



# LEED Certification Review Report

This report contains the results of the technical review of an application for LEED® certification submitted for the specified project. LEED certification is an official recognition that a project complies with the requirements prescribed within the LEED rating systems as created and maintained by the U.S. Green Building Council® (USGBC®). The LEED certification program is administered by the Green Business Certification Inc. (GBCI®).

## WTC Integrated Technology Center

**Project ID** 1000060237  
**Rating system & version** LEED-NC v2009  
**Project registration date** 07/27/2015



**Certified (Platinum)**

CERTIFIED: 40-49, SILVER: 50-59, GOLD: 60-79, PLATINUM: 80+

## LEED 2009 NEW CONSTRUCTION

ATTEMPTED: 92, DENIED: 5, PENDING: 0, AWARDED: 87 OF 110 POINTS

SUSTAINABLE SITES 20 OF 26	
SSp1 Construction Activity Pollution Prevention	Y
SSc1 Site Selection	1 / 1
SSc2 Development Density and Community Connectivity	5 / 5
SSc3 Brownfield Redevelopment	0 / 1
SSc4.1Alternative Transportation-Public Transportation Access	6 / 6
SSc4.2Alternative Transportation-Bicycle Storage and Changing Room	1 / 1
SSc4.3Alternative Transportation-Low-Emitting and Fuel-Efficient V	3 / 3
SSc4.4Alternative Transportation-Parking Capacity	2 / 2
SSc5.1Site Development-Protect or Restore Habitat	0 / 1
SSc5.2Site Development-Maximize Open Space	1 / 1
SSc6.1Stormwater Design-Quantity Control	0 / 1
SSc6.2Stormwater Design-Quality Control	0 / 1
SSc7.1Heat Island Effect, Non-Roof	1 / 1
SSc7.2Heat Island Effect-Roof	0 / 1
SSc8 Light Pollution Reduction	0 / 1

WATER EFFICIENCY 10 OF 10	
WEp1 Water Use Reduction-20% Reduction	Y
WEc1 Water Efficient Landscaping	4 / 4
WEc2 Innovative Wastewater Technologies	2 / 2
WEc3 Water Use Reduction	4 / 4

ENERGY AND ATMOSPHERE 25 OF 35	
EAp1 Fundamental Commissioning of the Building Energy Systems	Y
EAp2 Minimum Energy Performance	Y
EAp3 Fundamental Refrigerant Mgmt	Y
EAc1 Optimize Energy Performance	19 / 19
EAc2 On-Site Renewable Energy	1 / 7
EAc3 Enhanced Commissioning	0 / 2
EAc4 Enhanced Refrigerant Mgmt	2 / 2
EAc5 Measurement and Verification	3 / 3
EAc6 Green Power	0 / 2

MATERIALS AND RESOURCES 9 OF 14	
MRp1 Storage and Collection of Recyclables	Y
MRC1.1Building Reuse-Maintain Existing Walls, Floors and Roof	2 / 3
MRC1.2Building Reuse - Maintain 50% of Interior Non-Structural Ele	0 / 1
MRC2 Construction Waste Mgmt	2 / 2
MRC3 Materials Reuse	0 / 2
MRC4 Recycled Content	2 / 2

MATERIALS AND RESOURCES CONTINUED	
MRC5 Regional Materials	2 / 2
MRC6 Rapidly Renewable Materials	0 / 1
MRC7 Certified Wood	1 / 1

INDOOR ENVIRONMENTAL QUALITY 13 OF 15	
IEQp1 Minimum IAQ Performance	Y
IEQp2 Environmental Tobacco Smoke (ETS) Control	Y
IEQc1 Outdoor Air Delivery Monitoring	1 / 1
IEQc2 Increased Ventilation	1 / 1
IEQc3.1Construction IAQ Mgmt Plan-During Construction	1 / 1
IEQc3.2Construction IAQ Mgmt Plan-Before Occupancy	1 / 1
IEQc4.1Low-Emitting Materials-Adhesives and Sealants	1 / 1
IEQc4.2Low-Emitting Materials-Paints and Coatings	1 / 1
IEQc4.3Low-Emitting Materials-Flooring Systems	1 / 1
IEQc4.4Low-Emitting Materials-Composite Wood and Agrifiber Products	1 / 1
IEQc5 Indoor Chemical and Pollutant Source Control	1 / 1
IEQc6.1Controllability of Systems-Lighting	1 / 1
IEQc6.2Controllability of Systems-Thermal Comfort	1 / 1
IEQc7.1Thermal Comfort-Design	1 / 1
IEQc7.2Thermal Comfort-Verification	1 / 1
IEQc8.1Daylight and Views-Daylight	0 / 1
IEQc8.2Daylight and Views-Views	0 / 1

INNOVATION IN DESIGN 6 OF 6	
IDc1.1 Exemplary Performance - Maximize Open Space	1 / 1
IDc1.1 Innovation in Design	0 / 1
IDc1.2 Exemplary Performance - Water Use Reduction	1 / 1
IDc1.2 Innovation in Design	0 / 1
IDc1.3 Exemplary Performance - Wastewater Technologies	1 / 1
IDc1.3 Innovation in Design	0 / 1
IDc1.4 Innovation in Design	0 / 1
IDc1.4 Green Building Education	1 / 1
IDc1.5 Innovation in Design	0 / 1
IDc1.5 Integrative Process	1 / 1
IDc2 LEED® Accredited Professional	1 / 1

REGIONAL PRIORITY CREDITS 4 OF 4	
SSc1 Site Selection	1 / 1
SSc4.2Alternative Transportation-Bicycle Storage and Changing Room	1 / 1
SSc5.2Site Development-Maximize Open Space	1 / 1
WEc1 Water Efficient Landscaping	1 / 1

**TOTAL**

**87 OF 110**

# CREDIT DETAILS



## Project Information Forms

### Pif1: Minimum Program Requirements

Approved

12/08/2015 DESIGN FINAL REVIEW

The additional documentation demonstrates compliance.

09/01/2015 DESIGN PRELIMINARY REVIEW

The LEED Form states that the project complies with all Minimum Program Requirements. The project will comply with MPR 6: Must Commit to Sharing Whole-Building Energy and Water Usage Data via Option 2: USGBC Approved Data Template. The project is located in La Crosse, Wisconsin. However, to demonstrate compliance, the following must be addressed.

#### TECHNICAL ADVICE

1. The treatment of incomplete space in this LEED project has not been addressed; all spaces within the LEED Project Boundary must be considered for compliance, per LEED Interpretation 10102 (specifically, Future T401). Additionally, as stated in LEED Interpretation 10102, all projects containing incomplete spaces must be accompanied by a Letter of Commitment that has been signed and dated by the project Owner. Refer to the LEED Interpretation for additional information. Provide a Letter of Commitment, signed by the project Owner, indicating that the remaining incomplete spaces will satisfy the requirements of each prerequisite and credit achieved by this project if and when completed by the project Owner. Additionally, provide a narrative confirming that all completed aspects of the project relevant to the prerequisites and attempted credits have been included in the submittal documentation and calculations. Occupancy values must be determined for all spaces in the building, including both complete and incomplete spaces, and applied to any credits that use occupancy values to calculate compliance. Any features of these incomplete spaces that have not yet been installed should be excluded from the calculations, except in calculations for WEp1: Water Use Reduction and EAp2: Minimum Energy Performance, and the credits dependent upon the calculations in these two prerequisites. Anticipated, but as yet uninstalled, water- and energy-consuming fixtures regulated by WEp1 and EAp2 must be estimated in the Design (i.e. Proposed) case as being equivalent to the Baseline case for the intended use of the space.

### Pif2: Project Summary Details

Approved

09/01/2015 DESIGN PRELIMINARY REVIEW

The LEED Form includes the required project summary details. There is one building in this LEED application with a total of four stories and 125,204 gross square feet.

### Pif3: Occupant and Usage Data

Approved

12/08/2015 DESIGN FINAL REVIEW

The additional documentation demonstrates compliance. The average users value is 483, the peak users value is 407, and the FTE value is 50.

09/01/2015 DESIGN PRELIMINARY REVIEW

The LEED Form includes the required occupant and usage data. The project consists primarily of Core Learning Space: College / University spaces. The average users value is 350, the peak users value is 300, and the FTE value is 50. However, to demonstrate compliance, the following must be addressed.

#### TECHNICAL ADVICE

1. Pif1: Minimum Program Requirements has not been approved. It appears that the treatment of incomplete space in this LEED project has not been addressed. All spaces within the LEED Project Boundary must be considered for compliance per LEED Interpretation 10102. Therefore, occupancy values must be determined for all spaces within the LEED Project Boundary (including both complete and incomplete spaces) and these occupancy values must be applied to all relevant prerequisite and credit calculations to demonstrate compliance. Refer to the comments within Pif1 and provide the clarifications requested there. Additionally, revise this form and provide a narrative confirming that occupants have been included for all spaces within the LEED Project Boundary (including anticipated future non-Transient and Transient occupants of the incomplete spaces). The project should use the guidance in Appendix 1 within the LEED-CS 2009 rating system to establish occupant counts for incomplete spaces. The total occupancy values must be applied to all applicable prerequisites and credits.

2. The occupancy numbers have not been reported consistently throughout this project. This form indicates a peak users occupancy of 300, whereas IEQp1: Minimum Indoor Air Quality Performance indicates a peak users occupancy

of 2,049. Occupancy numbers must be reported consistently. Revise the form to ensure that the occupancy numbers are reported consistently throughout the project.

**P1f4: Schedule and Overview Documents      Approved**

**09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form includes the design and construction schedule. The date of substantial completion is March 1, 2016 and the date of occupancy is March 1, 2016. The required documents have been uploaded.



## Sustainable Sites

### **SSp1: Construction Activity Pollution Prevention**

**Awarded**

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project has implemented an erosion and sedimentation control (ESC) plan that conforms to local standards and code, which are more stringent than the National Pollutant Discharge Elimination System (NPDES) program requirements.

