10097687 Cornell University, Milstein Hall, 6/14/2012, Construction Application Review



How to Interpret this Report

Purpose: The Leadership in Energy and Environmental Design (LEED) Rating System was designed by the US Green Building Council to encourage and facilitate the development of more sustainable buildings.

Environmental Categories: The report is organized into five environmental categories as defined by LEED including: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation and Design Process, Administrative Inquiries,

LEED Prerequisites: Prerequisites must be achieved. Non-compliant prerequisites must be resolved before a certification can be awarded.

LEED Credits The environmental categories are subdivided into the established LEED credits, which are based on desired performance goals within each category. An assessment of whether the credit is earned or denied is made and a narrative describes the basis for the assessment.

Achieved: The applicant has provided the mandatory documentation which supports the achievements of the credit requirements, achieving the associated points. Currently the project has scored the adjacent points in this category.

Denied: The applicant has applied for a point in a particular credit, but has misinterpreted the credit intent or cannot substantiate meeting the requirements. Currently the project has the adjacent points in this category.

Rating: This Project has achieved enough points for Gold Rating.

Official Scores: Official LEED v2 Scores: Certified: 26-32 Silver Rating: 33-38 Gold Rating: 39-51 Platinum Rating: 52+

Sustainable Sites, Possible Points=14; Earned=8; Denied=0

Construction Activity Pollution Prevention, Prerequisite 1-Version 2.2 *Construction Application, 1/10/2012*

The LEED Submittal Template has been provided stating that the project's erosion and sedimentation control plan conforms to the 2003 EPA Construction General Permit, which outlines the provisions necessary to comply with Phase I and Phase II of the NPDES program. A narrative describing the implemented erosion and sedimentation control measures and a copy of the project's erosion and sedimentation control plan have been provided.

Please note that although page 1 of the template indicates that the project's erosion and sedimentation control plan is based on the NPDES program, the narrative on page 2 of the template indicates that the plan is based on the state's program. As the template narrative confirms that the local program is in

compliance with NPDES requirements, prerequisite compliance is not affected. For future submittals, ensure that the appropriate compliance path is chosen on page 1 of the template.

Site Selection, Credit 1-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that the project site does not meet any of the prohibited criteria.

Development Density and Community Connectivity, Credit 2-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that the project site is located within 0.5 miles of 13 community services and at least 1 residential district, with a minimum density of at least 10 units per acre. Additionally, a listing of the neighborhood services has been provided in supporting documentation. The required site map showing the 0.5 mile radius and the locations of the community services and residential district has also been provided.

Brownfield Redevelopment, Credit 3-Version 2.2

Credit not used.

Alternative Transportation: Public Transportation Access, Credit 4.1-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that the project is served by 4 campus bus lines within 0.25 miles of the project site. A scaled drawing showing the location of the transit stops has been provided. The project team has also provided a screenshot from the TCAT website and a TCAT route map for all 4 campus lines.

Alternative Transportation: Bicycle Storage and Changing Rooms, Credit 4.2-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that the project is non-residential. The Template states that bicycle storage facilities have been provided to serve 5.57% of FTE and Transient building occupants, measured at peak occupancy, and shower facilities for 5.0% of the FTE. Plans have been provided showing the location of the shower/changing facilities and the bike storage facilities.

Alternative Transportation: Low-Emitting and Fuel Efficient Vehicles, Credit 4.3-Version 2.2 Credit not used.

Alternative Transportation: Parking Capacity, Credit 4.4-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that no new parking has been added to the site.

Site Development: Protect or Restore Habitat, Credit 5.1-Version 2.2

Credit not used.

Site Development: Maximize Open Space, Credit 5.2-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that the project has been developed in an area with zoning requirements, but with no requirement for open space, and has provided vegetated open space equal to 49% of the project's site area. A site drawing has been provided in support of this credit.

Stormwater Management: Quantity Control, Credit 6.1-Version 2.2

Credit not used.

