

## PS 730 K - Brooklyn

### SCA DESIGN CERTIFICATION FORM RESUBMISSION 1- 4/10/2019

*NYC Green Schools Rating System 2016*



**4525 8<sup>th</sup> Avenue, Brooklyn, NY 11220 (Block 751 - Lot 1)**

Architect: RKTB Architects  
LLW: 107281

Sustainability Consultant:  
Vidaris, Inc.  
360 Park Ave. South, 15<sup>th</sup> Floor  
New York, N.Y., 10010

**PS 730K – Brooklyn**

**Design Certification Resubmission 1– NYC Green Schools**

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# Project Checklist

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## School Construction Authority

NYC Green Schools Rating System 2016

Project: **P.S. 730 K - New Primary School**  
 Address | Zip Code: **4525 8th Avenue**  
 LLW #: **107281**  
 Design #:   
 Architect: **RKTB**

Submission (Check one): ☐ SD ☐ DD ☐ 60% ☒ 100% ☐ Const  
 Submission Date: **April 10, 2019**

Reviewer :   
 Reviewer Sign Off:

Credit Names	BD&C Reference LEED for Schools 2009	CHPS Reference	NYC GSG 2016	Credit Description and Relevant Information and Drop-Down Menus	RPC (check project zipcode in GSG)	Required For all Projects	Required if Feasible <sup>1</sup>	Optional Credits <sup>2</sup>	If Anticipated, or if Documented: <sup>3</sup> Enter point value, or leave blank if Not Feasible or if Not Pursued		Auto Filled: Blank if Pursued, No. of Points if Not Pursued or if Not Feasible or Additional Credit Not Pursued
									Design Phase	Construction Phase	
<b>Site 26% of Total Points</b>					<b>Points: 15 out of 19</b>						
Site Selection	SS Pr 1	S 1.1P	<b>Construction Activity Pollution Prevention</b>		NP	<input checked="" type="checkbox"/> YES					
	SS 1	S 1.2R	<b>Site Selection</b>		1			1			
	1.1.7	S 1.3R	<b>Sustainable Site &amp; Building Layout</b>		NP	<input checked="" type="checkbox"/> YES				<input type="checkbox"/> NO	
	SS 2	S 1.4	<b>Development Density &amp; Community Connectivity</b>		RPC		4		4		
	SS 10	1.1.2 S 1.5R	<b>Joint Use of Facilities, Community Access</b>		1			1			
	SS Pr 2	S 1.6P	<b>Environmental Site Assessment</b>		NP	<input checked="" type="checkbox"/> YES					
Transportation	SS 3	S 1.7	<b>Brownfield Redevelopment</b>				1		NF	1	
	SS 4.1	S 2.1	<b>Alternative Transportation, Public Transportation Access</b>		RPC		4		4		
	SS 4.2	S 2.2	<b>Alternative Transportation, Bicycle Storage &amp; Changing Rooms</b>				1		1		
	SS 4.3/4.4	S 2.3R	<b>Alternative Transportation, Fuel-Efficient Vehicles/Parking Cap.</b>		2			2			
Minimize Impact on Site	SS 5.1	S 3.1	<b>Site Development, Protect or Restore Habitat</b>		RPC		1		NF	1	
	SS 5.2	S 3.2	<b>Site Development, Maximize Open Space</b>				1		1		
Stormwater Design	SS 6.2	S 4.1	<b>Stormwater Design, Quality Control</b>				1		NF	1	
Heat Island Effect	SS 7.2	S 5.1R	<b>Heat Island Effect, Roof</b>		1			1			
Outdoor Lighting	SS 8	S 6.1	<b>Light Pollution Reduction</b>				1		NF	1	
Site Category Sub-Total:					5	14		15	0	4	
<b>Water 5% of Total Points</b>					<b>Points: 3 out of 8</b>						
Outdoor Systems	WE 1.1	W 1.1	<b>Water Efficient Landscaping, Reduce by 50%</b>				2		NF	2	
	WE 1.1	W 1.2	<b>Water Efficient Landscaping, Reduce by 100%</b>				2		NF	2	
Indoor Systems	WE Pr 1	W 2.1P	<b>Minimum Water Use Reduction, 20% Reduction</b>		NP	<input checked="" type="checkbox"/> YES					
	WE 3	W 2.2R	<b>Enhanced Water Use Reduction, 30% Reduction</b>		2			2			
	WE 3	W 2.3	<b>Enhanced Water Use Reduction, 35% Reduction</b>				1		1		
	WE 3	W 2.4	<b>Enhanced Water Use Reduction, 40% Reduction</b>				1		NF	1	
Water Category Sub-Total:					2	6		3		5	
<b>Energy 5% of Total Points</b>					<b>Points: 3 out of 5</b>						
Commissioning	EA Pr 1	E 1.1P	<b>Fundamental Commissioning</b>		NP	<input checked="" type="checkbox"/> YES					
Refrigerant Management	EA Pr 3	E 2.1P	<b>Fundamental Refrigerant Management</b>		NP	<input checked="" type="checkbox"/> YES					
	EA 4	E 2.2	<b>Enhanced Refrigerant Management</b>				2		NF	2	
Verification	EA 5	E 3.1R	<b>Measurement &amp; Verification</b>		1				1		
	3.3.5	E 3.2R	<b>Energy Management System Controls, HVAC &amp; H. W. Systems</b>		NP	<input checked="" type="checkbox"/> YES				<input type="checkbox"/> NO	
Energy Efficiency	EA Pr 2	E 4.1P	<b>Minimum Energy Performance</b>		NP	<input checked="" type="checkbox"/> YES					
	3.1.2	E 4.2R	<b>HVAC System Sizing, Avoid Oversizing</b>		NP	<input checked="" type="checkbox"/> YES				<input type="checkbox"/> NO	
Power	EA 6	E 5.1R	<b>Green Power</b>		2				2		
Energy Category Sub-Total:					3	2		0	3	2	
<b>Materials 12% of Total Points</b>					<b>Points: 7 out of 10</b>						
Efficient Material Use	MR Pr 1	M 1.1P	<b>Storage &amp; Collection of Recyclables</b>		NP	<input checked="" type="checkbox"/> YES					
	MR 1.1	M 1.2	<b>Building Reuse, Maintain 75% of Existing Walls, Floors &amp; Roof</b>		RPC		1		NF	1	
	MR 1.1	M 1.3	<b>Building Reuse, Maintain 95% of Existing Walls, Floors &amp; Roof</b>				1		NF	1	
	MR 1.2	M 1.4	<b>Building Reuse, Maintain 50% of Interior Non-Structural Elements</b>				1		NF	1	
	MR 2	M 1.5R	<b>Construction Waste Management, Divert 50% from Disposal</b>		1				1		
	MR 2	M 1.6R	<b>Construction Waste Management, Divert 75% from Disposal</b>		1				1		
Sustainable Materials	MR 2	M 1.7	<b>Construction Waste Management, Divert 95% from Disposal</b>				1		1		
	MR 4	M 2.1R	<b>Recycled Content, 10% (post-consumer + 1/2 pre-consumer)</b>		1				1		
	MR 4	M 2.2	<b>Recycled Content, 20% (post-consumer + 1/2 pre-consumer)</b>				1		1		
	MR 5	M 2.3	<b>Regional Materials, 10% Extracted, Processed &amp; Manufactured</b>				1		1		
	MR 5	M 2.4	<b>Regional Materials, 20% Extracted, Processed &amp; Manufactured</b>				1		1		
	4.1.1	M 2.5R	<b>Wallboard &amp; Roof Deck Products, Mold Resistance</b>		NP	<input checked="" type="checkbox"/> YES				<input type="checkbox"/> NO	
Materials Category Sub-Total:					3	7		7		3	