### **SSc1: Site Selection**

**Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project site does not meet any of the prohibited criteria.

### **SSc2: Development Density and Community Connectivity**

**Awarded: 5**

POSSIBLE POINTS: 5

ATTEMPTED: 5, DENIED: 0, PENDING: 0, AWARDED: 5

**09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project complies with Option 2: Community Connectivity.

### **SSc3: Brownfield Redevelopment**

POSSIBLE POINTS: 1

**Not Attempted**

### **SSc4.1: Alternative Transportation-Public Transportation Access**

**Awarded: 6**

POSSIBLE POINTS: 6

ATTEMPTED: 6, DENIED: 0, PENDING: 0, AWARDED: 6

**12/08/2015 DESIGN FINAL REVIEW**

The additional documentation demonstrates compliance.

**09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project complies with Option 2: Bus Station Proximity and is located within one-quarter mile walking distance of one or more stops for two or more public, campus, or private bus lines usable by building occupants. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Provide a site plan or map, with scale, showing the walking path from the project building main entrance to the bus stop(s). Ensure that this pedestrian route is less than one-quarter mile walking distance.

### **SSc4.2: Alternative Transportation-Bicycle Storage and Changing Rooms**

**Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**12/08/2015 DESIGN FINAL REVIEW**

The additional documentation demonstrates compliance. The documentation indicates that bicycle storage facilities have been provided to serve 14.25% of the LEED-NC project FTE and transient occupants, measured at peak occupancy, and shower facilities have been provided for 6% of the LEED-NC project FTE occupants.

**09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project complies with Case 1: Commercial or Institutional Projects. Bicycle storage facilities have been provided to serve 16% of the LEED project FTE and transient occupants, measured at peak occupancy, and shower facilities have been provided for 4% of the LEED project FTE occupants. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. P1f1: Minimum Program Requirements and P1f3: Occupant and Usage Data have not been approved. It appears that the treatment of incomplete space in this LEED project has not been addressed. All spaces within the LEED Project Boundary must be considered for compliance per LEED Interpretation 10102. Refer to the comments within P1f1 and P1f3 and provide the clarifications requested there. Ensure that the Owner Letter of Commitment includes information regarding how the future fit-out of the incomplete spaces will allow for these spaces to meet the specific requirements of this credit. Additionally, revise this form and supporting documentation as necessary to confirm that all future occupants have been included in the calculations.

**SSc4.3: Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles**      **Awarded: 3**

POSSIBLE POINTS: 3

ATTEMPTED: 3, DENIED: 0, PENDING: 0, AWARDED: 3

**12/08/2015 DESIGN FINAL REVIEW**

The additional documentation demonstrates compliance for providing preferred parking spaces for low-emitting and fuel-efficient vehicles for 5.77% of total parking capacity.

**09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project complies with Option 1 and provides preferred parking spaces for low-emitting and fuel-efficient vehicles for 5.77% of total parking capacity. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Provide documentation, such as a narrative and/or revised site drawings, to confirm that the location of the low-emitting and fuel-efficient vehicle parking spaces meets the LEED definition of preferred. Preferred spaces are those spaces located closest to the main entrance of the project (exclusive of spaces designed for handicapped).

**SSc4.4: Alternative Transportation-Parking Capacity**      **Awarded: 2**

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that no new parking has been created within the LEED project scope of work.

**SSc5.1: Site Development-Protect or Restore Habitat**      **Not Attempted**

POSSIBLE POINTS: 1

**SSc5.2: Site Development-Maximize Open Space**      **Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project complies with Case 3: Sites with Zoning Ordinances but No Open Space Requirements. The open space provided is equal to 40.97% of the total site area.

**SSc6.1: Stormwater Design-Quantity Control**      **Not Attempted**

POSSIBLE POINTS: 1

**SSc6.2: Stormwater Design-Quality Control**      **Not Attempted**

POSSIBLE POINTS: 1

**SSc7.1: Heat Island Effect, Non-Roof**      **Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project complies with Option 1 and 69% of nonroof base building hardscape surfaces will be mitigated through the use of materials with an SRI of at least 29 or will be shaded by energy-producing energy panels.

However, the area shaded by energy-producing solar panels has already been included in the compliant concrete calculations and cannot be included as shaded area (i.e. double counting compliant hardscape). When recalculated excluding the shaded area, the documentation indicates that 65% of nonroof base building hardscape surfaces will be mitigated through the use of materials with an SRI of at least 29.

**SSc7.2: Heat Island Effect-Roof**  
POSSIBLE POINTS: 1

**Not  
Attempted**

**SSc8: Light Pollution Reduction**  
POSSIBLE POINTS: 1

**Not  
Attempted**



## Water Efficiency

### **WEp1: Water Use Reduction-20% Reduction**

**Awarded**

#### **12/08/2015 DESIGN FINAL REVIEW**

Additional documentation has been provided.

However, it is noted that the flush fixtures total daily uses for the Users fixture group differs from the standard calculation methodology (i.e. FTE three uses per day and Transients 0.5 uses per day). When recalculated based on 8.25% of male users utilizing the unisex restroom, the documentation indicates that the project has reduced potable water use by 32.3%.

#### **09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project has reduced potable water use by 32.85%. However, to demonstrate compliance, the following must be addressed.

##### TECHNICAL ADVICE

1. P1f1: Minimum Program Requirements and P1f3: Occupant and Usage Data have not been approved. It appears that the treatment of incomplete space in this LEED project has not been addressed. All spaces within the LEED Project Boundary must be considered for compliance. As stated in LEED Interpretation 10102, any anticipated, but not yet installed, future fixtures in the incomplete spaces must be included in the calculations of this prerequisite. The flush and flow rates of these future fixtures must use the LEED baseline rate for both the baseline and design cases. Refer to the comments within P1f1 and P1f3 and provide the clarifications requested there. Additionally, revise this form and provide a narrative confirming that all future occupants and all anticipated future fixtures have been included in the calculations of this prerequisite. Ensure that these future fixtures use the baseline flush/flow rate as specified within the LEED Reference Guide. Ensure that the Owner Letter of Commitment includes information specific to how the future fit-out of the incomplete spaces will allow for these spaces to meet the specific requirements of this prerequisite.

2. The floor plans in P1f4: Schedule and Overview Documents indicate that the project includes one unisex restroom that does not contain urinals (TR2C). The calculations in the form automatically assume that 100% of male occupants will use restrooms that contain urinals. If a percentage of male occupants will not have access to or will not be expected to use restrooms with urinals, the default Total Daily Uses for water closets and urinals must be adjusted in the form accordingly. Provide a narrative and supporting daily use calculations to explain the anticipated urinal usage. Revise the form to ensure that the Total Daily Uses column for the water closets and urinals have been modified appropriately.

3. The fixture schedule indicates that the lavatories are autocontrol faucets but the flow rates have not been converted from gallons per minute (GPM) to gallons per cycle (GPC), and the fixture type has not been listed as Metering in Table WEp1-4 Flow Fixture Data. Revise the form to ensure that the autocontrol lavatory faucets are converted from GPM to GPC and listed in the form as Metering. Ensure that the design case calculations use the default 12-second duration when converting to GPC as outlined in Table 2 within the WEp1 section of the LEED BD+C v2009 Reference Guide. The duration column is not applicable in this case and therefore should not be modified. Refer to the Water Use Reduction Additional Guidance found on the USGBC website for additional information regarding autocontrol/metered lavatory faucets.

### **WEc1: Water Efficient Landscaping**

POSSIBLE POINTS: 4

ATTEMPTED: 4, DENIED: 0, PENDING: 0, AWARDED: 4

**Awarded: 4**

#### **09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the landscaping and irrigation systems have been designed to reduce potable water consumption for irrigation by 100% and reduce the total water used for irrigation by 54.5%. The form indicates that the installed irrigation systems use municipally supplied non-potable water.

However, it is noted that the baseline case does not use average values for density factor (kd). For additional information, refer to the calculations section within WEc1 in the LEED BD+C v2009 Reference Guide. When recalculated, the documentation indicates that the landscaping and irrigation systems have been designed to reduce potable water consumption for irrigation by 100% and reduce the total water used for irrigation by 56.85%.

### **WEc2: Innovative Wastewater Technologies**

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**Awarded: 2**

#### **12/08/2015 DESIGN FINAL REVIEW**

The additional documentation provided demonstrates compliance and states that the project has reduced potable water usage for sewage conveyance in the project by 100% from the Baseline design.

#### **09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project complies with Option 1 and has reduced potable water for sewage conveyance by 100%. The reduction has been achieved by the use of high-efficiency flush fixtures and non-potable water sources. However, to demonstrate compliance, the following must be addressed.

##### TECHNICAL ADVICE

1. WEp1: Water Use Reduction is pending clarifications. Refer to the comments within WEp1 and resubmit this credit.

### **WEc3: Water Use Reduction**

**Awarded: 4**

POSSIBLE POINTS: 4

ATTEMPTED: 4, DENIED: 0, PENDING: 0, AWARDED: 4

#### **12/08/2015 DESIGN FINAL REVIEW**

The additional documentation provided demonstrates compliance that the project has reduced potable water usage in the project by 85.2% from the Baseline design.

#### **09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project has reduced potable water use by 33%. However, to demonstrate compliance, the following must be addressed.

##### TECHNICAL ADVICE

1. WEp1: Water Use Reduction is pending clarifications. Refer to the comments within WEp1 and resubmit this credit.





## Energy and Atmosphere

### **EAp1: Fundamental Commissioning of the Building Energy Systems**

**Awarded**

#### **11/09/2016 CONSTRUCTION FINAL REVIEW**

The additional documentation demonstrates compliance.

#### **09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the commissioning report is pending completion and a contract is in place to ensure that the report will be completed. However, to demonstrate compliance, the following must be addressed.

##### TECHNICAL ADVICE

1. Plf4: Schedule and Overview Documents indicates the date of substantial completion as March 1, 2016 and it is unclear as to why the commissioning process has not been completed (uploads to LEED Online are from December 2015). Provide a narrative and the completed commissioning report to confirm all fundamental commissioning activities have been completed.