Stormwater Management: Quality Control, Credit 6.2-Version 2.2

Credit not used.

Heat Island Effect: Non-Roof, Credit 7.1-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/10/2010

The LEED Submittal Template has been provided stating that 57.88% of the site hardscape has been paved with highly reflective materials. The calculations provided in the template indicate that of the 39,110 square feet of total site hardscape, 22,640 square feet (57.88%) have been paved with non-colored concrete. A site plan, showing the paved areas, has been provided.

Heat Island Effect: Roof, Credit 7.2-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that 100% of the total roof area is vegetated. The project team has also provided roof plans.

Light Pollution Reduction, 8-Version 2.2

Credit not used.

Water Efficiency, Possible Points=5; Earned=4; Denied=0

Water Efficient Landscaping, Credit 1.1-1.2-Version 2.2

Points earned=2, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that no permanent irrigation system has been installed. A narrative has also been included describing the landscaping design strategies installed on the site. The narrative states that the planting will only be watered during the initial plant establishment period. The project team has also provided irrigation plans, manufacturer specification sheets, and correspondence from the university regarding the project's temporary irrigation removal.

Innovative Wastewater Technologies, Credit 2-Version 2.2 Credit not used.

Water Use Reduction, Credit 3.1-3.2-Version 2.2

Points earned=2, Points denied=0 Design Application, 1/15/2010 The LEED Submittal Template has been provided stating that the project has reduced potable water use by 33.6% from a calculated baseline design through the installation of low-flow water closets and ultra low-flow lavatories. Per the narrative provided in the Submittal Template, the ultra-low flow lavatory has a duration of 12 seconds. When recalculated using the 12 second duration, the project demonstrates an annual potable water savings in fixtures and fittings of 34.8%.

Energy and Atmosphere, Possible Points=17; Earned=9; Denied=0

Fundamental Commissioning of the Building Energy Systems, Prerequisite 1-Version 2.2 Construction Application, 1/10/2012

The LEED Submittal Template has been provided stating that the fundamental commissioning requirements have been completed. In addition, a narrative describing the commissioned systems, as well as the results of the commissioning process, and a copy of the commissioning report have been provided.

However, the issues log within the report indicates that several commissioning issues have not been resolved.

TECHNICAL ADVICE:

Please confirm that all outstanding issues identified during commissioning have been resolved. Alternatively, provide a detailed plan or narrative outlining a plan of action to resolve these issues.

Construction Application, 5/30/2012

The issues log has been revised to address the issues outlined in the Preliminary Review comments and confirms that all outstanding issues have been resolved. A clarification narrative has been provided. The documentation demonstrates prerequisite compliance.

Minimum Energy Performance, Prerequisite 2-Version 2.2

Construction Application, 1/10/2012

The LEED Submittal Template has been provided stating that the project complies with the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4) of ASHRAE 90.1-2004 and has used a computer simulation model to document improved building energy performance under EAc1.

However, insufficient information has been provided to verify confirmation of points achieved under EAc1.

TECHNICAL ADVICE:

This prerequisite is pending the achievement of points in EAc1.

Construction Application, 5/30/2012

The EAc1 Optimize Energy Performance documentation has been revised to address the issues outlined in the Preliminary Review comments. The clarifications provided are sufficient to verify achievement of at least two points under EAc1. The documentation demonstrates prerequisite compliance.

Fundamental Refrigerant Management, Prerequisite 3-Version 2.2

Construction Application, 1/10/2012

The LEED Submittal Template has been provided stating that base building HVACR systems use no CFC-based refrigerants.

Optimize Energy Performance, Credit 1-Version 2.2

Points earned=6, Points denied=0 Construction Application, 1/10/2012

The LEED Submittal Template and supporting documentation have been provided stating that the project has achieved an energy cost savings of 28.99% using the ASHRAE 90.1-2004 Appendix G methodology. Energy efficiency measures include an improved thermal envelope, high efficiency glazing, reduced interior and exterior lighting power density, occupancy sensors, passive chilled beams, radiant floor heating, heat recovery, and VAV air handlers.