See Notes on Page 2 of 2

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Indoor Environmental Quality 23% of Total Points					Points: 13 out of 16						
IAQ Post-occupancy	IEQ Pr 1	Q 1.1P	Minimum IAQ Performance		NP	<input checked="" type="checkbox"/> YES	Credit Req'd - Confirm Pursuit				
	IEQ 1	Q 1.2R	Air Flow Stations, Outside Air Intakes		1			1			
IAQ Pre-occupancy	IEQ 3.1	Q 2.1R	Construction IAQ Management Plan, During Construction		1				1		
	IEQ 3.2	Q 2.2R	Construction IAQ Management Plan, Before Occupancy		1				1		
Low-Emitting Materials	IEQ 4.1	Q 3.1R	Low-Emitting Materials, Adhesives & Sealants <sup>4</sup>		1				1		
	IEQ 4.2	Q 3.2R	Low-Emitting Materials, Paints & Coatings <sup>4</sup>		1				1		
	IEQ 4.3	Q 3.3R	Low-Emitting Materials, Flooring Systems <sup>4</sup>		1				1		
	IEQ 4.4	Q 3.4R	Low-Emitting Materials, Comp Wood & Agrifiber Products <sup>4</sup>		1				1		
Pollution Source Control	IEQ 5	Q 4.1R	Indoor Chemical & Pollutant Source Control		1			1			
	5.3.5	Q 4.2R	Electric Ignition Stoves		NP	<input type="checkbox"/> YES	Indicate Pursuit			<input checked="" type="checkbox"/> NO	
	6.2.4	Q 4.3R	Post Construction Indoor Air Quality		NP	<input checked="" type="checkbox"/> YES	Indicate Pursuit			<input type="checkbox"/> NO	
Controllability of Systems	IEQ 6.1	Q 5.1R	Controllability of Systems, Lighting		1			1			
	IEQ 6.2	Q 5.2R	Controllability of Systems, Thermal Comfort		1			1			
Thermal Comfort	IEQ 7.1	Q 6.1R	Thermal Comfort, Design		1			1			
Lighting and Views	IEQ 8.1	Q 7.1	Daylight & Views, Daylight 75% of Classrooms			1		1			
	IEQ 8.1	Q 7.2	Daylight & Views, Daylight for 90% of Classrooms			1		NF		1	
	IEQ 8.1	Q 7.3	Daylight & Views, Daylight for 75% of Other Spaces			1		NF		1	
	IEQ 8.2	Q 7.4	Daylight & Views, Views			1		NF		1	
	5.2.1	Q 7.5R	Visual Performance, Artificial Direct-Indirect Lighting		NP	<input checked="" type="checkbox"/> YES	Indicate Pursuit			<input type="checkbox"/> NO	
Acoustics	IEQ Pr 3	5.5.1 Q 8.1P	Minimum Acoustical Performance		NP	<input checked="" type="checkbox"/> YES	Credit Req'd - Confirm Pursuit				
	IEQ 9	Q 8.2	Enhanced Acoustical Performance & Sound for Special Spaces		1			1			
	SCA	Q 8.3R	Acoustic Windows		NP	<input type="checkbox"/> YES	Indicate Pursuit			<input checked="" type="checkbox"/> NO	
IEQ Category Sub-Total:					11	5		7	6	3	
Regional	0% of Total Points			Use pull-down menus	RPC Claimed	Points: 0 out of 4					
Regionally Appropriate <sup>5</sup>	RP 1.1	R 1.1	Regionally Defined Credit Achieved		Blank		1			1	
	RP 1.2	R 1.2	Regionally Defined Credit Achieved		Blank		1			1	
	RP 1.3	R 1.3	Regionally Defined Credit Achieved		Blank		1			1	
	RP 1.4	R 1.4	Regionally Defined Credit Achieved		Blank		1			1	
Regional Category Sub-Total:					0	4	0	0		4	
Additional Credits	28% of Total Points			For A 3.1 Use pull-down menu	Points: 16 out of 33						
Innovation in Design	ID 2	A 1.1R	LEED® Accredited Professional		1			1			
	ID 1	A 1.2	Innovation or Exemplory Performance				1			1	
	ID 1	A 1.3	Innovation or Exemplory Performance				1			1	
Optional - Site Impact	SS 7.1	A 2.1	Heat Island Effect, Non-Roof					1		1	
	SS 6.1	A 2.2	Stormwater Design, Quantity Control		RPC			1		1	
	ID 1	A 2.3	Active Design in a School Environment				1	1		1	
Optional - Energy	EA 3	A 3.1	Enhanced Commissioning					2		2	
	EA 1	A 3.2	Optimize Energy Performance <sup>6</sup>		New 26%, Renovation 24%, 14 pts						
	EA 2	A 3.3	On-Site Renewable Energy		If NOT Approved, 0 pts						
	3.3.5	A 3.4	Enhanced Energy Management System Controls, HVAC & H.W.		NP	<input type="checkbox"/> YES	Indicate Pursuit			<input checked="" type="checkbox"/> NO	
Optional - IEQ	IEQ 4.6	A 4.1	Low-Emitting Materials, Ceiling and Wall Systems <sup>4</sup>				1			1	
Optional - Education	ID 3	A 5.1	The School Building as a Teaching Tool				1			1	
Additional Credit Category Sub-Total:					1			32	16	18	
Letter prefix indicates credit section (S, W, E, M, Q, R, A) First number indicates the category within the section					Column Totals:	25	38	32	41	16	39
					LEED® Equivalent Point Total <sup>7</sup> :	57 out of 95					

SCA Credit Name:

Letter prefix indicates credit section (S, W, E, M, Q, R, A)

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

1 Projects required to achieve all "feasible" credits that are possible for a particular project.

2 Projects may only pursue optional "Additional" section credits with permission from SCA unless otherwise noted.

3 During GSG submission phases, enter anticipated design and construction credits, keeping the Checklist current.

4 A maximum total value of four (4) points is allowed between these six low-emitting material credits (Q3.1, 3.2, 3.3, 3.4; A4.1)

5 RPC incentive regional credits as indicated. If the referenced credit is achieved, then the associated RPC can be claimed.

6 This credit requires project-specific energy modeling and can not be achieved by use of proto-typical modeling.

7 LL86/05 requires Certified LEED® 2009 for Schools or equivalent of a no-less stringent rating system - Minimum 40-49 Points

NP: To be consistent with LEED®, the NYC GSG assigns no point value to prerequisites or non-LEED® credits.

NYC GSG: Requires that all credits be attempted and proof through calculation for those which are not-feasible.

# Project Credit Narratives

## Credit Compliance Narratives

Project: PS 730K  
 Address: 4525 8<sup>th</sup> Avenue, Brooklyn, NY 11220  
 LLW #: 107281  
 Design #: \_\_\_\_\_

Date: November 13<sup>th</sup>, 2018  
 Architect: RKTB Architects  
 Submission 100% CD Resubmission 3  
 Reviewer: \_\_\_\_\_  
 Reviewer Sign Off: \_\_\_\_\_

### Directions:

- Eleven of the Site narratives are submitted with the Schematic Submission as indicated below. All other required narratives are submitted with the Design Development submittal.
- Design Teams must submit narratives for all credits in the Site, Water, Energy, Materials and Indoor Environmental Quality sections. For the Additional Credits, all projects must include a narrative for credit A1.1R. Narratives for the other Additional Credits should only be provided when it has been determined with the SCA that the additional credit(s) are to be pursued for this project. Include explanation of why the additional credit is to be pursued on this project. For those credits subject to Regional Priority Credit, indicate whether based on the zip code that the credit is eligible to obtain the additional point.
- Narratives should summarize the design approach to credit compliance and identify the specific SCA standards (standard specifications and design requirements) to be incorporated into the design documents. Include any specific information requested under the "Credit Submittals" heading from the second page of credit text. Provide explanations and calculations where appropriate for credits that are determined to be "not feasible" for this project.

## Site Credits

### Site Selection

#### S 1.1P Construction Activity Pollution Prevention

Credit achievement is feasible. The project site is less than an acre. The site is located in a combined sewer area and will not be discharging into a natural stream, open water, or 303(d) listed water body. An Erosion and Sediment Control Plan is shown on the drawings per the civil engineer. The plan shows measures to minimize pollution from construction activities, such as silt fencing or hay bales, dust control, a stabilized construction entrance, and temporary inlet protection with filter fabric. The contractor will be required to carry out these measures as described in both the drawings and the specifications.

Applicable SCA Standard Specifications include:

S01352 Sustainability  
 S01900 Existing Premises Work  
 02200 Earthwork

#### S 1.2R Site Selection

#### NARRATIVE AT SCHEMATIC SUBM.

Credit is feasible. The project site is required to meet the following requirements if feasible. The project meets all requirements as per the GSG 2016. Please see additional supporting documentation attached under section S1.2R.

- Project is located on a previously developed site and therefore the flood plain requirements that the elevation of the site is no lower than 5 feet above the elevation of the 100 year flood plain as defined by the federal emergency management agency is not required.
- The site is not adjacent to a river or coastline.

- The U.S. Fish and Wildlife Service listing of threatened or endangered species for the county has been provided. This list includes – Red Knot Bird, Northern Long-Eared Bat, Hawksbill Sea Turtle, and Leatherback Sea Turtle. In addition, site specific documentation has been requested from the New York Heritage Program. Confirmation that the project is not located in an area with rare plants or animals is included in the SD resubmission. Please see the request for confirmation from the New York Heritage Program included in the S1.2R supporting documentation.
- The project is not located within 100 feet of any wetlands and thus will meet this requirement.
- Site was previously developed and site is not within 50 feet of a water body and will comply with the credit requirements.
- Project land was not parkland prior to acquisition.

Applicable SCA Design Requirements:

1.1.3.1 Feasibility Study

### S 1.3R Sustainable Site & Building Layout

### NARRATIVE AT SCHEMATIC SUBM.

Credit is feasible.

The project is required to implement the following analyses:

- Identify viable locations on the roof(s) for potential renewable energy generation. The intent of this requirement is to identify potential sites for renewable measures but not to modify building infrastructure
- Plot shadow patterns from surrounding buildings onto project site to optimize access to daylight

The project is required to perform at least two of the following analyses.