### **EAp2: Minimum Energy Performance**

**Awarded**

#### **06/17/2016 DESIGN APPEAL REVIEW**

The LEED Form has been revised to address the issues outlined in the Final Review and states that the project has achieved an energy cost savings of 52.74%. The total predicted annual energy consumption for the project is 2,385,245 kWh/year of electricity and 1,001 therms/year of natural gas. The total predicted energy generated from on-site renewable systems is 70,296 kWh/year of electricity.

It is noted that the following four issues do not require a project response for this project as compliance is not affected, but should be considered as educational notes for future projects:

1. (Preliminary Review Comment #2) The narrative response indicates that Proposed Case exterior lighting energy use was not being included previously due to the fuel source being left blank. However, the fuel source is still blank. In this instance, the impact on the energy cost savings is minor and compliance is not affected for this issue. For future submittals, revise the form to report the fuel source consistently across all documentation.
2. (Preliminary Review Comment #3) The narrative response indicates that the Baseline and Proposed Case minimum outdoor air rates have been modeled as 58,689 cfm and 55,648 cfm, respectively. However, the minimum outdoor air rates calculated by the reviewer based on the zone level outdoor air provided in the SV-A reports is 55,469 cfm and 52,930 cfm for the Baseline and Proposed Case models, respectively. In this instance, the impact on the energy cost savings is expected to be small. For future submittals, revise the Baseline and Proposed Case models to report the minimum outdoor air rates consistently across all documentation equal to that indicated in the design documents provided in Plf4: Schedules and Overview Documents.
3. The Baseline Building results for all four cardinal orientations were not reported as required by Table G3.1.5(a). Note that the Baseline Case model is required to be rotated whenever the new construction floor area is greater than the existing construction floor area. In this instance, the new construction percent is close to 50% therefore a onetime exception is provided for this project. For future submittals, revise the model to simulate the Baseline building at 0 degrees, 90 degrees, 180 degrees, and 270 degrees and report the results in the Table EAp2-4.
4. The Baseline Case input reports indicate that there are parallel fan-powered boxes that are sized to be greater than 50% of the supply airflow (for example, the parallel fan-powered box airflow for zone zC11\_10 is 80% of the supply airflow). In this instance, this occurs in a small percentage of parallel fan-powered boxes and compliance is not affected for this issue. For future submittals, revise the Baseline Case model to report the parallel fan-powered box parameters consistent with that required by Section G3.1.3.14.

#### **03/11/2016 REVISED REVIEW COMMENT**

The LEED Form has been revised to address the issues outlined in the Preliminary Review and states that the project has achieved an energy cost savings of 46.50%. However, to demonstrate compliance, the following outstanding issues must be addressed.

For future submittals, upload a summary document that includes a narrative response to each Final Review comment, and a narrative describing any additional changes made to the energy models between review phases.

##### OUTSTANDING ISSUES

1. (Preliminary Review Comment #9) According to the narrative response the dust collector system has been modeled separately from the space conditioning HVAC systems and is now simulated as process energy. However, the Proposed Case fan energy consumption decreased by 568,109 kWh between the preliminary and final review submissions while the receptacle equipment energy only increased by 215,002 kWh. Additionally, per the response to

Preliminary Review Comment #10, the fan power modeled for the Proposed Case space conditioning HVAC systems increased between the preliminary and final review submissions. It is unclear if all energy associated with the dust collector system has been included as process energy in this review submission. Provide additional information regarding the fans, heating, and cooling energy associated with the dust collector system which is now being modeled as process energy.

2. (Preliminary Review Comments #8 & #12) According to the SV-A simulation input reports it does not appear that the VAV minimum flow rates for standard VAV terminals or fan-powered boxes have been modeled as designed in the Proposed Case model. For example, according to the SV-A simulation report for AHU6 (ERVU-6), the minimum flow ratio for the majority of VAV terminals is 0.16, however, according to the mechanical schedules, the VAV minimum flow ratio for terminal units on this air handler vary between 0.30 and 0.50. Furthermore, according to the SV-B simulation input report for AHU6, no fan-powered terminals have been modeled while according to the mechanical schedules there are 13 VAV fan-powered terminals serving this air handler. Revise the Proposed Case HVAC system to be consistent with the as-designed mechanical systems and provide revised SV-A and SV-B simulation input reports as verification.

Additionally, the following new issue surfaced as a result of the response to Preliminary Review comments:

3. According to the narrative response for Preliminary Review Comment #9, the dust collection systems have been modeled as process energy. However, it appears that the Baseline Case system AHU-1 has still been modeled with the dust collection systems modeled for the exceptional calculation method in the preliminary review (120,317 cfm of supply air). It does not appear that these supply air volumes are based on a 20 degrees F supply-air-to-room temperature difference as calculated by the sizing runs. Provide a detailed narrative clarifying how AHU1 was modeled in the Baseline Case, revise the model as necessary and provide revised SV-A simulation input reports.

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Due to these issues, the Proposed case fan power has been set to equal to the Baseline case fan power. The revised Proposed purchased energy consumption after applying site-generated renewable energy is 1,657,601 kWh of electricity, 880 therms/year of natural gas, with a revised Proposed energy cost of \$178,340.75/year. This leads to a total percentage improvement of 31.96%, which meets prerequisite requirements.

## 12/21/2015 DESIGN FINAL REVIEW

The LEED Form has been revised to address the issues outlined in the Preliminary Review and states that the project has achieved an energy cost savings of 46.50%. However, to demonstrate compliance, the following outstanding issues must be addressed.

For future submittals, upload a summary document that includes a narrative response to each Final Review comment, and a narrative describing any additional changes made to the energy models between review phases.

### OUTSTANDING ISSUES

1. (Preliminary Review Comment #2) It is unclear if the incomplete spaces in the Proposed Case model have been modeled with parallel fan-powered boxes consistent with the requirements of G3.1.3.14 because the SV-B reports have not been provided. Verify that the HVAC systems for the incomplete spaces have been modeled per the requirements for the Baseline Case HVAC systems from G3.1.1 and provide the SV-A and SV-B reports as verification.

2. (Preliminary Review Comment #5) Exterior lighting power values have been reported in Supplemental Table 1.4.3B and have been included in the Proposed and Baseline Case models as reported on the BEPU reports. However, the Proposed Case exterior lighting power has not been included in Table EAp2-5; therefore, the energy cost associated with the Proposed Case exterior lighting power has not been accounted for as the automatic cost calculation method has been selected in the form. Ensure that all energy end uses and fuel types are reported in Tables EAp2-4 and EAp2-5 and ensure that these values are consistent with the energy simulation output reports.

3. (Preliminary Review Comment #7) According to the narrative response the minimum outdoor air rate has been modeled identically in the Proposed and Baseline Case models. However, according to the SV-A simulation input reports, the sum of the minimum outdoor air rates for the Proposed Case is 46,064 cfm, while the sum of the minimum outdoor air rates for the Baseline Case is 58,743 cfm. Revise the minimum outside airflow (in units of cfm) to be modeled identically in the Baseline and Proposed case using the proposed case rates and provide the SV-A simulation input reports as verification.

4. (Preliminary Review Comment #9) According to the narrative response the dust collector system has been modeled separately from the space conditioning HVAC systems and is now simulated as process energy. However, the Proposed Case fan energy consumption decreased by 568,109 kWh between the preliminary and final review submissions while the receptacle equipment energy only increased by 215,002 kWh. Additionally, per the response to Preliminary Review Comment #10, the fan power modeled for the Proposed Case space conditioning HVAC systems increased between the preliminary and final review submissions. It is unclear if all energy associated with the dust collector system has been included as process energy in this review submission. Provide additional information regarding the fans, heating, and cooling energy associated with the dust collector system which is now being modeled as process energy.

5. (Preliminary Review Comments #8 & #12) According to the SV-A simulation input reports it does not appear that the VAV minimum flow rates for standard VAV terminals or fan-powered boxes have been modeled as designed in the Proposed Case model. For example, according to the SV-A simulation report for AHU6 (ERVU-6), the minimum flow ratio for the majority of VAV terminals is 0.16, however, according to the mechanical schedules, the VAV minimum flow

ratio for terminal units on this air handles vary between 0.30 and 0.50. Furthermore, according to the SV-B simulation input report for AHU6, no fan-powered terminals have been modeled while according to the mechanical schedules there are 13 VAV fan-powered terminals serving this air handler. Revise the Proposed Case HVAC system to be consistent with the as-designed mechanical systems and provide revised SV-A and SV-B simulation input reports as verification.

Additionally, the following new issue surfaced as a result of the response to Preliminary Review comments:

6. According to the narrative response for Preliminary Review Comment #9, the dust collection systems have been modeled as process energy. However, it appears that the Baseline Case system AHU-1 has still been modeled with the dust collection systems modeled for the exceptional calculation method in the preliminary review (120,317 cfm of supply air). It does not appear that these supply air volumes are based on a 20 degrees F supply-air-to-room temperature difference as calculated by the sizing runs. Provide a detailed narrative clarifying how AHU1 was modeled in the Baseline Case, revise the model as necessary and provide revised SV-A simulation input reports.

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Due to these issues, the predicted energy savings could not be confirmed. The documentation does not demonstrate prerequisite compliance.

All prerequisites must be earned prior to achieving LEED certification. Since this prerequisite has been denied after receiving two full rounds of review, an appeal will be necessary if the project team wishes to obtain LEED certification for the building.

## 09/10/2015 DESIGN PRELIMINARY REVIEW

The LEED Prerequisite Form and supporting documentation have been provided stating that the project is new construction consisting of 43.23% major renovation and therefore complies with Option 1: Whole Building Energy Simulation and has achieved an energy cost savings of 70.18%. However, to demonstrate compliance, the following comments requiring a project response (marked as Mandatory) must be addressed for the Final Review. For the remaining review comments (marked as Optional), a project response is optional.

