CERTIFICATE OF OCCUPANCY NARRATIVE SAMPLE

I. PROJECT DESCRIPTION

The *Cambridge Academy* is meeting the Certificate of Occupancy application requirement with a minimum of LEED Silver Certification for Schools New Construction and Major Renovations 2009. The project is will track 69 points.

II. AFFIDAVIT

I, John Doe, do hereby affirm that I have thoroughly reviewed the supporting documents for **LEED for 2009 Schools New Construction and Major Renovations** and confirm that Cambridge Academy meets the requirement for **Silver** with **69 points**. Cambridge Academy, 25 Cambridge Ave, Cambridge, MA has been designed to meet the green building requirement under Article 22.20 of the Cambridge Zoning Ordinance.

John Doe
LEED Administrator and Sustainability Consultant
Registered 12/2/2011


LEED AP BD+C

GREEN BUILDING CERTIFICATION INSTITUTE HEREBY CERTIFIES THAT

John Doe

HAS ATTAINED THE DESIGNATION OF

LEED AP BUILDING DESIGN + CONSTRUCTION

BY DEMONSTRATING KNOWLEDGE OF GREEN BUILDING PRACTICE REQUIRED FOR SUCCESSFUL IMPLEMENTATION OF THE LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED®) GREEN BUILDING RATING SYSTEM™

December 2, 2011 | 00000000 | December 1, 2013

GBCI

III. LEED 2009 for SCHOOLS NEW CONSTRUCTION AND MAJOR RENNOVATIONS CHECKLIST

A. Please see attached for the official checklist

B. The project meets the silver certification requirement achieving 69 points total.

Sustainable Sites	[17 points]
Water Efficiency	[8 points]
Energy and Atmosphere	[20 points]
Materials and Resources	[4 points]
Indoor Environmental Quality	[14 points]
Innovation and Design Process	[2 points]
Regional Priority	[4 points]
Total Points	**[69 points]**

IV. NARRATIVE FOR LEED CREDITS

The *Cambridge Academy* fulfills all the prerequisites for all categories.

A. SUSTAINABLE SITES

SSP1: Construction Activity Pollution Prevention **[Required]**

a. *Cambridge Academy* design documents include erosion and sedimentation plan that conforms to the local codes and the EPA Construction General Permit of the National Pollution Discharge Elimination System Program NPDES.

b. A standard engineering practices for erosion and sedimentation control was implemented on site during construction. A Stormwater Pollution Prevention Plan (SWPPP) has been prepared for the site per the requirements of the United States Environmental Protection Agency National Pollutant Discharge Elimination System Construction General Permit. The document was reviewed by WorkEPP and Partners. The SWPPP was used to document compliance with the Leadership in Energy and Environmental Design Sustainable Sites Prerequisite for Erosion and Sedimentation Control.

SSP2: Environmental Site Assessment **[Required]**

Cambridge Academy performed an environmental site assessment in two phases. Based on the assessment, *Cambridge Academy* provided remediation using the National Emission Standards for Hazardous Air Pollutants and cleaned the asbestos.

SSC1: Site Selection **[1 point]**

Cambridge Academy has not been developed on these sites:

a. Prime farmland as defined citation in 7CFR657.5.

b. Previously undeveloped land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by FEMA.

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

d. Within 100 feet of any wetlands as US Code of Fed. Regulations 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.

e. Previously undeveloped land that is within 50 feet of a water body that supports or could support fish, recreation or industrial use, consistent with the terminology of the Clean Water Act.

f. Land which prior to acquisition for the project was public parkland, unless land of equal or greater value as parkland is accepted in trade by the public landowner.

SSC2: Development Density and Community Connectivity **[4 points]**

Connectivity.

a. The academy is located on a previously developed site.

b. The academy is within 0.5 miles of a densely populated residential area.

c. The academy is within 0.5 miles of at least 10 basic services. The services include cafes, groceries, schools, parks, restaurants, and community centers. The lists of all services are attached in Section SD.1, Page 7.

d. The academy has access between the building and the services as shown in the site plan. Section SD.2, Page 8.

SSC3: Brownfield Development **[1 point]**

This project achieves this point by completing the requirement for SS prerequisite 2.

SSC4.1: Alternative Transportation – public transportation access **[4 points]**

Cambridge Academy achieves this credit by meeting the requirement for option 2, Bus Stop Proximity. The site is located within 0.25 miles walking distance from bus lines 64, 70, 1, 68, 69, and 91. Section SD.3, Page 9.

Cambridge Academy also achieves the requirements for all options as there is a dedicated biking lanes on more than two sides of the buildings. Section SD.4, Page 10.

