# 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 Green Business Certification Inc. (GBCI®).

## WCNR - Michael Smith Addition

| | |
|---|---|
| **Project ID** | 1000075260 |
| **Rating system & version** | LEED-NC v2009 |
| **Project registration date** | 08/15/2016 |

CERTIFIED SILVER GOLD PLATINUM

**Construction Application Decision**

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

## LEED 2009 NEW CONSTRUCTION

ATTEMPTED: 57, DENIED: 0, PENDING: 0, AWARDED: 57 OF 108 POINTS

### SUSTAINABLE SITES — 18 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 |
| SSc4.1 | Alternative Transportation-Public Transportation Access | 6 / 6 |
| SSc4.2 | Alternative Transportation-Bicycle Storage and Changing Room | 0 / 1 |
| SSc4.3 | Alternative Transportation-Low-Emitting and Fuel-Efficient V | 0 / 3 |
| SSc4.4 | Alternative Transportation-Parking Capacity | 2 / 2 |
| SSc5.1 | Site Development-Protect or Restore Habitat | 1 / 1 |
| SSc5.2 | Site Development-Maximize Open Space | 1 / 1 |
| SSc6.1 | Stormwater Design-Quantity Control | 0 / 1 |
| SSc6.2 | Stormwater Design-Quality Control | 0 / 1 |
| SSc7.1 | Heat Island Effect, Non-Roof | 1 / 1 |
| SSc7.2 | Heat Island Effect-Roof | 1 / 1 |
| SSc8 | Light Pollution Reduction | 0 / 1 |

### WATER EFFICIENCY — 4 OF 10

| | | |
|---|---|---|
| WEp1 | Water Use Reduction-20% Reduction | Y |
| WEc1 | Water Efficient Landscaping | 0 / 4 |
| WEc2 | Innovative Wastewater Technologies | 0 / 2 |
| WEc3 | Water Use Reduction | 4 / 4 |

### ENERGY AND ATMOSPHERE — 9 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 | 0 / 19 |
| EAc2 | On-Site Renewable Energy | 0 / 7 |
| EAc3 | Enhanced Commissioning | 2 / 2 |
| EAc4 | Enhanced Refrigerant Mgmt | 2 / 2 |
| EAc5 | Measurement and Verification | 3 / 3 |
| EAc6 | Green Power | 2 / 2 |

### MATERIALS AND RESOURCES — 7 OF 14

| | | |
|---|---|---|
| MRp1 | Storage and Collection of Recyclables | Y |
| MRc1.1 | Building Reuse-Maintain Existing Walls, Floors and Roof | 0 / 3 |
| MRc1.2 | Building 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 — 11 OF 15

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

### INNOVATION IN DESIGN — 6 OF 6

| | | |
|---|---|---|
| IDc1.1 | Innovation in Design | 0 / 1 |
| IDc1.1 | SSc7.1 HEAT ISLAND EFFECT-NONROOF-NONROOF SURFACES | 1 / 1 |
| IDc1.2 | SSc4.1 Double Transit Ridership | 1 / 1 |
| IDc1.2 | Innovation in Design | 0 / 1 |
| IDc1.3 | SSc5.2 SITE DEVELOPMENT-MAXIMIZE OPEN SPACE | 1 / 1 |
| IDc1.3 | Innovation in Design | 0 / 1 |
| IDc1.4 | EQpc78 - Design for Active Occupants | 1 / 1 |
| IDc1.4 | Innovation in Design | 0 / 1 |
| IDc1.5 | IDc1.5 Green Cleaning Policy | 1 / 1 |
| IDc1.5 | Innovation in Design | 0 / 1 |
| IDc2 | LEED® Accredited Professional | 1 / 1 |

### REGIONAL PRIORITY CREDITS — 2 OF 2

| | | |
|---|---|---|
| SSc2 | Development Density and Community Connectivity | 1 / 1 |
| WEc3 | Water Use Reduction | 1 / 1 |

| | |
|---|---|
| **TOTAL** | **57 OF 108** |

# CREDIT DETAILS

## Project Information Forms

### PIf1: Minimum Program Requirements — Approved

**09/15/2017 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 1: Third Party Data Source. The project is located in Fort Collins, Colorado.