### TECHNICAL ADVICE

#### REVIEW COMMENTS REQUIRING A PROJECT RESPONSE (Mandatory)

1. Provide the following:

a. A narrative response to each Preliminary Review comment below.

b. A narrative describing any additional changes made to the energy models between the Preliminary and Final Review phases not addressed by the responses to the review comments. The mandatory comments are perceived to reduce the projected savings for the Proposed design. If the projected savings increase substantially in the Final submission, without implementing any optional comments that may improve performance, a narrative explanation for these results must be provided.

2. Plf1: Minimum Program Requirements has not been approved. It appears that the treatment of incomplete space in this LEED project has not been addressed. All spaces within the LEED Project Boundary must be considered for compliance. As stated in LEED Interpretation 10102, any anticipated, but not yet installed, energy using systems in the incomplete spaces must be included in the calculations of this prerequisite. The energy using systems for incomplete space(s) that are not part of the project scope of work (such as incomplete space lighting systems and controls, thermal zones, VAV boxes, HVAC controls, unregulated loads, etc.) must be modeled identically in the Baseline and Proposed Case per ASHRAE 90.1-2007 Appendix G Table G3.1. Refer to the comments within Plf1 and provide the clarifications requested there. Ensure that the Owner Letter of Commitment includes information specific to how the future fit-out of the incomplete spaces will allow for these spaces to meet the specific requirements of this prerequisite.

Revise this form and provide a narrative confirming that energy-using systems for the unfinished spaces have been modeled identically in the Baseline and Proposed Case in accordance with ASHRAE 90.1 Appendix G Table G3.1.

a. Ensure that unfinished spaces that are intended for future use as conditioned spaces are modeled as conditioned spaces.

b. Per Table G3.1.6(Proposed)(c), model the lighting for unfinished spaces identically in the Baseline and Proposed Case model using the Building Area Method for the appropriate building type.

c. Model the thermal blocks for unfinished spaces in accordance with the requirements of Table G3.1.8(Proposed).

d. Model the Baseline Case system type serving the unfinished space(s) as System Type 6 - Packaged VAV w/ Parallel Fan-powered Boxes because the proposed heating source serving the remainder of the building is electric, the unfinished space(s) are non-residential occupancy, and the building is four stories and 125,204 square feet. If using G3.1.1 exceptions (a) through (d) to model the unfinished space(s), provide a narrative explaining why the exception applies.

e. Model all elements of the HVAC system serving the unfinished space that are not included in the base building design identically in the Baseline and Proposed Case models (e.g. VAV minimum volume, VAV box supply volume, demand control ventilation, economizer control, HVAC efficiencies, HVAC capacity ratios, supply air temperature reset controls, etc.).

f. Model the service hot water heating loads for the unfinished space(s) identically in the Baseline and Proposed Case. Where no service hot water system has been specified to serve the unfinished space(s) but the unfinished space(s) will have service hot water loads, model a Proposed case service hot water system that matches the system in the Baseline building design and serves the same hot water loads per Table G3.1.11(Proposed)(c).

g. Per Table G3.1.12 (Proposed), model receptacle and process loads identically in the Proposed and Baseline building designs based on the intended use of the space.

3. It is unclear whether existing envelope conditions prior to retrofit were modeled consistent with the requirements of ASHRAE 90.1-2007 Table G3.1.5(Baseline)(f). For all envelope assemblies located in spaces that were conditioned prior to retrofit, please model the Baseline case envelope U-factors, SHGCs, and F-factors using the existing conditions prior to retrofit. Please also separately report the existing renovation versus new construction envelope assemblies in Table 1.4 for both the Baseline and Proposed Case, and clearly identify the existing assemblies where energy efficient renovations have been made.

4. Supplemental Table 1.4 indicates that credit has been claimed for occupancy sensors in the Proposed Case. However, it appears that credit has been claimed for occupancy sensors in areas where they are required in accordance with Section 9.4.1.2 (Classrooms, Laboratories). Ensure that credit is not taken where occupancy sensors are required in accordance with Section 9.4.1.2 and indicate where occupancy sensor controls are modeled for credit (if any), verifying that this credit aligns with ASHRAE 90.1-2007 Table G3.2 and is only applied to fixtures controlled by occupant sensors. For spaces that are required to have occupancy sensors by ASHRAE 90.1-2007 Section 9.4.1.2, verify that they have been modeled appropriately in the Baseline Case. Revise the Baseline and Proposed Case models, the form, and provide the LV-B simulation input reports.

5. No exterior lighting power has been modeled for the Baseline or Proposed Case. Confirm that no exterior lighting is included in the building site or revise the models to reflect exterior lighting. Note that all exterior lighting which is existing on the project site should be modeled identically in the Proposed and Baseline Case models based on the existing exterior lighting power. 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; 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. Report the tradable and non#tradable surface lighting power separately (in units of Watts or Kilowatts) for both the Baseline and Proposed Case in Supplemental Table 1.4. Update the model and results to reflect exterior lighting if included in the model.

6. It is unclear whether the Proposed Case HVAC system was modeled as designed because according to the mechanical plans and drawings provided in Plf4: Schedule and Overview Documents, it appears that a natural gas fired boiler is connected to the ground source heat loop as a supplemental heat source. However, according to Supplemental Table 1.4 and the provided simulation output reports it does not appear that this boiler has been modeled. Table G3.1.10 (b)(Proposed) requires that the model be consistent with the design documents. Update the model so that all HVAC system parameters are consistent with the design documents, update Supplemental Table 1.4 to reflect all changes made, provide SV-A and PV-A simulation input reports, and update the form to reflect any changes made.

Note that a ground-source heat pump system with backup natural gas heating is considered a hybrid heating system and the Baseline system type should be selected accordingly. In order for the system to be classified as an electric heating source the natural gas fired boiler would have to be designated for emergency use only. If the boiler is for emergency use only, provide additional documentation (such as a sequence of operations for emergency power) demonstrating that the boiler will only be activated under emergency operations. Note that an extreme peak heating load which exceeds the capacity of the heating system does not qualify as an emergency condition.

7. According to the provided ECM Narrative, the project team is claiming savings for the dust collection system, claiming that the Baseline alternative consists of an exhaust air system with makeup ventilation air. However, minimum outside air rates (in CFM) must be modeled identically in the Baseline and Proposed Case based on the as-designed ventilation rates. While the adjustment of the ventilation rates between the Proposed and Baseline Case models is not permissible, a pressure drop credit for the dust collection system may be claimed based on the "Exhaust filters, scrubbers, or other exhaust treatment" devices credit.

Revise the minimum outside airflow (in units of cfm) to be modeled identically in the Baseline and Proposed case using the proposed case rates and provide the SV-A simulation input reports as verification. Additionally, verify that all systems in both the baseline and proposed case are modeled with zero outside air flow when fans are cycled on to meet unoccupied setback temperatures unless health or safety regulations mandate an alternate minimum flow during unoccupied periods (in which case, the unoccupied outside air rates should be modeled identically in the Baseline and Proposed Case).

8. It is unclear whether the Proposed Case HVAC system was modeled as designed because:

a. According to the SV-A reports in the file "IEQp1-3.pdf" provided in IEQp1: Minimum Indoor Air Quality Performance, it appears that only supply fans have been modeled for the HVAC systems. However, according to the mechanical schedules in Plf4, the HVAC systems contain supply fans, return fans, and exhaust fans.

b. According to the SV-A reports, no room exhaust fans (independent of the main air handling units) have been modeled. However, according to the mechanical schedules there are at least 21 exhaust/and or fume hood fans.

Table G3.1.10(b)(Proposed) requires that the model be consistent with the design documents. Update the model so that all HVAC system parameters (e.g. fan volumes, fan powers, efficiencies, heating/cooling capacities, etc.) are consistent with the design documents, update Supplemental Table 1.4 to reflect all changes made, provide revised

SV-A simulation input reports and update the form to reflect any changes made.

9. According to the SV-A reports, the Proposed Case VAV minimum flow rates for the combined air handling unit/dust collector systems (AHU1, AHU2, AHU4, and AHU8) have been set based on the minimum outdoor air rates of the air handling unit without the dust collection system. However, it is unclear that this is an accurate representation of the as-designed system because:

- a. It is unclear that the fans for the dust collection systems are variable volume fans.
- b. It is unclear that the fans for the dust collection systems would vary their flow rate based on the thermal load of the space, rather, it is expected that the dust collection fans would operate based on a need within the space (i.e. scheduled).
- c. It is unclear that the VAV part-load ratios for the combined air handling unit/dust collector systems would result in the expected fan power consumption for the as-designed systems.

Provide a detailed narrative clarifying the expected operation for the as-designed dust collector systems and a justification for the approach taken when modeling the combined air handling unit/dust collector systems. Provide revised SV-A simulation input reports as well as the SS-L simulation output reports.

10. Based on the SV-A simulation input reports provided in IEQp1, it appears that the Proposed case fan power is based on the system brake horsepower but does not include the energy associated with the fan motor efficiency. For example, unit ERVU-6 has a 25.7 brake horsepower supply fan powered by a 30 horsepower fan motor and an 18.6 brake horsepower exhaust fan powered by a 25 horsepower motor. Based on ASHRAE 90.1-2007 Table 10.8, the baseline efficiency for 25 and 30 horsepower motors is 92.4%; with this motor efficiency the peak electrical draw would be 35.77 kW, not 33.03 kW. Revise the Proposed case fan power to include the efficiency losses of the fan motors, provide revised SV-A simulation input reports, and update Table EAp2-5 as necessary.