- Orient and compose the building to take advantage of natural daylighting
- Plot shadow patterns from proposed building(s)/addition on adjacent properties and buildings and consider design options to address impact as necessary.
- Consider prevailing winds when determining the site and building layout. Consider prevailing winds when determining the site and building layout.
- Take advantage of existing building and natural land formations and vegetation to provide shelter from extreme weather or to deflect unwanted noise.
- Design landscaping to mitigate solar gain and winter winds.

The project performed the following 3 analyses of sustainable design factors:

- Identify viable locations on the roof(s) for potential renewable energy generation.  
The architect has identified that the roof of the addition has 965 square feet that could potentially be used to house solar panels.
- Orient and compose the building addition to take advantage of natural daylighting.  
The building orientation provides significant shade from south west sun for playground area during morning and afternoon hours. Classrooms located on the south west side will receive morning and afternoon light. Glare will be controlled by shades. This location minimizes impact on adjacent properties in Summer time.
- Plot shadow patterns from surrounding buildings on the project site.  
Surrounding buildings are 2 to three stories shorter than the proposed school building. Buildings to the southeast and southwest appear to cast a shadow on the lower floors of the project building.
- Cast shadow patterns from the proposed building on adjacent properties-  
During the summer, shadows cast from the project site affect four properties to the east of the site. During the fall, shadows cast from the project site affect six properties northeast and two properties east of the site. During the winter, shadows cast from the project site affect seven properties northeast of the site and five properties northwest of the site.

Applicable SCA Design Requirements include:

1.1.3.1 Feasibility Study

1.3.1.1 Building Location and Orientation

1.3.4.1 Entrances and Exits

2.5.1 Trees, Shrubs, Ground Cover and Lawns



#### S 1.4 Development Density & Community Connectivity

#### NARRATIVE AT SCHEMATIC SUBM.

Credit is feasible. The project aims to comply with OPTION 1 - Community Connectivity. The project can demonstrate compliance with pedestrian access to at least 10 basic services within a ½ mile radius, see supporting map and template.

Additionally there are at least 10 dwelling units per acre in the multifamily neighborhood as shown on 45<sup>th</sup> Street. Among the many residential units in the surrounding area, 974 45<sup>th</sup> Street is located on at least a 0.229 acre lot and has 39 residential units, a density of at least 170 dwelling units/acre.

Applicable SCA Design Requirements include:

1.1.3.1 Feasibility Study

#### S 1.5R Joint Use of Facilities, Community Access

#### NARRATIVE AT SCHEMATIC SUBM.

Credit is feasible. Assembly spaces under consideration as a shared community space include the Cafeteria and the Multi-Purpose Room. See diagrams in supporting documents to show the path of travel to these spaces from the main entrance.

Applicable SCA Design Requirements include:

1.3.1.1 Building Location and Orientation

1.3.5.1 Cafeteria PK-8 and HS

#### S 1.6P Environmental Site Assessment

#### NARRATIVE AT SCHEMATIC SUBM.

Credit is feasible. A Phase I ESA was completed by D&B Engineers in July, 2016. A Phase II ESA was completed in November 2016 for the proposed construction of P.S. 730 K located at 4525 8<sup>th</sup> Avenue, Brooklyn, NY 11220 (hereafter referred to as the "Site").

##### **Conclusions and Recommendations:**

- Incorporation of a sub-slab depressurization system and a soil vapor barrier into the design as a precautionary measure
- Proper characterization, handling, and disposal of all soil excavated during school construction
- Placement of a minimum of two feet of environmentally clean fill over any exposed soil in landscaped areas within the Site
- In addition, any suspect asbestos-containing material, lead-based paint, and polychlorinated biphenyl-containing material identified prior to construction of the proposed building will be properly managed during demolition activities.

Any remediation effort that are recommended will be completed in accordance with SCA IEH specifications. Furthermore, it will be documented by the appropriate authority (DEP or DEC). An outdoor air assessment (OAA) was not performed by IEH as part of the Phase I EAS but has been requested by the architect.

The Environmental Assessment Form and Supplemental Studies summary, as provided by SCA, has been included in the supplemental documentation summarizing the ESA findings.

#### S 1.7 Brownfield Redevelopment

#### NARRATIVE AT SCHEMATIC SUBM.

Credit is not feasible. A Phase I ESA was completed for the site in July, 2016. A Phase II ESA was completed in November 2016 for the proposed construction of P.S. 730 K located at the "Site". Based on the Phase II ESA results, extensive remediation is not necessary for the Site and therefore this credit is not feasible. Any remediation effort that are recommended will be completed in accordance with SCA IEH specifications. Furthermore, it will be documented by the appropriate authority (DEP or DEC).

Report summaries have been included in the previous submission.

Transportation

S 2.1 Alternative Transportation, Public Transportation Access NARRATIVE AT SCHEMATIC SUBM.

Credit is feasible. The project aims to comply with OPTION 1. The site is located within half a mile walking distance of at least three Public Bus Stations—the B11, B70, and B35. Please see the supporting credit documentation for this credit.

Applicable SCA Design Requirements include:

1.1.3.1 Feasibility Study

S 2.2 Alternative Transportation, Bicycle Storage & Changing Rooms NARRATIVE AT SCHEMATIC SUBM.

Credit is feasible. The project design will incorporate secure bicycle storage and changing rooms. Bicycle storage will be provided both within the building and outside the building within 200 yards (600 feet) of the building and will accommodate **total occupants and students above 3<sup>rd</sup> grade per SCA DR 1.3.1.12**. To accommodate a staff of **61 employees and 337.7 total occupants, 5 interior bicycle spaces and 12 additional spaces are required**. The current schematic design shows 76 sf dedicated for bike storage on the first floor. This space will accommodate 5 bikes. Two bike racks will be placed within 200 yards of building and will accommodate 12 bikes. The unisex shower in the building on the cellar floor will accommodate 0.5% of Full-time equivalent (FTE) staff. See supporting documentation.

Total Bike Storage Needed: **5 + 12 = 17**

Total Bike Storage Provided: 17

Applicable SCA Design Requirements include:

DR 1.3.1.12 Bicycle Storage

DR 2.3.3 Bicycle Racks

Applicable SCA Standard Specifications include:

02870 Site and Street Furnishings

05700 Ornamental Metals

S 2.3R Alternative Transportation, Fuel-Efficient Vehicles/Parking Capacity NARRATIVE AT SCHEMATIC SUBM.

Credit is feasible. No new parking will be provided by the project. Parking is prohibited on the school premises.

Applicable SCA Design Requirements include:

1.1.3.1 Feasibility Study

Minimize Impact on Site

S 3.1 Site Development, Protect or Restore Habitat NARRATIVE AT SCHEMATIC SUBM.

Credit not feasible. The credit requirement is to protect or restore a minimum of 50% of the site area (excluding the building footprint) or 20% of the total site area (including building footprint), whichever is greater, with native or adapted vegetation. The greater requirement is 50% of the site area minus the building, as shown below.

Site area = 17,027 sf

Building Footprint = 8,031 sf

Site area minus building footprint = 8,996 sf

50% of the site area =  $8,996 \times 0.50 = 4,498$  sf

20% of total site area =  $17,027 \times 0.20 = 3,405.4$  sf

Existing Ground Level Vegetated Area = 0 sf

Proposed New Ground Level Vegetated Area = 533 sf

Proposed New Roof Level Vegetated Area = 0 sf

Total Vegetated Area = 533 sf

As currently designed, the project will not be able to comply with this credit. The minimum amount of vegetation required for this credit on this site is 4,498 sf. The project existing vegetation shown on site (sidewalk trees) totals 533 sf. In order to receive this credit the site must provide an additional 3,965 sf of vegetated space.

Applicable SCA Design Requirements:

1.1.3.1 Feasibility Study

1.3.1.1 Building Layout and Orientation

Applicable SCA Standard Specifications include:

Section 02200 Earthwork

### S 3.2 Site Development, Maximize Open Space

### NARRATIVE AT SCHEMATIC SUBM.

Credit is feasible. The credit requirement is to provide vegetated open space equal to 20% of the site area excluding the building footprint. Hardscape areas can contribute to compliance. As shown below, hardscape areas exceed the minimum requirement of 1,799.2 sf of open space. Vegetated area currently meets the minimum requirement of 449.8 sf. See supporting documents for diagram.

Site area = 17,027 sf

Building Footprint = 8,031 sf

Site area minus building footprint = 8,996 sf

20% Site area minus building footprint =  $8,996 \times 0.20 = 1,799.2$  sf

25% of 20% site area (minus building footprint) = **449.8 sf**

Existing Ground Level Vegetated Area = 0 sf

Proposed New Ground Level Vegetated Area = 533 sf

Total Vegetated Area = 533 sf

Play Yard Area = 3,250 sf

Project will comply with this credit.

Applicable SCA Design Requirements:

1.1.3.1 Feasibility Study

1.3.1.1 Building Layout and Orientation

### Stormwater Design

### S 4.1 Stormwater Design, Quality Control

Credit compliance not expected. The project will include underground storm water detention tanks to capture runoff from the playground and roof. However, the detention tank will not be infiltrated; analysis shows infiltration into subsoil will be trapped by the new foundation walls and create hydrostatic buildup. Instead, captured runoff will be released at the restricted, allowable flow dictated by the NYCDEP to the combined sewer system.