### PIf2: Project Summary Details — Approved

**09/15/2017 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 40,000 gross square feet.

### PIf3: Occupant and Usage Data — Approved

**09/15/2017 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 527, the peak users value is 1,877, and the FTE value is 27.

### PIf4: Schedule and Overview Documents — Approved

**09/15/2017 DESIGN PRELIMINARY REVIEW**

The LEED Form includes the design and construction schedule. The date of substantial completion is June 29, 2018, and the date of occupancy is June 29, 2018. The required documents have been uploaded.

## Sustainable Sites

### SSp1: Construction Activity Pollution Prevention — Awarded

**01/07/2019 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

**09/15/2017 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

**09/15/2017 DESIGN PRELIMINARY REVIEW**

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

It is noted that a hotel is not considered a basic service for the pruposes of this credit. In addition, the College of Liberal Arts would not be considered a separate service from the project building. In this case, compliance is not affected, as the reviewer was able to determine that additional services are present within the radius.

### SSc3: Brownfield Redevelopment — Not Attempted

POSSIBLE POINTS: 1

### SSc4.1: Alternative Transportation-Public Transportation Access — Awarded: 6

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

**09/15/2017 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.

### SSc4.2: Alternative Transportation-Bicycle Storage and Changing Rooms — Not Attempted

POSSIBLE POINTS: 1

### SSc4.3: Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles — Not Attempted

POSSIBLE POINTS: 3

### SSc4.4: Alternative Transportation-Parking Capacity — Awarded: 2

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

**09/15/2017 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 — Awarded: 1

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

01/07/2019 **CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project complies with Case 2: Previously Developed Areas or Graded Sites. The project has restored or protected at least 50% of the project site excluding the building footprint using native or adapted vegetation. The project has selected the Licensed Professional Exemption (LPE).

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

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

09/15/2017 **DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project complies with Case 2: Sites with No Local Zoning Requirements. The open space provided is equal to or greater than the footprint of the LEED project building.

### 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

01/07/2019 **CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project complies with Option 1 and 100% 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 — Awarded: 1

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

12/05/2017 **DESIGN FINAL REVIEW**

The LEED Form states that the project complies with Option 1 and 100% of the building roof surface has a Solar Reflectance Index meeting the credit requirements.

The project has selected the Licensed Professional Exemption (LPE).

### SSc8: Light Pollution Reduction — Not Attempted

POSSIBLE POINTS: 1

## Water Efficiency

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

**09/15/2017 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project has reduced potable water use by 42.43%.

**WEc1: Water Efficient Landscaping** **Not Attempted**
POSSIBLE POINTS: 4

**WEc2: Innovative Wastewater Technologies** **Not Attempted**
POSSIBLE POINTS: 2

**WEc3: Water Use Reduction** **Awarded: 4**
POSSIBLE POINTS: 4
ATTEMPTED: 4, DENIED: 0, PENDING: 0, AWARDED: 4

**09/15/2017 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project has reduced potable water use by 42.43%.

## Energy and Atmosphere

### EAp1: Fundamental Commissioning of the Building Energy Systems — Awarded

#### 12/19/2018 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that fundamental commissioning is complete.

### EAp2: Minimum Energy Performance — Awarded

#### 12/01/2017 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 5.26%. The total predicted annual energy consumption for the project is 834,299 kWh/year of electricity, 7,122 therms/year of purchased steam, and 6,715 therms/year of purchased chilled water.

#### 10/02/2017 DESIGN PRELIMINARY REVIEW

The LEED Form states that the project complies with Option 1: Whole Building Energy Simulation and has achieved an energy cost savings of 7.8%. 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. It is unclear what types of windows are used in the proposed building because the Minimum Energy Performance calculator indicates nonmetal framing windows for the Baseline building whereas the LEED Summary Report indicates that metal framing windows are modeled. Revise the calculator or the Baseline model and provide supporting documentation such as window schedules or window specifications to confirm that the Baseline building has been modeled according to ASHRAE Appendix G requirements.

