWM plan which will include the amount and type of construction waste diverted/recycled. Requirements to develop the plan are included in project specifications.
SCA Standards Incorporated:
• S01352 Sustainability Requirements
• S01524 Construction Waste Management
• 02060 Building Demolition
• 02070 Selective Removals & Demolition

M1.3R Construction Waste Management Implementation
Credit is feasible. The construction manager/contractor will implement the construction waste management plan. The minimum amount diverted from landfill will be 50% and the 75% diversion rate will be targeted if feasible. The construction manager will track all major waste streams generated and the percentage of material disposed and diverted from landfill throughout construction administration. Requirements are included in project specifications.
SCA STANDARD SPECIFICATIONS
S01352 Sustainability Requirements
S01524 Construction Waste Management
02060 Building Demolition
02070 Selective Removals & Demolition

M2.1A- Material Extraction Reporting
Credit is not feasible. This credit is optional and may only be pursued with SCA direction.

M2.2A- Material Extraction Optimization

M2.3- Material Environmental Reporting
Credit is feasible. Requires a minimum of 10 products from 3 manufacturers to demonstrate reviewed life cycle information is available. The primary material types contributing to credit compliance are finishes, including Gypsum Wallboard Tile Backer Board, Non-Load-Bearing Steel Framing, Joint Compound and Insulation, Ceramic Wall Tiles, Quarry Floor Tiles, Mosaic Floor Tiles, Ceiling Tiles, Wood Flooring, VCT, Tile Carpeting, Paint. Compliance with this credit will be coordinated with the design approach to credit M2.5; the project design will give preference to products that meet relevant SCA standards and have both an EPD and material ingredient report, where possible.
SCA STANDARD SPECIFICATIONS
S01352 Sustainability Requirements

M2.4A- Material Environmental Optimization
Credit is not feasible. This credit is optional and may only be pursued with SCA direction.

M2.5- Material Ingredient Reporting
Credit is feasible. Requires a minimum of 10 products from 5 manufacturers to demonstrate chemical inventory. This can be met through standards including HPD, Cradle to Cradle, ANSI/BIFMA e3 Furniture, and Declare. Products for which HPDs are available include ACT, paint, and carpet tile. Project team will be directed to use resources including the HPD Collaborative Public Repository to find compliant products. Requirements for tracking are included in specifications.

SCA STANDARD SPECIFICATIONS
S01352 Sustainability Requirements

M2.6A- Material Ingredient Optimization
Credit is not feasible. This credit is optional and may only be pursued with SCA direction.

Q1.1P – Minimum IAQ Performance
Credit is feasible. Ventilation Systems will be designed to meet requirements of ASHRAE 62.1-2010, Occupancy level per 2014 NYC Building Code table 28.2-1004.11 and air requirements per 2014 NYC Mechanical Code table 403.3. A direct outdoor airflow measurement device will be included for variable air volume systems. For constant volume systems, outdoor airflow will be balanced to design minimum outdoor airflow rate utilizing current transducer on the supply fan, airflow switch, or other monitoring device. Ventilation Rate Procedure calculations will be provided at 60% GSG Submission. An ASHRAE Outdoor Air Assessment was performed for the project site in February 2020. The report is included with S1.2R documentation. The report concludes that a nearby gas station facility warrants "conducting further evaluation of emissions from surrounding sources to determine whether additional design measures beyond the standard NYCSCA requirements should be incorporated into the building's heating, ventilation, and air conditioning (HVAC) system." Alarm will be set if the air flow deviates by more than 15%. MERV-13 filters will be used for HVAC equipment. Air flow measuring station equipment will be used to monitor air flow rates. CFD report is included in the submission.
SCA Design Requirements
6.2.0 General Overview of Heating Ventilation
and Air Conditioning Systems
6.2.1 HVAC Unit Centralization and Coordination
6.2.3 Non-Assembly Spaces
6.2.9 Heating and Cooling Design Parameters
SCA Specification Sections
S01550 Indoor Air Quality Requirements
15852 Air Handling Units
15970 Temperature Control System (BMS/DDC with School Operating Console)
15985 Sequence of Operations
15992 Cleaning and Testing
15993 Balancing of Systems
Supporting Documentation
ASHRAE Outdoor Air Assessment Report
CFD Modeling Report

Q1.2 Enhanced IAQ Source Control
This credit is feasible. This project will comply with the requirement of this credit by designing according to following design requirements:
- 1.3.4.1 Entrance and Exits
- 6.2.0 General Overview of Heating Ventilation and Air Conditioning Systems
- 6.2.28 HVAC Design Requirement for special spaces

An entryway 10 feet long foot grille (in the direction of travel) will be provided per Specification Section 12485 at the new main entrances (front and back). A storage room for waste is provided; Janitor's sink closets, Grounds Equipment rooms, General Storage Rooms, and copy rooms will be sufficiently exhausted to create negative air balance with respect to adjacent spaces and will be designed with self-closing doors. The occupied areas will be provided with air filtration media that provides a Minimum Efficiency Reporting Value (MERV) of 13 or better. Filtration will be applied to both return and outside air that is to be delivered as supply air.
The following **SCA Standard Specification Sections** will be incorporated in the Contract Documents:
- 12485 Foot Grilles
- SS15540 HVAC Pumps

- SS15565 Condensing Boilers
- SS15783 Split Heat Pump System
- SS157852 Fan Coil Units
- SS15853 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)
- SS15993 Balancing of Systems
- SD15985 HVAC Standard Detail Series

Q1.3-Enhanced IAQ Ventilation & Monitoring UPDATED for GSG-60% submission)
This credit is feasible. The HVAC systems have been designed to meet the requirements of SCA Design Requirements Section 6.2.3, Part A.1.D (nonassembly) and 6.2.4 Part F (assembly), which require that the project incorporate DCV. Carbon Dioxide Monitoring is pursued by the project to meet DR requirements and, in turn, credit requirements. All occupiable spaces in the project will be provided with CO2 detectors for DCV logic and in accordance with SCA Design Requirements 6.2.3, 6.2.4, and 6.2.9. Monitors will be installed in the breathing zone. Therefore, all densely occupied spaces will have CO2 monitoring.