However, the following six review comments requiring a project response (marked as "Mandatory") must be addressed for the Final Review.

Please post the original documentation for this credit (including the original EAc1 template) to LEED-Online in a zip file (e.g. "Preliminary EAc1 Submittal.zip") for comparison in the next review phase. Please also upload a summary document that includes a narrative response to each Preliminary Review comment that has been addressed by the project and a narrative describing any additional changes made to the energy models between the preliminary and Final Review phase.

TECHNICAL ADVICE:

REVIEW COMMENTS REQUIRING A PROJECT RESPONSE (Mandatory):

- 1. As indicated in the uploaded documents "Baseline Roof Construction Input.pdf", "Proposed Case Basement Roof Construction Inputs.pdf", and "Studio Roof Construction proposed case.pdf" the Baseline and Proposed Case roof were modeled with an absorptivity value of 0.6. According to Table G3.1-5(c), the roof surface should be modeled with a reflectance of 0.45 if the reflectance of the Proposed roof is greater than 0.7 and its emittance is greater than 0.75. Otherwise, the Proposed reflectance should be 0.3. The Baseline roof should be modeled with a reflectivity of 0.3. Please revise the energy models in accordance with Table G3.1-5(c) and update the Submittal Template, as necessary.
- 2. It is unclear whether the window U-value of 0.385 used for the Proposed Case accounts for the impact of the window frames on the whole assembly as required by ASHRAE modeling protocol. Please provide additional information to confirm that the framed assembly U-value was used for the Proposed Case windows (e.g. showing that the whole window assembly has been tested by NFRC, or verifying that LBNL Window5 calculations have been provided for the whole assembly, or verifying that the frame effects are captured within the energy modeling software), or revise the model referencing ASHRAE 90.1-2004 Table A8.2 if needed.
- 3. The uploaded document "EAc1 Narrative.pdf" indicates automatic daylighting controls are included in the project and in the Proposed Case energy model. Please provide a narrative describing the controls and how they are implemented in the Proposed energy model. Describe how the controls conform to Table G3.1 Paragraph 6(f). Revise the energy models, update the Submittal Template, and revise the supporting documentation as required.
- 4. An energy savings is reflected for exterior lighting. Please verify that the Proposed Case exterior lighting reflects the actual building design, and the Baseline case reflects the allowed lighting power from Section 9. Ensure that no credit is taken in the Proposed design case for lighting reductions on non-tradable surfaces as outlined in LEED-NC v2.2 EAc1 CIR Ruling dated 4/25/2007 (LEED Interpretation 5261). Additionally, note that additional lighting power allowance cannot be claimed in the Baseline model for surfaces that are not provided with lighting in the actual design, and lighting fixtures cannot be double counted for different exterior surfaces. Please report the tradable and non-tradable surface lighting power separately (in units of Watts or Kilowatts) for both the Baseline and Proposed Case in Table 1.4, and verify that these values are appropriately reflected in the model outputs and LEED template Tables 1.8.1 and 1.8.2.

- 5. The uploaded document "Baseline Case Air side summary.pdf" appears to indicate AHU-3 is a Baseline system input for zero square feet, zero design flow, and zero capacity. Please provide a narrative describing the purpose of including this system.
- 6. It is unclear whether the Baseline equipment capacities were based on sizing runs, and oversized by 25% for heating and 15% for cooling, in accordance with Section G3.1.2.2. It is also unclear whether the Proposed Case equipment capacities were modeled as designed. If necessary, please revise the Baseline case heating and cooling capacities in accordance with ASHRAE Section G3.1.2.2 requirements, and the Proposed Case equipment capacities to reflect the actual design. For central plants: Please also verify that the Baseline capacities were oversized either at the system level or the plant level, but not at the system and plant levels. In Table 1.4, please list the total Baseline and Proposed Case cooling and heating capacities in Table 1.4, and the applicable capacity ranges for the systems used in the Baseline and Proposed Case (consistent with the ranges listed in Tables 6.8.1A through 6.8.1G).