### Heat Island Effect

### S 5.1R Heat Island Effect, Roof

Credit achievement is feasible. Project will use roofing materials having a Solar Reflectance Index (SRI) equal or greater than 78 for low-sloped roofs (<2:12) for a minimum of 75% of the roof surface. Mechanical area will be excluded from the credit calculations. The remaining 6,189 sf of roof area will have compliant SRI value of 78 or higher for 100% credit compliance. See supporting documents for reference.

Total Roof area = 6,189 sf

Mechanical Area =  $421 + 144 + 227 + 424 + 227 = 1,443$  sf

Applicable SCA Design Requirements include:  
6.1.11 Stormwater Management

Applicable SCA Standard Specifications include:  
07560 Fluid Applied Protected Membrane Roofing  
07610 Sheet Metal Roofing

#### Outdoor Lighting

##### S 6.1 Light Pollution Reduction

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Revised 9/20/18

Credit achievement is not feasible, which has been confirmed by the engineer at the 60% CD Submission and the 100% CD Submission. The site is currently designated by the City of New York as a residential district, R6, with a commercial overlay, C1-3. According to RCNY 5000-01 this classifies as Lighting Zone 2. The exterior lighting requirements of this zone are that all site and building mounted luminaries produce a maximum initial illuminance value no greater than 0.10 horizontal and vertical footcandles at the site boundary and no greater than 0.01 horizontal footcandles 10 feet beyond the site boundary and that no more than 2% of the total initial designed fixture lumens are emitted at an angle of 90 degrees or high from nadir. The north and west side of the school building sit on the property line along the city sidewalk. **The project cannot meet the requirement because the approved lighting fixtures cannot meet both the 1 foot-candle requirement (per Design Requirement and Building Code) and the 0.10 horizontal and vertical foot-candle requirement at the building boundary.**

Applicable SCA Design Requirements include:

- 7.2.1 Interior Lighting
- 7.2.3 Emergency Lighting
- 7.2.5 Exterior/Site/Security Lighting
- 7.2.6 Athletic Fields/Sports Lighting

Applicable SCA Standard Specifications include:

- 16145 Lighting Control
- 16502 LED Interior Building Lighting
- 16520 Exit Sign Lights and Emergency Lighting Fixtures and Systems
- 16530 Site/Security Lighting

#### Water Credits

#### Outdoor Systems

##### W 1.1 Water Efficient Landscaping. Reduce by 50%

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Credit achievement is not feasible since the area of plantings is less than 5% of the site area.

Site Area = 17,027 sf

Planted Area = 533 sf

Planted Area is 3.13% of site area

Applicable SCA Design Requirements include:

- DR 2.5.1 Trees, Shrubs, Ground Cover and Lawns
- DR 6.17 Wall Hydrant Requirements for Window Washing and General Maintenance

Applicable SCA Standard Specifications include:

- 02900 Landscaping

##### W 1.2 Water Efficient Landscaping. Reduce by 100%

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Credit achievement is not feasible since the area of plantings is less than 5% of the site area.

Applicable SCA Design Requirements include:  
DR 2.5.1 Trees, Shrubs, Ground Cover and Lawns  
DR 6.17 Wall Hydrant Requirements for Window Washing and General Maintenance

Applicable SCA Standard Specifications include:  
02900 Landscaping

#### Indoor Systems

##### W 2.1P Minimum Water Use Reduction

Credit achievement is feasible. Compliance with this credit is feasible with the implementation of all New York City SCA Standard Specifications and Plumbing Design Requirements for high efficiency flush toilets, high water efficiency urinals, low water flow shower heads, and aerated metered faucets. Domestic water use calculations provided to the NYCSCA during the development of the NYCSCA Green School Guide demonstrated that, for new buildings, the domestic water use reduction will be at greater than 35% above the baseline design criteria when utilizing the above referenced plumbing fixtures. To confirm, the water use reduction calculations that are specific to this project are completed as part of this 60% CD submission.

The population will be 328 students – Grade 3 through 5. There are approximately 45 Full-Time-Equivalent staff. The anticipated summer population is 30% of the school population, including staff.

The project team acknowledges the baseline standards and these will be reflected in the water use calculations.

Applicable SCA Design Requirements include:  
6.1.16 Compliance with LL86/05

Applicable SCA Standard Specifications include:  
15440 Plumbing Fixtures

##### W 2.2R Water Use Reduction, 30% Reduction

Compliance with this credit will be achieved by implementing the same practices as those described for credit W2.1R

##### W 2.3 Water Use Reduction, 35% Reduction

Compliance with this credit will be achieved by implementing the same practices as those described for credit W2.1R

##### W 2.4 Water Use Reduction, 40% Reduction

Credit is not feasible. The domestic water use calculations in this submission do not achieve a 40% reduction compared to the baseline design criteria.

#### Energy

#### Commissioning

##### E 1.1P Fundamental Commissioning of the Building Energy Systems

Credit achievement is feasible. The project design complies with the requirements of this credit through compliance with SCA/DOE building commissioning policies. Updated Specification Table of Contents has been included in the submission.

Applicable specification sections include:  
S01352 Sustainability  
S01650 – Facility Start-up, Demonstration, and Training  
S01660 – Commissioning  
11600 Laboratory Equipment  
16502 LED Interior Building Lighting

## Refrigerant Management

### E 2.1P Fundamental Refrigerant Management

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Credit achievement is feasible. The air conditioning system will consist of modular chillers that utilize refrigerant R-410A and split heat pump units that utilize refrigerant R-410A. No CFC-based refrigerants will be used on the project.

Applicable SCA Standard Specifications include:

11400 Food Service Equipment  
15660 Air Cooled Modular Chillers  
15783 Split Heat Pump System

### E 2.2 Enhanced Refrigerant Management

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Credit achievement is not feasible.

The following methodology was used when completing the Refrigerant Impact Form:

- Base building system containing refrigerants and the associated type of refrigerants will be listed including the ozone-depletion potential (ODP) and the global warming potential (GWP) values.
- Actual manufacturer's data for the type and quantity of refrigerant will be used.
- Compile manufacturer's indicating that halons, CFCs and HCFCs are not used in the Fire Protection system

The Refrigerant Impact Form is included in this submission to confirm non-compliance with this credit. Calculations show the ozone depletion and global warming potential index has exceeded 100.

Applicable SCA Standard Specifications include:

S01352 Sustainability  
11400 Food Service Equipment  
15660 Air Cooled Modular Chillers  
15783 Split Heat Pump System

## Verification

### E 3.1R Measurement & Verification

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**Revised 9/20/18**

Credit achievement is feasible. The BMS System will measure gas and electric consumption by connecting the pulse type utility meters to the BMS System. Measurement of the gas consumption by the domestic hot water heater will be measured through a dedicated gas sub-meter that will be connected to the BMS System. Electrical consumption by the lighting in the building will be measured by connecting watt-meters at the lighting panels to the BMS System.

Consumption of electrical power by the modular air cooled chiller will be measured by connecting watt-meters at the electrical panels that feed this systems, to the BMS System. Consumption of energy by chilled water pumps, hot water pumps, supply and return fans at RTUs (roof top units) will be metered/monitored by connecting the variable frequency drives of the motors at each of those systems to the BMS System.

Applicable SCA Design Requirements include:

6.2.20 - Building Management Control System / Direct Digital Control BMS/DDC

Applicable SCA Standard Specifications include:

15970 Temperature Control Systems (LonWorks BMS/DDC with School Operating Console)  
15973 Facility Management Systems Integration  
15985 Sequence of Operations  
15416 Gas Piping System  
16420 Service Entrance Equipment

### E 3.2R Energy Management System Controls, HVAC and Hot Water

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Credit achievement is feasible. The building will be provided with Building Management System (BMS) that will be connected to the NYC DOE Wide Area Intranet Network (WAN). This connection allows complete monitoring and control of the school's MEP systems from both the local BMS station in the Custodian's Office in the cellar as well as the DOE central monitoring and control station located at 44-46 Vernon Blvd., Long Island City, NY.

Applicable SCA Design Requirements include:

6.2.20 - Building Management Control System / Direct Digital Control BMS/DDC

Applicable SCA Specification Sections include:

15970 Temperature Control Systems (LonWorks BMS/DDC With School Operating Console)

15973 Facility Management Systems Integration

15985 Sequence of Operations

#### Energy Efficiency

##### E 4.1P Minimum Energy Performance

The energy model has followed the template and schedules posted on the SCA website. Energy model is based on the 100% CD set and discussions with the engineer. Based on current calculations, the building has shown compliance with Appendix G of ASHRAE 90.1-2010 and with LL86 based on ASHRAE 90.1-2013 through project specific modeling. Please see Vidaris' energy report and Energy Star Statement of Energy Design Intent.