It is also noted that preliminary ventilation calculations as part of the 30% DD set for each of the four (4) AHUs in the project HVAC scope show that 30% increase in outdoor air delivered to the project over flow rate required by ASHRAE 62.1-2010 is achievable for multi-zone AHUs 1 and 2.
For AHU 1, the design OA intake flow is 9,000 cfm, a 30% increase over the ASHRAE 62.1 minimum (6,803 cfm). For AHU 2, the design OA intake flow is 8,250 cfm, over 2x the ASHRAE 62.1 minimum (4,086 cfm).
The single-zone AHUs 3 and 4 deliver 2,250 cfm and 2,750 cfm, respectively. Increased ventilation rates, however, is not an option under Q1.3A.

SCA Standards Incorporated:
• 15781 Packaged Heating and Cooling Units
• 15852 Air Handling Units
• 15853 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)
• 15854 Custom Packaged Rooftop Heating and Cooling Units (Constant Volume System)
• 15855 Commercial Packaged Rooftop Heating and Cooling Units
• 15857 Unit Ventilator
• 15970 Temperature Control System (BACnet BMS/DDC With School Operating Console)
• 15985 Sequence of Operations
• 15985 HVAC Standard Detail Series
Supporting Documentation
• None

Q2.1R Construction IAQ Management Plan
This credit is feasible. The construction of the new building will follow the Sheet Metal and Air-Conditioning Contractors National Association (SMACNA) IAQ Guidelines for Occupied Building Under Construction, 2nd Edition 2007, ANSI/ SMACNA 008-2008 (Chapter 3). Specification Section S01550 Indoor Air Quality Requirements requires the development of an Indoor Air Quality Plan. Specification Section S01560 Installation Sequence of Finish Materials requires the Contractor to avoid contamination of absorptive materials. A dust control plan will be implemented by the contractor. If permanently installed air handlers are used
during construction, filtration media with a Minimum Efficiency Reporting Value (MERV) 8 shall be used at each return air inlet (i.e., grilles, registers, openings in ductwork where ceilings are used as return air plenums) as determined by ASHRAE 52.2-2007.
SCA STANDARD SPECIFICATIONS
- S01352 Sustainability Requirements
- S01550 Indoor Air Quality Requirements
- S01560 Installation Sequence of Finish Materials

Q2.2R Building IAQ Flush-Out
Credit is feasible and will be pursued.
Design documents will require the Contractor to follow one of the following alternates for flushing out the building at completion of construction.
Option 1-Flush-out prior to occupancy is the SCA preferred method.
After construction ends, but prior to occupancy and with all interior finishes installed, contractor is to install new filtration media and perform a building full flush-out. Supply the total air volume of 14,000 cubic foot of outdoor air per square foot of floor area prior to occupancy maintaining an internal temperature at least 60ºF dry bulb and relative humidity no higher than 60%. If there is not enough time for full flush-out in the construction schedule, the space may be occupied following delivery of a minimum of 3,500 cubic foot of outdoor air per square foot of floor area to the space. Once the school is occupied, it shall be ventilated at a rate of 0.30 cubic feet per minute per square foot of outside air or the design minimum outside air rate, whichever is greatest. During each day of the flush-out period, ventilation shall begin a minimum of three hours prior to occupancy and continue during occupancy and shall continue until a total of 14,000 cubic foot of outside air per square foot of floor area has been delivered to the space. After complying with this requirement, all ventilation systems will operate in normal mode.
The following SCA Standard Specification section will be incorporated in Contract Documents:
SCA STANDARD SPECIFICATIONS
- S01352 Sustainability Requirements
- S01550 Indoor Air Quality Requirements

Q3.1R Electric Ignition Stoves
Credit is not feasible. Food service equipment will be all electric; no gas fired cooking appliances are proposed for the project.

Q3.2R – Post Construction Indoor Air Quality
This credit is feasible. The initial equipment selection list provided by DOE/DSF will include two High Efficiency Particulate Arrestor (HEPA) vacuums.

Q4.1 Low Emitting Materials, 3-5 Categories
Credit is feasible. Option 1 Product Category Calculations will be achieved through product selection and specification, and tracked during construction administration. Low-emitting materials in 5 categories (paints and coatings, adhesives and sealants, flooring, composite wood, ceilings, wall, thermal and acoustic insulation) are included in product specifications.
SCA Standard Specifications
References throughout specifications
- G01600 Material and Equipment
- S01352 Sustainability Requirements
- 06100 Rough Carpentry
- 06200 Finish Carpentry
- 06410 Custom Casework
- 07900 Joint Sealers
- 08524 Aluminum Projected Windows
- 08800 Miscellaneous Glazing
- 08921 Aluminum Storefront
- 09310 Ceramic Tile
- 09510 Acoustical Ceilings
- 09659 Resilient Flooring
- 10100 Visual Display Boards
- 10400 Identifying Devices
- 10415 Bulletin Boards, Glazed Display Boards, Display Cabinets and Cases
- 10830 Mirrors
- 11600 Laboratory Equipment
- Div 15 All HVAC and P&D adhesive and sealers

Q4.2A Low Emitting Materials, 6 Categories
This credit is not being pursued as it requires permission from SCA

Q5.1R Thermal Comfort
Credit is feasible. HVAC systems for the building will be designed to comply with the applicable New York City SCA HVAC Design Requirements in order to provide the thermal comfort requirements of ASHRAE 55-2010. All individual classrooms, offices, and assembly areas in the building will be provided with individual thermostats for temperature control. The thermostats in the assembly areas are adjustable by the occupants via the custodian. Note that the design team will need to determine how kitchen can be design to meet ASHRAE requirements.
SCA Design Requirements:
6.2.0 General Overview of HVAC Systems
6.2.1 HVAC Unit Centralization and Coordination
6.2.3 Non-Assembly Spaces (Classrooms, Offices, etc.)
6.2.4 Public Assembly Spaces
6.2.9 Heating and Cooling Design Parameters (Load Calculations)
6.2.22 Kitchen Ventilation
6.2.28 HVAC Design Requirements for Special Spaces
SCA Specification Sections:
15970 - Temperature Control System
15985 - Sequence of Operations

