NEW YORK CITY

GREEN SCHOOLS GUIDE 2019

IDP PHASE OVERVIEW

NYC Department of Education

SCA NYC School Construction Authority

GOAL OF PRESENTATION

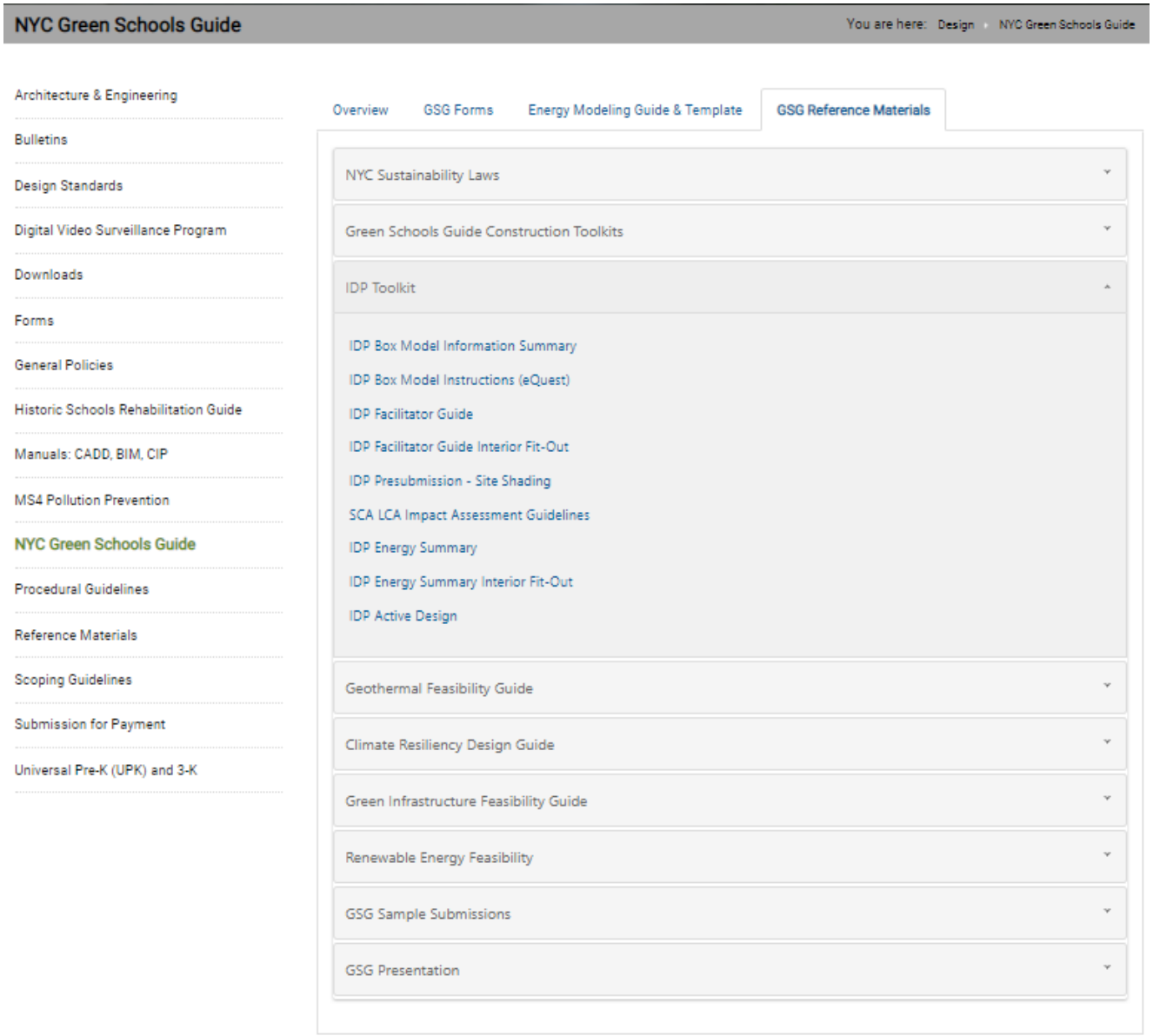
- Provide an overview of the 2019 GSG IDP phase submission
- Understand P1.1R – Integrative Design Process credit requirements
- Identify all GSG IDP phase documentation
- Review GSG Submission reporting templates and IDP Sample Submission
- **AIA CES Course Information**: 1.5 AIA LU
  Course #: GSG-IDP
  AIA Certificates will be distributed to all attendees. Attendance for AIA Members will be reported.