Construction Application, 5/30/2012

The revised documentation has been provided including a narrative response to Preliminary Review comments, updated simulation input and output summary files, lighting calculations, window U-value calculations and an updated LEED Submittal Template to address the issues outlined in the Preliminary Review comments and claims a performance improvement of 28.58% using the ASHRAE 90.1-2004 Appendix G methodology. Energy efficiency measures incorporated into the building design include an improved thermal envelope, high efficiency glazing, reduced interior and exterior lighting power density, occupancy sensors, passive chilled beams, radiant floor heating, heat recovery and VAV air handlers. Sufficient information has been provided to address all issues raised in the Preliminary Review. The total predicted annual energy consumption for the project is 81,924 kWh/year of electricity and 54,930 therms/year of natural gas. The documentation demonstrates credit compliance.

On-Site Renewable Energy, Credit 2-Version 2.2 Credit not used.

Enhanced Commissioning, Credit 3-Version 2.2

Points earned=1, Points denied=0 Construction Application, 1/10/2012

The LEED Submittal Template has been provided stating that the enhanced commissioning requirements have been completed. In addition, a narrative describing the enhanced commissioning processes that were employed on the project has been provided.

However, the requirements of EAp1 Fundamental Commissioning have not been met.

TECHNICAL ADVICE:

Please address the comments provided under EAp1.

Construction Application, 5/30/2012

The EAp1 Fundamental Commissioning documentation has been revised to address the issues outlined in the Preliminary Review comments. A copy of the issues log has been provided. The documentation demonstrates credit compliance.

Enhanced Refrigerant Management, Credit 4-Version 2.2

Points earned=1, Points denied=0

Design Application, 1/15/2012

The LEED Submittal Template has been provided stating that the project does not use refrigerants. An alternative compliance narrative was provided stating that the campus utilizes lake source cooling rather than refrigerants.

Measurement and Verification, Credit 5-Version 2.2

Points earned=1, Points denied=0 Construction Application, 1/10/2012

The LEED Submittal Template has been provided stating that the project has developed and implemented a measurement and verification plan consistent with Option D of the IPMVP. A copy of the project's M and V plan and the required narrative have been provided to support achievement of this credit.

However, neither the uploaded M and V plan nor the narrative document confirm compliance with Option D of the IPMVP.

TECHNICAL ADVICE:

Please update and resubmit the M and V plan and narrative to show compliance with Option D of the IPMVP as follows:

- 1. Identify the acceptable range(s) of error (generally there is a different range allowable for both monthly and annual data).
- 2. Explain the corrective action plan that will be applied if Monitoring and Verification determines that the building does not perform as anticipated.

Construction Application, 5/30/2012

The clarification narrative and an updated Monitoring and Verification plan have been provided to address the issues outlined in the Preliminary Review comments and indicates acceptable ranges of error and identifies a corrective action plan that will be applied if the building does not perform as anticipated. The documentation demonstrates credit compliance.

Green Power. Credit 6-Version 2.2

Credit not used.

Materials and Resources, Possible Points=13; Earned=5; Denied=0

Storage and Collection of Recyclables, Prerequisite 1-Version 2.2

Design Application, 1/15/2012

The LEED Submittal Template has been provided stating that the project has provided appropriately sized dedicated areas for the collection and storage of recycling materials, including cardboard, paper, plastics, glass, and metals. The project team has also provided a floor plan to indicate the location of the areas dedicated for recycling, as well as a copy of the university's recycling policy.

Building Reuse, Credit 1.1-1.2-Version 2.2

Credit not used

Building Reuse, Non-Structural Credit 1.3-Version 2.2

Credit not used.