3. The Minimum Energy Performance calculator indicates that Baseline building has been modeled with HVAC system type 7 only. The stairwells and MDF spaces, which have been designed with separate fan coil unit systems, appear to have peak thermal loads or schedules that differ significantly from the rest of the building and must be modeled with a separate single-zone system per ASHRAE G3.1.1 exception (b). Note that spaces with a much higher than average window-to-floor area ratio, spaces with very high peak occupancies, spaces with significantly different temperature setpoints, and server room spaces may have peak thermal loads or schedule differences that meet the thresholds referenced in G3.1.1 exception (b). Revise the Baseline system type to system type 3 for all spaces meeting G3.1.1 exception (b).

4. It appears that both Proposed and Baseline Case chilled water pumps are modeled as constant volume pumps per LEED Summary report. However, ASHRAE G3.1.3.10 indicates that chilled-water pumps in systems serving less than 300 tons cooling capacity shall be modeled as a primary/secondary systems with secondary pump riding the pump curve. Since the project uses purchased chilled water, only secondary pumps riding the pump curve should be modeled. Furthermore, both Proposed and Baseline pump power is modeled as 22 watts per gpm whereas G3.1.3.10 exception indicates that the pump power for systems using purchased chilled water shall be 16 watts per gpm for the Baseline building. The Proposed building chilled water pumps must be modeled as designed. Revise the models and provide updated LEED Summary Report to confirm that both Proposed and Baseline Case are modeled according to ASHRAE modeling protocol.

5. The energy savings reported for space heating (40% end-use savings) do not appear to be substantiated because the proposed energy efficiency measures including reduced lighting power and window shading increase space heating energy use and the purchased heat source does not provide energy savings from the heating equipment. Review the Baseline and Proposed inputs for the model to confirm that they conform to ASHRAE 90.1-2007 and LEED modeling protocol. Provide sufficient information regarding the energy inputs in the Minimum Energy Performance calculator and an accompanying narrative to justify the reported energy savings.

### EAp3: Fundamental Refrigerant — Awarded

**Management**

**12/01/2017 DESIGN FINAL REVIEW**

The additional documentation demonstrates compliance.

**10/02/2017 DESIGN PRELIMINARY REVIEW**

The LEED Form states that there are no CFC-based refrigerants serving the project building. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. The LEED Form indicates that the project does not use refrigerant because it connects to campus chilled water system according to Plf4: Schedules and Overview Documents. However, LEED BD+C v2009 states that if the building is connected to an existing chilled water system, that system must either be CFC-free or the project team must demonstrate a commitment to phasing out CFC-based refrigerants no later than 5 years after the project is completed. Provide revised Form to demonstrate compliance of the chilled water system that the project building is connecting to.

**EAc1: Optimize Energy Performance** — **Not Attempted**
POSSIBLE POINTS: 19

**EAc2: On-Site Renewable Energy** — **Not Attempted**
POSSIBLE POINTS: 7

**EAc3: Enhanced Commissioning** — **Awarded: 2**
POSSIBLE POINTS: 2
ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**02/21/2019 CONSTRUCTION FINAL REVIEW**

The additional documentation demonstrates compliance.

**12/19/2018 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that enhanced commissioning has been implemented. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Provide the contract between the Owner and the Commissioning Agent which ensures post-construction commissioning activities.

**EAc4: Enhanced Refrigerant Management** — **Awarded: 2**
POSSIBLE POINTS: 2
ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**12/01/2017 DESIGN FINAL REVIEW**

The additional documentation demonstrates compliance.

**10/02/2017 DESIGN PRELIMINARY REVIEW**

The LEED Form states that there are no refrigerants in the HVAC systems that serve the LEED project. Additionally, all fire suppression systems in the LEED project do not use ozone-depleting substances including CFCs, HCFCs, or halons. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Refer to comment in EAp3: Fundamental Refrigerant Management and resubmit for this credit.

**EAc5: Measurement and Verification** — **Awarded: 3**
POSSIBLE POINTS: 3
ATTEMPTED: 3, DENIED: 0, PENDING: 0, AWARDED: 3

**12/19/2018 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 — Awarded: 2

**POSSIBLE POINTS: 2**

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

### 12/19/2018 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that the project has a two-year purchase agreement to procure 100% of electricity for this LEED project that meets the Green-e definition for renewable power using Option 1: Whole Building Energy Simulation.