GOAL OF IDP PHASE

- **Understand how the IDP is used as a tool to integrate sustainability measures and guide the project team on sustainability requirements**
- Identify and use opportunities to achieve **synergies** across disciplines and building systems
- Learn how to use the analyses for all potential design schemes to **inform the project design,** provide integrative design strategies and support ongoing performance and operations
- Explain how team members from **various disciplines** can discuss the project goals, opportunities and risks from the perspective of their respective disciplines and the perspectives of the whole project and its end users
- Identify **supporting documentation** to meet the standards of the New York City Green Schools Guide which is in alignment with LEED v4 green building standards and New York City green building local laws

IDP TOOLS

GREEN SCHOOLS GUIDE WEBSITE



GREEN SCHOOLS GUIDE WEBSITE

GSG Sample Submissions

The following are examples for each design submission phase of a submission that is fairly complete and uses the appropriate Green Schools Guide forms.

The content of all the samples may or may not have been accepted by the GSG Committee reviewing the submission, but is intended to provide guidance as to a format that will expedite the review process and reduce the need for multiple resubmissions. Each phase submission is to be resubmitted separately until it is deemed complete. Click on the link for the appropriate sample submission for the appropriate Rating System.

To view the Green Schools Rating Sample Submissions, you must have Adobe Acrobat Reader installed on your computer. If you do not have Adobe Acrobat Reader installed, follow the link below to install the latest version of Adobe Acrobat Reader Please note that provided sample submissions serve only as references and are project-specific.

2019 Rating System Sample Submission

- IDP
- Schematic (Under development)

2016 Rating System Sample Submission

- Schematic
- Design Development
- 60% Construction Documents
- 100% Construction Documents
- Design Certification
- Construction Phase

2009 Rating System Sample Submission

- Schematic
- Design Development
- 60% Construction Documents
- Construction Phase

GSG Presentation

IDP TIMELINE

BEFORE THE IDP WORKSHOP

- Project design team will identify a moderator (**Sustainability Consultant/LEED AP BD+C**) to lead the IDP Workshop
- Assigned discipline leads will prepare synopsis of each discovery analysis and send to the SCA **at least 3 days before** the workshop
- Prepare a preliminary agenda with activity durations and list of participants distributed **at least 2 days before** the workshop
- Review the IDP guidelines on the SCA website

DURING & AFTER IDP WORKSHOP

- Designate a team member to take meeting minutes during the Workshop

- **Prepare workshop meeting minutes** to include all recommendations for each Discovery from the Workshop in the IDP Workshop Report