Construction Waste Management, Credit 2-Version 2.2

Points earned=2, Points denied=0 *Construction Application*, 1/10/2012

The LEED Submittal Template has been provided stating that the project has diverted 388.90 tons (85.07%) of on-site generated construction waste from landfill. Calculations have been provided to document the waste types and receiving agencies for recycled materials. A copy of the project's Construction Waste Management Plan has been provided, along with summary calculations and a site plan detailing the locations of dumpsters. The template narrative indicates that the clean wood product has been diverted from landfill to be used an alternate daily landfill cover; this strategy is approved in LEED-NC v2.2 MRc2 CIR Ruling dated 8/2/2008 (LEED Interpretation 2256).

Resource Reuse, Credit 3-Version 2.2

Credit not used.

Recycled Content, Credit 4-Version 2.2

Points earned=2, Points denied=0 *Construction Application*, 1/10/2012

The LEED Submittal Template has been provided stating that 21.91% of the total building materials content, by value, have been manufactured using recycled materials. Supporting documentation from manufacturers and suppliers has been provided.

Please note that the material cost of the Oneonta Block Concrete Masonry Unit has not been listed consistently between this credit and MRc5 Regional Materials. This credit lists \$803 as the cost, whereas MRc5 lists \$800. As this difference is negligible, credit compliance is not affected. For future submittals, ensure that materials costs are listed consistently throughout the LEED submittal.

Regional Materials, Credit 5-Version 2.2

Points earned=1, Points denied=0 Construction Application, 1/10/2012

The LEED Submittal Template has been provided stating that 18.31% of the total building materials value includes building materials and/or products that have been extracted, harvested or recovered, as well as manufactured within 500 miles of the project site. Supporting documentation from manufacturers and suppliers has been provided.

Please note that the material cost of the Oneonta Block Concrete Masonry Unit has not been listed consistently between this credit and MRc4 Recycled Content. This credit lists \$800 as the cost, whereas MRc4 lists \$803. As this difference is negligible, credit compliance is not affected. For future submittals, ensure that materials costs are listed consistently throughout the LEED submittal.

Rapidly Renewable Materials, Credit 6-Version 2.2

Credit not used.

Certified Wood, Credit 7-Version 2.2

Credit not used.

Indoor Environmental Quality, Possible Points=15; Earned=9; Denied=0

Minimum IAQ Performance, Prerequisite 1-Version 2.2

Design Application, 1/15/2012

The LEED Submittal Template has been provided stating that the project complies with the minimum requirements of ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality, using the Ventilation Rate Procedure (VRP). A supplemental narrative has been provided to describe the project's ventilation design. The narrative also refers to supplemental documents for specific information regarding fresh air intake volumes. The project team has also provided supplemental VRP calculations and a mechanical schedule to further detail compliance with the reference standard.

Environmental Tobacco Smoke (ETS) Control, Prerequisite 2-Version 2.2 *Design Application, 1/10/2012*

The LEED Submittal Template has been provided stating that smoking is prohibited inside buildings within the project and that designated smoking areas have been located 25 feet away from building openings and air intakes. The project team has also provided a copy of the university's smoking policy.

Outdoor Air Delivery Monitoring, Credit 1-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2012

The LEED Submittal Template has been provided stating that carbon dioxide concentrations are monitored within all densely and non-densely occupied spaces. The Template further states that monitoring equipment has been configured to generate an alarm when conditions vary by 10% or more from the setpoint. A narrative describing the project's ventilation design and CO2 monitoring system has been included, as required, and the project team has cited LEED-NC v2.2 EQc1 CIR (ruling dated 8/9/2007) to support this compliance approach. Drawings have been provided documenting the location and type of installed sensors, as well as manufacturer information to detail the type of sensors provided.

However, it is not clear from the information provided whether the project team has installed the CO2 sensors within the breathing zone, between 3 to 6 feet above the floor. Please note that per LEED-NC v2.2 EQc1 CIR (ruling dated 6/27/2008), CO2 sensors located in return air ducts do not meet the requirements of this credit.

