Cornell Green Building Guidelines (CGBG)

Version 1.0 (Revised 03/30/06)

Introduction and Overview

Cornell Green Building Guidelines (CGBG) are the embodiment of Cornell University's green building goals and standards. The CGBG also serve to coordinate compliance with Executive Order 111 ("Green and Clean State Vehicles and Buildings") and use of the LEED™ Green Building Rating System with Cornell's own green building practices.

The CGBG is composed of:

- These Guidelines;
- Sustainable Design **Templates**, and
- The Design Process **Matrix**.

Sustainable Design Templates (the Templates**)** are a combined design guide and documentation tool. The Templates lists various sustainable design and construction strategies with basic guidance as to what is considered "baseline" and "high" levels of performance for each sustainable practice. The Templates also provide a means to document, using a narrative, the incorporation of those practices. Many of the practices identified in the Templates follow the general order of LEED™ but have been tailored to reflect campus priorities and encourage performance independent of a "point system".

The Design Process Matrix (the Matrix) is a table which identifies required design processes and deliverables according to six phases of the design and construction process. A brief description of these deliverables is included in the *Deliverables & Documentation* section of these Guidelines.

Compliance with the CGBG requires project teams to provide the applicable deliverables identified in the Matrix. Documentation of sustainable practices is principally achieved through completion of the Template at each applicable stage in design and construction. Compliance does NOT require incorporation of every sustainable practice. Rather, the goal of this program is to provide a rationale process for evaluating, incorporating, and documenting the use of strategies appropriate to each specific design effort.

The Cornell Green Building Guidelines are an adaptation and modification of guidance from various sources, including LEED™-NC (version 2.2); New York State Executive Order 111 "Green and Clean" State Vehicles and Buildings Guidelines, 2nd edition (E.O. 111); the University at Buffalo High Performance Building Guidelines, and the State of Minnesota Sustainable Building Guidelines (MSBG). However, many of the standards in the Matrix have been modified significantly from those original documents.

Alignment of Green Building Activities

LEED-NC version 2.2: While modified to reflect campus priorities and use, the CGBG is designed to remain compatible with LEED-NC v2.2, the most commonly used and detailed green building standards available at the time these guidelines were published. Specifically, the Sustainable Design Guide is organized into the same six categories as LEED-NC v2.2:

- Sustainable Sites (SS)
- Water Efficiency (WE)
- Energy & Atmosphere (EA)
- Materials & Resources (MR)
- Indoor Environmental Quality (EQ)
- Innovation in Design (ID)

In addition to the general organized categories, many of the practices within each element also parallel the similar practices of LEED™. By keeping the organization consistent, projects that elect to pursue LEED™ compliance can use the Design Guide Templates to document progress in each practice area without redundancy or overlap. However, projects which do not elect to pursue LEED™ need not utilize the more specific and measured criteria of LEED™ in documenting sustainable features.

E.O.111 Compliance: In order to align green building activities between Endowed Ithaca and the Contract Colleges of the University which are subject to Executive Order 111 ("Green and Clean State Vehicles and Buildings"), the Matrix and the Template have been formatted and arranged similarly.

While there are similarities, compliance with Cornell's guidelines will not necessarily reflect compliance with the structured and measured requirements of E.O. 111. For projects which are required to document compliance with E.O.111, duplicative documentation is not intended and the use of the Template for documentation is not required. Nonetheless, the use of the Templates early in a design process is still encouraged, since many of the measures included in the Templates are Cornell-specific and not included in LEED™ or E.O.111 guidance.

Deliverables & Documentation

Specific design processes are required by Cornell in order to further a whole-building design process as outlined in the Design Process Matrix. The specific documentation described in these Guidelines applies to all building projects, whether or not these efforts would earn LEED™ credits or be subject to E.O.111. This information will be used toward furthering Cornell's goal of continuous improvement in green building practices.

Specifically, the Matrix includes the following requirements:

- ***Design Charrette:*** Each project must undergo, sometime prior to Design Development, a Design Charrette (workshop) focused on sustainability. The Design Charrette shall include at least one person with the following qualifications:
    - A member of the Green Building Oversight Committee; OR
    - An individual who has been a member of a completed Cornell project which incorporated these Design Guidelines, documented to the satisfaction of the GBOC.

  The length and exact agenda of the meeting shall be as determined by the Project Manager, as appropriate to the size and complexity of the project.

- ***Identify Project Goals***: At the conclusion of the Design Charrette, the project design leader shall document the sustainable *goals and objectives* of the project through use of the **Template**. Note that not all measures included on the Template may be selected for, or applicable to, the project (for instance, some projects may not include any changes to water or plumbing system and have no impact on operational water use). Only measures which are applicable need be documented; all others should be identified as "N.A." for "Not Applicable". At each major design submittal and into construction, these template narratives shall be repeatedly updated to reflect the revised goals and achievements of the project.

- ***Environmental Site Analysis***: For projects causing changes to a site, the project designer shall review the measures included in the Site Strategy Templates and show an effort to improve the sustainable use of the site. Measures which will be incorporated into the project shall be documented using the applicable Template narrative space and refined using appropriate metrics as design develops.