## Materials and Resources

### MRp1: Storage and Collection of Recyclables — Awarded

**09/15/2017 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.

### MRc1.1: Building Reuse-Maintain Existing Walls, Floors and Roof — Not Attempted
POSSIBLE POINTS: 3

### MRc1.2: Building Reuse - Maintain 50% of Interior Non-Structural Elements — Not Attempted
POSSIBLE POINTS: 1

### MRc2: Construction Waste Management — Awarded: 2
POSSIBLE POINTS: 2
ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**01/07/2019 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project has diverted 85.05% of the on-site generated construction waste from landfill.

### MRc3: Materials Reuse — Not Attempted
POSSIBLE POINTS: 2

### MRc4: Recycled Content — Awarded: 2
POSSIBLE POINTS: 2
ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**02/19/2019 CONSTRUCTION FINAL REVIEW**

The additional documentation demonstrates compliance and states that 59.09% of the total building materials content, by value, has been manufactured using recycled materials.

It is noted that the Material and Resources Calculator indicates that 29.09% of the total building materials content, by value, has been manufactured using recycled materials. Compliance is not affected in this instance. For future projects ensure that the values reported in the form is consistent across all submittal.

**01/07/2019 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that 30.09% of the total building materials content, by value, has been manufactured using recycled materials. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. The VT Industries FSC - Flush Wood Doors has been included in the calculations for both MRc4: Recycled Content (20% recycled content) and MRc7: Certified Wood (100% new wood) and the reported sum of the recycled content and new wood content percentages exceeds 100%. Provide revised calculations to ensure that the sum of the recycled content and new wood content percentages does not exceed 100%. Ensure that the reported information is consistent with MRc7. Additionally, provide a narrative describing how the wood products have been accounted for in each of the credits. If any of the products listed above are removed from the calculations, ensure that the narrative explains the reason for their exclusion. Refer to LEED Interpretation 10372 for more information.

### MRc5: Regional Materials — Awarded: 2
POSSIBLE POINTS: 2
ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**01/07/2019 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that 28.61% of the total building materials value includes materials and products that have been manufactured and extracted within 500 miles of the project site.

**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

### 02/19/2019 CONSTRUCTION FINAL REVIEW

The additional documentation demonstrates compliance and states that 59.09% of the total wood-based building materials are certified in accordance with the principles and criteria of the Forest Stewardship Council (FSC).

It is noted that the cost of wood by VT Industries reported in the Materials and Resources calculator is inconsistent with that indicated in the vendor invoices. When recalculated, compliance is not affected. For future projects ensure that the cost of wood is reported consistently across all submittal.

### 01/07/2019 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that 66.21% of the total wood-based building materials are certified in accordance with the principles and criteria of the Forest Stewardship Council (FSC). However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Although some of the invoices have been provided within IEQc4.4: Low-Emitting Materials Composite Wood and Agrifiber Products, invoices have not been provided for all products contributing toward this credit (products by Lam-Wood Systems, VT Industries and Patrick Lumber Company). Refer to the detailed documentation guidance for this credit outlined in the April 7, 2008 USGBC FSC Memorandum and LEED Interpretation 10296, which can be found on the USGBC website. Provide FSC compliant vendor invoices, and additional documentation if necessary, for all FSC Certified wood products.

2. VT Industries FSC - Flush Wood Doors has been included in the calculations for both MRc4: Recycled Content and MRc7: Certified Wood. As clarified in LEED Interpretation 10372, products identified as FSC Mix Credit or FSC Mix [NN]% also have pre- or post-consumer recycled content, the latter of which is commonly reported separately by the product manufacturer. In these instances, the project must choose whether to classify the product (or some fraction of the assembly) as FSC Certified or as recycled content; the material cannot contribute to both claims simultaneously. For recycled content claims, the material must meet the definition of ISO 14021. Provide a revised calculation with wood component values that do not double-count the wood product cost.

# Indoor Environmental Quality

## IEQp1: Minimum Indoor Air Quality Performance — Awarded

### 12/01/2017 DESIGN FINAL REVIEW

The Ventilation Rate Procedure calculation has been revised to address the issues outlined in the Preliminary Review. However, the following outstanding issue is identified in the revised VRP calculations.