TECHNICAL ADVICE: Please provide narrative confirmation that the CO2 sensors have been located within the breathing zone, between 3 to 6 feet above the floor.

Increased Ventilation, Credit 2-Version 2.2

Credit not used.

Construction IAQ Management Plan: During Construction, Credit 3.1-Version 2.2

Points earned=1, Points denied=0 *Construction Application, 1/10/2012*

The LEED Submittal Template has been provided stating that the project developed and implemented a construction IAQ Management Plan that followed the referenced SMACNA Guidelines, and that permanently installed air handling equipment was not operated during construction. A copy of the project's IAQ Management Plan and photographs highlighting the implemented IAQ measures have been provided.

Construction IAQ Management Plan: Before Construction, Credit 3.2-Version 2.2 Points earned=0, Points denied=0

Construction Application, 1/10/2012

The LEED Submittal Template has been provided stating that, prior to initial occupancy, baseline IAQ testing was conducted. A copy of the project's IAQ testing report was provided to confirm that all sampling

points were tested confirming that the allowable concentration limits have not been exceeded. These non-compliant areas were flushed with outside air and retested to confirm compliance with the concentration limits.

However, the testing report does not include results for 4-Phenylcyclohexene (4-PCH). As stated on page 329 of the LEED-NC v2.2 Reference Guide, Third Edition, this test is required if carpets and fabrics with styrene butadiene rubber (SBR) latex backing materials are installed as part of the base building systems.

TECHNICAL ADVICE:

Please provide a revised testing report including results for 4-Phenylcyclohexene (4-PCH). Alternatively, confirm that carpets and fabrics with styrene butadiene rubber (SBR) latex backing material have not been installed as part of the base building systems.

Low-Emitting Materials: Adhesives and Sealants, Credit 4.1-Version 2.2

Points earned=1, Points denied=0 Construction Application, 1/10/2012

The LEED Submittal Template has been provided stating that all indoor adhesive and sealant products comply with the VOC limits of the referenced standards for this credit. The template includes a list of the required product details.

However, it appears that the required product information may not have been provided for all indoor adhesive and sealant products.

TECHNICAL ADVICE:

Please provide a comprehensive list of adhesives and sealants and/or a narrative explaining why commonly used products were not incorporated within the project. Products such as construction adhesives, fire-stopping sealants, duct sealants, flooring adhesives, base molding adhesive and PVC plumbing adhesives are typically included in credit documentation. Revise the template, as necessary.

Construction Application, 5/30/2012

The clarification narrative has been provided to address the issues outlined in the Preliminary Review comments and includes a comprehensive list of all adhesives and sealant products used in the project building. The clarification narrative includes a revised copy of the template, listing all adhesives and sealants. The documentation demonstrates credit compliance.

Low-Emitting Materials: Paints and Coatings, Credit 4.2-Version 2.2

Points earned=1, Points denied=0 *Construction Application, 1/10/2012*

The LEED Submittal Template has been provided stating that all indoor paint and coating products comply with the VOC limits of the referenced Green Seal and SCAQMD standards. The template includes a list of the required product details.

Low-Emitting Materials: Carpet Systems, Credit 4.3-Version 2.2

Points earned=1, Points denied=0 *Construction Application, 1/10/2012*

Low-Emitting Materials: Composite Wood and Agrifiber, Credit 4.4-Version 2.2 Credit not used.

Indoor Chemical and Pollutant Source Control, Credit 5-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2012

The LEED Submittal Template has been provided stating that the project has installed the required indoor chemical and pollutant source control measures required by this credit. A listing of each entryway product installed for the building has been provided. Copies of the project's construction drawings have been provided to show the installed entryway systems, room separations and required ventilation systems. The Submittal Template also confirms that MERV 13 filtration media has been installed in all HVAC systems prior to occupancy. The project team has also provided manufacturer information for the doors to the chemical use areas, the entryway product, and the filters installed on the project.