Q6.1R Interior Lighting Control
Credit is feasible and will be pursued
Controllability will be provided as follows:
Administrative Offices and Other Regularly Occupied Spaces
Provide individual lighting controls for 90% (minimum) of the building occupants to enable adjustments to suit individual task needs and preferences
AND
Provide lighting system controls for all learning spaces including classrooms, chemistry laboratories, art rooms, shops, music rooms, gymnasiums and dance and exercise studios to enable adjustments that meet group needs and preferences.
All interior lighting shall automatically be controlled by a programmable Lighting Control Panel with integral clock except for the emergency lighting. The Lighting Control Panel shall be provided at the Electric Closet and to control all spaces that do not have automatic shutoff and/or Occupant sensors.

The requirements for compliance with this credit will be as follows:
Daylight harvesting is to be provided in all spaces with windows except when the total lighting power of a daylight zone is less than 150kw or when the total glazing area is less than 20 square feet. Provide manual override of daylight sensors with switches for three lighting levels (on, off, and midlevel) to allow occupant adjustments in classrooms and group spaces. Midlevel lighting should be 30% to 70% of the maximum illumination level.
In Spaces without windows: wall mounted vacancy sensor to automatically control lighting with an override switch.
Corridor: emergency lighting controlled from key operated switches located at the main entrance; other lights controlled by control panel on each floor and occupancy sensors. Lights on occupancy sensors are reduced to 50% when not occupied and 100% upon occupancy.
Electrical Closet: toggle switch.
Individual office: wall mounted vacancy sensor to automatically control lighting with an override switch.
Janitor's Closet: wall-mounted vacancy sensor.
Mechanical Areas – Service Areas: toggle switch.
Staff toilets: vacancy sensor.

Stair: emergency lighting controlled from key operated switches located at the main entrance; other lights controlled by occupancy sensors. Lights on occupancy sensors are reduced to 50% when not occupied and 100% upon occupancy.
Storage: vacancy sensor.
Student toilets: key-operated switch. All Lights on occupancy sensors are reduced to 50% when not occupied and 100% upon occupancy.
SCA Design Requirements:
7.2.1 Interior Lighting
SCA Standard Specifications:
- 16140 Wiring Devices
- 16145 Lighting Control Devices
Applicable SCA Standard Details include:
SCA Room Planning Standards (Standard Room Layouts)

Q6.2 Interior Lighting Quality
Credit is feasible.
Color rendering index (CRI) of all lighting specified in the project will be a minimum of 80 or higher.
Luminaire Life: More than 75% of the lighting fixtures shall be rated for L80 at 50,000Hrs.
Direct Overhead Lighting: The total connected load of direct only lighting fixtures does not exceed 25% of the total lighting load in regularly occupied spaces.
Surface Reflectance: Lastly, the area-weighted surface reflectance averages for ceilings, walls and floors are achievable in regularly occupied spaces for the current design. Light-colored paints will be selected for the classroom and office walls, ACTs will be selected in accordance with SCA Standard Specifications section tiling 09510, which specifies ACTs with light reflectance values in excess of 85%, and floors will be primarily VCT, ceramic tile or other hard. Detailed calculations will be provided at the 60% CD GSG submission once final finishes are selected.
Design Requirements:
• 7.2.1. Interior Lighting
Standard Specifications:
• 16502 LED Interior Building Lighting

Q6.3R Visual Performance
Credit is feasible. All classrooms shall be provided with pendant mounted direct-indirect LED lighting fixtures. The use of this type of lighting fixtures will reduce lighting power density (LPD) and, therefore use less energy while delivering a better quality of light to the space. Typically, the ceiling heights will be a 10 feet. The lighting will be at 8'-6" providing an 18" area for deflection of light.
The construction documents will show the lighting layouts and light fixture schedules. At the 60% Phase the point lighting levels (photometric) calculations for typical and non-typical spaces will be provided.
The **following SCA Standard Specifications and Design Requirements** will be incorporated:
- 16502 Interior LED Lighting
- 7.2.1 Interior Lighting

Q7.1 Daylight
Credit is feasible. Simulation of Spatial Daylight Autonomy Modeling to determine compliance has been performed by the team showing 69.74% sDA for regularly occupied spaces. SCA standards include glazing and manual shades that will control glare are included in the design. Floor plans showing regularly occupied spaces and the Daylight modeling report including geometric plots are included with the supporting documents.
SCA DESIGN REQUIREMENTS
1.3.1.1 Building Location and Orientation
1.3.1.2 Planning Guidelines for New Schools and Additions
SCA STANDARD SPECIFICATIONS
08525 High Performance Aluminum Projected Windows
08800 Miscellaneous Glazing

08921 Aluminum Storefront
12500 Window Shades
12501 Chain and Clutch Operated Window Shades
Supporting Documentation:
SDA Daylight Simulation Modeling
Floor plans