- ***Design Energy Use Targets:*** Targets for operational energy use of the project, using the New York State Energy Code as a baseline, shall be developed by the design team and documented using the EA-1 Template during the schematic design process.

- ***Outline Commissioning Plan:*** An outline of the Commissioning Plan shall be prepared during schematic design. At a minimum, this outline shall include a listing of all equipment and systems which would be subject to commissioning and an overview of the timing and types of commissioning tasks which would apply to each equipment item or system on the list.

- ***Energy Modeling:*** Energy modeling is required for all projects which include new systems or equipment which are anticipated to impact future energy use. The goal of early modeling is to allow an informed decision about the selection and design of components, construction, and systems by considering Life Cycle energy costs into the selection. LEED™ and E.O.111 projects have very specific energy modeling requirements; other projects may use any Cornell-accepted modeling package or program which effectively analyzes operational energy use. Projects with no

appreciable impact on energy (for example, an internal remodeling project fed by existing HVAC system) may not require energy modeling. As indicated in the Matrix, initial energy modeling for design purposes and more accurate modeling to document projected energy use, once additional design information is available, are both required. The final energy model shall be documented in a separate report, with the results summarized in the narrative for Template EA-1.

- ***Define Energy Efficiency Strategies:*** In addition to the energy modeling, the design team shall define the specific strategies to be used to reduce energy in the new or renewed construction. These strategies shall be documented in Energy & Atmosphere Strategy Templates (using Template EA-1 and others as applicable).

- ***Draft and Final Commissioning Plan and Specifications***: Prior to the start of construction, written documentation to define the expectations of the contractor (whether internal Shops work or external Contract work) is required. Early in design, a preliminary listing of the materials needed for the project shall be produced; this will help the project team (and University green experts) identify "green alternatives" as design progresses. For example, certain finishes or furnishing may be available from a local manufacturer, or options with higher recycled content but equal performance may be available. On very simple projects, final specifications and requirements might be included right on the drawing or order; on most larger projects they would be included as part of a Contract Specification or detailed written appendage to a work order.

- ***Construction Submittals (IAQ Plan, Materials Certifications, Waste Management Plan, Commissioning Data, etc.):*** A number of green building strategies require specific documentation during construction. This documentation helps determine compliance with project goals and serves to inform and educate project personnel and future projects about what green practices were successful and useful on past project, and which practices were difficult to implement or achieve. A general description of the goals and requirements of documentation are included on applicable Templates.

- ***Final Documentation:*** At the conclusion of the project, a final set of Templates, updated by the project manager to document project performance, is required. Operations and Maintenance materials (in accordance with the university's General Conditions and General Requirements) and a final Commissioning Report are also needed. For applicable projects, E.O.111 or LEED™ Certifications are also required to document project accomplishments.

Guideline Management

The Green Building Oversight Committee (GBOC) is responsible for monitoring compliance with the CGBG and for updating the CGBG in accordance with Senior Administration. Therefore, a copy of the final Templates and supporting information as applicable shall be provided to a member of the GBOC at the project conclusion.

CORNELL UNIVERSITY - SUSTAINABLE DESIGN SUMMARY

Project: ***EXAMPLE***
Status/Phase: ***FINAL DESIGN***
Date: ***May-06***

KEY:
- ***Maximum Use of Strategy***
- ***Baseline Use of Strategy***
- ***Strategy Not Part of this Project***

Site Strategies:	**Summary/Key Metric:**
SS-1: Direct Development to Environmentally Appropriate Areas	Re-development Site
SS-P1: Construction Activity Pollution Prevention	SWPPP in place
SS-3: Re-Develop Environmentally-Damaged Site	Lead from past site use
SS-4.1: Use Sites linked to Public Transportation Access	On principal bus lines
SS-4.2: Encourage Bicycle Use	Covered bike racks included
SS-4.3: Encourage Low-Emission or Fuel-Efficient Vehicles	
SS-4.4: Limit Parking Capacity; Encourage Alt to Single-Occupancy Vehicle Use	Parking garage included in project
SS-5.1: Protect or Restore Habitat	Adjacent glade area protected
SS-5.2: Maximize Open Space	Integrated into quad system
SS-6.1: Stormwater Design: Quantity Control	Reduces run-off rate by 25%
SS-6.2: Stormwater Design: Quality Control	Reduced solids run-off 8%
SS-7.1: Heat Island Effect: Non-Roof	Light colored concrete used
SS-7.2: Heat Island Effect: Roof	Energy Star Roof System
SS-8: Light Pollution Reduction	Façade up-lighting part of scope
SS-9: Reduce Site Impact by Right-Sizing the Building	Reduced building 10% from schematic design!
Water Strategies:	
WE-1: Water Efficient Landscaping	No permanent irrigation system needed
WE-2: Innovative Wastewater Technologies	Pre-treatment for loading areas
WE-3: Water Use Reduction	Reduction of 5% from plumbing code max
Energy & Atmosphere Strategies:	
EA-1: Optimize Energy Performance	Modeling used to reduce energy use 24%
EA-2: On-Site Renewable Energy	
EA-3: Building Commissioning	Full Commissioning Included
EA-4: Refrigerant Management	Used Lake Source Cooling
EA-5: Measurement & Verification	Had to remove controls to make budget
EA-6: Green Power	
Materials & Resources Strategies:	
MR-P.1: Storage & Collection of Recyclables	Room reserved for recycled materials
MR-1: Building Reuse	Reused part of former annex
MR-2: Construction Waste Management	Recycled 20% of construction waste
MR-3: Materials Reuse	Tried to re-use slate but quality poor
MR-4: Recycled Content	Specs include recycled material for wallboard
MR-5: Regional Materials	Wood floors from Binghamton mfgr
MR-6: Rapidly Renewable Materials	
MR-7: Certified Wood	Not available in species desired
Indoor Environmental Quality Strategies:	
EQ-1: Outdoor Air Delivery Monitoring	CO2 monitors installed in lecture area
EQ-2: Increased Ventilation	Ventilation exceeds standards by 28%
EQ-3: Construction IAQ Management Plan	Contractor failed to follow specs
EQ-4: Low-Emitting Materials	Using ultra-low VOC Paints -- performed well
EQ-5: Indoor Chemical & Pollutant Source Control	Ventilated mop room
EQ-6: Controllability of Systems	Removed individual heat controls to meet budget
EQ-7: Thermal Comfort	Ventilation meets min goals
EQ-8: Daylight & Views	Daylighting for 80% of spaces; views for 72%
Innovation & Design Process Strategy:	
ID-1: Innovation in Design	Used Insulated forms that reduced material use