#### HVAC Optimization

##### E 4.2R HVAC System Sizing, Avoid Oversizing

Credit achievement is feasible. The HVAC Systems for the building will be sized per SCA DR 6.2.13 Arrangement and Sizing of Equipment and 6.2.9 Heating and Cooling Design (Load Calculations) and shall not be oversized except when required to optimize energy efficiency operation of system. HVAC system is sized to maintain indoor design temperatures of 78 F and 50% RH (Summer) and 72 F (Winter) with design outdoor conditions of 89 F DB and 73 F WB (Summer) and 11 F (Winter). Please see attached calculation demonstrating the justification for the size of each system.

Applicable SCA Design Requirements include:

6.2.9 Heating and Cooling Design Parameters (Load Calculations)

6.2.13 Arrangement and Sizing of Equipment

6.2.34 Verification of Air System Design

Applicable SCA Standard Specifications include:

15540 HVAC Pumps

15565 Condensing Boilers

15660 Air Cooled Modular Chillers

15783 Split Heat Pump System

15853 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)

15935 Single Zone Variable Air Volume (52 VAV) Air Handling Units For Public Assembly Spaces

#### Power

##### E 5.1R Green Power

Credit achievement is feasible. The project will provide at least 35% of its electricity from renewable sources by engaging in at least a two-year renewable energy contract. The allocation of green power will be calculated using either the annual electricity consumption from the energy model.

#### Electric Use Design Case

Annual Electricity Consumption: 198,714 kWh

$198,714 \times .35 = 69,549.9$

$69,549.9 \times 2 = 139,099.8 \text{ kWh}$

#### Materials Credits

## Efficient Material Use

### M 1.1P Storage & Collection of Recyclables

Credit achievement 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. Refuse Room (Room 118, 166 sf) is located on the ground floor near stairs that lead to the cafeteria. Additionally these materials will be collected with bins placed throughout the spaces. The cafeteria will have designated bins for recycling and the kitchen area will have space for both glass/plastic/metal containers as well as for paper/cardboard.

The SCA F&E Unit standard furniture list includes two-bin utility cart and recycling containers for classrooms, offices and cafeteria.

The following SCA Design Requirements apply to this credit:

DR 1.3.1.2 Building Organization-Space Relationships

DR 1.3.1.8 Refuse and Recycling Storage

DR 1.3.5.01 Cafeterias PK-8 and HS

The following SCA Standard Specifications apply to this credit:

11172 Waste Handling Equipment

### M 1.2 Building Reuse, Maintain 75% of Existing Walls, Floors & Roof

Credit achievement is not feasible. The credit is not applicable to the project, as existing structures are not included in the scope of this submission.

### M 1.3 Building Reuse, Maintain 95% of Existing Walls, Floors & Roof

Credit achievement is not feasible. The credit is not applicable to the project, as existing structures are not included in the scope of this submission.

### M 1.4 Building Reuse, Maintain 50% of Interior Non-Structural Elements

Credit achievement is not feasible. The credit is not applicable to the project, as existing structures are not included in the scope of this submission.

### M 1.5R Construction Waste Management, Divert 50% from Disposal

Credit achievement is feasible. The project has targeted meeting the 50% diversion threshold. The Construction Manager will be required to implement measures to ensure the 50% threshold for recycled waste. The construction manager will create a construction waste management plan and will track percentage of material diverted from landfill and incineration throughout construction.

Applicable SCA Standard Specifications include:

S01352 Sustainability

S01524 Construction Waste Management

02070 Selective Removals & Demolition

### M 1.6R Construction Waste Management, Divert 75% from Disposal

Credit achievement is feasible. The project has targeted meeting the 75% diversion threshold. The Construction Manager will be required to implement measures to ensure the maximum threshold for recycled waste. The construction manager will create a construction waste management plan and will track percentage of material diverted from landfill and incineration throughout construction.

Applicable SCA Standard Specifications include:

S01352 Sustainability



M 1.7 Construction Waste Management, Divert 95% from Disposal

The project intends to meet the credit requirements. The project has targeted meeting the 95% diversion threshold. The Construction Manager will be required to implement measures to ensure the maximum threshold for recycled waste. The construction manager will create a construction waste management plan and will track percentage of material diverted from landfill and incineration throughout construction.

Sustainable Materials

M 2.1R Recycled Content, 10% (post-consumer + ½ pre-consumer)

Credit achievement is feasible. The project specifications include language for recycled content for materials. The project will track recycled content percentages and material costs throughout construction through the submittal process. The project anticipates meeting the 10% credit threshold.

Applicable SCA Standard Specifications include:

01352 Sustainability  
02200 Earthwork  
02511 Asphaltic Concrete Paving  
02513 Sidewalk and Street Paving  
03300 Cast-in-Place Concrete  
04200 Unit Masonry  
05120 Structural Steel  
05710 Steel Stairs  
07211 Perimeter Foundation Insulation  
07212 Miscellaneous Building Insulation  
07250 Sprayed Fire-Resistive Materials  
07560 Fluid-applied Protected Membrane Roofing  
08524 Aluminum Projected Windows  
09260 Gypsum Board Assemblies  
09310 Ceramic Tiles  
09510 Acoustic Ceilings  
09626 Resilient Athletic Flooring  
09650 Resilient Flooring  
09680 Carpet  
10151 Toilet Compartments

M 2.2 Recycled Content, 20% (post-consumer + ½ pre-consumer)

Credit achievement is feasible. The project anticipates meeting the 20% threshold. Refer to credit M 2.1R above.

Applicable SCA Standard Specifications include:

S01352 Sustainability

M 2.3 Regional Materials, 10% Extracted, Processed & Manufactured Regionally

Credit achievement is feasible. The project specifications include language for recycled content for materials. The project will track regional material percentages and material costs throughout construction through the submittal process. The project anticipates meeting the 10% threshold.

Applicable SCA Standard Specifications include:

S01352 Sustainability  
02200 Earthwork  
02511 Asphaltic Concrete Paving

02513 Sidewalk and Street Paving  
02900 Landscaping  
03300 Cast-in-Place Concrete  
04200 Unit Masonry  
05120 Structural Steel  
05300 Metal Deck  
09260 Gypsum Board Assemblies  
09310 Ceramic Tiles

#### M 2.4 Regional Materials, 20% Extracted, Processed & Manufactured Regionally

Credit achievement is feasible. The project anticipates meeting the 20% threshold. Refer to credit M 2.3 above.

Applicable SCA Standard Specifications include:  
S01352 Sustainability

#### M 2.5R Wallboard & Roof Deck Products, Mold Resistance

Credit achievement is feasible. The project specifications include language which specifies mold resistant wallboard products. The project Architect will specify and the project will purchase compliant applicable materials at the building envelope. The project will track materials throughout construction for compliance with mold resistant requirements of the specification and will comply with credit requirements.

Applicable SCA Specification Sections:  
S01352 Sustainability  
06100 Rough Carpentry  
07212 Miscellaneous Building Insulation  
07250 Sprayed Fire-Resistive Materials  
09260 Gypsum Board Assemblies

#### Indoor Environmental Quality Credits

IAQ Post-occupancy

#### Q 1.1P Minimum IAQ Performance

Credit achievement is feasible. The ventilation system will be designed to provide outdoor air ventilation to meet minimum ASHRAE Standard 62.1-2007 requirements. Occupancy level per 2014 NYC Building Code table 28.2-1004.11 and air requirements per 2014 NYC Mechanical Code table 403.3. Increased ventilation will not be pursued as per the direction of the SCA.

Ventilation Index Tables showing the actual outside air flow rate to each occupied space after comparing the outside air requirements of ASHRAE 62.1-2007 and the 2014 NYC Building Code and Mechanical Code are provided in the submission.

Applicable 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)

Applicable SCA Specification Sections:  
S01550 Indoor Air Quality Requirements  
15985 Sequence of Operations  
15992 Cleaning and Testing  
15993 Balancing of Systems

#### Q 1.2R Outdoor Air Delivery Monitoring

Credit achievement is feasible. The central ventilation system will be provided with air flow measuring stations at the outside air intakes in order to measure/monitor the outside air supplied to the school. Data for outside air measurement will be available for verification at the school level through the BMS system schools operating console in the Custodian's Office or through the DOE centralized host control station for Automatic Temperature Control of Schools in NYC.

Applicable 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)

Applicable SCA Specification Sections:

- 15970 - Temperature Control System (Lonworks BMS/DDC with School Operating Console)
- 15985 - Sequence of Operations

IAQ Pre-occupancy

#### Q 2.1R Construction IAQ Management Plan, During Construction

Credit achievement is feasible. The SCA specification Section S01550, Indoor Air Quality Requirements, requires development and implementation of an Indoor Air Quality Management Plan. Section S01560 Installation Sequence of Finish Materials requires the contractor to avoid contamination of absorptive materials. The contractor will be responsible for certifying that the IAQ Management Plan has been upheld during construction.

The construction will follow the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd Edition 2007, ANSI/SMACNA 008-2008 (Chapter 3).