Q7.2 Quality Views
Credit is feasible. Preliminary views analysis of the current design shows compliance with credit requirements; at least 2 quality views were achieved for 91% of the regularly occupied floor area. To determine credit compliance, a full views analysis report was completed assessing the effective quality of views provided by the current design (from architectural drawings shared by LHP on 12/29/20) using Rhino with Grasshopper as a computation and visualization tool. The custom Grasshopper script created an analysis grid with 36" node spacing within each of the regularly occupied areas. It then drew lines from each of these points at 42" above the floor for every 10°. The sight-lines that did not reach a window were eliminated, leaving only those sight-lines/views that are direct lines of sight to glazing. The remaining views were then evaluated for each of the four quality view types. Floor plans showing the results at each node and aggregated performance values for each regularly occupied space for different view types are included in the 30% DD Daylighting and Views Study (Appendix C). These aggregated values capture the results of views calculations for each regularly occupied space. Analysis methodology is described in detail in the report in Appendix C. The current design was found to provide 91% of regularly occupied spaces with scenic views (i.e., flora, fauna, sky and movement) and view factors of at least 3 and 85% with unobstructed views within a distance of 3x the glazing head height. The whole gymatorium (including stage) were excluded from credit calculations, as credit requirements allow for exclusion of gyms and/or auditoriums. The regularly occupied area excluded corridors, columns and other circulation areas within the rooms simulated and throughout the Addition, following the one hour per day per occupant rule-of-thumb in the LEED v4 BD+C Reference Guide.
SCA Standards Incorporated:
• 16502 LED Interior Building Lighting
Supporting Documentation
• 30% DD Daylighting and Views Study- Plans with Views
• Quality Views Credit Form

Q8.1P – Minimum Acoustic Performance
Credit is feasible.
EXTERIOR NOISE
Screening: Commercially available aerial maps of the neighborhood indicate that the MTA elevated 2 and 5 subway lines, along White Plains Road, are located approximately 300-feet (0.05-miles) to the west of he project site. Neighborhood mapping also indicates a significant amount of 6-story residential buildings, between White Plains Road and Cruger Avenue, separating the MTA 2/5 subway lines from the façade of the new Addition. Based on the limited direct line-of-sight between the elevated MTA subway rail lines and the new Addition, the site was screened out of requiring a site-specific environmental noise survey. As noted in DR 1.3.1.9 and DR 4.3.1, the standard SCA glazing assembly for IGU aluminum projected/fixed windows in all classrooms are comprised of the following:
Exterior Glass: 1/4-inch thick laminated [1/8-inch annealed, 60mil PVB interlayer, 1/8-inch annealed]. Airspace: 3/8-inch.
Interior Glass: 1/4-inch thick laminated [1/8-inch annealed, 60mil PVB interlayer, 1/8-inch annealed].
Acoustic modelling suggests the above noted glazing can achieve an approximate STC-40/OITC-33* rating.
*Pursuant to SCA Spec 08524 (Aluminum Projected Windows), a minimum OITC-28 rating is required. AKRF does not anticipate any significant challenges in meeting GSG/DR requirements if the typical SCA window glazing is specified for this project.
Background Noise Levels:
To meet the minimum required acoustic performance in Q8.1P the background noise levels due to mechanical equipment must meet 40 dBA in all core learning spaces. Mechanical systems, ductwork layouts, and noise levels

will be evaluated for compliance once drawings have been prepared. Recommendations for noise mitigation in non-compliant areas will be provided in acoustical report for GSG-60% submission. Background noise level requirements provided in the SCA Design requirements section 6.2.25 should be met during design.
Reverberation Time:
The reverberation time of a room is based on the volume and the finishes. Classrooms and core learning Spaces < 20,000 Cubic Feet will include sufficient sound absorptive finishes for compliance with the reverberation time requirement specified in ANSI Standard S12.60-2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools. The total area of acoustical wall panels, ceiling finishes, and other sound-absorbent finishes equals or exceeds the total ceiling area of the room, excluding recessed lights, diffusers, grilles, and chilled beams. Acoustic materials will have an NRC of 0.70 or higher.

APPLICABLE SCA DESIGN REQUIREMENTS

1.3.1.9 Architectural Acoustics
4.1.1 Building Façade – New Buildings and Additions
4.2.1 Exterior Masonry Wall
4.3.1 Window Types
5.1.1 Typical Room Finishes
5.4.1 Suspended Ceilings
6.2.25 HVAC Acoustical Standards

APPLICABLE ANSI STANDARD

ANSI S12.60-2010

Supporting Documentation:
Site Plan with Exterior Noise Source

Q8.2 Enhanced Acoustical Performance

Credit is not feasible. The acoustical consultant has reviewed the DD documents and determined that the project will have difficulty meeting the requirements to achieve 35 dBa noise levels. There may be significant cost and require increased duct size.

SCA DESIGN REQUIREMENTS

1.3.1.9 Architectural Acoustic Standards
4.1.1 Building Facade - New Buildings and Additions
4.2.1 Exterior Masonry Wall
4.3.1 Window Types
5.4.1 Suspended Ceilings
6.2.25 HVAC Acoustical Standards

SCA STANDARD SPECIFICATIONS

08525 High Performance Aluminum Projected Windows
08110 Steel Doors and Frames
08210 Wood Doors
08800 Miscellaneous Glazing
08921 Aluminum Storefront
09510 Acoustical Ceilings
15891 Metal Ductwork
15910 Duct Accessories
15993 Balancing of Systems

R1.1 Regional Priority - Q1.2R and Q1.3A
Credit is feasible. Compliance with credits Q1.2R and Q1.3A was achieved.

I1.1R – LEED® Accredited Professional

Credit is feasible. [Consultant] from [company] will act as LEED AP for this project. LEED AP BD+ certificate is included.

Supporting Documentation:
LEED AP BD+C Certificate

From:
To:
Cc:
Subject: RE: 2nd Compliance review - HVAC Controls
Attachments: image007.png
image010.png
image013.png

Good morning,

All FMSI comments have been addressed.