Controllability of Systems: Lighting, Credit 6.1-Version 2.2

Credit not used.

Controllability of Systems: Thermal Comfort, Credit 6.2-Version 2.2

Credit not used.

Thermal Comfort: Design, Credit 7.1-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that the HVAC systems and building envelope have been designed to meet the requirements of ASHRAE Standard 55-2004. The project team has provided a narrative describing the method used to establish thermal comfort criteria for the project. Data have also been provided regarding the specific seasonal temperature and humidity design criteria. However, the project team has not provided a description of the system's ability to maintain maximum humidity levels during periods of low cooling load, or a justification for a strategy of no dehumidification based on local climate conditions.

TECHNICAL ADVICE: Please provide a revised narrative describing the system's ability to maintain the maximum humidity levels during periods of low cooling load, or alternatively, provide a justification for a strategy of no dehumidification based on local climate conditions.

Design Application Review, 4/21/2010

The project team has provided a response narrative and a sequence of operations for HVAC control describing the system's ability to maintain the maximum humidity levels during periods of low cooling load, demonstrating that the project's envelope complies with the requirements of ASHRAE Standard 55-2004.

Thermal Comfort: Verification, Credit 7.2-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that a thermal comfort survey will be distributed to building occupants within the first 6 to 18 months of occupancy. The narrative includes an appropriate corrective action plan if the survey results indicate that 20% of the building occupants are dissatisfied with thermal comfort based on the environmental variables outlined in ASHRAE 55-2004. The project team has also provided a supplemental narrative to describe the survey process, as well as a copy of the occupant survey. However, achievement of EQc7.2 cannot be awarded without demonstrated achievement of EQc7.1.

TECHNICAL ADVICE: Please clarify the pending issues surrounding EQc7.1.

Design Application Review, 4/21/2010

The project team has clarified all issues surrounding EQc7.1 and has earned EQc7.1, thus demonstrating compliance with the requirements of EQc7.2.

Daylighting and Views: Daylight 75% of Spaces, Credit 8.1-Version 2.2 Points earned=1, Points denied=0 *Construction Application.* 1/10/2012

he LEED Submittal Template has been provided stating that the project has achieved a minimum 2% glazing factor in 100% of all regularly occupied spaces. Calculations have been provided. A narrative has been provided indicating that no areas have been excluded from the calculations.

However, two issues are pending:

- 1. It is unclear whether all regularly occupied area has been included in the calculations. Table 1.2 Space Summary in the EAc1 Optimize Energy Performance Submittal Template indicates that the project includes 60,332 square feet of conditioned space, which is significantly greater than the value listed for regularly occupied space in this template (35,048 square feet). As stated on page 387, regularly occupied spaces are areas where workers are seated or standing as they work inside a building. In residential applications, it refers to living and family rooms.
- 2. Table 1.4 Comparison of Proposed Design Versus Baseline Design in the EAc1 Submittal Template lists Fenestration Visual Light Transmittance values of 0.68 or 0.85, which is inconsistent with the calculations for this credit, indicating Tvis values of 0.67, 0.39, and 0.58.

TECHNICAL ADVICE:

- 1. Please revise the calculations to include all regularly occupied spaces in the project building. Alternatively, provide a narrative to clarify that all regularly occupied spaces have been included in the initial calculations. Ensure the narrative includes an explanation (supplemented with supporting documentation, such as excerpts from floor plans) for the large discrepancy.
- 2. Revise the calculations to use the actual Tvis values for the fenestration installed at the project building. Ensure consistency with the EAc1 submittal.

Construction Application, 5/30/2012

The calculations have been revised to address the issues outlined in the Preliminary Review comments and lists the Tvis values consistently with EAc1 Optimize Energy Performance. Additionally, a clarification narrative has been provided confirming that the area listed in the calculations accurately represents the regularly occupied area in the project building. The documentation indicates that the project has achieved a minimum 2% glazing factor in 100% of all regularly occupied spaces. The documentation demonstrates credit compliance.