OUTSTANDING ISSUE

1. (Preliminary Review Comment #1) The revised VRP calculations indicate that the maximum of zone ventilation efficiency Evz has been used as system ventilation efficiency Ev. However, ASHRAE 62.1-2007 Appendix A indicates that Ev is the minimum of Evz. The system ventilation efficiency Ev shall be determined using ASHRAE 62.1-2007 Table 6-3 or Appendix A. Revise the VRP calculations by choosing the appropriate Ev determination method and provide revised design documentation as necessary to confirm that the system is designed with required outdoor air rate.

After recalculation, the project demonstrates compliance to this prerequisite, however, the project compliance to IEQc2: Increased Ventilation cannot be confirmed.

### 10/02/2017 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. It appears that the calculations may not 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) and when the VAV system is at minimum flow. The VRP calculations appear to performed when VAV system is at maximum flow. Provide revised Ventilation Rate Procedure calculations with an Ez of 0.8 and with the VAV system analyzed at minimum flow, or provide additional information to justify the parameters used.

2. The VRP calculation indicates that the air handling unit (AHU-1) is designed with 11,360 CFM of outdoor air whereas the mechanical schedule provided under PIf4: Schedules and Overview Documents indicates that AHU-1 is designed with 11,200 CFM of outdoor air. Revise the VRP calculations and ensure that the design parameters are reported consistently with the design.

For future projects, note:

3. The total peak occupancy of 742 people documented for this prerequisite varies substantially from the total building users of 1,877 people reported in PIf3: 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 compliance of this prerequisite is not impacted according to the provided floor plan seating capacity.

## IEQp2: Environmental Tobacco Smoke (ETS) Control — Awarded

### 09/15/2017 DESIGN PRELIMINARY REVIEW

The LEED Form states that smoking is prohibited within 25 feet of entries, outdoor air intakes, and operable windows. 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

### 12/01/2017 DESIGN FINAL REVIEW

The additional documentation demonstrates compliance.

### 10/02/2017 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, that an outdoor airflow measurement device has been installed for all systems where 20% or more of the design supply airflow services non-densely occupied spaces, 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 indicate that CO2 sensors have not been installed within each densely occupied space (e.g. conference/meeting rooms served by VAV 3-11 and VAV 4-1). 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.

2. The Form indicates that the CO2 setpoints of 1,000 ppm are designed for all spaces, however, it is unclear if the CO2 setpoints are low enough to provide sufficient outside air to meet the IEQc2: Increased Ventilation requirements. Provide a narrative to confirm that the CO2 setpoints of 1,000 ppm will assure a 30% increase in OA flow during periods of partial occupancy.

3. The Form indicates that the air handling unit (AHU-1) is designed with 11,360 CFM of outdoor air whereas the mechanical schedule provided under PIf4: Schedules and Overview Documents indicates that AHU-1 is designed with 11,200 CFM of outdoor air. Revise the Form and ensure that the design parameters are reported consistently with the design.

**IEQc2: Increased Ventilation** **Not Attempted**
POSSIBLE POINTS: 1

**IEQc3.1: Construction IAQ Management Plan-During Construction** **Awarded: 1**
POSSIBLE POINTS: 1
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**01/07/2019 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

**12/19/2018 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 2: Early occupancy flush-out.

**IEQc4.1: Low-Emitting Materials-Adhesives and Sealants** **Awarded: 1**
POSSIBLE POINTS: 1
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**02/19/2019 CONSTRUCTION FINAL REVIEW**

The additional documentation demonstrates compliance.

**01/07/2019 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. 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. Tarkett 960 Adhesive has been included in the Materials and Resource calculator, but has not been included in the documentation for this credit. 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

### 01/07/2019 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

### 01/07/2019 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.

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

POSSIBLE POINTS: 1

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

### 01/07/2019 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.

## IEQc5: Indoor Chemical and Pollutant Source Control — Awarded: 1

POSSIBLE POINTS: 1

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

### 09/15/2017 DESIGN PRELIMINARY REVIEW

The LEED Form states that the project has been designed to minimize building occupant exposure to potentially hazardous particulates and chemical pollutants.

## IEQc6.1: Controllability of Systems-Lighting — Awarded: 1

POSSIBLE POINTS: 1

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

### 12/19/2018 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that lighting controls are provided for 98.11% of building occupants and 100% of shared multi-occupant spaces to enable adjustments that meet needs and preferences.