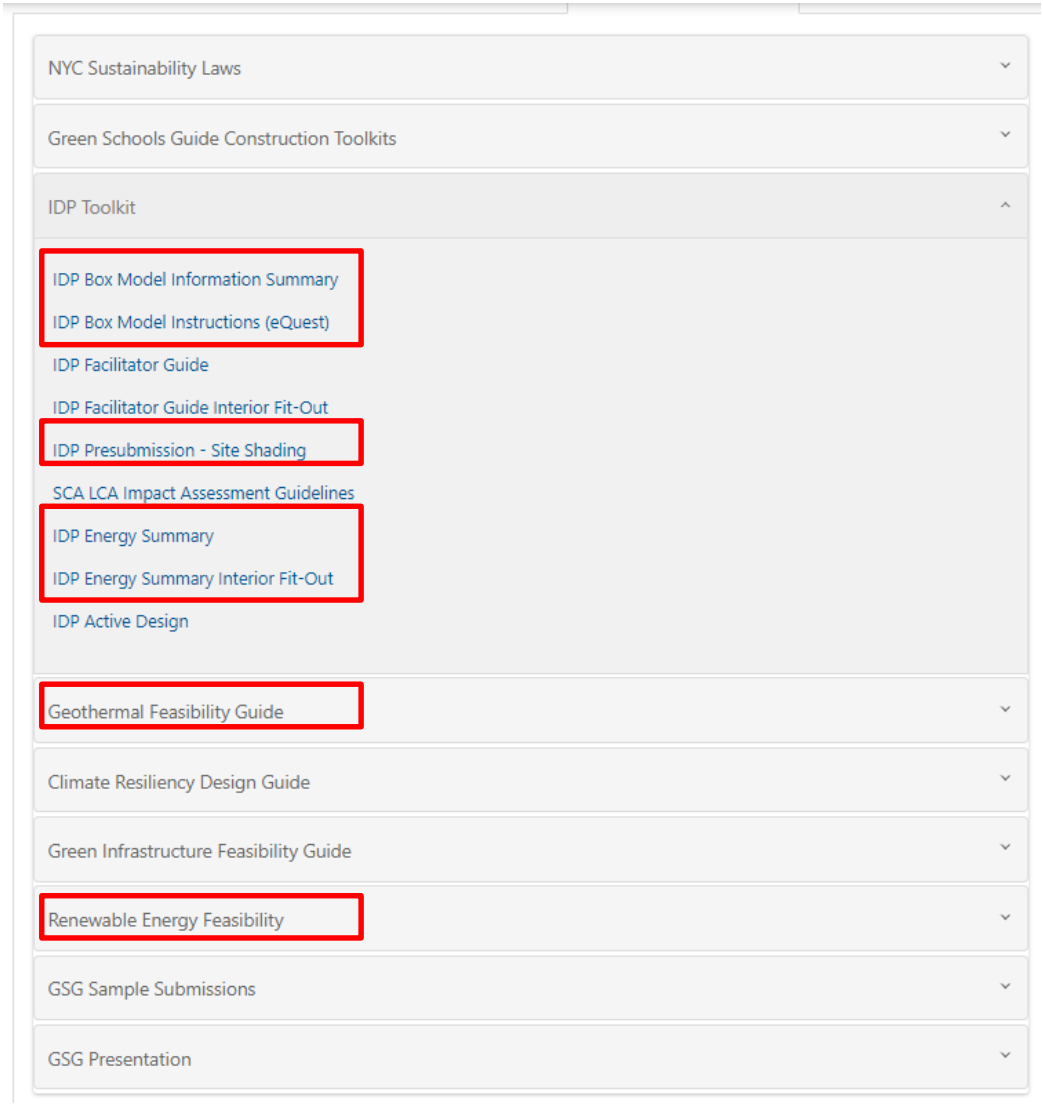
- **Within 2 weeks of the IDP Workshop**, submit an Integrative Design Workshop Report including:
  - All discovery analyses completed including meeting minutes from workshop with follow up actions and responsible parties for each
  - Design impacts that may inform scheme selection
  - Preliminary GSG checklist and credit impacts of strategies evaluated

DISCOVERY ANALYSIS

Discovery #1 - Energy and Daylight Related Systems

Objective	References
Meet **performance target** as described in Credit E3.1P - Minimum Energy Performance.	
Site conditions: Assess site shading, prevailing winds, exterior lighting, landscaping, and adjacent site conditions	IDP Presubmission- Site Shading IDP Energy Summary
Massing and orientation: Assess how massing and orientation affect energy consumption, daylighting, HVAC sizing.	IDP Energy Summary
Renewable Energy Analysis: Complete an assessment of renewable energy potential as required by LL31/16 and LL 94/19, as described in Credit E6.1P. Roof plan with sustainable roofing zone per LL 94 of 2019, including all calculations and analysis indicating whether solar PV electricity generating system and/or green roof system is selected.	PVWatts Calculator https://pvwatts.nrel.gov/ Local Law 94 of 2019
MEP Layout Optimization: Develop a best and alternate solution to optimize the MEP design and determine the modifications to the Architectural system to meet the HVAC optimization goals.	IDP Energy Summary
Daylight access and design strategies for gymnasium/gymatorium	
Geothermal system applicability per New York City Geothermal Pre-feasibility Tool per LL06/16.	New York City Geothermal Screening Tool https://www1.nyc.gov/assets/ddc/geothermal/index.html
Provide **IDP** Box Model as per template and instructions	IDP Box Model Instructions (eQuest) IDP Box Model Information Summary