Thanks,

FMSI Operations Manager NYC SCA

Cell:

From: >
Sent: Monday, May 3, 2021 3:17 PM
To:
Cc:
Subject: RE: P - 2nd Compliance review - HVAC Controls

Good afternoon sir. Please refer to the following link to the revised drawings and responses:

20210503_2nd Compliance

Respectfully,

From:
Sent:
To:
Cc:
Subject: - 2nd Compliance review - HVAC Controls

Mayor's Office of Environmental Protection
City Capital Green Building Program
Project Intake and Reporting Form

	I. PROJECT IDENTIFICATION		
1	Project name		
2	Project manager		
3	Project manager organization	NYCSCA	
4	Project manager email	example@example.com	
5	Project manager phone	123-456-7890	
6	FMS ID (or other identifier if not issued FMS ID)		
7	FY FMS ID (or other identifier if not issued FMS ID)		
8	FY of first Certificate to Proceed		
9	FY of construction start		
10	City-owned		
11	Management agency	NYCSCA	
12	Client agency	NYCDOE	
13	Project construction cost ($)		
14	Proportion from item #13 funded before FY18 ($)		
15	Total city funding contribution ($)		
16	City contribution percentage (%)		
17	Status since last reporting period	NA	
18	Project development phase		

	II. PROJECT GEOGRAPHY		
19	Project street address (street, borough, zip code)	345 Example St	
20	Community District		
21	City Council District		

	III. PROJECT QUALIFICATIONS AND REQUIREMENTS		
22	Occupancy Group	E	
23	Project type	School	
24	Project area (square feet)	35000	
25	LEED requirement	Green Schools Guide	
26	Green building energy cost reduction requirements	NA	
27	Low energy intensity building pathway	Alternative Target	
28	Energy use intensity design target (kBTU/sf/yr)	70 Source EUI	
29	System replacement or installation type (1)	NA	
30	System replacement or installation cost ($)	NA	
31	System energy cost reduction requirement	NA	
32	System replacement or installation type (2)	NA	
33	System replacement or installation cost ($)	NA	
34	System energy cost reduction requirement	NA	
35	System replacement or installation type (3)	NA	
36	System replacement or installation cost ($)	NA	
37	System energy cost reduction requirement	NA	
38	Plumbing system scope	Yes	
39	Plumbing system scope cost ($)		
40	Potable water reduction requirement		
41	Green building alternative standard proposed	Green Schools Guide	
42	Green building exemption requested	No	
43	Energy use intensity alternative proposed	70 Source EUI	
44	Energy use intensity exemption requested	No	
45	Energy cost reduction requirement exemption requested	No	
46	System installation or replacement exemption requested	No	
47	Potable water reduction exemption requested	No	

	IV. PROJECT OUTCOMES		
48	LEED design level achieved	NA	
49	LEED certification awarded	NA	
50	Alternative green building standard achieved	Yes	
51	Green building energy cost reduction result		
52	System energy cost reduction requirement outcome (1)	NA	
53	System energy cost reduction requirement outcome (2)	NA	
54	System energy cost reduction requirement outcome (3)	NA	
55	Potable water reduction achieved	Yes	
56	Energy intensity target achieved (kBTU/sf/yr)		
57	Alternate energy intensity target achieved	Yes	
58	Incremental cost of work to achieve required standards ($)		
59	Exempted (if requested and granted) project area (square feet)	NA	
60	Exempted (if requested and granted) project budget ($)	NA	
61	Project designed and constructed as low energy intensity building	Yes	
62	Project considered to be designed and constructed as an onsite energy generating buildi	Yes	
63	Project considered to be designed and constructed as a net zero energy building	No	
64	Project considered to be designed and constructed to incorporate green infrastructure	Yes	

(A) ENERGY USAGE DETAILS *(Project team to fill in based on 100% Energy modeling results)*

	Energy Usage Type	Baseline	Design Case	Projected Reductions
1	Electric Use (Kwh/yr)			
2	Electric Peak Demand (Kw)			
3	Monthly Electric Peak Demand (Kw/yr)			
4	Gas Use for Heating (therms/yr)			
5	Purchased Steam (Mlbs/yr)			
6	Potable Water Use (gallons/yr)			

NYC Green Schools Rating System

School Construction Authority

DESIGN TEAM
CERTIFICATION FORM
Design Phase

RESPONSIBLE PARTY:

INITIAL SUBMISSION PHASE: SD | DD | 60% | 100% | Design | CA

Project:	PS 123A	**Submission Date:**	
Address:	345 Example St		
LLW #	123456		
Design #	123456		

Architect:		**Engineer:**	
Firm:	Architect	**Firm:**	Mechanical, Electrical, Plumbing
Telephone:	123-456-7890	**Telephone:**	123-456-7890
Email:	example@example.com	**Email:**	example@example.com

Architect's sustainability report and tue@12

As Architect of Record, I verify that the statements initialed by me on the following pages are accurate to the best of my knowledge and are compliant with credit requirements of the NYC Green Schools Guide.
Narratives for all credits have been provided and updated as necessary with the final design submission.
Calculations have been provided, according to the credit requirements, and updated as necessary with the final design submission.

Architect's Name Here	Architect's Title Here	Architect's Signature Here	Date
Name	Title	Signature	Date

Engineer's Statement - Design Phase:

As Engineer of Record, I verify that the statements initialed by me on the following pages are accurate to the best of my knowledge and are compliant with credit requirements of the NYC Green Schools Guide.
Narratives for all credits have been provided and updated as necessary with the final design submission.
Calculations have been provided, according to the credit requirements, and updated as necessary with the final design submission.

Engineer's Name Here	Engineer's Title Here	Engineer's Signature Here	Date
Name	Title	Signature	Date
Engineer's Name Here	Engineer's Title Here	Engineer's Signature Here	Date
Name	Title	Signature	Date

Revision I - September 2019
Revision II - February 26, 2021

Arch Initials | Eng Initials

Integrative Design Process

AA BB **P1.1R Integrative Design Process**

The following preliminary analyses and workshop were completed before the completion of schematic design.

- [X] Discovery #1 - Energy and Daylight Related Systems
- [X] Discovery #2 - Water-Related Systems
- [X] Discovery #3 - Preliminary Life-Cycle Impacts Assessment (LCA)
- [X] Discovery #4 - Active Design
- [X] Discovery #5 - Acoustics
- [X] Discovery #6 - Climate Resiliency
- [X] IDP Workshop Report

Arch Initials | Eng Initials

Location & Transportation

AA BB **L1.1R Sensitive Land Protection**

The construction documents for this project call for no buildings, roads or parking areas to be developed on land **meeting all of the following criteria:**
(For projects with special circumstances, a detailed narrative describing compliance with prescribed site selection criteria has been provided.)