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Site Strategy SS-1: Direct Development to Environmentally Appropriate Areas

Performance Goals:

Baseline performance projects avoid the following sites:

- Prime agricultural land
- Land with an elevation lower than 5 feet above 100-year flood plain as defined by FEMA
- Land with slopes averaging about 15% or greater, or with an Unique Natural Area
- Land which is considered a Federal wetland per 40 CFR Parts 230-233 and Part 22.
- Land which is listed as wetland on State wetland maps

High performance: in addition to the above, construct within sites that meet one of the following criteria:

- Previously developed land that is substantially impervious prior to re-development.
- "Infill" projects immediately adjacent to, or filling in between, buildings averaging three stories or greater.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-P1: Construction Activity Pollution Prevention

Performance Goals:

Baseline performance:

- Create an Erosion and Sedimentation Control (ESC) Plan during the design phase of the project.
- Employ strategies such as temporary and permanent seeding, mulching, earth dikes, silt fencing, sediment traps and sediment basins to prevent the following:
  - Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
  - Prevent sedimentation of storm sewer or receiving streams.
  - Prevent polluting the air with dust and particulate matter.

High performance: in addition to the above, implement the following:

- Perform formal inspections and document adherence to the ESC Plan by a third party storm water specialist
- Achieve the goals listed above by implementation of measures, appropriate maintenance, and improvements where needed
- Provide a report documenting successful practices and features

Performance Record	*As work progresses, indicate status in each box below (**N.A., baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-2: Select a Site that Promotes Development Density & Community Connectivity

Performance Goals:

Baseline performance:

- Development is within areas of campus that is served by central heating and cooling infrastructure (or projects including an extension of that infrastructure)
- Development includes site that provides building occupants with at least one daily full-service meal option within building or within about 1 km of the building.

High performance (in addition to the above): implement at least three of the following strategies:

- Develop the project within an existing building or as an extension of an existing building.
- Construct or renovate a previously developed site located within walking distance (about 1 km) of an area with residential zoning which permits apartments or town homes.
- Locate the project on a site which includes pedestrian connections to at least two restaurants or hot-food eateries within walking distance (about 1 km) of the site.
- Locate the project within walking distance (about 1 km) of a fitness center, with shower facilities at either the fitness center or the project site.
- Locate the project within walking distance (about 1 km) of theatres, libraries, performing arts centers, parks, or similar recreation or leisure activity sites.
- Locate the project within walking distance of a public garden or natural walking path (at least 1 km long).

Performance Record	*As work progresses, indicate status in each box below (**N.A.,Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-3: Re-Develop Environmentally-Damaged Site

Performance Goals:

Baseline performance:

- Design and construct project on previously developed site that was not green space prior to the project.

High performance (in addition to the above):

- Select a site where previous development produced significant environmental contamination or a heavily-developed site bounded by sites within significant environmental value, or
- As part of the site development, restore some areas of low environmental value or to create areas of significantly higher environmental value (wetlands, areas or growth of native plants, etc).

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-4.1: Use Sites linked to Public Transportation Access

Performance Goals:

Baseline performance:

- Utilize a site that is served by at least two separate local bus lines which have established stops within convenient walking distance (about 0.5 km) of the building.

High performance (in addition to the above):

- Enhance public transportation access by incorporating in the project the construction or improvement of a public bus stop, providing a covered area for bus passengers to await buses, or similar actions which are designed to make public transportation use easier or more convenient, or
- Provide some other site-specific public transportation option for facility residents/occupants.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-4.2: Encourage Bicycle Use

Performance Goals:

Baseline performance:

- Provide development within a building or site which is accessible by bicycle without crossing public highways
- For any new access roads included in the project, design bike lanes or paths which connect to existing campus or community bike lanes or paths
- Provide a bike rack which allows for bikes to be secured within about 30 meters of the front or main building entry.