## IEQc6.2: Controllability of Systems-Thermal Comfort — Not Attempted

POSSIBLE POINTS: 1

## IEQc7.1: Thermal Comfort-Design — Awarded: 1

POSSIBLE POINTS: 1

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

### 10/02/2017 DESIGN PRELIMINARY REVIEW

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

For future projects, note:

1. It is unclear if the occupant’s clothing and metabolic rate have been considered in thermal comfort analysis. The graphical method in Section 5.2.1.1 may only be used for occupants with activity levels between 1.0 and 1.3 met and where clothing is worn that provides between 0.5 and 1.0 clo of thermal insulation. Use the computer modeling method

from Section 5.2.1.2 for all spaces with metabolic rates above 1.3 met. The Center for the Built Environment has a Thermal Comfort Tool that may be used to assist with demonstrating compliance (http://smap.cbe.berkeley.edu/comforttool). Compliance of this project is not impacted.

### IEQc7.2: Thermal Comfort-Verification — Awarded: 1

**POSSIBLE POINTS: 1**

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

**10/02/2017 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: Innovation in Design** — **Not Attempted**
POSSIBLE POINTS: 1

**IDc1.1: SSc7.1 HEAT ISLAND EFFECT-NONROOF-NONROOF SURFACES** — **Awarded: 1**
POSSIBLE POINTS: 1
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**01/07/2019 CONSTRUCTION PRELIMINARY REVIEW**

The LEED Form states that the project achieves exemplary performance for SS Credit 7.1: Heat Island Effect Nonroof. The requirement for exemplary performance is to cover 100% of nonroof hardscape surfaces and the project has documented 100%.

**IDc1.2: SSc4.1 Double Transit Ridership** — **Awarded: 1**
POSSIBLE POINTS: 1
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/15/2017 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project achieves exemplary performance for SSc4.1: Alternative Transportation - Public Transportation Access. The project location has at least double the transit lines required for the base credit, and the total frequency is at least 200 rides per day.

**IDc1.2: Innovation in Design** — **Not Attempted**
POSSIBLE POINTS: 1

**IDc1.3: SSc5.2 SITE DEVELOPMENT-MAXIMIZE OPEN SPACE** — **Awarded: 1**
POSSIBLE POINTS: 1
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/15/2017 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project achieves exemplary performance for SSc5.2 . The requirement for exemplary performance is double the base credit requirement, which the project has achieved.

**IDc1.3: Innovation in Design** — **Not Attempted**
POSSIBLE POINTS: 1

**IDc1.4: EQpc78 - Design for Active Occupants** — **Awarded: 1**
POSSIBLE POINTS: 1
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**12/05/2017 DESIGN FINAL REVIEW**

The LEED Form states that the project team has developed an innovation strategy for Design for Active Occupants. The project includes at least one main stair that enables occupants to travel between the building entrance floor(s), the occupant’s own destination floor and common use floors. Additionally, the project includes the following features: all regularly occupied floors are classified for re-entry, accessible staircases are visible from the corridor, there is accessibility to at least one open or interconnecting staircase to at least 50% of the tenant/occupant floors for convenient pedestrian vertical circulation, the main staircase is located to be visible from main building lobby and within 25 foot (7.5 meters) walking distance from any edge of the lobby, the main staircase is located to be visible before an occupant visually encounters any motorized vertical circulation (elevator/escalator), daylighting is provided at each floor/roof level of the stair(s) using either windows and/or skylights of at least 8 square feet (1 square meter) in size, inviting sensory stimulation such as artwork and/or music is in place in stairwells.

**IDc1.4: Innovation in Design** — **Not Attempted**
POSSIBLE POINTS: 1

**IDc1.5: IDc1.5 Green Cleaning Policy** — **Awarded: 1**
POSSIBLE POINTS: 1
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**09/15/2017 DESIGN PRELIMINARY REVIEW**

The LEED Form states that the project team has developed and implemented a Green Housekeeping program. The project must demonstrate compliance with LEED-EBOM 2009 IEQp3: Green Cleaning Policy. The Green Cleaning Policy follows the LEED-EBOM Policy Model and demonstrates the development of a comprehensive and quantitative green cleaning program that includes detailed information regarding staff training, cleaning processes and chemicals, and occupant feedback.