- [ ] Previously undeveloped land whose elevation was less than 5-feet above the 100 year FEMA designated flood elevation.
- [ ] Land that is specifically identified as habitat for any species on Federal or State threatened or endangered species lists.
- [ ] Land within 50 feet of any wetlands as defined by Unites States Code of Federal Regulations 40 CFR Parts 230-233 and Part 22, and isolated wetlands or areas of special concern identified by state or local rule, OR within setback distances from wetlands prescribed in state or local regulations as defined by local or state rule or law, whichever is more stringent.
- [ ] Previously undeveloped land that is within 100 feet of a water body, defined as seas, lakes, rivers, streams and tributaries that support or could support fish, recreation or industrial use, consistent with the terminology of the Clean Water Act.
- [ ] Land that prior to acquisition for this project was public parkland, unless land of equal or greater value as parkland is accepted in trade by the public landowner.

AA BB **L1.2 High Priority Site, Option 1 or 2**

This project is on a previously developed site that meets one of the criteria indicated below.

- [ ] Historic District
- [X] Priority Designation

AA BB **L1.3 Surrounding Density**

This project is on a previously developed site AND meets the density requirements. A Surrounding Density Form has been submitted as documentation.

AA BB **L1.4R Diverse Uses**

This project is on a previously developed site within a 1/2 mile of a residential zone/neighborhood with an average density of 10 dwelling units/acre AND is within a 1/2 mile radius of at least 10 basic services and with pedestrian access to those services. An annotated plan has been submitted as documentation.

AA BB **L2.1R - Access to Quality Transit**

- [X] The project has a functional entry within a ¼-mile walking distance of existing or planned bus, streetcar, or rideshare stops, or within a ½-mile walking distance of existing or planned bus rapid transit stops, light or heavy rail stations, subways, commuter rail stations or ferry terminals.

Distance to Stop/Station in Feet	Line Designation
1250	B SUBWAY
450	B35 BUS

OR

- [ ] The project has an attendance boundary such that the specified percentages of students live within no more than a ¾-mile walking distance (for grades 8 and below, or ages 14 and below), and 1½-mile walking distance (for grades 9 and above or ages 15 and above) of a functional entry of a school building.

AA BB **L2.2 - Bicycle Facilities**

[X] This project includes secure bicycle racks and/or storage for 5% or more of all building staff and students above grade 3 and provides shower and changing facilities in the building, 1 on-site shower with changing facility for the first 100 staff and one additional shower per 150 staff.

AND

[X] The project is within a 200-yard walking distance of a qualifying bicycle network

AA BB **L2.3R - Reduced Parking Footprint**

[X] No new parking is provided on this project site. A narrative has been provided summarizing proximity to public transportation and why no new parking is required.

This project is on a previously developed site within a 1/2 mile of a residential zone/neighborhood with an average density of 10 dwelling units/acre AND is within a 1/2 mile radius of at least 10 basic services and with pedestrian access to those services. An annotated plan has been submitted as documentation.

[ ] For zoning required parking, indicate how preferred parking is to be accommodated and how many points under credits L1.3 Density, L1.4 Diverse Uses, or L2.1 Access to Quality Transit to determine percent reduction required.

N/A N/A **L2.4P Green Vehicles, Charging Station Infrastructure**

This project provides charging station infrastructure for 20% of all parking spaces.

N/A N/A **L2.5A Green Vehicles, Charging Station Installation**

[ ] This project has designated 5% of parking spaces as preferred parking reserved for low-emitting and fuel-efficient vehicles, vanpool or carpool. A narrative and site plan outlining compliance have been provided as documentation.

Arch Initials	Eng Initials	**Site**

AA BB **S1.1P - Environmental Site Assessment**

A Phase I Environmental Assessment as described in ASTM E1527-05 was conducted. If the Phase 1 indicated possible contamination, then a Phase II ESA was conducted. The site conditions have been assessed and the site is suitable for school use as is.

AA **S1.2R - Enhanced Site Assessment**

A site survey of the topography, hydrology, climate, vegetation, soils, human use, and human health effects have been evaluated. The assessment demonstrates the relationship between the site features and the site survey topics, and how these features influenced the project design. A rationale for excluding any topics above has been provided.

AA **S2.2 - Open Space**

For projects with no zoning-mandated open space requirement, the area of open vegetated space, qualifying hardscape or qualifying green roof for this project is equal to at least 20% of the site area. An annotated site plan with area information has been provided as documentation.

AA **S2.3P - Green Infrastructure Assessment**

Green Infrastructure Assessment Report has been completed

N/A

S2.4 - Rainwater Management

This project was designed to include best management practices (BMPs) capable of treating stormwater runoff from 90% of the average annual rainfall. These BMP's are capable of removing 80% of the average annual post development total suspended solids (TSS) load. A narrative has been submitted describing Best Management Practices per NYSPDES and structural controls as documentation.

This project minimized rainwater runoff by implementing **one** of the following:

[ ] Project site is on average less than 50% impervious. The post-development discharge rate is less than the pre-development rate.

OR

[ ] Project site is on average greater than 50% impervious. The post-development stormwater runoff has been decreased by 25%.

AND

[ ] Quantity calculations have been provided as documentation. A narrative has also been provided that describes site conditions, measures taken and controls implemented to prevent excessive velocities and associated erosion. The following chart has been completed for structural and non-structural Best Management Practices (BMPs).

Best Management Practice	Description of BMP's contribution to Stormwater Filtration	% of Annual Rainfall Volume treated by BMP

AA

S2.5- Heat Island Reduction

The roof and non-roof surfaces comply with the following (annotated plan with area calculations has been submitted as documentation):

[X] The roof materials have a Solar Reflectance Index (SRI) equal to or greater than 82 for low sloped roofs (< 2:12), and 29 for steep sloped roofs (>2:12) for a minimum of 75% of the roof surface.

