# 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®).

## Microsoft MIL01 RDD

| | |
|---|---|
| **Project ID** | 1000141510 |
| **Rating system & version** | LEED V4 BD+C: DC |
| **Project registration date** | 02/25/2021 |

CERTIFIED SILVER GOLD PLATINUM

**Design and Construction Final Review Decision**

**Certified: 40-49, Silver: 50-59, Gold: 60-79, Platinum: 80+**

## LEED v4 BD+C: Data Centers

**Attempted: 63, Denied: 1, Pending: 0, Awarded: 60 of 110 points**

| INTEGRATIVE PROCESS | 0 OF 1 |
|---|---|
| Integrative Process | 0 / 1 |

| LOCATION AND TRANSPORTATION | 3 OF 16 |
|---|---|
| LEED for Neighborhood Development Location | 0 / 16 |
| Sensitive Land Protection | 0 / 1 |
| High Priority Site | 0 / 2 |
| Surrounding Density and Diverse Uses | 1 / 5 |
| Access to Quality Transit | 0 / 5 |
| Bicycle Facilities | 0 / 1 |
| Reduced Parking Footprint | 1 / 1 |
| Green Vehicles | 1 / 1 |

| SUSTAINABLE SITES | 4 OF 10 |
|---|---|
| Construction Activity Pollution Prevention | Y |
| Site Assessment | 1 / 1 |
| Site Development - Protect or Restore Habitat | 0 / 2 |
| Open Space | 0 / 1 |
| Rainwater Mgmt | 0 / 3 |
| Heat Island Reduction | 2 / 2 |
| Light Pollution Reduction | 1 / 1 |

| WATER EFFICIENCY | 6 OF 11 |
|---|---|
| Outdoor Water Use Reduction | Y |
| Outdoor Water Use Reduction | 2 / 2 |
| Indoor Water Use Reduction | Y |
| Indoor Water Use Reduction | 4 / 6 |
| Building-Level Water Metering | Y |
| Cooling Tower Water Use | 0 / 2 |
| Water Metering | 0 / 1 |

| ENERGY AND ATMOSPHERE | 28 OF 33 |
|---|---|
| Fundamental Commissioning and Verification | Y |
| Minimum Energy Performance | Y |
| Optimize Energy Performance | 18 / 18 |
| Building-Level Energy Metering | Y |
| Fundamental Refrigerant Mgmt | Y |
| Enhanced Commissioning | 4 / 6 |
| Advanced Energy Metering | 1 / 1 |
| Demand Response | 0 / 2 |
| Renewable Energy Production | 3 / 3 |
| Enhanced Refrigerant Mgmt | 0 / 1 |
| Green Power and Carbon Offsets | 2 / 2 |

| MATERIALS AND RESOURCES | 4 OF 13 |
|---|---|
| Storage and Collection of Recyclables | Y |
| Construction and Demolition Waste Mgmt Planning | Y |
| Building Life-Cycle Impact Reduction | 1 / 5 |
| Product disclosure & optimization - Environmental Product Declarations | 1 / 2 |
| Product disclosure & optimization - Sourcing of Raw Materials | 0 / 2 |
| Product disclosure & optimization - Material Ingredients | 0 / 2 |
| Construction and Demolition Waste Mgmt | 2 / 2 |

| INDOOR ENVIRONMENTAL QUALITY | 6 OF 16 |
|---|---|
| Minimum IAQ Performance | Y |
| Environmental Tobacco Smoke Control | Y |
| Enhanced IAQ Strategies | 2 / 2 |
| Low-Emitting Materials | 1 / 3 |
| Construction IAQ Mgmt Plan | 1 / 1 |
| IAQ Assessment | 1 / 2 |
| Thermal Comfort | 0 / 1 |
| Interior Lighting | 1 / 2 |
| Daylight | 0 / 3 |
| Quality Views | 0 / 1 |
| Acoustic Performance | 0 / 1 |

| INNOVATION | 5 OF 6 |
|---|---|
| Innovation | 4 / 5 |
| LEED Accredited Professional | 1 / 1 |