High performance: In addition to the above, provide the following:

- Provide covered bicycle storage area.
- If non-residential, provide adequate interior shower facilities for bike commuters (existing facilities are acceptable).

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-4.3: Encourage Low-Emission or Fuel-Efficient Vehicles

Performance Goals:

Baseline performance:

- Provide preferred parking of low-emission or fuel-efficient vehicles at the site.

High performance (in addition to the above):

- Provide one or more "shared-use" low-emission vehicles or provide alternative fuel vehicle fueling stations at the site.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-4.4: Limit Parking Capacity to Encourage Alternatives to Single-Occupancy Vehicle Use

Performance Goals:

Baseline performance:

- Provide preferred parking for multi-occupancy (carpool) vehicles; or
- Provide no-cost or low-cost shared parking passes through the University's transportation system to a significant portion of the building occupants.

High performance (in addition to the above):

- Provide no net "new" parking for the building; or
- Provide limited new parking such that the number of spaces is significantly less than that typically used based on the percentage of building occupants and single-vehicle use rate as calculated by the University's Transportation Office

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-5.1: Protect or Restore Habitat

Performance Goals:

Baseline performance:

- On greenfield sites*, perform a site survey to identify site elements and adopt a master plan for development of the project site. Carefully site the building to minimize disruption to existing ecosystems and design the building to minimize its footprint. Strategies include stacking the building program, tuck-under parking and sharing facilities with neighbors.
- Establish clearly marked construction boundaries to minimize disturbance of the existing site and restore previously degraded areas to their natural state.
- Encourage the use of native/adapted plants in the site development landscape plan and prohibit plant materials listed as invasive or noxious weed species.

High performance (in addition to the above):

- On greenfield sites, limit all site disturbance. Target limiting the disturbed areas to no more than about 14 meters beyond the building perimeter; 0.35 meters beyond surface walkways, patios, surface parking and minor utilities; 5 meters beyond primary roadway curbs and main utility branch trenches; and 8 meters beyond constructed areas with permeable surfaces (such as pervious paving areas, stormwater detention facilities and playing fields) that require additional staging areas in order to limit compaction in the constructed area.
- On previously developed or graded sites, restore or protect a significant portion of the site area as possible with native or adapted vegetation. Native/adapted plants are plants indigenous to a locality or cultivars of native plants that are adapted to the local climate and are not considered invasive species or noxious weeds.

** Greenfield sites are those that are not previously developed or graded and remain in a natural state. Previously developed sites are those that previously altered by direct human activities.*

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-5.2: Maximize Open Space

Performance Goals:

Baseline performance:

- Provide a high ratio of open space to development footprint to promote biodiversity.

High performance (in addition to the above):

- Provide vegetated open space area adjacent to the building that is sufficient to support outdoor activities or a sustained natural micro-climate or garden areas. Strategies include stacking the building program, tuck-under parking and green roofing.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-6.1: Stormwater Design: Quantity Control

Performance Goals:

Baseline performance:

- Limit disruption of natural water hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from stormwater runoff, and eliminating contaminants.
- Specify vegetated roofs, pervious paving, or other measures to minimize impervious surfaces. Review and consider reuse stormwater volumes generated for non-potable uses such as landscape irrigation, toilet and urinal flushing and custodial uses.

High performance (in addition to the above):

- Implement a stormwater management plan that prevents the post-development peak discharge rate and quantity from exceeding the pre-development peak discharge rate and quantity for the one- and two-year 24-hour design storms.
- Test the system during a storm event after installation; document and confirm its performance. Publicize the results to Cornell stakeholders.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-6.2: Stormwater Design: Quality Control

Performance Goals:

Baseline performance:

- Limit disruption and pollution of natural water flows by managing stormwater runoff.
- Use alternative surfaces (e.g., vegetated roofs, pervious pavement or grid pavers) and nonstructural techniques (e.g., rain gardens, vegetated swales, disconnection of imperviousness, rainwater recycling) to reduce imperviousness and promote infiltration thereby reducing pollutant loadings.
- Use sustainable design strategies (e.g., Low Impact Development, Environmentally Sensitive Design) to design integrated natural and mechanical treatment systems such as constructed wetlands, vegetated filters, and open channels to treat stormwater runoff.

High performance (in addition to the above):

- Implement a stormwater management plan that reduces impervious cover, promotes infiltration, and captures and treats the stormwater runoff from substantially all of the average annual rainfall1 using acceptable best management practices (BMPs).
- BMPs used to treat runoff must be capable of removing a majority of the average annual post development total suspended solids (TSS) load based on existing monitoring reports. BMPs are considered to meet these criteria if they are designed in accordance with New York State Stormwater Technical Standards.
- Test systems after installation during storm event; document successful performance.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-7.1: Heat Island Effect: Non-Roof

Performance Goals:

Baseline performance:

- Design non-roof surfaces to reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.
- Shade constructed surfaces on the site with landscape features and utilize high-reflectance materials for hardscape. Consider replacing constructed surfaces (i.e. roof, roads, sidewalks, etc.) with vegetated surfaces such as vegetated roofs and open grid paving or specify high-albedo materials to reduce the heat absorption.