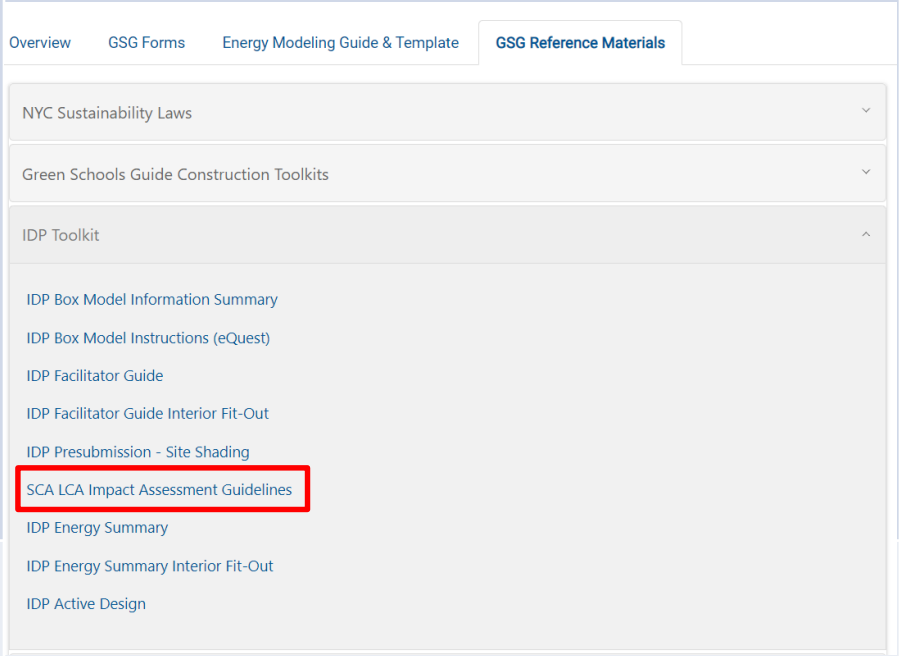
Discovery #1 – References



Discovery #2 – Water-Related Systems/Green Infrastructure

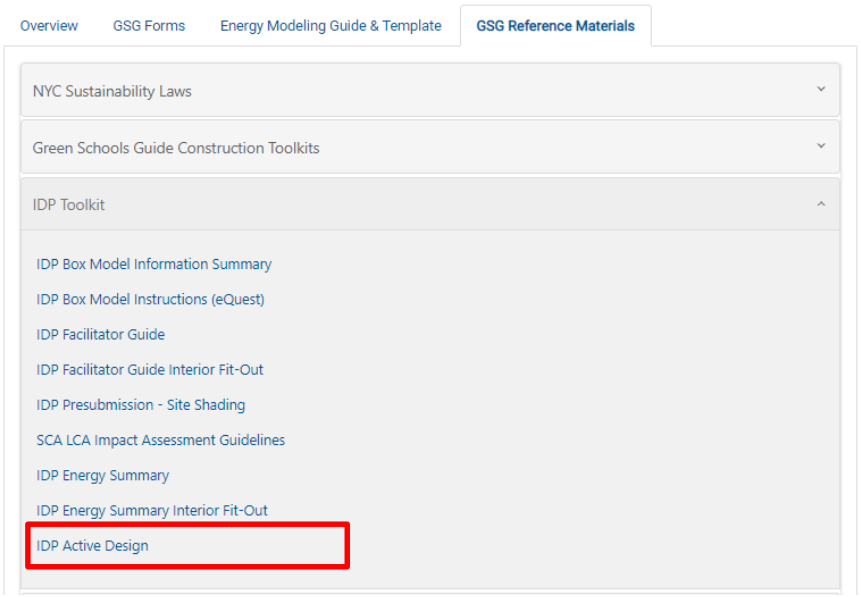
Objective	References
Demonstrate how at least one **on-site non-potable water supply source** was analyzed to reduce the burden on the NYC municipal supply or wastewater treatment systems, such as on-site rainwater, graywater, and HVAC equipment condensate	
Water Demand Analysis Calculate the following: • Monthly and annual rainfall volume landing on site and building roof • Monthly and annual site and building water use Also, take into consideration the following: • Rainwater quantity and quality management systems • Landscaping, irrigation, and site elements • Roofing systems and/or building form and geometry	Indoor Water Use Reduction Credit Form (W2.1P, W2.2R)
Potential **cost impact** associated with installing any water conserving systems other than SCA standard	
Analyze potential locations for **green infrastructure**	