Applicable SCA Standard Specifications include:

- G01700 Project Close-Out
- S01550 Indoor Air Quality Requirements
- S01560 Installation Sequence of Finish Materials

#### Q 2.2R Construction IAQ Management Plan, Before Occupancy

Credit achievement is feasible. The contractor will be required to operate the central ventilation system for the addition prior to occupancy of school until all areas of the school receive 14,000 cubic feet of outside air per square feet maintaining an internal temperature higher than 60°F DB and relative humidity no higher than 60%. The volume of outside and indoor temperature and humidity conditions will be measured/monitored by the BMS system. After complying with this requirement, all ventilation systems will operate in normal mode.

Applicable specification sections to be included:

- G01700 Project Close-Out
- S01352 Sustainability
- S01550 – Indoor Air Quality Requirements

Low-Emitting Materials

#### Q 3.1R Low-Emitting Materials, Adhesives & Sealants

Credit achievement is feasible. All adhesives and sealants required for the project will be in compliance with VOC limits established by New York State as well as rule #1168 of the South Coast Air Quality Management District (SCAQMD) and the Green Seal Standard for Commercial Adhesives GS-36 requirements. Project will track adhesives and sealants throughout construction and confirm compliance. Project will comply with the credit requirements per specification.

Applicable specification sections to be included:

- G01600 Material and Equipment
- S01352 Sustainability

07900 Joint Sealers  
09680 Carpet  
15401 Supplemental General Requirements  
15440 Plumbing Fixtures

#### Q 3.2R Low-Emitting Materials, Paints & Coatings

Credit achievement is feasible. All paints and coatings required for the project will be in compliance with VOC limits established by New York State as well as rule #1113 of the South Coast Air Quality Management District (SCAQMD), the Green Seal Standard for GS-11, GS- 03 requirements. Project will track adhesives and sealants throughout construction and confirm compliance. Project will comply with the credit requirements per specification.

Applicable specification sections to be included:

G01600 Material and Equipment  
S01352 Sustainability  
09900 Painting

#### Q 3.3R Low-Emitting Materials, Flooring Systems

Credit achievement is feasible. All carpet installed will meet the requirements of the Green Label Plus program. All carpet cushion installed will meet the requirements of the Green Label program. All carpet adhesive will meet the VOC requirements of Q 3.1. All hard surface flooring must be certified as compliant with FloorScore standard by independent third-party, including vinyl, linoleum, laminate flooring, ceramic flooring, rubber flooring, wall base, and associated sundries.

Project will track flooring systems throughout construction. Project will comply with the credit requirements as per specification.

Applicable specification sections to be included:

G01600 Material and Equipment  
S01352 Sustainability  
09310 Ceramic Tile  
09626 Resilient Athletic Flooring  
09650 Resilient Flooring  
09680 Carpet

#### Q 3.4R Low-Emitting Materials, Comp Wood & Agrifiber Products

Credit achievement is feasible. All composite woods used on the project will be free of added urea-formaldehyde. The specifications for the wood sections include the appropriate language.

Project will track materials throughout construction. Project will comply with credit requirements per specifications.

Applicable specification sections to be included:

S01352 Sustainability  
06100 Rough Carpentry  
06200 Finish Carpentry  
06410 Custom Casework  
08210 Wood Doors  
09590 Wood Flooring  
10100 Visual Display Boards  
10415 Bulletin Boards  
12302 Manufactured Wood Casework

Pollution Source Control

#### Q 4.1R Indoor Chemical & Pollutant Source Control

Credit achievement is feasible. Permanent entryway systems at least 10' long will be provided at the vestibule entrances. The central HVAC units will be provided with pre-filters having a Minimum Efficiency Reporting Value (MERV) of 7 and final filters having a MERV of 13. Janitors' closets, grounds equipment room, and receiving areas will be provided with exhaust systems that will maintain those areas under negative air balance and, therefore, prevent the outflow of room contaminants into other areas of the school. Partitions in these spaces will be constructed from slab to slab and doors will be self-closing to further mitigate pollutant transfer.

The MERV 13 filtration efficiency required for the central air handling units will be indicated in specifications 15852 and 15935. All toilet rooms, science rooms, janitors' closets, kitchen, and mechanical rooms are provided with mechanical exhaust as indicated in HVAC design drawings.

Applicable SCA Design Requirements:

1.3.4.1 Entrances and Exits

6.2.0 General Overview of Heating Ventilation and Air Conditioning Systems

6.2.28 HVAC Design Requirements for Special Spaces

Applicable SCA Specification Sections:

12485 Foot Grilles

15852 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)

15935 Single Zone Variable Air Volume (52 VAV) Air Handling Units For Public Assembly Spaces

#### Q 4.2R Electric Ignition Stoves

Credit achievement is not feasible. Project intends to install only therm/hold units and cooking range is not part of the kitchen layout.

Applicable SCA Design Requirements:

7.3.1 Fire Detection and Alarm System for Low Rise School Buildings

Applicable SCA Specification Sections:

11400 Food Service Equipment

#### Q 4.3R Post Construction Indoor Air Quality

Credit achievement is feasible. SCA/F&E will provide at least two HEPA vacuums for use within the facility.

The project will get written confirmation from the SCA/F&E to confirm HEPA vacuums will be provided as part of the initial equipment for the school. The project team anticipates meeting the credit requirements.

Controllability of Systems

#### Q 5.1R Controllability of Systems, Lighting

Credit achievement is feasible. The project will provide individual lighting controls for at least 90% of the occupancy and low voltage lighting control switches for shared multi-occupants spaces including classrooms. All instructional spaces 2,000 SF or less in area will be controlled by one ceiling mounted vacancy/daylight harvesting sensor and switch located at the entrance door. A room controller will be provided to control both rows of lights. An override three position push button switch set to off, 50%, and 100% will also be provided. Key-operated switches shall be provided for assembly spaces (i.e. student cafeteria), wall mounted vacancy sensors for lighting control in individual offices and ceiling mounted vacancy sensors (manual on) in classrooms. Daylight harvesting sensors will be installed in all applicable spaces, including classrooms.

Applicable SCA Design Requirements include:

7.2.1 Interior Lighting

Applicable SCA specifications:

16140 Wiring Devices

16145 Lighting Control Devices

#### Q 5.2R Controllability of Systems, Thermal Comfort

Credit achievement is feasible. Heating and cooling shall be provided. 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. Controls are shown in the submission.

Applicable 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

Applicable SCA Specification Sections:

15970 - Temperature Control System

15985 - Sequence of Operations

Thermal Comfort

#### Q 6.1R Thermal Comfort, Design

Credit achievement 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 55-2004.

Applicable 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

Applicable SCA Specification Sections:

15970 - Temperature Control System (Lonworks BMS/DDC with School Operating Console)

15985 - Sequence of Operations

Lighting and Views

#### Q 7.1 Daylight & Views, Daylight 75% of Classrooms

Credit achievement is feasible. The project team has performed daylight and view calculations. The project achieves 89.16% daylight for classroom spaces.

Please see Daylight & Views forms and plans for classroom spaces in previous submission.

Applicable SCA Design Requirements include:

1.3.1.1 Building Location and Orientation

1.3.1.2 Planning Guidelines for New Schools and Additions

Applicable SCA Specification Sections:

08524 Aluminum Projected Windows

08800 Miscellaneous Glazing

12501 Chain and Clutch Operated Window Shades

#### Q 7.2 Daylight & Views, Daylight 90% of Classrooms

Credit achievement is not feasible. The project team has performed daylight and view calculations. The project achieves 89.16% daylight for classroom spaces.

Please see Daylight & Views forms and plans for classroom spaces in previous submission.

Applicable SCA Design Requirements include:

1.3.1.1 Building Location and Orientation

1.3.1.2 Planning Guidelines for New Schools and Additions

Applicable SCA Specification Sections:

08524 Aluminum Projected Windows

08800 Miscellaneous Glazing

12501 Chain and Clutch Operated Window Shades

#### Q 7.3 Daylight & Views, Daylight for 75% of Other Spaces

Credit achievement is not feasible. The project team has performed daylight and view calculations. The project achieves 36.07% daylight for other spaces.

Please see Daylight & Views forms and plans for other spaces in previous submission.

Applicable SCA Design Requirements include:

1.3.1.1 Building Location and Orientation

1.3.1.2 Planning Guidelines for New Schools and Additions

Applicable SCA Specification Sections:

08524 Aluminum Projected Windows

08800 Miscellaneous Glazing

12501 Chain and Clutch Operated Window Shades

#### Q 7.4 Daylight & Views, Views

Credit achievement is not feasible. The project team has performed daylight and view calculations and the project does not meet the required 90% compliance requirement. The project achieves 83% access to views.

Please see Daylight & Views forms and plans for classroom spaces in previous submission.

Applicable SCA Design Requirements include:

1.3.1.1 Building Location and Orientation

#### Q 7.5 Visual Performance, Artificial Direct-Indirect Lighting

Credit achievement is feasible. All classrooms will 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. To-date, we have received interior photometrics for the two classrooms, cafeteria, music room, and multi purpose room spaces, which are included in the submission.