High performance (in addition to the above):

- Provide any combination of the following strategies for a majority of the site hardscape (including roads, sidewalks, courtyards and parking lots):
  - Shade (within 5 years of occupancy)
  - Paving materials with a high Solar Reflectance Index (Target SRI $\geq$ 29)
  - Open grid pavement system

OR

- Place a significant portion of the parking spaces under cover (defined as under ground, under deck, under roof, or under a building). Any roof used to shade or cover parking must have a high Solar Reflectance Index (Target SRI $\geq$ 29)

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-7.2: Heat Island Effect: Roof

Performance Goals:

Baseline performance:

- Design roof surfaces to reduce heat islands.
- Consider installing high-albedo and vegetated roofs to reduce heat absorption.

High performance (in addition to the above):

- Use roofing materials having a high Solar Reflectance Index for most or all of the roof surface (Target SRIs: ≥ 78 for flat roofs; ≥ for steep roofs).

OR

- Install a vegetated roof for a majority of the roof area.

OR

- Install a combination of the above for most or all of the roof areas.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-8: Light Pollution Reduction

Performance Goals:

Baseline performance:

- Minimize light trespass from the building and site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare reduction, and reduce development impact on nocturnal environments.

High performance (in addition to the above):

- Design interior lighting such that the angle of maximum candela from most or all interior luminaires strikes opaque building interior surfaces and does not exit out through the windows.

OR

- Include controls such that most or all non-emergency interior lighting is automatically controlled to turn off during non-business hours. Provide manual override capability for after hours use.

AND

- For exterior, only light areas as required for safety, provide shielded lighting fixtures to eliminate light trespass, reduce light levels below the power densities defined in ASHRAE/IESNA Standard 90.1-2004, Exterior Lighting Section, and minimize or eliminate landscape lighting, façade lighting, and similar non-necessary exterior lighting not necessary for safety.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Site Strategy SS-9: Reduce Site Impact by Right-Sizing the Building
(No LEED corollary)

Performance Goals:

Baseline performance:

- Determine the necessary building size at the beginning of the project and do not allow the building to grow by more than 5% through the entire design and construction process.

High performance: reduce building impact by one of the following strategies:

- Through a focused design process, reduce the building size from the original design assumption.
- Construct the facility with a commensurate demolition of an underutilized facility to result in no net increase in square footage.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Water Efficiency Strategy WE-1: Water Efficient Landscaping
(Corresponds to LEED WE-1.1 & 1.2)

Performance Goals:

Baseline performance:

- Design landscaping to limit the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

High performance (in addition to the above):

- Eliminate or substantially minimize the installation of permanent irrigation systems;

OR

- Use non-potable water for a majority of the watering needs.

Performance Record	*As work progresses, indicate status in each box below (**N.A.,Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Water Efficiency Strategy WE-2: Innovative Wastewater Technologies

Performance Goals:

Baseline performance:

- Generate no wastewater discharges that do not meet the local Sewer Use Permit general discharge limits (i.e., do not require special permit conditions).

High performance (in addition to the above):

- Design and install composting toilet systems or other similar local waste treatment system;

OR

- Design and install on-site wastewater treatment system (which uses a biological treatment process) for a significant wastewater load.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Water Efficiency Strategy WE-3: Water Use Reduction
(Corresponds to LEED WE-3.1 & 3.2)

Performance Goals:

Baseline performance:

- Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.
- Specify high-efficiency fixtures which use less water than the Code standards.

High performance: In addition to the above, utilize one of more of the following strategies:

- Design and utilize systems which utilize storm water or grey water for sewage conveyance;
- Design and utilize dry urinals or similar significant water-conserving fixtures;
- Use infrared sensors or similar devices to limit water waste in most or all applicable potable water use locations;
- Re-use RO/DI water or implement a similar design which results in a substantial and permanent reduction in facility water use below that used by similar facilities of its type.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Energy & Atmosphere Strategy EA-1: Optimize Energy Performance
(Corresponds to LEED EA-P.2 & EA-1)

Performance Goals:

Baseline performance:

- Design the building envelope and systems to maximize energy performance.
- Use a computer simulation model to assess the energy performance and identify the most cost-effective energy efficiency measures and to set energy efficiency targets.
- Implement all energy reduction methods which have Life Cycle Costs which are less than the no-action alternative.
- Quantify energy performance as compared to a baseline building.
- Meet the New York State Energy Code

High performance (in addition to the above):

- Focusing on high-energy use areas, design and implement systems which reduce overall energy use to levels substantially below the New York State Energy Code.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Energy & Atmosphere Strategy EA-2: On-Site Renewable Energy

Performance Goals:

Baseline performance:

- Assess the project for on-site non-polluting and renewable energy potential including solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies.