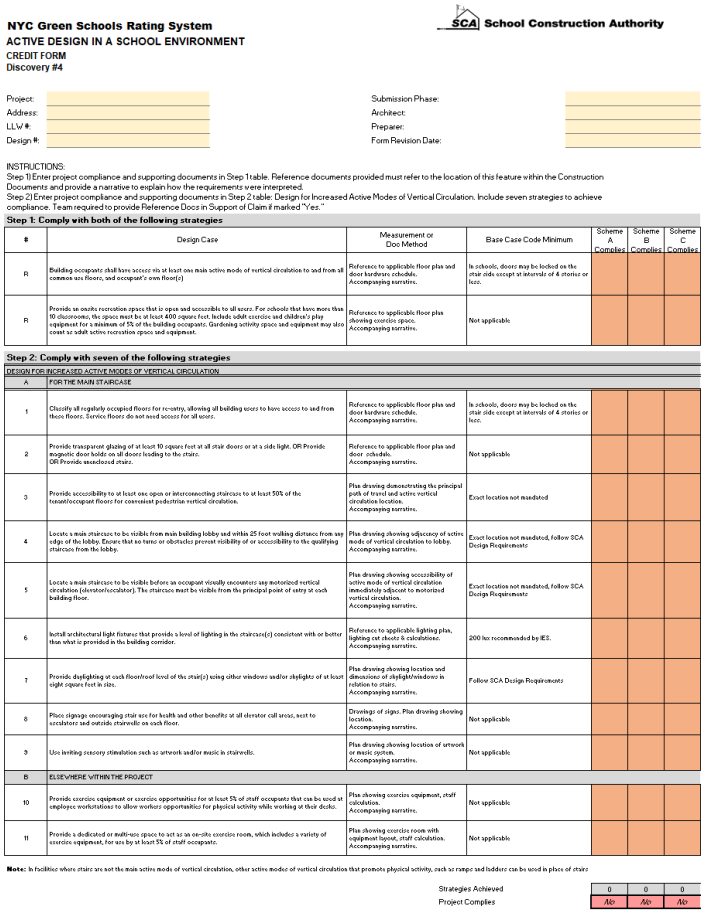
Discovery #3 – Preliminary Life-Cycle Impacts Assessment (LCA)

Objective	References
Perform a preliminary Life-Cycle Assessment by assessing: • 2-3 **wall assemblies** (brick cavity wall, concrete insulated panel wall, rainscreen wall) • 2-3 **roof assemblies** (blue roof, green roof, and standard SCA roof). Quantify the LCA impacts of each using the Athena software. Include software results in the IDP Workshop Report.	SCA LCA Impact Assessment Guidelines Athena Building Impact Estimator
Provide a **narrative** indicating the LCA design considerations including why each assembly was selected or not selected.	

Discovery #4 – Active Design

Objective	References
First **floor plan** for each scheme with all potential Active Design strategies identified and located	IDP Active Design





NYC Green Schools Rating System
ACTIVE DESIGN IN A SCHOOL ENVIRONMENT
CREDIT FORM
Discovery #4

SCA School Construction Authority

Project:
Address:
LLW #:
Design #:
Submission Phase:
Architect:
Preparer:
Form Revision Date:

INSTRUCTIONS:
Step 1) Enter project compliance and supporting documents in Step 1 table. Reference documents provided must refer to the location of this feature within the Construction Documents and provide a narrative to explain how the requirements were interpreted.
Step 2) Enter project compliance and supporting documents in Step 2 table: Design for Increased Active Modes of Vertical Circulation. Include seven strategies to achieve compliance. Team required to provide Reference Docs in Support of Claim if marked "Yes."

Step 1: Comply with both of the following strategies

#	Design Case	Measurement or Doc Method	Base Case Code Minimum	Scheme A Complies	Scheme B Complies	Scheme C Complies
R	Building occupants shall have access via at least one main active mode of vertical circulation to and from all common use floors, and occupant's own floor(s).	Reference to applicable floor plan and door hardware schedule. Accompanying narrative.	In schools, doors may be locked on the stair side except at intervals of 4 stories or less.			
R	Provide an onsite recreation space that is: open and accessible to all users. For schools that have more than 10 classrooms, the space must be at least 400 square feet. Include adult exercise and children's play equipment for a minimum of 5% of the building occupants. Gardening activity space and equipment may also count as adult active recreation space and equipment.	Reference to applicable floor plan showing exercise space. Accompanying narrative.	Not applicable			