Daylighting and Views: Views for 90% of Spaces, Credit 8.2-Version 2.2 Credit not used.

Innovation and Design Process, Possible Points=5; Earned=5; Denied=0

Innovation in Design, Credit 1.1-Version 2.2 Points earned=1, Points denied=0 Construction Application, 1/10/2012 The LEED Submittal Template has been provided stating that the project has developed and implemented a Transportation Management Plan based on LEED Interpretation 532. In addition to a comprehensive plan (more two components), the project earn at least three SSc4 points. The project must additionally provide official documentation for at a least a five-year commitment to the programs, documentation for the number of employees that are initially provided program information, and documentation of the policies/procedures that ensure the same service for new employees. A copy of the project's plan has been provided, and the project has earned SSc4.1 Alternative Transportation: Public Transportation Access, SSc4.2 Alternative Transportation: Bicycle Storage and Changing Rooms, and SSc4.4 Alternative Transportation: Parking Capacity.

However, two issues are pending:

- 1. The description of the transportation management program does not include official documentation (e.g., a signed letter, or an excerpt from university policy or employee manuals) demonstrating that the university has a five year commitment to the program, going forward.
- 2. The transportation management program does not state the number of employees that are initially provided personalized trip information, nor does it document the policies/procedures that ensure the same service for new employees.

TECHNICAL ADVICE:

- 1. Please revise the transportation management program to demonstrate that the project has an ongoing commitment (at least five years) to the program.
- 2. Revise the program to specify the number of employees and students that are initially provided personalized trip information. Additionally, document the policies/procedures that ensure that the same service is provided for new employees.

Construction Application, 5/30/2012

The signed letter has been provided to address the issues outlined in the Preliminary Review comments and describes the ongoing commitment to the transportation management program as well as details on new employee and student involvement. The documentation demonstrates credit compliance.

Innovation in Design, Credit 1.2-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that the project achieves exemplary performance for SSc5.2, Site Development? Maximize Open Space as specified in the LEED-NC v2.2 Reference Guide, Third Edition. The guideline for exemplary performance in SSc5.2 for projects where zoning requirements exist, but zero open space is required is to provide open space equal to 40% of the site area. The project has a project site area of 84,690 square feet, and the project team has provided 41,480 square feet of vegetated open space. The project has provided open space equal to 49% of the total project site area, demonstrating that it has achieved exemplary performance.

Innovation in Design, Credit 1.3-Version 2.2

Points earned=1, Points denied=0 *Construction Application, 1/10/2012*

The LEED Submittal Template has been provided stating that the project has developed and implemented a green housekeeping program. Green cleaning is detailed in LEED-NC v2.1 IDc1.1 CIR ruling dated 4/8/2004 (LEED Interpretation 766). To receive an innovation point, the project must demonstrate that a comprehensive green cleaning / housekeeping program is in place with clear

performance goals including: a statement of purpose; custodial training; the contractual or procedural requirements for operations staff; a clear set of acceptable performance standards by which to measure products, progress, and achievement of goals; and documentation of the program's housekeeping and environmental cleaning solution specifications. The green cleaning plan complies with the LEED Interpretation requirements.

Innovation in Design, Credit 1.4-Version 2.2

Points earned=1, Points denied=0 Design Application, 1/15/2010

The LEED Submittal Template has been provided stating that the project achieves exemplary performance for SSc7.2, Heat Island Effect?Roof as specified in the LEED-NC v2.2 Reference Guide. The guideline for exemplary performance in SSc7.2 is to provide 100% of the project's roof area with a green roof system. The project has demonstrated that 100% of the project's roof is vegetated, which meets the requirement for exemplary performance.

LEED Accredited Professional, Credit 2-Version 2.2

Points earned=1, Points denied=0 Construction Application, 1/10/2012

The LEED Submittal Template has been provided stating that a LEED AP has been a participant on the project development team. A copy of the LEED AP award certification for Mark Knipfer has been included.