SSC4.2: Alternative transportation – bicycle storage and changing room **[1 point]**

The academy provides 70 bicycle racks within 200 yards of the building entrance for staff and students above grade 3 level. The number of bicycle racks exceeds the 5% of all building occupants. The project provides shower and changing facilities along with bike lanes that extend at least to the end of the school property in 2 or more directions with no barriers on school property. The site plan showing the location of bicycle storage, shower and facilities, bike lanes can be found in Section SD.5, Page 11.

SSC 4.3: Alternative Transportation-Low-E and Fuel-Efficient Vehicles **[1 point]**

The project achieves this credit by meeting the requirement for option 1. The academy provides 3 parking spaces for low-emitting and fuel-efficient vehicles which is 5% of the total -65- vehicle parking capacity. The academy also provides carpool drop-off area.

SSC 6.1 Stormwater Design, Quantity Control **[1 point]**

The project achieves this credit by meeting the requirement for case 2. The project uses various Best Management Practices (BMP) and other measures to minimize runoff and improve water quality. The drainage is designed to meet the provisions of the MASSDEP Stormwater Management Policy for a redevelopment project. The stormwater management strategies meet with the City of Cambridge standards and standard engineering practices of the State of Massachusetts. BMPs include underground detention/infiltration systems, proprietary water quality management structures, and a rainwater collection/reuse cistern. The rainwater is captured and reused within the building for toilet flushing. The runoff from the roofs will be discharged directly to the rainwater cistern in the proposed parking garage as shown in the site plan. As a result of the BMPs, there is a 25% decrease in the volume of stormwater runoff from the 2-year 24-hour design storm. Please see calculations in Section SD.6, Page 12.

SSC 6.2 Stormwater Design, Quality Control **[1 point]**

Rainwater harvesting system is used to collect and treat stormwater on site. The plan treats the stormwater runoff from 90% of the average annual rainfall using various BMPs mentioned in SSC 6.1.

SSC 7.1 Heat Island Effect, Non-Roof **[1 point]**

The project achieves this credit by meeting the requirement for option 2. The academy provides underground parking garage, exceeding 50% of the total parking spaces available on site. The roof is vegetated and solar panels are provided on the south half of the building. Please see roof plan in Section SD.7, Page 13.

SSC 7.2 Heat Island Effect, Roof **[1 point]**

The project achieves this credit by meeting the requirement for option 1. The project uses roof materials with a solar reflectance of 78 as it is considered as a low-sloped-roof. This roof material with a solar reflectance index of 78 will be implemented for a minimum of 75% of the roof surface.

SSC 10 Joint Use of Facilities **[1 point]**

The project achieves this credit by meeting the requirement for option 2. The academy provides 2 dedicated-use spaces in the building including a health clinic, library, parking lot and police offices.

B. WATER EFFICIENCY

WEP1: Water Use Reduction **[Required]**

The project achieves this credit by implementing strategies that allows 20% reduction in water use. The main strategies are reusing rainwater and using low flow plumbing fixtures. The low flow plumbing fixtures have been installed through all the restrooms, rainwater is being stored and reused to reduce water use in restrooms, and irrigation will be reduced by using native, tolerant plant species. The calculation for the water use is in Section SD.8, Page 14.

WEC1: Water Efficient Landscaping **[4 points]**

The project achieves this credit by meeting the requirement for option 2, path 2. All plants used on the site require no irrigation. Please refer to landscape plan in section SD.8, Page 14-A.

WEC3: Water Use Reduction **[4 points]**

The project achieves water use reduction by using high efficient plumbing fixtures and rainwater harvesting for flushing. The strategies allows minimum of 40% water use reduction. The calculation for water reduction percentage is in Section SD.9, Page 15.

C. ENERGY & ATMOSPHERE

EAP1: Fundamental Commissioning of Building Energy Systems **[Required]**

The commissioning agent reviewed and oversaw the commissioning process activities including heating, ventilating, air conditioning and refrigeration systems and associated controls, lighting and daylighting controls, domestic hot water systems, and renewable energy systems.

EAP2: Minimum Energy Performance **[Required]**

The project has an energy consultant that evaluates the energy performance of the building. The current prediction for energy reduction is 35% based on the energy modeling. The project achieves higher energy standard than ASHRAE 90.1-2007 for

major building components such as the envelope, HVAC, lighting, and domestic hot water. The calculation in Section SD.10, Page 16 shows minimum 10 percent savings required for this credit.

EAP3: Fundamental Refrigerant Management **[Required]**

The building does not use any chlorofluorocarbon based refrigerants.

EAC1: Optimize Energy Performance **[12 points]**

The project has 15,000 square feet of PV-panels for on-site solar generation. We used a simulation model for calculating the building performance as shown in Section SD.11, Page 17. The energy model being used to estimate annual energy use for the academy has been created using the software program Design Builder, version 2.0. The inputs for the program have been determined based on the building geometry, materials and systems, occupancy, and building schedules. Based on the modeling and calculation, the total energy use reduction save is approximately 40%.