**IDc1.5: Innovation in Design** — **Not Attempted**
POSSIBLE POINTS: 1

**IDc2: LEED® Accredited Professional** — **Awarded: 1**
POSSIBLE POINTS: 1
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**01/07/2019 CONSTRUCTION PRELIMINARY REVIEW**

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

## Regional priority

### SSc2: Development Density and Community Connectivity

**POSSIBLE POINTS: 1**

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

### WEc3: Water Use Reduction

**POSSIBLE POINTS: 1**

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

| | | | | |
|---|---|---|---|---|
| **TOTAL** | **108** | **57** | **0** | **57** |

# REVIEW SUMMARY

| Review | SUBMITTED | RETURNED | POINTS: SUBMITTED | DENIED | PENDING | AWARDED |
|---|---|---|---|---|---|---|
| **Design Preliminary** | **08/30/2017** | **10/10/2017** | **31** | **0** | **4** | **27** |

| Credit | STATUS | TYPE | POINTS: ATTEMPTED | DENIED | PENDING | AWARDED |
|---|---|---|---|---|---|---|
| PIf1: Minimum Program Requirements | **Approved** | | **0** | **0** | **0** | **0** |
| PIf2: Project Summary Details | **Approved** | | **0** | **0** | **0** | **0** |
| PIf3: Occupant and Usage Data | **Approved** | | **0** | **0** | **0** | **0** |
| PIf4: Schedule and Overview Documents | **Approved** | | **0** | **0** | **0** | **0** |
| SSc1: Site Selection | **Anticipated** | Design | **1** | **0** | **0** | **1** |
| SSc2: Development Density and Community Connectivity | **Anticipated** | Design | **6** | **0** | **0** | **6** |
| SSc4.1: Alternative Transportation-Public Transportation Access | **Anticipated** | Design | **6** | **0** | **0** | **6** |
| SSc4.4: Alternative Transportation-Parking Capacity | **Anticipated** | Design | **2** | **0** | **0** | **2** |
| SSc5.2: Site Development-Maximize Open Space | **Anticipated** | Design | **1** | **0** | **0** | **1** |
| WEp1: Water Use Reduction-20% Reduction | **Anticipated** | Design | **0** | **0** | **0** | **0** |
| WEc3: Water Use Reduction | **Anticipated** | Design | **5** | **0** | **0** | **5** |
| EAp2: Minimum Energy Performance | **Pending** | Design | **0** | **0** | **0** | **0** |
| EAp3: Fundamental Refrigerant Management | **Pending** | Design | **0** | **0** | **0** | **0** |
| EAc4: Enhanced Refrigerant Management | **Pending** | Design | **2** | **0** | **2** | **0** |
| MRp1: Storage and Collection of Recyclables | **Anticipated** | Design | **0** | **0** | **0** | **0** |
| IEQp1: Minimum Indoor Air Quality Performance | **Pending** | Design | **0** | **0** | **0** | **0** |
| IEQp2: Environmental Tobacco Smoke (ETS) Control | **Anticipated** | Design | **0** | **0** | **0** | **0** |
| IEQc1: Outdoor Air Delivery Monitoring | **Pending** | Design | **1** | **0** | **1** | **0** |
| IEQc5: Indoor Chemical and Pollutant Source Control | **Anticipated** | Design | **1** | **0** | **0** | **1** |
| IEQc7.1: Thermal Comfort-Design | **Anticipated** | Design | **1** | **0** | **0** | **1** |
| IEQc7.2: Thermal Comfort-Verification | **Anticipated** | Design | **1** | **0** | **0** | **1** |
| IDc1.2: SSc4.1 Double Transit Ridership | **Anticipated** | Design | **1** | **0** | **0** | **1** |
| IDc1.3: SSc5.2 SITE DEVELOPMENT-MAXIMIZE OPEN SPACE | **Anticipated** | Design | **1** | **0** | **0** | **1** |
| IDc1.5: IDc1.5 Green Cleaning Policy | **Anticipated** | Design | **1** | **0** | **0** | **1** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Design Final** | **11/17/2017** | **12/06/2017** | **6** | **1** | **0** | **5** |