Step 2: Comply with seven of the following strategies

DESIGN FOR INCREASED ACTIVE MODES OF VERTICAL CIRCULATION						
A	FOR THE MAIN STAIRCASE					
1	Classify all regularly occupied floors for re-entry, allowing all building users to have access to and from those floors. Service floors do not need access for all users.	Reference to applicable floor plan and door hardware schedule. Accompanying narrative.	In schools, doors may be locked on the stair side except at intervals of 4 stories or less.			
2	Provide transparent glazing of at least 10 square feet at all stair doors or at a side light. OR Provide magnetic door holds on all doors leading to the stairs. OR Provide unenclosed stairs.	Reference to applicable floor plan and door schedule. Accompanying narrative.	Not applicable			
3	Provide accessibility to at least one open or interconnecting staircase to at least 50% of the tenant/occupant floors for convenient pedestrian vertical circulation.	Plan drawing demonstrating the principal path of travel and active vertical circulation location. Accompanying narrative.	Exact location not mandated			
4	Locate a main staircase to be visible from main building lobby and within 25 foot walking distance from any edge of the lobby. Ensure that no items or obstacles prevent visibility of or accessibility to the qualifying staircase from the lobby.	Plan drawing showing adjacency of active mode of vertical circulation to lobby. Accompanying narrative.	Exact location not mandated, follow SCA Design Requirements			
5	Locate a main staircase to be visible before an occupant visually encounters any motorized vertical circulation (elevator/escalator). The staircase must be visible from the principal point of entry at each building floor.	Plan drawing showing accessibility of active mode of vertical circulation immediately adjacent to motorized vertical circulation. Accompanying narrative.	Exact location not mandated, follow SCA Design Requirements			
6	Install architectural light fixtures that provide a level of lighting in the staircase(s) consistent with or better than what is provided in the building corridor.	Reference to applicable lighting plan, lighting cut sheets & calculations. Accompanying narrative.	200 lux recommended by IES.			
7	Provide daylighting at each floor/roof level of the stair(s) using either windows and/or skylights of at least eight square feet in size.	Plan drawing showing location and dimensions of skylight/windows in relation to stairs. Accompanying narrative.	Follow SCA Design Requirements			
8	Place signage encouraging stair use for health and other benefits at all elevator call areas, next to escalators and outside stairwells on each floor.	Drawings of signs. Plan drawing showing location. Accompanying narrative.	Not applicable			
9	Use inviting sensory stimulation such as artwork and/or music in stairwells.	Plan drawing showing location of artwork or music system. Accompanying narrative.	Not applicable			
B	ELSEWHERE WITHIN THE PROJECT					
10	Provide exercise equipment or exercise opportunities for at least 5% of staff occupants that can be used at employee workstations to allow workers opportunities for physical activity while working at their desks.	Plan showing exercise equipment, staff calculation. Accompanying narrative.	Not applicable			
11	Provide a dedicated or multi-use space to act as an on-site exercise room, which includes a variety of exercise equipment, for use by at least 5% of staff occupants.	Plan showing exercise room with equipment layout, staff calculation. Accompanying narrative.	Not applicable			

Note: In facilities where stairs are not the main active mode of vertical circulation, other active modes of vertical circulation that promote physical activity, such as ramps and ladders can be used in place of stairs

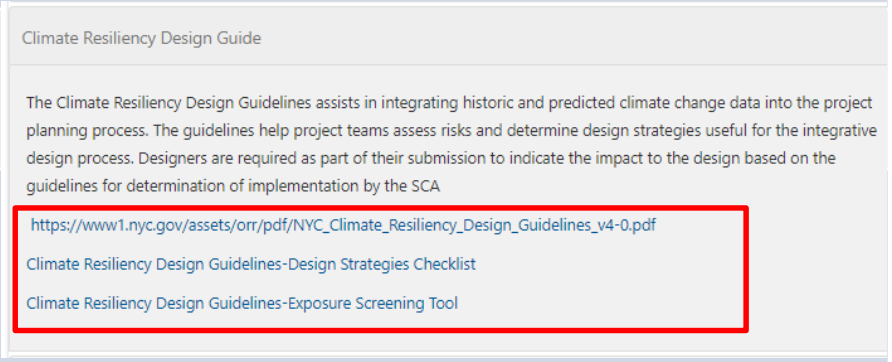
Strategies Achieved	0	0	0
Project Complies	No	No	No