High performance (in addition to the above):

- Design and install and on-site renewable energy system which provides a measurable fraction of the building annual energy use.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Energy & Atmosphere Strategy EA-3: Building Commissioning
(Corresponds to LEED EA-P.1 & EA-3)

Performance Goals:

Baseline performance:

- Verify that the building's energy related systems are installed, calibrated and perform according to the owner's project requirements, basis of design, and construction documents.
- Designate an individual as the Commissioning Authority (CxA) to lead, review and oversee the completion of the commissioning process activities.
- Develop and incorporate commissioning requirements into the construction documents.
- Complete a summary commissioning report.

High performance (in addition to the above):

- The CxA shall conduct, at a minimum, one commissioning design review of the Owner's Project Requirements (OPR), Basis of Design (BOD), and design documents prior to mid-construction documents phase and back-check the review comments in the subsequent design submission.
- The CxA shall review contractor submittals applicable to systems being commissioned for compliance with the OPR and BOD. This review shall be concurrent with A/E reviews and submitted to the design team and the Owner.
- Assure the involvement by the CxA in reviewing building operation within 10 months after substantial completion with O&M staff and occupants. Include a plan for resolution of outstanding commissioning-related issues.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Energy & Atmosphere Strategy EA-4: Refrigerant Management
(Corresponds to LEED EA-P.3 & EA-4)

Performance Goals:

Baseline performance:

- Do not use CFC-based refrigerants in new base building HVAC&R systems
- Do not allow users to utilize this class of refrigerant in equipment used within the building

High performance (in addition to the above):

- Do not use refrigerants of any kind in new base building HVAC&R systems (use Lake Source Cooling for buildings which are mechanically cooled).

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Energy & Atmosphere Strategy EA-5: Measurement & Verification

Performance Goals:

Baseline performance:

- Develop an M&V Plan to evaluate significant elements of the building and/or energy system performance.
- Characterize the building and/or energy systems through energy simulation or engineering analysis.

High performance (in addition to the above):

- Install the necessary metering equipment to measure significant energy use. Track performance by comparing predicted performance to actual performance, broken down by component or system as appropriate.
- Evaluate energy efficiency by comparing actual performance to baseline performance.
- Communicate results to Campus stakeholders.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Energy & Atmosphere Strategy EA-6: Green Power

Performance Goals:

Baseline performance:

- Make a symbolic gesture but obtaining a small portion of the building's electricity from renewable sources. Renewable sources are as defined by the Center for Resource Solutions (CRS) Green-e products certification requirements.

High performance (in addition to the above):

- Obtain a significant portion of the building's electricity from renewable sources by engaging in at least a two-year renewable energy contract. Renewable sources are as defined by the Center for Resource Solutions (CRS) Green-e products certification requirements.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Materials & Resources MR-P.1: Storage & Collection of Recyclables

Performance Goals:

Baseline performance:

- Provide building occupants with easily accessible recycling containers and services, for paper, corrugated cardboard, glass, plastics and metals.

High performance (in addition to the above), utilize one of more of these practices:

- Conduct a waste stream audit to establish a current building waste baseline.
- Develop a building occupant waste reduction and recycling program that addresses the separation, collection and storage of materials for recycling, including: paper, glass, plastics, cardboard, metals, batteries and fluorescent light bulbs.
- Consider source reduction purchasing strategies, and other opportunities for waste diversion from landfill disposal or incineration.
- Encourage a high level of recycling by building occupants through some type of measurable program, and report on the results.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Materials & Resources MR-1: Building Reuse

Performance Goals:

Baseline performance:

- Consider reuse of existing, previously occupied buildings, including structure, envelope and elements. Remove elements that pose contamination risk to building occupants and upgrade components that would improve energy and water efficiency such as windows, mechanical systems and plumbing fixtures.

High performance (in addition to the above):

- Retain and re-use a large portion of existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing, excluding window assemblies and non-structural roofing material).

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Materials & Resources MR-2: Construction Waste Management

Performance Goals:

Baseline performance:

- Develop and implement a construction waste management plan that, at a minimum, identifies the materials to be diverted from disposal and whether the materials will be sorted on-site or co-mingled.
- Provide specific recycle and/or salvage options for all major non-hazardous construction and demolition debris.

High performance (in addition to the above):

- Recycle and/or salvage a high percentage of the non-hazardous construction and demolition debris by strict adherence to the Plan.
- Document the achievement, indicating specific waste categories, amounts, and recycling locations so this information can be shared on campus.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Materials & Resources MR-3: Materials Reuse

Performance Goals:

Baseline performance:

- Identify opportunities to incorporate salvaged materials into building design and research potential material suppliers. Consider salvaged materials such as beams and posts, flooring, paneling, doors and frames, cabinetry and furniture, brick and decorative items.

High performance (in addition to the above):

- Use salvaged, refurbished or reused materials for at least one ***significant*** element of the project.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Materials & Resources MR-4: Recycled Content

Performance Goals:

Baseline performance:

- Establish a project goal for recycled content materials and identify material suppliers that can achieve this goal.
- During construction, ensure that the specified recycled content materials are installed.
- Consider a range of environmental, economic and performance attributes when selecting products and materials.
- Specifically identify materials in the specifications which are chosen for high recycled content.

High performance (in addition to the above):

- Document the use of recycled materials for major building finishes, furnishings, or components, listing types of materials and dollar values, so that this information can be shared among project managers.
- Identify which products perform well and which (if any) below expectations.