OR

[ ] The roof has vegetation for at least 50% of the roof area.

OR

[ ] 75% of the roof area is covered with either roof materials having Solar Reflectance Index compliant with the standard listed above, or with vegetated roofs.

AND

Project site has 50% of site hardscape complying with **at least one of the following**:

[X] Hardscape materials have a Solar Reflectance Index (SRI) equal to or greater then 29.

OR

[ ] Shade from architectural devices or structures have an SRI of at least 29

OR

[ ] Open grid pavement system at least 50% pervious

OR

[ ] Shade from structures covered with solar panels

OR

[ ] Shade from existing canopy or within five years of landscape installation

AA

S2.6 - Light Pollution Reduction

For Uplight

[ ] The luminaire schedule and documentation for all fixtures that meet the BUG Rating method requirements has been provided.

OR

[X] Calculations for lumens per luminaire and lumens emitted above horizontal have been provided.

For Light Trespass

[ ] The luminaire schedule and documentation for all fixtures that meet the BUG Rating method requirements has been provided.

OR

[X] A Photometric site plan showing all installed exterior lighting luminaires has been provided.

AA

S3.1R - Joint Use of Facilities, Community Access

The building design facilitates shared use of facilities by the community. A narrative has been provided describing design features incorporated to facilitate community access.

AA

S3.2 Active Design in a School Environment

[X] This project incorporated at least minimum required active design features.

Arch Initials | Eng Initials

Water

AA BB **W1.1P - Minimum Outdoor Water Use Reduction, Reduce 30%**

[ ] This project reduces the total water use for landscape irrigation by 30%.

OR

[X] This project does not require irrigation.

AA BB **W1.2R - Enhanced Outdoor Water Use Reduction, Reduce Potable 50%-100%**

The project reduces the potable water use for landscaping by:

[ ] 50% potable water use reduction

[ ] 100% potable water use reduction

[X] This project does not require irrigation.

BB **W2.1P - Indoor Water Use Reduction**

[X] This project uses less water by the percentage indicated than the baseline fixture performance requirements of the Energy Policy Act of 1992. A completed Water Use Reduction Form has been submitted for this project to demonstrate this.

[X] 20%

BB **W2.2R - Indoor Water Use Reduction**

[X] This project uses less water by the percentage indicated than the baseline fixture performance requirements of the Energy Policy Act of 1992. A completed Water Use Reduction Form has been submitted for this project to demonstrate this.

[X] 25%

[X] 30%

[X] 35%

[ ] 40%

[ ] 45%

AA BB **W3.1P - Water Metering ,Building Level**

A narrative describing the whole building water meter, including the location and model of the selected water meter.

AA BB **W3.2R - Water Metering, Advanced**

A narrative describing the subsystems metered, including the location and model of each selected submeter, and the percentage of the subsystem that is metered has been provided.

N/A N/A **W4.1A - Cooling Tower Water Use**

A narrative summarizing the design approach for credit compliance.

[ ] Maximum number of cycles achieved without exceeding any filtration levels or affecting operation of condenser water system (up to maximum of 10 cycles)

[ ] Achieve a minimum of 10 cycles by increasing the level of treatment in condenser or make-up water
OR
Meet the minimum number of cycles to earn 1 point and use a minimum 20% recycled nonpotable water

Arch Initials | Eng Initials

Energy

BB **E2.1P - Fundamental Refrigerant Management**

No CFC-based refrigerants have been used in the HVAC or refrigerant systems of this project. For modernization and renovation projects, CFC-based refrigerants have not be re-used and non-CFC systems have been specified for any replacement equipment.

BB **E2.2 - Enhanced Refrigerant Management**

The Weighted Average Atmospheric Impact of HVAC refrigeration units on this project is less than 100. A completed Refrigerant Impact Form, updated as necessary based on the final design submission, has been submitted for this project to demonstrate this.

BB **E3.1P - Minimum Energy Performance**

This project's construction documents comply with the following energy code requirements:

[X] The mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4) of ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda).

BB **E3.2R - Optimize Energy Performance**

A whole building energy simulation per ANSI/ASHRAE/IESNA standard 90.1-2010 (with errata but without amendments) using the building performance rating method in Appendix G was conducted.

[X] Project specific energy cost reduction modeling has been completed for this project. A copy of the energy modeling report has been submitted, updated as necessary based on the final design submission.

The energy modeling program used was:	eQUEST- DOE2
The principal heat source is:	GAS
Source EUI (Energy Use Intensity)	66
The percentage of energy cost reduction per ASHRAE 90.1-2010 Appendix G was:	24%

BB **E3.3R - HVAC System Sizing, Avoid Oversizing**

All major HVAC components of this project have been designed to correctly match loads to avoid system over-sizing.

[X] Load calculations, design drawings and a written narrative rationale for selecting the specified equipment and establishing the most efficient system size and configuration.

BB **E4.1R - Energy Management System Controls, HVAC and Hot Water Systems**

This project utilizes an open protocol Building Management System (BMS) that controls and monitors the HVAC and Hot water systems.

[X] Schedules unoccupied setback temperature setpoints
[X] Schedules control of all ventilation outdoor air fans, exhaust fans and outdoor air/exhaust air dampers
[X] Provides zoning of systems for major building areas
[X] Provides an override system to temporarily change a unit or zone from unoccupied to occupied mode
[X] Provides a centrally located scheduling interface

BB **E6.1P- of Renewable Energy Feasibility**

[X] Onsite Energy Generating Study determining feasibility of design and construction of this project was performed AND/OR
[X] "Net zero energy building" as per Local Law 31/16 was performed

BB **E6.2A - Renewable Energy Production**

Project specific energy cost reduction modeling has been completed for this project. The results from that modeling were used to project annual building energy costs and the percentage of energy use has been offset by on-site renewable sources.