Discovery #5 – Acoustics

Objective	References
Review the requirements for the Minimum (**Q8.1P**) and Enhanced Acoustics (**Q8.2**) credits and identify risks to achieving each credit. Include **potential risks** and **acoustical considerations** including programmatic adjacencies, spaces that may need special acoustical treatment to mitigate sound transmission, exterior and interior noise levels, etc.	Typically, the project team's Acoustical Consultant provides a preliminary level Acoustical Report or Narrative with exterior noise assessment.

Discovery #6 – Climate Resiliency

Objective	References
Identify all applicable climate hazards using the **Exposure Screening Tool**	
Perform a **Risk Assessment Methodology**, based on Exposure Screening Tool results. If Exposure Screening Tool results indicate a Medium or High exposure rating, follow instructions in tool to address the triggered climate risk.	
Identify possible resilient design interventions in response to increasing heat, increasing precipitation, and sea level rise, including but not limited to those recommended in **the Design Strategies Checklist** and consistent with related Green School Guide Credits	
Provide maps of **flood zones and sea level rise** present and predicted for the school building location, including High Tide and Future Floodplain maps for the 2020s, 2050s, 2080s and 2100 (see NYC Flood Hazard Mapper tool).	NYC Flood Hazard Mapper



Discovery #6

Appendix 4 - Design Strategies Checklist

This appendix provides a template for identifying possible design strategies to address climate change hazards, as described throughout the Guidelines.

Project Title:

Design Strategies Checklist (not exhaustive)

Extreme Heat	Comments	Extreme Precipitation	Comments	Sea Level Rise & Storm Surge	Comments
☐ Mechanical Cooling System More efficient than SCA standard		☐ Select High Elevation Site		☐ Select High Elevation Site	
☐ Minimize East-West Building Orientation		☐ Select Higher Elevation within Existing Site		☐ Select Higher Elevation within Existing Site	
☐ Passive Solar Cooling and Ventilation Systems		☐ Green Roof		☐ Raise Building Floor Elevation	
☐ Cool Roof (SRI appropriate)		☐ Protect Below Grade Areas from Flooding		☐ Waterproof Building Envelope	
☐ Green Roof (extensive)		☐ On-site Stormwater Management (gray)		☐ Elevate Critical Building Functions	
☐ Vegetated Structures (planters, walls)		☐ Reduce Impervious Areas		☐ Elevate Critical Equipment	
☐ Enhanced HVAC System, including space layout optimization, system scalability, and improved controls		☐ Permeable Pavement			
☐ Building Envelope More efficient than SCA standard		☐ Increase Green Spaces and Planted Areas			
☐ Shade Structures		☐ Tree Planting/Preservation			
☐ Structures Covered by Energy Generation Systems		☐ Bioswale			
☐ Light Colored Pavements (appropriate SRI)		☐ Rainwater Reuse Cisterns			
☐ Increase Planted Areas		☐ Stormwater Planter			
☐ Permeable Surfaces and Open-grid Pavement		☐ Grass Filter Strip			
☐ Bioswales		☐ Constructed Wetland			

Design Strategies Checklist - continued (not exhaustive)

Extreme Heat	Comments	Extreme Precipitation	Comments	Sea Level Rise & Storm Surge	Comments
☐ Daylighting		☐ Selection of Salt/Flood Tolerant Plantings		☐ Flexible Adaptation Pathway	
☐ Window shading		☐ Selection of Native Plantings		☐ Constructed Wetland	
☐ Operable windows		☐ Preservation of Natural Vegetation		☐ Preservation of Natural Wetland	
☐ Waste Heat Recovery		☐ Blue Roof		☐ Other:	
☐ Solar + storage		☐ Other			
☐ Trees and Shrubs					
☐ Preservation of Natural Vegetation					
☐ Other:					

Please refer to the CRDG v4 (https://www1.nyc.gov/assets/orr/pdf/NYC_Climate_Resiliency_Design_Guidelines_v4-0.pdf) for clarification on design strategies.

Discovery #6

Exposure Screening Tool

Complete grey shaded cells to screen the project for climate change related hazards. Some are populated with drop down lists.