| Credit | STATUS | TYPE | POINTS: ATTEMPTED | DENIED | PENDING | AWARDED |
|---|---|---|---|---|---|---|
| SSc7.2: Heat Island Effect-Roof | **Anticipated** | Design | **1** | **0** | **0** | **1** |
| EAp2: Minimum Energy Performance | **Anticipated** | Design | **0** | **0** | **0** | **0** |
| EAp3: Fundamental Refrigerant Management | **Anticipated** | Design | **0** | **0** | **0** | **0** |
| EAc4: Enhanced Refrigerant Management | **Anticipated** | Design | **2** | **0** | **0** | **2** |
| IEQp1: Minimum Indoor Air Quality Performance | **Anticipated** | Design | **0** | **0** | **0** | **0** |
| IEQc1: Outdoor Air Delivery Monitoring | **Anticipated** | Design | **1** | **0** | **0** | **1** |
| IDc1.4: EQpc78 - Design for Active Occupants | **Anticipated** | Design | **1** | **0** | **0** | **1** |

| Construction Preliminary | 12/10/2018 | 01/10/2019 | 25 | 0 | 6 | 19 |
|---|---|---|---|---|---|---|

| Credit | STATUS | TYPE | POINTS: ATTEMPTED | DENIED | PENDING | AWARDED |
|---|---|---|---|---|---|---|
| SSp1: Construction Activity Pollution Prevention | Awarded | Construction | 0 | 0 | 0 | 0 |
| SSc5.1: Site Development-Protect or Restore Habitat | Awarded | Construction | 1 | 0 | 0 | 1 |
| SSc7.1: Heat Island Effect, Non-Roof | Awarded | Construction | 1 | 0 | 0 | 1 |
| EAp1: Fundamental Commissioning of the Building Energy Systems | Awarded | Construction | 0 | 0 | 0 | 0 |
| EAc3: Enhanced Commissioning | Pending | Construction | 2 | 0 | 2 | 0 |
| EAc5: Measurement and Verification | Awarded | Construction | 3 | 0 | 0 | 3 |
| EAc6: Green Power | Awarded | Construction | 2 | 0 | 0 | 2 |
| MRc2: Construction Waste Management | Awarded | Construction | 2 | 0 | 0 | 2 |
| MRc4: Recycled Content | Pending | Construction | 2 | 0 | 2 | 0 |
| MRc5: Regional Materials | Awarded | Construction | 2 | 0 | 0 | 2 |
| MRc7: Certified Wood | Pending | Construction | 1 | 0 | 1 | 0 |
| IEQc3.1: Construction IAQ Management Plan-During Construction | Awarded | Construction | 1 | 0 | 0 | 1 |
| IEQc3.2: Construction IAQ Management Plan-Before Occupancy | Awarded | Construction | 1 | 0 | 0 | 1 |
| IEQc4.1: Low-Emitting Materials-Adhesives and Sealants | Pending | Construction | 1 | 0 | 1 | 0 |
| IEQc4.2: Low-Emitting Materials-Paints and Coatings | Awarded | Construction | 1 | 0 | 0 | 1 |
| IEQc4.3: Low-Emitting Materials-Flooring Systems | Awarded | Construction | 1 | 0 | 0 | 1 |
| IEQc4.4: Low-Emitting Materials-Composite Wood and Agrifiber Products | Awarded | Construction | 1 | 0 | 0 | 1 |
| IEQc6.1: Controllability of Systems-Lighting | Awarded | Design | 1 | 0 | 0 | 1 |
| IDc1.1: SSc7.1 HEAT ISLAND EFFECT-NONROOF-NONROOF SURFACES | Awarded | Construction | 1 | 0 | 0 | 1 |
| IDc2: LEED® Accredited Professional | Awarded | Construction | 1 | 0 | 0 | 1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Construction Final** | **01/31/2019** | **02/20/2019** | **6** | **0** | **0** | **6** |

| Credit | STATUS | TYPE | POINTS: ATTEMPTED | DENIED | PENDING | AWARDED |
|---|---|---|---|---|---|---|
| EAc3: Enhanced Commissioning | **Awarded** | Construction | **2** | **0** | **0** | **2** |
| MRc4: Recycled Content | **Awarded** | Construction | **2** | **0** | **0** | **2** |
| MRc7: Certified Wood | **Awarded** | Construction | **1** | **0** | **0** | **1** |
| IEQc4.1: Low-Emitting Materials-Adhesives and Sealants | **Awarded** | Construction | **1** | **0** | **0** | **1** |