| REGIONAL PRIORITY CREDITS | 4 OF 4 |
|---|---|
| Reduced Parking Footprint | 1 / 1 |
| Green Vehicles | 1 / 1 |
| Light Pollution Reduction | 1 / 1 |
| Outdoor Water Use Reduction | 1 / 1 |

| TOTAL | 60 OF 110 |
|---|---|

# Credit details

## PROJECT INFORMATION

**Project Information** **Awarded**

### Design and Construction Final Review

This is the second project submitted by Mercury under the Microsoft Data Centre Prototype. The Project Information form has been completed and the supporting documentation has been provided.

Awarded.

### Design and Construction Preliminary Review

This is the first project submitted by Mercury under the Microsoft Data Centre Prototype. The Project Information form has been completed and the supporting documentation has been provided.

1. The Project Information narrative has not been provided.

Provide the narrative describing the project in general, including information on occupancy, base building mechanical systems, and any incomplete shell spaces.

2. The required documentation has not been provided.

Provide the following:

1. The representative floor plans for the project.

2. The photos, renderings, or drawings of the project, both inside and outside.

# INTEGRATIVE PROCESS

**Integrative Process**
**Possible points: 1**

**Not attempted**

## LOCATION AND TRANSPORTATION

**LEED for Neighborhood Development Location** — Not attempted
Possible points: 16

**Sensitive Land Protection** — Not attempted
Possible points: 1

**High Priority Site** — Not attempted
Possible points: 2

**Surrounding Density and Diverse Uses** — **Awarded : 1**
Possible points: 5
Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

**Design and Construction Preliminary Review**

Option 2: Diverse Uses

Awarded.

**Access to Quality Transit** — Not attempted
Possible points: 5

**Bicycle Facilities** — Not attempted
Possible points: 1

**Reduced Parking Footprint** — **Awarded : 1**
Possible points: 1
Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

**Design and Construction Final Review**

LEED v4.1 Option 1: No Parking or Reduce Parking, 67.39% reduction in parking capacity

Awarded.

**Design and Construction Preliminary Review**

LEED v4.1 Option 1: No Parking or Reduce Parking, 67.39% reduction in parking capacity

1. This credit option was not prototyped and has not been submitted as an Individual Credit (IC).

Submit the credit as an IC.

2. It is not clear whether the total base ratio parking capacity has been correctly determined. Specifically, the parking appears to be shared with other buildings. Further, it is not clear how parking was allocated to the project building.

Provide a narrative clarifying how the total parking capacity was determined and allocated to this LEED Project. Revise the LEED Form and site plan as necessary.

**Green Vehicles** — **Awarded : 1**
Possible points: 1
Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

**Design and Construction Final Review**

LEED v4.1 Option 1: Electric Vehicle Charging, 5% EVSE Parking

Awarded.

Note the following:

1. This credit option was not prototyped and has not been submitted as an Individual Credit (IC). For future projects, submit the credit as an IC.

### Design and Construction Preliminary Review

Option 1: Electric Vehicle Charging, 20% EVSE Parking and 13% Preferred Green Vehicle Parking

1. The green vehicle parking has not been identified consistently on the provided site plans. The site plan identifies the spaces as “Electric Vehicle Parking Sign” rather than for green vehicle parking.

Provide the final site parking plan and/or confirmation of the location of the green vehicle parking spaces.

2. The signage documentation has not been provided.

Provide the following:

a. Photographs or signage details that confirm that the preferred parking spaces for green vehicles are reserved.

b. Photographs or signage details demonstrating how the parking spaces with charging equipment are reserved for electrical vehicle use.

3. The preferred parking spaces highlighted on the site plan do not appear to meet the LEED definition of preferred. Preferred spaces are those spaces with the shortest walking distance to the main entrance of the project (exclusive of spaces reserved for people with disabilities).

Provide a revised site plan demonstrating that the parking for green vehicles is in a preferred location. Alternatively, provide a narrative demonstrating that the current location is considered preferred.