Applicable SCA Design Requirements include:

7.2.1 Interior Lighting

Applicable SCA Design Requirements include:

16502 LED Interior Building Lighting

Acoustics

#### Q 8.1P Minimum Acoustical Performance

Credit achievement is feasible. To meet SCA noise criteria, all classrooms and core learning spaces shall include an acoustic ceiling tile with a minimum NRC rating of 0.70. In some spaces, additional absorption may be needed to meet the specified RT60 criteria. In those instances, measures such as acoustic wall panels and/or using an even higher STC rating will be implemented. As the design progresses into Construction Documents, mathematical models of the classrooms and core learning spaces will be created based on Sabine equation. Final recommendations for each space will be made based off these models and coordination with the design team.

This criteria also requires a maximum sound level of 45 dBA in all classrooms and core learning spaces. The mechanical systems serving classrooms will be modeled in Trane Acoustics Program (TAP) based on the mechanical drawings including the duct layout plan, airflow specified, diffuser/grille selection, and manufacturer's sound levels for the specified equipment. The review will include supply paths, return paths, and radiated sound. Treatment to meet this criteria may include: acoustically lining ductwork, incorporating sound attenuators, selecting low NC diffusers/grilles, and locating equipment in non-sensitive areas wherever possible. Vibration isolation measures will also be reviewed for all major mechanical units and any smaller units serving the classrooms and compared to ASHRAE guidelines. We've included the DD Acoustic Report (January 30<sup>th</sup>, 2018), the 60% CD Acoustic Report (April 10<sup>th</sup>, 2018), and the 100% CD Acoustic Report (June 14<sup>th</sup>, 2018) in the submission.

Applicable SCA Design Requirements include:

1.3.1.9 Architectural Acoustic Standards

5.4.1 Suspended Ceilings

6.2.25 HVAC Acoustical Standards

Applicable SCA Standard Specifications include:

09510 Acoustical Ceilings

15891 Metal Ductwork

15910 Duct Accessories

15853 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)

15930 Variable Air Terminals

15935 Single Zone Variable Air Volume (52 VAV) Air Handling Units for Public Assembly Spaces

#### Q 8.2 Enhanced Acoustical Performance & Sound Isolation for Special Spaces

Credit achievement is feasible. The acoustical consultant has reviewed and analyzed the 100% Construction Documents concerning sound isolation of special spaces in PS 730K. Special sound-isolating constructions for the Cafeteria, Music Room, and Gymnasium will be incorporated into the design.

#### Q 8.3R Acoustic Windows

Credit achievement is not feasible. The acoustical consultant has performed a Site Noise Exposure Analysis to determine the ambient sound level at the site due to aircraft noise, traffic and other exterior noise sources.

#### Additional Credits

##### Required Support

#### A 1.1R LEED® Accredited Professional

Credit achievement is feasible. Various team members are LEED Accredited Professionals. The certificate of Lauren Campfield of Vidaris has been provided to document this credit.

#### A 1.2 Innovation or Exemplary Performance

#### A 1.3 Innovation or Exemplary Performance



Optional - Site Impact

A 2.1 Heat Island Effect, Non-Roof

---

A 2.2 Stormwater Design, Quantity Control

---

A 2.3 Active Design in a School Environment

---

Credit achievement is feasible and will be pursued per direction from the SCA. The architect will incorporate the following design elements to address active design:

R-Minimum Accessible Floors: Make active modes of vertical circulation accessible to all users

1-Floor Re-entry: Make active modes of vertical circulation accessible at all floors

3-Stair Visibility at All Floors: Visual connection to active modes of vertical circulation

4-Stair Visibility from Main Lobby: Visual connection to Main Lobby

5-Location – Visibility: Visual connection to active mode of vertical circulation

6-Lighting: Make active vertical circulation areas a desirable space through enhanced lighting

7-Daylighting: Make active vertical circulation areas a desirable space through natural lighting

8-Signage Prompt at Active Vertical Circulation: Encourage active modes of vertical circulation over motorize modes of vertical circulation

10-Recreational Space: Provide opportunities for on-site recreation

Optional - Energy

A 3.1 Enhanced Commissioning

---

A 3.2 Optimize Energy Performance

---

Credit achievement is feasible and will be pursued per direction from the SCA. Per direction from the SCA, a project-specific energy model has been performed for the 100% GSG Submission and indicates 26.3% savings versus the ASHRAE 90.1-2010 baseline. Fourteen (14) points will be pursued based on the model results.

The project achieves 21.3% savings in regulated energy costs compared with the LL86 Baseline. The project is compliant with the LL86 requirements.

Please see attached Assessment of Energy Performance for Compliance with NYC SCA Green Schools Guide document for energy model results summary.

A 3.3 On-Site Renewable Energy

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A 3.4 Enhanced Energy Management System Controls, HVAC and Hot Water Systems

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Optional - IEQ

A 4.1 Low-Emitting Materials, Ceiling and Wall Systems

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Optional - Education

A 5.1 The School Building as a Teaching Tool

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# Supporting Credit Documentation

Design Team Certification Form  
DESIGN PHASE



Architect:	Firm Name:	RKTB Architects	Date:	4/8/2019
	Address:	150 West 22nd St. New York, NY 10011	Project Name:	P.S. 730 K - New Primary School
	Telephone:	212.807.9500	Project Address:	4525 8th Avenue, Brooklyn, NY
	email:	<a href="mailto:owhilmoyer@rktb.com">owhilmoyer@rktb.com</a>		
Engineer:	Firm Name:	Shenoy Engineers	LLW #:	107281
	Address:	39 US Hwy 46 E, Suite 802, Pine Brook, NJ 07066	Design #:	
	Telephone:	973-808-4090	BCC #:	
	email:	<a href="mailto:yaw@shenoyengineers.com">yaw@shenoyengineers.com</a>	Design Manager:	
			PDM:	
			BCC Reviewer:	
		Commissioning:		

Architect's Statement - Design Phase:

As Architect of Record, I verify that the statements initiated 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.

ALBERT ARONOV

Name

ARCHITECT

Title

Signature

4.8.19

Date

Engineer's Statement - Design Phase:

As Engineer of Record, I verify that the statements initiated 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.

YATISH SHARMA

Name

ENGINEER

Title

Signature

4/8/19

Date

Design Team Certification Form  
DESIGN PHASE



Architects and Engineers  
Initials or Initials

AA  
ARCH

**Site**

**S1.2R - Site Selection**

The construction documents for this project call for no buildings, roads or parking areas to be developed on land meeting 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.

AND

- ☐ Land that is specifically identified as habitat for any species on Federal or State threatened or endangered species lists.

AND

- ☐ Land within 100 feet of any wetlands as defined by United 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.

AND

- ☐ Previously undeveloped land that is within 50 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.

AND

- ☐ 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.

**S1.3 - Sustainable Site and Building Layout**

The following design measures have been undertaken and a narrative, site plan and section (as required) have been submitted to document the measures undertaken. (Check no fewer than three)

- ☒ Orient and compose building to take advantage of natural daylighting.
- ☒ Plot shadow patterns from surrounding buildings onto project site to optimize access to daylight.
- ☒ Plot shadow patterns from proposed building(s)/addition onto adjacent properties and buildings, and consider design options to address impact as necessary.
- ☐ Consider prevailing winds when determining the site and building layout.
- ☐ Take advantage of existing adjacent building and natural land formations and vegetation to provide shelter from extreme weather or to deflect unwanted noise.
- ☐ Design landscaping to mitigate solar gain and winter winds.
- ☒ Identify viable locations on roof for potential renewable energy generation.

**S1.4 - Development Density and Community Connectivity**

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

- ☒ 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.

OR

- ☐ This project is on a previously developed site AND in a community with a minimum density of 60,000 sqft per acre net. A Development Density Form has been submitted as documentation.

**S1.5R - 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.

**S1.6P - Environmental Site Assessment**

A Phase I Environmental Site Assessment as described in ASTM E1527-05 was conducted.

- ☐ Remediation is not required.
- ☐ Remediation is required but is not part of the scope of this project as it will be completed under another project.
- ☒ Remediation is required and will be part of this project but does not meet the requirements to achieve Credit S1.7, Brownfield Redevelopment.
- ☐ Remediation is required and will be documented during Construction under Credit S1.7, Brownfield Redevelopment.

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**S2.1 - Alternative Transportation, Public Transportation Access**

This project site is within 1/2 mile (2,640 feet) pedestrian route of an existing, or planned and funded, commuter rail, light rail or subway stations OR within 1/4 mile (1,320 feet) pedestrian route of at least one stop on two different public bus lines as indicated below. A scaled annotated site plan showing the length of the pedestrian route and identifying the stations has been provided as documentation. Summary information is below.

Distance to Stop/Station in Feet	Line Designation
1056 ft.	B11 Bus
528 ft.	B70 Bus
2112 ft.	B35 Bus

AA  
ARCH

**S2.2 - Alternative Transportation, Bicycle Storage & Changing Rooms**

This project includes secure bicycle racks and/or storage for 5% or more of all building staff and students above grade 3 level and provides shower and changing facilities in the building for 0.5% of full-time staff.