Performance Record	*As work progresses, indicate status in each box below (**N.A.,Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Materials & Resources MR-5: Regional Materials

Performance Goals:

Baseline performance:

- Establish a project goal for locally sourced materials, and identify materials and material suppliers that can achieve this goal.
- Consider a range of environmental, economic and performance attributes when selecting products and materials.
- Specify and use building materials or products that have been extracted, harvested or recovered, as well as manufactured, in local regions, with preferences in the following order:
    - Local community (County)
    - State
    - Region (New England and Southeastern Canada)
    - North America

High performance (in addition to the above):

- During construction, utilize local and regional materials, components, and furnishings.
- Document types of local materials used, source, and dollar value so that this information can be shared with other Project Managers.
- Identify which products perform well and which (if any) below expectations.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Materials & Resources MR-6: Rapidly Renewable Materials

Performance Goals:

Baseline performance:

- Establish a project goal for rapidly renewable materials and identify products and suppliers that can support achievement of this goal.
- Consider materials such as bamboo, wool, cotton insulation, agrifiber, linoleum, wheat board, strawboard and cork.
- Specify the use of renewable materials.

High performance (in addition to the above):

- Use rapidly renewable building materials and products for significant building elements.
- Document the types, cost, and source of such materials so that this information can be shared with other Project Managers.
- Include information about which products perform well and which (if any) perform below expectations.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Materials & Resources MR-7: Certified Wood

Performance Goals:

Baseline performance:

- Establish a project goal for FSC-certified wood products and identify suppliers that can achieve this goal.
- Specify wood-based materials and products, which are certified in accordance with the Forest Stewardship Council's (FSC) Principles and Criteria or a similar recognized and audited system, for major wood building components.

High performance (in addition to the above):

- Use certified wood products for significant building elements.
- Document the types, cost, and source of such materials so that this information can be shared with other Project Managers.
- Include information about product quality and performance.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Indoor Environmental Quality EQ-P.2: Environmental Tobacco Smoke Control

Performance Goals:

Baseline performance:

- Prohibit smoking in the building during and after construction
- Locate any exterior designated smoking areas at least 25 feet away from entries, outdoor air intakes and operable windows.

High performance:

- Implement any policy or program which directly results in the cessation of smoking by one or more construction crew members, project members, or building occupants and document this achievement.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Indoor Environmental Quality EQ-1: Outdoor Air Delivery Monitoring

Performance Goals:

Baseline performance:

- Install carbon dioxide and airflow measurement equipment and feed the information to the HVAC system and/or Building Automation System (BAS) to trigger corrective action, if applicable.
- If such automatic controls are not feasible with the building systems, use the measurement equipment to trigger alarms that inform building operators or occupants of a possible deficiency in outdoor air delivery.

High performance (in addition to the above):

- Monitor carbon dioxide concentrations within all densely occupied spaces (classrooms, teaching labs, auditoriums, cafes, etc) at the breathing level of those spaces.
- For each mechanical ventilation system serving non-densely occupied spaces, provide a direct outdoor airflow measurement device capable of measuring the minimum outdoor airflow rate with an accuracy of plus or minus about 15% of the design minimum outdoor air rate, as defined by ASHRAE 62.1-2004.
- Provide for reduced ventilation air when occupancy is light (based on measurements).

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Indoor Environmental Quality EQ-2: Increased Ventilation
(Corresponds to LEED EQ-P.1 & EQ-2)

Performance Goals:

Baseline performance:

- Increase breathing zone outdoor air ventilation rates to all occupied spaces to levels exceeding the minimum rates required by ASHRAE Standard 62.1-2004.
- For Mechanically ventilated Spaces: Use heat recovery, where appropriate, to minimize the additional energy consumption associated with higher ventilation rates.

High performance (in addition to the above):

- Increase breathing zone outdoor air ventilation rates to all occupied spaces by significant levels above the minimum rates required by ASHRAE Standard 62.1-2004 without substantially impacting energy costs.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Indoor Environmental Quality EQ-3: Construction IAQ Management Plan

Performance Goals:

Baseline performance:

- Adopt an IAQ management plan to protect the HVAC system during construction, control pollutant sources and interrupt contamination pathways. Sequence the installation of materials to avoid contamination of absorptive materials such as insulation, carpeting, ceiling tile, and gypsum wallboard.
- Prior to occupancy, perform a building flush-out or test the air contaminant levels in the building.

High performance (in addition to the above):

- During construction meet or exceed the recommended Control Measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 1995, Chapter 3.
- Protect stored on-site or installed absorptive materials from moisture damage.
- If permanently installed air handlers are used during construction, provide effective filtration media at each return air grille, or isolate and do not use permanent ventilation systems. Replace all filtration media immediately prior to occupancy.
- After construction ends, prior to occupancy and with all interior finishes installed, perform and document a comprehensive building flush-out while maintaining an internal temperature of at least 60 degrees F and relative humidity no higher than about 60%.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Indoor Environmental Quality EQ-4: Low-Emitting Materials

Performance Goals:

Baseline performance:

- Specify low-VOC paints and coatings in construction documents, especially for interior coating systems. Ensure that VOC limits are clearly stated in each section of the specifications where paints and coatings are addressed.
- Specify Adhesives, Sealants and Sealant Primers which adhere to South Coast Air Quality Management District (SCAQMD) Rule #1168 or similar established and verified standard.
- Specify carpet and carpet cushion installed in the building interior to meet the testing and product requirements of the Carpet and Rug Institute's Green Label Plus program or a similar established program..
- Specify wood and agrifiber products that contain no added urea-formaldehyde resins.
- Specify laminating adhesives for field and shop applied assemblies that contain no added urea formaldehyde resins.