11. It is unclear if the packaged rooftop heat pumps in the Baseline model were modeled according to Section G3.1.3.1, which requires that the electric air-source heat pumps are modeled with electric auxiliary heat that only energizes on the last thermostat stage and when the outdoor air temperature is less than 40 degrees F. Per ASHRAE Interpretation 90.1-2007-09, this means that the heat pump and auxiliary heat should operate together at low temperature conditions, with the compressor as the lead machine. The outside air cutoff temperature for the compressor must be no greater than the temperature associated with the low-temperature heating efficiency requirements of Table 6.8.1B (17 degrees F). For packaged heat pump units smaller than 65,000 Btuh and packaged terminal heat pumps, the HSPF rating accounts for electric auxiliary operation and includes test conditions at 17 degrees F. Indicate the modeled characteristics of the electric auxiliary heat in Table 1.4 including the temperature at which the auxiliary heat engages and the outside air temperature cutoff for the compressor. If the compressor low temperature cutoff is modeled as greater than 17 degrees F for packaged heat pump units smaller than 65,000 Btuh or packaged terminal heat pumps, describe how the Baseline efficiency of the heat pump was modeled to reflect the HSPF rating including auxiliary heating energy.

Note that if the Baseline Case heating fuel type has been revised to hybrid heating based on the response to comment #6 this comment may be ignored.

12. Insufficient information is provided in Supplemental Table 1.4 regarding VAV fan-powered terminals. For both the Baseline and Proposed Case, indicate in Table 1.4 the fan power per cfm for the parallel fan-powered boxes, the peak air flow as a percentage of design flow, and the minimum volume setpoints as a percentage of peak design flow, and verify that the Baseline Case is modeled in accordance with Section G3.1.3.14, or make any necessary revisions to the model. Provide the SV-B simulation input reports as verification.

Note that if the Baseline Case heating fuel type has been revised to hybrid heating based on the response to comment #6 the Baseline Case VAV terminal units should be modeled based on Section G3.1.3.13 which requires that the minimum volume setpoints for the VAV reheat terminal units are modeled at 0.4 cfm per square feet, unless this reduces the outside air rate below the minimum value. Provide additional information in Table 1.4 regarding how the VAV reheat terminal units in the Baseline Case were modeled, provide input reports to verify that this has been correctly modeled, and make any necessary revisions to the model. Provide the SV-A simulation input reports as verification.

REVIEW COMMENTS THAT DO NOT REQUIRE A PROJECT RESPONSE, BUT MAY LEAD TO AN IMPROVED PERFORMANCE RATING IF ADDRESSED (Optional):

13. The mechanical schedules provided in Plf4 indicate that sound attenuation sections have been provided for the as-designed HVAC system. However, according to Supplemental Table 1.4.7A, it does not appear that any pressure drop credits have been claimed for the sound attenuation sections in the Baseline fan power calculations.

Revise the Baseline Case fan power as necessary. For each of the pressure credits claimed, provide additional documentation, such as mechanical drawings, that clearly show these features in the as-designed building. Update Table 1.4 and the model to reflect revised fan powers.

**EAp3: Fundamental Refrigerant Management**

**Awarded**

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that there are no CFC-based refrigerants serving the project building.

**EAc1: Optimize Energy Performance**

POSSIBLE POINTS: 19

ATTEMPTED: 19, DENIED: 0, PENDING: 0, AWARDED: 19

**Awarded:****19****06/17/2016 DESIGN APPEAL REVIEW**

Additional documentation has been provided for EAp2: Minimum Energy Performance claiming an energy cost savings of 52.74%.

**03/11/2016 REVISED REVIEW COMMENT**

Additional documentation has been provided for EAp2: Minimum Energy Performance claiming an energy cost savings of 46.5%. However, when EAp2 was recalculated based on the issues noted there, the project has demonstrated an energy cost savings of 31.96%.

**12/17/2015 DESIGN FINAL REVIEW**

Additional documentation has been provided for EAp2: Minimum Energy Performance claiming an energy cost savings of 46.50%. However, the clarifications provided are insufficient to verify the savings claimed.

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The project does not have to appeal both EAp2 and this credit. Should the project wish to appeal EAp2, the status of this credit will be updated based on the results of that appeal.

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Credit Form states that the project is new construction consisting of 43.23% major renovation and has achieved an energy cost savings of 70.18%. However, to demonstrate compliance, the following must be addressed.

## TECHNICAL ADVICE

1. Refer to the comments within EAp2: Minimum Energy Performance and resubmit this credit.

**EAc2: On-Site Renewable Energy**

POSSIBLE POINTS: 7

ATTEMPTED: 4, DENIED: 3, PENDING: 0, AWARDED: 1

**Awarded: 1****06/17/2016 DESIGN APPEAL REVIEW**

The additional documentation provided for EAp2: Minimum Energy Performance demonstrates compliance and the form states that the project complies with Option 1: Whole Building Energy Simulation and that the project has offset 2.85% of the total energy costs through renewable energy generated on-site.

**03/11/2016 REVISED REVIEW COMMENT**

Additional documentation has been provided for EAp2: Minimum Energy Performance claiming a 5.1% energy cost savings from on-site renewable energy. However, when EAp2 was recalculated based on the issues noted there, the project has demonstrated that 4.2% of the total energy costs are offset through renewable energy generated on-site.

**12/17/2015 DESIGN FINAL REVIEW**

Additional documentation has been provided for EAp2: Minimum Energy Performance claiming a 5.1% energy cost savings from on-site renewable energy. However, EAp2 has been denied pending clarifications.

Because this credit is denied solely due to issues with EAp2, it does not need to be appealed should the project wish to appeal EAp2. The status of this credit will be updated based on the results of the appeal of the base credit.

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project complies with Option 1: Whole Building Energy Simulation and that the project has offset 6.02% of the total energy costs through renewable energy generated on-site. However, to demonstrate compliance, the following must be addressed.

## TECHNICAL ADVICE

1. It is unclear where the renewable energy production system is located and similarly unclear if it is located on the project site. Provide additional documentation (such as project drawings and a narrative) describing the renewable energy production system, including the methodology used to estimate the annual energy generated by the system.

2. Refer to the comments within EAp2: Minimum Energy Performance and resubmit this credit.

**EAc3: Enhanced Commissioning**  
POSSIBLE POINTS: 2

**Not  
Attempted**

**EAc4: Enhanced Refrigerant Management** **Awarded: 2**

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project selected refrigerants and HVACR systems that minimize or eliminate the emission of compounds that contribute to ozone depletion and global climate change. Additionally, all fire suppression systems in the LEED project do not use ozone-depleting substances including CFCs, HCFCs, or halons. The refrigerant impact calculation indicates that the total refrigerant impact of the LEED project is 38 per ton, which is less than the maximum allowable value of 100.

**EAc5: Measurement and Verification**

**Awarded: 3**

POSSIBLE POINTS: 3

ATTEMPTED: 3, DENIED: 0, PENDING: 0, AWARDED: 3

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project complies with Option 1 and has developed and implemented a Measurement and Verification (M&V) plan consistent with Option D: Calibrated Simulation (Savings Estimation Method) in the IPMVP Volume III: Concepts and Options for Determining Energy Savings in New Construction, April 2003.

**EAc6: Green Power**

**Denied**

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 2, PENDING: 0, AWARDED: 0

**11/09/2016 CONSTRUCTION FINAL REVIEW**

No further information has been provided.

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project has a two-year purchase agreement to procure 35.64% of electricity for this LEED project that meets the Green-e definition for renewable power using Option 1: Whole Building Energy Simulation. However, to demonstrate compliance, the following must be addressed.

**TECHNICAL ADVICE**

1. The supporting documentation (i.e. RCE.pdf) is blank. Provide the contract to purchase renewable power and ensure that the documentation includes the name of the provider, the total annual electricity provided, and the term of the contract.



## Materials and Resources

### MRp1: Storage and Collection of Recyclables

**Awarded**

12/08/2015 **DESIGN FINAL REVIEW**

The additional documentation demonstrates compliance.

09/01/2015 **DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project has provided appropriately sized dedicated areas for the collection and storage of materials for recycling. However, to demonstrate compliance, the following must be addressed.

#### TECHNICAL ADVICE

1. P1f1: Minimum Program Requirements has not been approved. It appears that the treatment of incomplete space in this LEED project has not been addressed. All spaces within the LEED Project Boundary must be considered for compliance per LEED Interpretation 10102. Refer to the comments within P1f1 and provide the clarifications requested there. Ensure that the Owner Letter of Commitment includes information regarding how the future fit-out of the incomplete spaces will allow for these spaces to meet the specific requirements of this prerequisite.
2. Provide a floor plan confirming the location of the recycling area. In addition, provide a revised narrative describing the expected volume and pick-up frequency of recycled materials and confirming that the recycling areas have been sized adequately, based on the expected volume.

### MRc1.1: Building Reuse-Maintain Existing Walls, Floors and Roof **Awarded: 2**

POSSIBLE POINTS: 3

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

09/19/2016 **CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project is undergoing a major renovation, includes additions equal to 131.35% of the existing gross floor area, and that 81.11% of the existing structural elements are being reused.

### MRc1.2: Building Reuse - Maintain 50% of Interior Non-Structural Elements

POSSIBLE POINTS: 1

**Not Attempted**

### MRc2: Construction Waste Management **Awarded: 2**

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

11/09/2016 **CONSTRUCTION FINAL REVIEW**

The additional documentation provided demonstrates compliance by diverting 83.02% of the on-site generated construction waste from landfill.

09/19/2016 **CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project has diverted 83.02% of the on-site generated construction waste from landfill. However, to demonstrate compliance, the following must be addressed.

#### TECHNICAL ADVICE

1. Provide a copy of the Construction Waste Management Plan. The plan must identify the diversion goals, relevant construction debris and materials to be diverted, implementation protocols, and parties responsible for implementing the plan. Refer to the Documentation Guidance and Examples sections in the LEED BD+C v2009 Reference Guide for more information.

### MRc3: Materials Reuse

POSSIBLE POINTS: 2

**Not Attempted**

### MRc4: Recycled Content

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**Awarded: 2**

09/19/2016 **CONSTRUCTION PRELIMINARY REVIEW**



The LEED Form states that 40.58% of the total building materials content, by value, has been manufactured using recycled materials.

**MRc5: Regional Materials**

**Awarded: 2**

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**11/09/2016 CONSTRUCTION FINAL REVIEW**

The additional documentation provided demonstrates compliance for installation of 37.59% regional materials.