EAC2: On-site Renewable Energy **[4 points]**

The academy installed PV-panels and generated at least 10% of the total energy use of the building. The total energy use was calculated using the total occupancy, type of usage, and duration of usage.

EAC3: Enhanced Commissioning **[2 points]**

A commissioning authority has been overseeing the completion of all commissioning process activities. The CxA conducted a design review, reviewed contractor submittals, developed a system manual, verified the requirements for training operating personnel and reviewed the operation of the building with operations and maintenance staff and occupants.

EAC5: Measurement and Verification **[2 points]**

The project achieved this credit by meeting the requirement for option 1. The verification will be completed with energy model simulation.

D. MATERIAL & RESOURCES

MRP1: Storage and Collection of Recyclables **[Required]**

The academy has dedicated recycling area on each of the floor. Also, the academy used local waste handlers to collect glass, plastic, and paper.

MRC2: Construction Waste Management **[1 point]**

The project implemented the construction waste management plan diverting 50% of the construction waste from landfill. Many of the materials used on site was recycled or sorted on site before transporting to Cambridge Refinery Center.

MRC4: Recycled Content **[2 points]**

The project uses recycled materials for construction such that the sum of post-consumer recycled content is 12% of the total value of the materials in the project.

MRC5: Regional Materials **[1 points]**

The project only used building materials or products that have been extracted, harvested or recovered, and manufactured, within 500 miles of the project site for 10% of the total materials value.

E. INDOOR ENVIRONMENTAL QUALITY

EQP1: Minimum IAQ Performance **[Required]**

The project meets the minimum requirements of ASHRAE 62-2007 Table 6-1 the "Minimum Ventilation Rates in Breathing Zone".

EQP2: Environmental Tobacco Smoke (ETS) control **[Required]**

The project achieves this credit by meeting the requirement for option 1. Smoking is prohibited on the property and this policy will be strictly enforced.

EQP3: Minimum Acoustical Performance **[Required]**

The academy will meet the minimal acoustical performance prerequisite by providing materials that has noise reduction coefficient of 0.70 or higher.

EQC1: Outdoor Air Delivery Monitoring **[1 point]**

The project achieves this credit by meeting the requirement for case 1. The academy installed a permanent system for CO2 monitoring and outdoor air measurement, required for mechanically ventilated spaces.

EQC3.1: Construction IAQ Management Plan – during construction **[1 point]**

The management plan for the construction and preoccupancy phases of the building is in Section SD.11, Page 18. The project meets all the requirements for implementation and documentation of SMACNA.

EQC3.2: Construction IAQ Management Plan – before occupancy **[1 point]**

The project achieves this credit by meeting the requirement for option1. The project performed a flush-out to meet the requirement.

EQC4: Low-emitting Materials **[5 points]**

The project achieves all of credit 4 – adhesives and sealants, paints and coatings, flooring systems, composite wood and agrifiber products, and furniture and furnishings. The specs are provided in Section SD. 12, Page 19.

EQC6.2 Controllability of Systems – thermal comfort **[1 point]**

The academy complies with the requirements of this credit by allowing at least 50% of occupants have individual access to control either the air speed, air temperature, radiant temperature, or humidity provided by mechanical systems, in individually occupied spaces.

EQC7.1 Thermal Comfort – design **[1 point]**

The academy complies with the Massachusetts State Building Code, IECC 2009 and ASHRAE Standard 55 climate zone 5. The mechanical systems selected for the building is designed to maintain the required thermal comfort standards as recommended by ASHRAE Standard 55.

EQC7.2 Thermal Comfort Verification **[1 point]**

Upon the usage of the building, there will be a survey to find out if the occupants are satisfied with the thermal conditions of the building. If not satisfied, we agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied.

EQC8.1 Daylight and Views – daylight **[3 points]**

The project achieves this credit by meeting the requirement for option 1. The academy is designed so that 90% of classroom spaces are meeting the illuminance levels of a minimum of 25 footcandles and a maximum of 500 fc in a clear sky condition on the dates indicate in the guideline. Please see Section SD. 13, Page 20 for calculation and diagrams.

F. INNOVATION AND DESIGN

IDC1.1 Innovation & Design Education Plan **[1 point]**

The academy installed signage throughout the building and property that identifies the briefly explains the environmental qualities of certain sustainable design features.

IDC1.2 Innovation & Design – Exemplary Performance – Joint Use of Facilities **[1 point]**

The academy shares the facilities with Cambridge Community Center and Letter Press Association.

G. REGIONAL PRIORITY

RPC1: Regional Priority **[4 points]**

The project achieved the following regional credits: EAC2, SSC3, SSC7.4, SSC7.2.