AA  
ARCH

**S2.3R - Alternative Transportation, Low Emitting & Fuel-Efficient Vehicles/Parking Capacity**

This project implements one of the following alternative transportation strategies:

- ☒ 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.  
OR
- ☐ If on-site parking is provided, 5% of spaces provided to be designated preferred parking spaces reserved for low-emitting and fuel-efficient vehicles, vanpool or carpool. A narrative and site plan outlining compliance have been provided as documentation.

AA  
ARCH

**S3.2 - Site Development, Maximize 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.

N/A      N/A

**S4.1 - Stormwater Design, Quality Control**

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 NYSDES and structural controls as documentation.

AA  
ARCH

**S5.1R - Heat Island Effect, Roof**

The roof surfaces comply with one of the following (annotated roof plan with area calculations has been submitted as documentation):

- ☒ The roof materials have a Solar Reflectance Index (SRI) equal to or greater than 78 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.

N/A

**S6.1 - Light Pollution Reduction**

**For Interior Lighting**

- ☐ The construction documents include automatic controls that turn off non-essential interior lighting during hours when the school is not in operation.  
OR
- ☐ For projects with lights not automatically controlled to turn off, the angle of the maximum candela from each luminaire shall not exit through buildings.

**For Exterior Lighting**

- ☐ This project scope includes no exterior lighting.  
OR
- ☐ For projects with exterior lighting, Light Pollution Reduction Forms have been submitted including calculations for exterior site areas and building façade/landscape areas indicating compliance with the credit requirements.

## Water

N/A

N/A

### W1.1 - Water Efficient Landscaping Reduce by 50%

This project reduces the use of potable water for landscape irrigation by doing the following:

- ☐ The landscaping designed does not require a permanent irrigation system using potable water. Any temporary irrigation systems called for in the construction documents for plant establishment are specified to be removed within one year of installation. The minimum vegetative site area of 5% has been met.

N/A

N/A

### W1.2 - Water Efficient Landscaping, No Potable Water Use or Irrigation

This project reduces the use of potable water for landscape irrigation by doing the following:

- ☐ The landscaping and irrigation system have been designed to reduce the use of potable water for irrigation from a calculated baseline. Calculations have been submitted based on methodology from LEED for Schools, credit WEc1 and updated based on final construction documents.

YS

ENG

### W2.1P - Minimum Water Use Reduction 20%

- ☒ This project uses 20% 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.

YS

ENG

### W2.2R - Enhanced Water Use Reduction 30%

- ☒ This project uses 30% 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.

YS

ENG

### W2.3 - Enhanced Water Use Reduction 35%

- ☒ This project uses 35% 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.

N/A

### W2.4 - Enhanced Water Use Reduction 40%

- ☐ This project uses 40% 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.

## Energy

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### 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.

YS

ENG

### E3.2R - Energy Management System Controls, HVAC and Hot Water Systems

This project utilizes an open protocol Facility Management System (FMS) that controls the HVAC and Hot water systems.

YS

ENG

### E4.1P - Minimum Energy Performance

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

- ☒ The mandatory provisions (Sections 5.4, 6.4, 7.24, 8.4, 9.4 and 10.4) of ASHRAE/IESNA Standard 90.1-2010 (without amendments)
- AND
- ☒ The prescriptive requirements (Sections 5.5, 6.5, 7.5 and 9.5) or performance requirements (Section 11) of ASHRAE/IESNA Standard 90.1-2010 (without amendments).

YS

ENG

### E4.2R - HVAC System Sizing, Avoid Over Sizing

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

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

## Materials

### 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.

### M 2.5R - Wallboard & Roof-deck Products, Mold Resistance

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

## Indoor Environmental Quality

### Q1.1P - Minimum IAQ Performance

This project implements the following strategies for improved Indoor Air Quality:

- ☒ The project meets the minimum requirements of Sections 4 through 7 of ASHRAE 62.1-2007 Ventilation for Acceptable Indoor Air Quality. Construction documents submitted reflect this compliance.

AND

- ☒ A design narrative has been provided describing this project's ventilation design as documentation. This narrative includes specific information regarding fresh air intake volumes for each occupied zone.

### Q1.2R - Outdoor Air Delivery Monitoring

This project includes air flow stations on all outside air intakes of central heating, ventilating and air-conditioning equipment. Construction documents showing the air flow stations have been provided as documentation.

### Q4.1R - Indoor Chemical & Pollutant Source Control

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

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

AND

- ☒ 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

- ☒ 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

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



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DESIGN PHASE



N/A

AA  
ARCH

**Q4.2R - 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.

**Q4.3R - Post Construction Indoor Air Quality**

Maintenance and Equipment list for this project developed by the DOE/DSF Unit includes only HEPA vacuums. The SCA has provided written documentation to the design team confirming HEPA vacuums are on the Maintenance and Equipment list for this project.

Y5  
ENG

**Q5.1R - Controllability of Systems, Lighting**

This project has been designed with the following lighting controls:

- ☒ Lighting controllability has been provided for a minimum of 90% of the building occupants in regularly occupied spaces.

AND

- ☒ 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.

Y5  
ENG

**Q5.2R - Controllability of Systems, Thermal Comfort**

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

- ☒ Comfort controls have been provided for a minimum of 50% of the building occupants in regularly occupied spaces.

AND

- ☒ 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.

Y5  
ENG

**Q6.1R - Thermal Comfort, Design**

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.

- ☒ 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**

Season	Maximum Indoor Space Design Temperature Deg (F)	Minimum Indoor Space Design Temperature Deg (F)	Maximum Indoor Space Design Relative Humidity
Summer	78°F	75°F	50%
Winter	N/A	72°F	N/A

AA  
ARCH

**Q7.1 - Daylight & Views, Daylight in 75% Classrooms**

This project is designed to provide classroom occupants a connection between indoor spaces and the outdoors through the introduction of daylight. A completed Daylight 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 daylighting would hinder these areas functions.

N/A

**Q7.2 - Daylight & Views, Daylight in 90% Classrooms**

This project is designed to provide classroom occupants a connection between indoor spaces and the outdoors through the introduction of daylight. A completed Daylight 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 daylighting would hinder these areas functions.

N/A

**Q7.3 - Daylight & Views, Daylight in 75% of Other Spaces**

This project is designed to provide the building occupants a connection between indoor spaces and the outdoors through the introduction of daylight. A completed Daylight 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 daylighting would hinder these areas functions.



Design Team Certification Form  
DESIGN PHASE



N/A

Q7.4 - Daylight & Views, Views

Occupants in 90% 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.

YS

ENG

Q7.5R - Visual Performance, Artificial Direct-Indirect Lighting

This project uses only pendant mounted high-efficiency LED fixtures in all classrooms. I have provided a lighting schedule and reflected ceiling plans as documentation.

AA

ARCH

Q8.1P - Minimum Acoustical Performance

This project employs the following strategies for good acoustic performance:

☒ Classrooms have a maximum background noise level of 45 dBA.

AND

☒ All classrooms have 0.6-second maximum (unoccupied) mid-frequency (average of 500, 1,000 and 2,000 Hz) reverberation times for classrooms with volumes of up to 10,000 ft<sup>3</sup>; 0.7-second maximum (unoccupied) mid-frequency reverberation time for classrooms of 10,000 to 20,000 ft<sup>3</sup>.

AND

☒ A report from a qualified acoustical consultant has been provided as documentation.

AA

ARCH

Q8.2 - Enhanced Acoustical Performance & Sound Isolation for Special Spaces

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.

N/A

Q8.3 - Acoustic Windows

This building has acoustically rated windows with a minimum STC level of higher than 40 for classroom and other educational spaces, as recommended by the acoustic consultant for this project. A report from a qualified acoustical consultant has been submitted as documentation.

### Additional Credits

AA  
ARCH

YS

N/A

#### A1.1R - LEED Accredited Professional

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

#### A2.1 - Heat Island Effect, Non-Roof

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

- ☐ Hardscape materials have a Solar Reflectance Index (SRI) equal to or greater than 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

N/A

#### A2.2 - Stormwater Design Quantity Control

This project minimized stormwater 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	% of Annual Rainfall Volume treated by BMP

AA  
ARCH

YS

ENG

#### A2.3 Active Design in a School Environment

This project has satisfied the prerequisite element to provide occupants floor-to-floor access between the stairs and their own floor as well as other common-use floors.

#### A3.2 - Optimized Energy Performance

- ☒ 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:

The principal heat source is:

The percentage of energy cost reduction per ECB method using 90.1-

The percentage of energy cost reduction per Appendix G using 90.1-

Drop-down menu

DOE-2.2

Natural Gas

21.3%

26.3%

N/A

A3.4 - Enhanced Energy Management System Controls, HVAC and Hot Water Systems

The project has a building management system that provides the following energy saving features:

- ☐ Scheduled unoccupied setback temperature controls
- ☐ Scheduled control of all ventilation outdoor air fans, exhaust fans and outdoor air dampers
- ☐ Zoning of systems for major building areas
- ☐ An override system to temporarily change a unit or zone from unoccupied to occupied
- ☐ A centrally located scheduling interface