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that 37.59% of the total building materials value includes materials and products that have been manufactured and extracted within 500 miles of the project site. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Revise the calculator to report the manufacturing and extraction distances for River City Ready Mix concrete and IMETCO metal wall panels.

**MRc6: Rapidly Renewable Materials**

**Not Attempted**

POSSIBLE POINTS: 1

**MRc7: Certified Wood**

**Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that 100% of the total wood-based building materials are certified in accordance with the principles and criteria of the Forest Stewardship Council (FSC).



### IEQp1: Minimum Indoor Air Quality Performance

### Awarded

#### 12/17/2015 DESIGN FINAL REVIEW

The additional documentation demonstrates compliance.

#### 09/10/2015 DESIGN PRELIMINARY REVIEW

The LEED Form states that the project is mechanically ventilated and that the ventilation system has met the minimum requirements of ASHRAE 62.1-2007. However, to demonstrate compliance, the following must be addressed.

#### TECHNICAL ADVICE

1. The documentation provided does not meet the requirements of the Ventilation Rate Procedure Calculations outlined in Section 6.2 of ASHRAE 62.1-2007. Provide revised ventilation rate procedure calculations for all ventilation systems in accordance with Section 6.2.

Based on the mechanical drawings and schedules provided in Plf4: Schedule and Overview Documents it appears that two of the ventilation systems (AHU-2 and AHU-4) are 100% outdoor air systems. For these systems, provide ventilation rate procedure calculations including (at a minimum) the following information for each zone: the Zone Occupancy Category, Zone Floor Area (Az), Zone Population (Pz), Area Outdoor Air Rate (Ra), People Outdoor Air Rate (Rp), and Zone Air Distribution Effectiveness (Ez), as required by Section 6.2.4.

The remainder of the ventilation systems appear to be multiple-zone recirculating systems. For these systems, provide Ventilation Rate Procedure calculations following Section 6.2.5. At the condition analyzed provide, at a minimum, the Zone Floor Area (Az), Zone Population (Pz), Area Outdoor Air Rate (Ra), People Outdoor Air Rate (Rp), Zone Primary Airflow (Vpz), Zone Air Distribution Effectiveness (Ez), System Ventilation Efficiency (Ev), and Outdoor Air Intake Flow (Vot).

2. Ensure that the calculations have been performed for the worst-case conditions. Generally, worst-case conditions are during heating mode (i.e. zone air distribution effectiveness, Ez, of 0.8 for an overhead distribution system in heating mode). Provide revised Ventilation Rate Procedure calculations with an Ez of 0.8, or provide additional information to justify the parameters used.

3. Ensure that the calculations have been performed for the worst-case conditions. Generally, worst-case conditions are when the VAV system is at minimum flow. Provide revised Ventilation Rate Procedure calculations with the VAV system analyzed at minimum flow, based on the actual mechanical design, or provide additional information to justify the parameters used.

4. Ensure that the total peak occupancy documented for this prerequisite is consistent with the total building users of 300 people reported in Plf3: Occupant and Usage Data. The peak occupancy should be reported consistently among all credits. Confirm the appropriate peak occupancy for the building and update the peak occupancy and/or the diversity so the peak occupancy is consistent among all credits or provide a detailed narrative describing the difference in occupants. The ASHRAE default occupancy should not be used when the expected occupancy is known.

5. Ensure that the total area documented for this prerequisite is consistent with the total gross area of 125,204 square feet reported in Plf2: Project Summary Details. It is unclear whether all occupiable space (as defined by ASHRAE 62.1-2007) has been accounted for within the ventilation rate procedure calculations. Although some of the difference can be attributed to non-occupiable spaces (e.g., mechanical rooms, inactive stairwells, shafts, and gross versus net area) and space types that are only required to meet the exhaust requirements of Table 6-4 (e.g., restrooms, kitchens) a justification for any difference in excess of roughly 10% must be provided. All occupiable spaces (which can include regularly occupied, non-regularly occupied, and unconditioned areas) must be provided with ventilation that meets the minimum requirements in accordance with ASHRAE 62.1-2007. Update the Ventilation Rate Procedure calculations to include all occupiable spaces and ensure that the area is reported consistently among all credits. If the difference in area is greater than 10%, provide a detailed narrative that describes the approximate area breakdown of the excluded spaces by space type to confirm that all occupiable spaces have been included in the calculations.

6. Insufficient information has been provided to confirm that the critical zone has been correctly determined. Critical zones generally include conference rooms, training rooms, or other high-density spaces with variable occupancy, though office spaces or other spaces may be the critical zone if the volume of air supplied to the space is limited. Provide a narrative to confirm how the critical zone was identified and update the calculations so the critical zone is clearly identified.

7. Plf1: Minimum Program Requirements and Plf3: Occupant and Usage Data have not been approved. It appears that the treatment of incomplete space in this LEED project has not been addressed. All spaces within the LEED Project Boundary must be considered for compliance per LEED Interpretation 10102. Refer to the comments within Plf1 and Plf3 and provide the clarifications requested there. Ensure that the Owner Letter of Commitment include information regarding how the future fit-out of the incomplete spaces will allow for these spaces to meet the specific requirements. Additionally, revise this form and supporting documentation as necessary to confirm that all future occupants have been included in the calculations.

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The USGBC LEED 62MZ (<http://www.usgbc.org/resources/usgbc-leed-62mzcalc>) and Minimum Indoor Air Quality Performance (<http://www.usgbc.org/resources/minimum-indoor-air-quality-performance-calculator>) calculators are available as optional tools that may be used to calculate the minimum ventilation needed to comply with this prerequisite and the 30% increase in ventilation needed to comply with IEQc2: Increased Ventilation. If the USGBC LEED 62MZ calculator is used, a separate calculator must be provided for each ventilation unit. The Minimum Indoor Air Quality Performance calculator has the ability to calculate ventilation requirements for multiple units within the same file.

Please note that this spreadsheet is only valid for multiple-zone recirculating systems. For other system types, a separate calculation must be provided or the calculators within the LEED Form may be used.

## **IEQp2: Environmental Tobacco Smoke (ETS) Control**

**Awarded**

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that smoking is prohibited on the project site. Additionally, smoking is prohibited within the building.

## **IEQc1: Outdoor Air Delivery Monitoring**

**Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**12/17/2015 DESIGN FINAL REVIEW**

The additional documentation demonstrates compliance.

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project is mechanically ventilated, that a CO2 sensor has been installed within each densely occupied space, and these devices are programmed to generate an alarm when the conditions vary by 10% or more from the design value. However, to demonstrate compliance, the following must be addressed.

### TECHNICAL ADVICE

1. The provided plans do not indicate that outdoor airflow measurement devices have been installed on all mechanical ventilation systems where 20% or more of the design supply airflow serves non-densely occupied spaces. Provide documentation confirming that all required mechanical ventilation systems include outdoor airflow measurement devices.
2. It is not clear that CO2 sensors have been installed within each densely occupied space (Classrooms and Lab spaces on the third and Fourth Floor). Provide documentation confirming that all spaces with a design occupant density greater than or equal to 25 people per 1000 square feet are monitored by CO2 sensors.
3. P1f1: Minimum Program Requirements and P1f3: Occupant and Usage Data have not been approved. It appears that the treatment of incomplete space in this LEED project has not been addressed. All spaces within the LEED Project Boundary must be considered for compliance per LEED Interpretation 10102. Refer to the comments within P1f1 and P1f3 and provide the clarifications requested there. Ensure that the Owner Letter of Commitment include information regarding how the future fit-out of the incomplete spaces will allow for these spaces to meet the specific requirements. Additionally, revise this form and supporting documentation as necessary to confirm that all future occupants have been included in the calculations.

## **IEQc2: Increased Ventilation**

**Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**12/17/2015 DESIGN FINAL REVIEW**

The additional documentation demonstrates compliance.

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project is mechanically ventilated and that the breathing zone outdoor air ventilation rates to all occupied spaces has been increased by at least 30% above the minimum rates required by ASHRAE 62.1-2007. However, to demonstrate compliance, the following must be addressed.

### TECHNICAL ADVICE

1. Further documentation is required to demonstrate that the breathing zone outdoor air ventilation rates has been increased by at least 30% above the minimum rates required by ASHRAE 62.1-2007. Refer to the comments in IEQp1:

Minimum Indoor Air Quality Performance, which also apply to this credit. Provide calculations for the worst-case condition (e.g. winter heating) showing that the minimum outdoor airflow available in the breathing zone in the critical zone for the project AHU exceeds 30% of the minimum outside airflow required by ASHRAE 62.1-2007. Please note that for multiple zone recirculating systems this includes demonstrating the following:

- A. At the system level, the uncorrected outside air requirement for the system (Vou) must be multiplied by 130%.
- B. For the critical zone, the outside air required at the breathing zone (Vbz) must be multiplied by 130%.
- C. For the critical zone, the zone ventilation efficiency (Ev) must be recalculated based on the revised values for Vou and critical zone Vbz.
- D. At the system level, the total outside air intake required as a fraction of primary supply air must be recalculated using the new critical zone ventilation efficiency (Ev) and the new uncorrected outside air requirement for the system (Vou).

**IEQc3.1: Construction IAQ Management Plan-During Construction**      **Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project reduces air quality problems resulting from construction to promote the comfort and well-being of construction workers and building occupants.

**IEQc3.2: Construction IAQ Management Plan-Before Occupancy**      **Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that an Indoor Air Quality (IAQ) Management Plan was developed and implemented and that the project complies with Option 1, Path 1: Pre-occupancy flush-out.

**IEQc4.1: Low-Emitting Materials-Adhesives and Sealants**      **Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**11/09/2016 CONSTRUCTION FINAL REVIEW**

The additional documentation demonstrates compliance.

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that all adhesive and sealant products used on the inside of the weatherproofing system and applied on-site have been included in the tables and comply with the VOC limits of the referenced standards for this credit. However, to demonstrate compliance, the following must be addressed.