AA BB **E6.3R - Green Power & Carbon Offsets**

The SCA has provided documentation to the Design Team that they have applied for and have received approval for obtaining the required 50% building electrical consumption through green power, carbon offsets, or renewable energy certificates (RECs).

Arch Initials | Eng Initials | **Materials**

AA **M1.1P - Storage and Collection of Recyclables**

The final project construction documents include collection and storage areas for recyclable materials. The collection areas have been sized to meet the schools needs. The recycling area will accommodate recycling of plastics, metals, paper, cardboard and glass.

AA **M 4.1R - Wallboard & Roof-deck Products, Mold Resistance**

The wallboard and roof-deck products specified in this project comply with the referenced mold resistance standards.

Arch Initials | Eng Initials | **Indoor Environmental Quality**

BB **Q1.1P - Minimum IAQ Performance**

[X] The project meets the minimum requirements of Sections 4 through 7 of ASHRAE 62.1-2010 Ventilation for Acceptable Indoor Air Quality. Construction documents submitted reflect this compliance.

AA BB **Q1.2R - Enhanced IAQ Source Control**

This project employs the following strategies to reduce exposure to potentially hazardous particulates and chemical pollutants:

[X] Entries have permanent entryway systems at least ten feet long in the primary direction of travel that capture dirt and particulates.

AND

[X] All areas where hazardous gases and/or chemicals are present/used have been designed to be sealed according to the credit requirement and have been provided with an exhaust system that provides sufficient exhaust with respect to adjacent spaces to prevent cross-contamination to adjacent spaces.

AND

[X] Regularly occupied areas of the building are specified to have air filtration media that provides a Minimum Efficiency Reporting Value (MERV) of 13 or better.

AND

[X] A design narrative has been provided listing affected spaces, how they are sealed and separated and related exhaust systems.

BB **Q1.3A - Enhanced IAQ Ventilation & Monitoring**

This project has been designed to reduce and control pollutant entry into buildings and later cross-contamination of all occupied areas.

[ ] Option 1. Exterior Contamination Prevention

OR

[X] Option 2. Carbon Dioxide Monitoring

OR

[ ] Option 3. Additional Source Control and Monitoring

N/A **Q3.1R - Electric Ignition Stoves**

This project employs only electric ignitions for gas-fired cooking appliances that have that capability. Specifications for gas-fired cooking appliances have been provided as documentation.

BB **Q5.1R - Thermal Comfort**

This project has been designed with the following thermal comfort controls:

[X] Comfort controls have been provided for a minimum of 50% of the building occupants in regularly occupied spaces.

AND

[X] A narrative has been provided describing the project's comfort control strategy. Information on the type and location of controls is included in that narrative.

This project's HVAC system and building envelope have been designed to meet the requirements of ASHRAE Standard 55-2004 Thermal Comfort Conditions for Human Occupancy.

[X] As documentation, a narrative has been provided describing the method used to establish the thermal comfort conditions. Relevant thermal data is included in the chart below:

Non-D75 spaces

Season	Maximum Indoor Space Design Temperature Deg (F)	Minimum Indoor Space Design Temperature Deg (F)	Maximum Indoor Space Design Relative Humidity
Summer	78°F	N/A	50%
Winter	N/A	72°F	N/A

D75 spaces

Note: CSD spaces are not considered D75 spaces

Season	Maximum Indoor Space Design Temperature Deg (F)	Minimum Indoor Space Design Temperature Deg (F)	Maximum Indoor Space Design Relative Humidity
Summer			
Winter			

BB **Q6.1R - Interior Lighting Control**

This project has been designed with the following lighting controls:

[X] Lighting controllability has been provided for a minimum of 90% of the building occupants in regularly occupied spaces.

AND

[X] A narrative has been provided describing the project's lighting control strategy. Information on the type and location of controls is included in that narrative.

BB **Q6.2 - Interior Lighting Quality**

This project has been designed with the following lighting strategies (minimum 4 required):

[ ] Light Fixture Illuminance

[X] Color Rendering Index

[X] Lamp Life

[X] Direct Overhead Lighting

[X] Surface Reflectance

BB **Q6.3R - Visual Performance**

[X] This project uses only pendant mounted glare-free ambient lighting in all classrooms. I have provided a lighting fixture schedule and reflected ceiling plans as documentation.

[X] Photometric plans and calculations were provided.

AA **Q7.1 - Daylight**

This project is designed to provide classroom occupants a connection between indoor spaces and the outdoors through the introduction of daylight. A completed Daylight Autonomy Simulation modeling report, including geometric plots and simulations, has been submitted. A detailed narrative has been provided describing any special areas excluded from compliance, and why daylighting would hinder these areas functions.

AA

Q7.2 - Quality Views

Occupants in 75% of regularly occupied spaces will have direct lines of site to perimeter glazing. A completed Views Calculation Form for this project has been provided, updated as necessary based on the final design documents. A detailed narrative has been provided describing any special areas excluded from compliance, and why views would hinder these areas functions.

AA

Q8.1P - Minimum Acoustic Performance

This project employs the following strategies for good acoustic performance:

[X] Classrooms have a maximum background noise level of 40 dBA.

AND

[X] Implement acoustic treatment and other measures to minimize exterior noise

AND

[X] All classrooms meet the recommended reverberation times.

AND

[X] A report from a qualified acoustical consultant has been provided as documentation.

N/A

Q8.2 - Enhanced Acoustic Performance

This project has been designed to acoustically isolate loud rooms from noise sensitive spaces. A report from a qualified acoustical consultant has been submitted as documentation.

[ ] HVAC background noise is 35 dBA or less in classrooms and other learning spaces

AND

[ ] Sound Transmission Class (STC) rating at least 35.

Arch Initials	Eng Initials	**Innovation**
AA		**I1.1R - LEED Acredited Professional**

There is a LEED accredited professional on the design team. Copy of accreditation certificate has been provided.

N/A	N/A	**I1.2A - Innovation or Pilot Credit**