General

Criticality	*See "Appendix - Criticality"*	Non-critical
Cost	*Major or Minor project*	
Estimated useful life (years)	*See "Appendix - Useful Life"*	
Projected construction completion date (calendar year)	*Review preliminary schedule to determine projected calendar year of construction completion*	
Projected end of useful life (year)	*Sum of the above (autocalculated)*	0
Climate projections	*See "Appendix - Design Adjustment"*	**Present to 2039**

SCA Specific Project Instructions: Complete all grey shaded cells on this tab (Exposure Screening Tool); subsequent tabs are for reference only. Consult NYC Climate Resiliency Design Guidelines v4.0 and data available at links included in the tables below. Estimated useful life for New Construction and Major Renovation projects should be 100 years; estimated useful life for tenant improvement projects should be 30 years.

Heat

Exposure Screening Tool

Risk Screening Question	Directions	Answer	Total Score and Next Steps
Does the facility include new construction of, or substantial improvements to, the landscape, hardscape, roof, HVAC, building envelope, ventilation system, or façade?	All parts of NYC are exposed to extreme heat. New construction projects or substantial improvements that include changes to the landscape, hardscape, roof, HVAC, building envelope, ventilation system, or façade could affect the material performance of a project, thermal comfort of occupants, and/or increase ambient temperatures. If the project includes any of those components, answer 'yes.'		
		Heat Vulnerability Score	
Is the facility in a neighborhood tabulation area with high heat vulnerability?	Identify the neighborhood tabulation area your facility is located in. Locate that neighborhood tabulation area on the Heat Vulnerability Index map located in Section II.A of the Guidelines and note the area's vulnerability. Select the corresponding answer. HVI map: http://a816-dohbesp.nyc.gov/IndicatorPublic/VisualizationData.aspx?id=2411,719b87,107,Summarize NTA map: https://data.cityofnewyork.us/City-Government/NTA-map/d3gk-pfyz		
		# of Heat Waves	
How many annual heat waves are projected to occur at the end of the facility's useful life?	See Section II.A of the Guidelines and note the annual heat wave projection according to the useful life of the facility. Select the corresponding answer.		

Total Score	Exposure Rating
2-5	Low
6-8	Medium
9-10	High

If the project is less than $50M:
...and scores "Medium" or "High" consult Section II.A of the Guidelines.
...and scores "Medium" or "High" consult Section II.A of the Guidelines.
...and scores a "Low" using the Guidelines is not required.

If the project is $50M or more:
...and scores "Medium" or "High" complete a detailed Risk Assessment (See Section III) and then consult Section II.A in the Guidelines.
...and scores a "Low" using the Guidelines is not required.

SCORE	0
EXPOSURE RATING	

SCA Specific Project Note: If project budget is less than $50 million and scores "Medium" or "High" in the Heat category, consult Section II. A in the Guidelines and consider modifications to the current design to address the triggered climate risk.

SCA Specific Project Note: If project budget is more than $50 million and scores "Medium" or "High" in the Heat category, consult Section II. A in the Guidelines and provide a list of recommendations for modifications to the current design to address the triggered climate risk. Include an order of magnitude cost for each recommended measure.

ation

Does the facility require a new DEP site connection proposal, or a modification to the existing site connection plan?	The intensity and frequency of precipitation events are projected to increase across all parts of NYC, creating new challenges for stormwater management and impacts to the built environment. New construction projects provide opportunities to accommodate increased precipitation flow volumes, and typically require submitting a new site drainage connection proposal to DEP for review and approval. If a project is a substantial improvement, the scope of work of the substantial improvement would dictate if the previously approved DEP site connection plan will require	

Total Score	Exposure Rating
1	Low
2	Medium
3-4	High

If the project is less than $50M:
...and scores "Medium" or "High" consult Section II.B of the Guidelines.
...and scores a "Low" using the Guidelines is not

SCA Specific Project Note: If project budget is less than $50 million and scores "Medium" or "High" in the Precipitation category, consult Section II. B in the Guidelines and consider modifications to the current design to address the triggered climate

Exposure Screening Tool | Appendix - Useful Life | Appendix - Critical Facilities | Appendix - Design Adjustm ...

All IDP Submissions shall be emailed to NYCGSG-Submissions@nycsca.org

NEW YORK CITY

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2019