High Performance (in addition to the above):

- In addition to just specifying low-emitting materials, provide a list of specific products which meet these requirements and perform well.
- During construction, utilize these low-emitting materials wherever possible and effective.
- Document types of products and materials used, source, and dollar value so that this information can be shared with other Project Managers.
- Identify which products perform well and which (if any) perform below expectations.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Indoor Environmental Quality EQ-5: Indoor Chemical & Pollutant Source Control

Performance Goals:

Baseline performance:

- Design facility cleaning and maintenance areas with isolated exhaust systems for contaminants, and maintain physical isolation from the rest of the regularly occupied areas of the building.
- Install permanent architectural entryway systems such as grills or grates to prevent occupant-borne contaminants from entering the building.
- Install high-level filtration systems in air handling units processing both return air and outside supply air.
- Ensure that air handling units can accommodate required filter sizes and pressure drops.

High Performance (in addition to the above):

- Ensure through post-construction monitoring and documentation that systems effectively isolate areas where contaminants are likely to be present and correct any deficiencies.
- Where applicable (depending on source) use laboratory analysis of air collected by environmental professionals to check and document this performance.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Indoor Environmental Quality EQ-6: Controllability of Systems

Performance Goals:

Baseline performance:

- Provide a high level of lighting system and thermal comfort system control.

High performance (in addition to the above):

- Provide individual lighting controls for all or nearly all the building occupants to enable adjustments to suit individual task needs and preferences.
- Provide individual comfort controls for a majority of the building occupants to enable adjustments to suit individual task needs and preferences.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Indoor Environmental Quality EQ-7: Thermal Comfort

Performance Goals:

Baseline performance:

- Design HVAC systems and the building envelope to meet the requirements of ASHRAE Standard 55-2004, Thermal Comfort Conditions for Human Occupancy
-

High performance (in addition to the above):

- Provide for the assessment of building thermal comfort over time through measurement, analysis, and reporting of psychometric information.
- Report on any deficiencies so that other projects may evaluate for improvements.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Indoor Environmental Quality EQ-8: Daylight & Views

Performance Goals:

Baseline performance:

- Design the building to maximize interior daylighting.

High performance (in addition to the above):

- Achieve direct line of sight to the outdoor environment via vision glazing for building occupants in most or all of the regularly occupied areas.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

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Innovation & Design Process ID-1: Innovation in Design

Performance Goals:

Baseline performance:

- Incorporate sustainable design innovations not covered by other sections of these guidelines

High performance:

- Incorporate and document significant design innovations not covered by other sections of these guidelines which result in significant, measurable improvements.
- Provide design guidance for those design practices or strategies which can be extended to other facilities or projects on campus, and communicate these practices in a Toolbox Training session or similar forum.

Performance Record	*As work progresses, indicate status in each box below (**N.A., Baseline, or High**)*				
	Pre-Design Intent	Schematic Design	Design Development	Construction Documents	Construction Complete

Narrative: As work progresses, provide updated narratives which summarizes the Planning, Design, and Implementation of this Strategy:

Design Process Matrix

Cornell Green Building Guidelines (3/30/06)

	I. Pre-Design	II. Schematic Design	III. Design Development	IV. Construction Documents	V. Construction Phase	VI. Final Acceptance/ Occupancy
Responsibility	**Consultant**	**Consultant**	**Consultant**	**Consultant & Comm Agent**	**Construction Manager (some tasks delegated in contract)**	**Project Manager & Commissioning Agent**
Deliverables	□ Design Charrette □ Identify Project Goals (Document using Templates)	□ Environmental Site Analysis (Record on Site Use Templates) □ Design Energy Use Targets (Record on Energy Templates)[1] □ Outline Commissioning Plan	□ Run Intitial Computer Energy Model(s)[1] □ Define Energy Eff. Strategies (Document using Templates)[1] □ Draft Commissioning Plan □ Preliminary Green Materials Specifications	□ Final Computer Energy Model & Report[1] □ Final Specs (Including Final Commissioning Plan)	□ Construction IAQ Plan [2] □ Materials Certifications[2] □ Waste Management Certs[2] □ Other Project Documentation[2]	□ EO 111/ LEED™ Certifications (as applic) □ Owner's Manual/O&M Info □ Commissioning Report
Updating Tasks		□ Review and Update Templates	□ Review and Update Templates	□ Review and Update Templates	□ Monitor and Administer Commissioning	□ Review and Update Templates - Final Report

Notes:

[1]Required of project types which impact operational energy use in any significant way.

[2]Submittals listed are referenced to specific strategies and do not apply to all projects; see Templates.