**TECHNICAL ADVICE**

1. Flooring adhesives have not been reported in IEQc4.1: Low-Emitting Materials - Adhesives and Sealants. Revise Table L-5 Flooring Adhesives and Sealants in IEQc4.1 to include only flooring adhesives and sealants. Report all non-flooring adhesives and sealants in Table IEQc4.1-1: Non-Flooring Adhesives & Sealants.
2. It is unclear whether all adhesives and sealants used on the inside of the weatherproofing system and applied on-site have been included in the table. Based on the scope of work, the following adhesives and sealants appear to be missing: flooring adhesives (see comment #1), subfloor adhesives, drywall and panel adhesives, wall-base adhesives, multipurpose construction adhesives, structural glazing and wood adhesives, substrate adhesives, tile adhesives, contact adhesives, duct sealants, and plumbing adhesives and sealants. Refer to the referenced standards of this credit and confirm whether the comprehensive list of adhesives and sealants, as defined by the referenced standards, used on the inside of the weatherproofing system and applied on-site have been included in the table. The following are common products included in this credit: flooring adhesives, subfloor adhesives, drywall and panel adhesives, wall-base adhesives, multipurpose construction adhesives, structural glazing and wood adhesives, substrate adhesives, tile adhesives, contact adhesives, architectural sealants (including grouts, and polyurethane or plastic foams), duct sealants, plumbing adhesives and sealants, wall-covering adhesives, fiberglass panel adhesives, welding adhesives, and aerosol adhesives. Refer to the South Coast Air Quality Management District (SCAQMD) South Coast Rule 1168 (effective date of July 1, 2005 and rule amendment date of January 7, 2005) for the complete list and definitions. Consult AQMD and product manufacturers for assistance in properly classifying products. Revise the form, provide additional manufacturer documentation, and include a narrative to explain any special circumstances, if necessary. Ensure that all applicable products have been included in the documentation.

**IEQc4.2: Low-Emitting Materials-Paints and Coatings**      **Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that all paint and coating products used on the inside of the weatherproofing system and applied on-site have been included in the tables and comply with the VOC limits of the referenced standards for this credit.

**IEQc4.3: Low-Emitting Materials-Flooring Systems**      **Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**11/09/2016 CONSTRUCTION FINAL REVIEW**

The additional documentation demonstrates compliance.

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that all interior flooring materials meet or exceed applicable criteria for the Carpet and Rug Institute, South Coast Air Quality Management District, the California Department of Health Standard, or FloorScore; the carpet adhesives used have a VOC level of less than 50 g/L; all floor finishes meet the requirements of SCAQMD Rule 1113; and all tile setting adhesives and grout meet SCAQMD Rule 1168. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Flooring adhesives have not been reported in IEQc4.1: Low-Emitting Materials - Adhesives and Sealants. Revise Table L-5 Flooring Adhesives and Sealants in IEQc4.1 to include only flooring adhesives and sealants.

**IEQc4.4: Low-Emitting Materials-Composite Wood and Agrifiber Products**      **Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**11/09/2016 CONSTRUCTION FINAL REVIEW**

The additional documentation demonstrates compliance.

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that all composite wood and agrifiber products used on the interior of the building and all laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies contain no added urea-formaldehyde resins. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Laminating adhesives have not been included in the table. Revise the form to include all laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies. Provide additional manufacturer documentation and a narrative if necessary.

**IEQc5: Indoor Chemical and Pollutant Source Control**      **Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**12/17/2015 DESIGN FINAL REVIEW**

The additional documentation demonstrates compliance.

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project has been designed to minimize building occupant exposure to particulates and chemical pollutants. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. It is unclear if entryway compliant entryway systems have been provided at all building entryway points (specifically,

Vestibule TV1C, Vestibule TV1D, and the entryways into Cabinet Shop T101, Framing Lab T108, Fabrication T110, and Machine Tool T119). Provide drawing(s) highlighting all building entry points and confirm that compliant entryway systems will be located at all regular used exterior entrances. Provide a narrative clarifying why any entry points have been excluded. Refer to the Implementation section of this credit in the LEED BD+C v2009 Reference Guide for additional information.

### **IEQc6.1: Controllability of Systems-Lighting**

**Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

#### **09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The additional documentation demonstrates compliance by providing lighting controls for 100% of building occupants and 100% of shared multi-occupant spaces to enable adjustments that meet needs and preferences.

#### **12/08/2015 DESIGN FINAL REVIEW**

This credit was submitted for initial review during the Design Final Review. The LEED Form states that lighting controls are provided for 100% of building occupants and 100% of shared multi-occupant spaces to enable adjustments that meet needs and preferences. However, to demonstrate compliance, the following must be addressed.

##### TECHNICAL ADVICE

1. Provide documentation, such as a floor plan and schedule, to demonstrate that at least 90% of occupants are provided with lighting adjustments (such as task lights) and that transient groups share lighting controls in all shared multi-occupant spaces (such as dimming or multi-level lighting).

Because this credit was submitted for initial review during the Design Final Review, it will receive the second round of review during the Construction Review phase. Re-attempt the credit so it is open for review.

#### **09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form has been provided. However, to demonstrate compliance, the following must be addressed.

##### TECHNICAL ADVICE

1. The form is blank and does not appear to have been completed. For future submittals, provide a revised form which has been completed along with all of the necessary documentation it requires.

If applicable, please note that Plf1: Minimum Program Requirements has not been approved. It appears that the treatment of incomplete space in this LEED project has not been addressed. All spaces within the LEED Project Boundary must be considered for compliance per LEED Interpretation 10102. Refer to the comments within Plf1 and provide the clarifications requested there. Ensure that the Owner Letter of Commitment includes information regarding how the future fit-out of the incomplete spaces will allow for these spaces to meet the specific requirements of this credit.

### **IEQc6.2: Controllability of Systems-Thermal Comfort**

**Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

#### **12/08/2015 DESIGN FINAL REVIEW**

This credit was submitted for initial review during the Design Final Review. The LEED Form states that thermal controls are provided for 69.44% of building occupants and 100% of shared multi-occupant spaces to enable adjustments that meet needs and preferences.

#### **09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form has been provided. However, to demonstrate compliance, the following must be addressed.

##### TECHNICAL ADVICE

1. The form is blank and does not appear to have been completed. For future submittals, provide a revised form which has been completed along with all of the necessary documentation it requires.

If applicable, please note that Plf1: Minimum Program Requirements has not been approved. It appears that the treatment of incomplete space in this LEED project has not been addressed. All spaces within the LEED Project Boundary must be considered for compliance per LEED Interpretation 10102. Refer to the comments within Plf1 and provide the clarifications requested there. Ensure that the Owner Letter of Commitment includes information regarding how the future fit-out of the incomplete spaces will allow for these spaces to meet the specific requirements of this credit.

**IEQc7.1: Thermal Comfort-Design****Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the mechanically ventilated and mechanically conditioned project space is in compliance with ASHRAE 55-2004.

**IEQc7.2: Thermal Comfort-Verification****Awarded: 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that a permanent monitoring system will be installed and a thermal comfort survey of building occupants will be conducted between six and 18 months after occupancy.

**IEQc8.1: Daylight and Views-Daylight****Not  
Attempted**

POSSIBLE POINTS: 1

**IEQc8.2: Daylight and Views-Views****Not  
Attempted**

POSSIBLE POINTS: 1



## Innovation in Design

### **IDc1.1: Exemplary Performance - Maximize Open Space**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded: 1**

#### **09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project achieves exemplary performance for SSc5.2: Site Development - Maximize Open Space. The requirement for exemplary performance is 40% and the project has documented 40.97%.

### **IDc1.1: Innovation in Design**

POSSIBLE POINTS: 1

**Not Attempted**

### **IDc1.2: Exemplary Performance - Water Use Reduction**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded: 1**

#### **12/08/2015 DESIGN FINAL REVIEW**

The former proposal for exemplary performance for EAc1: Optimize Energy Performance has been replaced with exemplary performance for WEc3: Water Use Reduction. The LEED Form states that the project achieves exemplary performance for WEc3: Water Use Reduction. The requirement for exemplary performance is 45% and the project has documented 85.2%.

#### **09/08/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project achieves exemplary performance for EAc1: Optimize Energy Performance. The requirement for exemplary performance is 50% and the project has documented 70.18%. However, the base credit has not been achieved.

#### TECHNICAL ADVICE

1. Refer to the comments within EAc1. Ensure that any issues noted there are addressed within the exemplary performance documentation when resubmitting this credit.

Alternatively, the project may pursue a different Innovation in Design strategy for the Final Review.

### **IDc1.2: Innovation in Design**

POSSIBLE POINTS: 1

**Not Attempted**

### **IDc1.3: Exemplary Performance - Wastewater Technologies**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded: 1**

#### **12/08/2015 DESIGN FINAL REVIEW**

The clarifications provided for WEc2: Innovative Wastewater Technologies demonstrate compliance. The requirement for exemplary performance is 100% and the project has documented 100%.

#### **09/01/2015 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project achieves exemplary performance for WEc2: Innovative Wastewater Technologies. The requirement for exemplary performance is 100% and the project has documented 100%. However, the base credit has not been achieved.

#### TECHNICAL ADVICE

1. Refer to the comments within WEc2. Ensure that any issues noted there are addressed within the exemplary performance documentation when resubmitting this credit.

Alternatively, the project may pursue a different Innovation in Design strategy for the Final Review.

### **IDc1.3: Innovation in Design**

POSSIBLE POINTS: 1

**Not Attempted**



**IDc1.4: Innovation in Design**

POSSIBLE POINTS: 1

**Not  
Attempted**

**IDc1.4: Green Building Education**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded: 1**

**11/09/2016 CONSTRUCTION FINAL REVIEW**

The LEED Form states that the project team has developed and implemented a Public Education program. This strategy is detailed in the LEED BD+C v2009 Reference Guide. The documentation provided for the development of a signage program, a case-study, and website or electronic newsletter complies with the Reference Guide requirements.

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project team has developed and implemented a Public Education program. This strategy is detailed in the LEED BD+C v2009 Reference Guide. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Provide documentation demonstrating the development of two of the following: a signage program (electronic examples), a case-study (pdf of the hardcopy), guided tours (a script and tour stop description drawing), an educational outreach program (detailed narrative and supporting document), and/or a website (pdf of the website) or electronic newsletter (pdf of the hardcopy).

**IDc1.5: Innovation in Design**

POSSIBLE POINTS: 1

**Not  
Attempted**

**IDc1.5: Integrative Process**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded: 1**

**11/09/2016 CONSTRUCTION FINAL REVIEW**

The additional documentation demonstrates compliance.

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project team has developed and implemented an Integrated Process strategy in accordance with the Innovation Catalog. A narrative has been provided. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. This credit must be documented in accordance with the LEED v4 requirements. Provide a completed copy of the Integrative Process Worksheet, which can be located here <http://www.usgbc.org/node/2613097?view=resources&return=/credits/new-construction/v4/integrative-process-credits>

**IDc2: LEED® Accredited Professional**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded: 1**

**09/19/2016 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that a LEED AP has been a participant on the project development team.



## Regional priority

### **SSc1: Site Selection**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: , PENDING: , AWARDED: 1

### **SSc4.2: Alternative Transportation- Bicycle Storage and Changing Rooms**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: , PENDING: , AWARDED: 1

### **SSc5.2: Site Development-Maximize Open Space**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: , PENDING: , AWARDED: 1

### **WEc1: Water Efficient Landscaping**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: , PENDING: , AWARDED: 1

**TOTAL**

**110**

**92**

**5**

**0**

**87**

# REVIEW SUMMARY

Review			POINTS:			
	SUBMITTED	RETURNED	SUBMITTED	DENIED	PENDING	AWARDED
<b>Design Preliminary</b>	<b>08/24/2015</b>	<b>09/22/2015</b>	<b>67</b>	<b>0</b>	<b>46</b>	<b>21</b>

Credit	STATUS	TYPE	POINTS: ATTEMPTED	DENIED	PENDING	AWARDED
PIf1: Minimum Program Requirements	<b>Not Approved</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
PIf2: Project Summary Details	<b>Approved</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
PIf3: Occupant and Usage Data	<b>Not Approved</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
PIf4: Schedule and Overview Documents	<b>Approved</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
SSc1: Site Selection	<b>Anticipated</b>	Design	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
SSc2: Development Density and Community Connectivity	<b>Anticipated</b>	Design	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>
SSc4.1: Alternative Transportation-Public Transportation Access	<b>Pending</b>	Design	<b>6</b>	<b>0</b>	<b>6</b>	<b>0</b>
SSc4.2: Alternative Transportation-Bicycle Storage and Changing Rooms	<b>Pending</b>	Design	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>
SSc4.3: Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles	<b>Pending</b>	Design	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>
SSc4.4: Alternative Transportation-Parking Capacity	<b>Anticipated</b>	Design	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
SSc5.2: Site Development-Maximize Open Space	<b>Anticipated</b>	Design	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
WEp1: Water Use Reduction-20% Reduction	<b>Pending</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
WEc1: Water Efficient Landscaping	<b>Anticipated</b>	Design	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>
WEc2: Innovative Wastewater Technologies	<b>Pending</b>	Design	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>
WEc3: Water Use Reduction	<b>Pending</b>	Design	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>
EAp2: Minimum Energy Performance	<b>Pending</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
EAp3: Fundamental Refrigerant Management	<b>Anticipated</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
EAc1: Optimize Energy Performance	<b>Pending</b>	Design	<b>19</b>	<b>0</b>	<b>19</b>	<b>0</b>
EAc2: On-Site Renewable Energy	<b>Pending</b>	Design	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>
EAc4: Enhanced Refrigerant Management	<b>Anticipated</b>	Design	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
MRp1: Storage and Collection of Recyclables	<b>Pending</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IEQp1: Minimum Indoor Air Quality Performance	<b>Pending</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IEQp2: Environmental Tobacco Smoke (ETS) Control	<b>Anticipated</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IEQc1: Outdoor Air Delivery Monitoring	<b>Pending</b>	Design	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IEQc2: Increased Ventilation	<b>Pending</b>	Design	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IEQc5: Indoor Chemical and Pollutant Source Control	<b>Pending</b>	Design	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IEQc6.1: Controllability of Systems-Lighting	<b>Pending</b>	Design	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IEQc6.2: Controllability of Systems-Thermal Comfort	<b>Pending</b>	Design	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IEQc7.1: Thermal Comfort-Design	<b>Anticipated</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>

IEQc7.2: Thermal Comfort-Verification	<b>Anticipated</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IDc1.1: Exemplary Performance - Maximize Open Space	<b>Anticipated</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IDc1.2: Exemplary Performance - Water Use Reduction	<b>Pending</b>	Design	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IDc1.3: Exemplary Performance - Wastewater Technologies	<b>Pending</b>	Design	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>

**Design Final****12/04/201501/12/2016****46****23****0****23**

<b>Credit</b>	<b>STATUS</b>	<b>TYPE</b>	<b>POINTS: ATTEMPTED</b>	<b>DENIED</b>	<b>PENDING</b>	<b>AWARDED</b>
PIf1: Minimum Program Requirements	<b>Approved</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
PIf3: Occupant and Usage Data	<b>Approved</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
SSc4.1: Alternative Transportation-Public Transportation Access	<b>Anticipated</b>	Design	<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>
SSc4.2: Alternative Transportation-Bicycle Storage and Changing Rooms	<b>Anticipated</b>	Design	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
SSc4.3: Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles	<b>Anticipated</b>	Design	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
WEp1: Water Use Reduction-20% Reduction	<b>Anticipated</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
WEc2: Innovative Wastewater Technologies	<b>Anticipated</b>	Design	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
WEc3: Water Use Reduction	<b>Anticipated</b>	Design	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
EAp2: Minimum Energy Performance	<b>Denied</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
EAc1: Optimize Energy Performance	<b>Denied</b>	Design	<b>19</b>	<b>19</b>	<b>0</b>	<b>0</b>
EAc2: On-Site Renewable Energy	<b>Denied</b>	Design	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>
MRp1: Storage and Collection of Recyclables	<b>Anticipated</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IEQp1: Minimum Indoor Air Quality Performance	<b>Anticipated</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IEQc1: Outdoor Air Delivery Monitoring	<b>Anticipated</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IEQc2: Increased Ventilation	<b>Anticipated</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IEQc5: Indoor Chemical and Pollutant Source Control	<b>Anticipated</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IEQc6.1: Controllability of Systems-Lighting	<b>Denied</b>	Design	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
IEQc6.2: Controllability of Systems-Thermal Comfort	<b>Anticipated</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IDc1.2: Exemplary Performance - Water Use Reduction	<b>Anticipated</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IDc1.3: Exemplary Performance - Wastewater Technologies	<b>Anticipated</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>

<b>Design Appeal</b>	<b>05/06/201606/29/2016</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>19</b>
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<b>Credit</b>	<b>STATUS</b>	<b>TYPE</b>	<b>POINTS: ATTEMPTED</b>	<b>DENIED</b>	<b>PENDING</b>	<b>AWARDED</b>
EAp2: Minimum Energy Performance	<b>Anticipated</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
EAc1: Optimize Energy Performance	<b>Anticipated</b>	Design	<b>19</b>	<b>0</b>	<b>0</b>	<b>19</b>

**Construction Preliminary****09/14/201609/28/2016****25****0****11****14**

<b>Credit</b>	<b>STATUS</b>	<b>TYPE</b>	<b>POINTS: ATTEMPTED</b>	<b>DENIED</b>	<b>PENDING</b>	<b>AWARDED</b>
SSp1: Construction Activity Pollution Prevention	<b>Awarded</b>	Construction	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
SSc7.1: Heat Island Effect, Non-Roof	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
EAp1: Fundamental Commissioning of the Building Energy Systems	<b>Pending</b>	Construction	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
EAc5: Measurement and Verification	<b>Awarded</b>	Construction	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
EAc6: Green Power	<b>Pending</b>	Construction	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>
MRC1.1: Building Reuse-Maintain Existing Walls, Floors and Roof	<b>Awarded</b>	Construction	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
MRC2: Construction Waste Management	<b>Pending</b>	Construction	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>
MRC4: Recycled Content	<b>Awarded</b>	Construction	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
MRC5: Regional Materials	<b>Pending</b>	Construction	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>
MRC7: Certified Wood	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IEQc3.1: Construction IAQ Management Plan-During Construction	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IEQc3.2: Construction IAQ Management Plan-Before Occupancy	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IEQc4.1: Low-Emitting Materials-Adhesives and Sealants	<b>Pending</b>	Construction	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IEQc4.2: Low-Emitting Materials-Paints and Coatings	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IEQc4.3: Low-Emitting Materials-Flooring Systems	<b>Pending</b>	Construction	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IEQc4.4: Low-Emitting Materials-Composite Wood and Agrifiber Products	<b>Pending</b>	Construction	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IEQc6.1: Controllability of Systems-Lighting	<b>Awarded</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IDc1.4: Green Building Education	<b>Pending</b>	Construction	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IDc1.5: Integrative Process	<b>Pending</b>	Construction	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
IDc2: LEED® Accredited Professional	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>



**Construction Final****11/07/201611/28/2016****11****2****0****9****Credit**

	STATUS	TYPE	POINTS: ATTEMPTED	DENIED	PENDING	AWARDED
EAp1: Fundamental Commissioning of the Building Energy Systems	<b>Awarded</b>	Construction	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
EAc6: Green Power	<b>Denied</b>	Construction	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>
Mrc2: Construction Waste Management	<b>Awarded</b>	Construction	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Mrc5: Regional Materials	<b>Awarded</b>	Construction	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
IEQc4.1: Low-Emitting Materials-Adhesives and Sealants	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IEQc4.3: Low-Emitting Materials-Flooring Systems	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IEQc4.4: Low-Emitting Materials-Composite Wood and Agrifiber Products	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IDc1.4: Green Building Education	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
IDc1.5: Integrative Process	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>