## SUSTAINABLE SITES

**Construction Activity Pollution Prevention** — **Awarded**

**Design and Construction Preliminary Review**

EPA Construction General Permit

Awarded.

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**Site Assessment** — **Awarded : 1**
Possible points: 1
Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

**Design and Construction Preliminary Review**

Awarded.

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**Site Development - Protect or Restore Habitat** — **Not attempted**
Possible points: 2

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**Open Space** — **Not attempted**
Possible points: 1

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**Rainwater Management** — **Not attempted**
Possible points: 3

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**Heat Island Reduction** — **Awarded : 2**
Possible points: 2
Attempted: 2, Denied: 0, Pending: 0, Awarded: 2

**Design and Construction Preliminary Review**

Option 1: Nonroof and Roof

1. The area covered by solar PV panels is incorrectly listed as area shaded by structures with energy generation system under non-roof measures. The area covered by solar PV panels on rooftop can be excluded from the total effective roof area.

Compliance is not affected in this instance. Awarded for two points.

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**Light Pollution Reduction** — **Awarded : 1**
Possible points: 1
Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

**Design and Construction Final Review**

Uplight and Light Trespass: Option 1, BUG Rating Method

Awarded.

Note the following:

1. This credit option was not prototyped and has not been submitted as an Individual Credit (IC). For future projects, submit the credit as an IC.

**Design and Construction Preliminary Review**

Uplight and Light Trespass: Option 1, BUG Rating Method

1. This credit option was not prototyped and has not been submitted as an Individual Credit (IC).

Submit the credit as an IC.

2. The site lighting plan does not include all required information.

Provide the site lighting plan depicting the project boundary, the property line (if different from the project boundary), the lighting boundary, any additional properties included in the lighting boundary, the location and label of all exterior luminaires within the project boundary. Ensure that all applicable exterior fixtures within the project boundary are clearly labeled.

3. Provide a luminaire schedule showing the mounting height for each unique luminaire (photometric center of the luminaire above grade). Demonstrate that the fixtures comply with the maximum allowable BUG ratings for the project’s lighting zone based on the mounting height and distance from the lighting boundary.

## WATER EFFICIENCY

**Outdoor Water Use Reduction** **Awarded**

**Design and Construction Preliminary Review**

Option 1: No Irrigation Required

Awarded.

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**Outdoor Water Use Reduction** **Awarded : 2**

Possible points: 2

Attempted: 2, Denied: 0, Pending: 0, Awarded: 2

**Design and Construction Preliminary Review**

Option 1: No Irrigation Required

Awarded.

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**Indoor Water Use Reduction** **Awarded**

**Design and Construction Final Review**

Usage-based Calculation, 44.56%

The project does not have cooling towers or evaporative condensers.

Awarded.

**Design and Construction Preliminary Review**

Usage-based Calculation, 44.56%

1. The information in WEc Water Metering states that the project includes an evaporative cooling system but documentation has not been provided.

Provide the following:

a. A clarification narrative and revised LEED Form if the project scope includes a evaporative condensers.

b. Manufacturer documentation/cut sheets to confirm that the appliance and process water use comply with the requirements.

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**Indoor Water Use Reduction** **Awarded : 4**

Possible points: 6

Attempted: 4, Denied: 0, Pending: 0, Awarded: 4

**Design and Construction Final Review**

Usage-based Calculation, 44.56%

Awarded.

**Design and Construction Preliminary Review**

Usage-based Calculation, 44.56%

1. WEp Indoor Water Use Reduction is pending clarifications.

Refer to the comments within the prerequisite and resubmit this credit.

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**Building-Level Water Metering** **Awarded**

### Design and Construction Preliminary Review

Awarded.

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**Cooling Tower Water Use** — **Not attempted**
**Possible points: 2**

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**Water Metering** — **Not attempted**
**Possible points: 1**

### Design and Construction Preliminary Review

1. The documentation does not confirm that the non-fixture usage (e.g. the cleaning/janitor sink, water cooler, Boiler) is measured and can be deducted to measure the usage of the indoor plumbing fixtures described in WEp Indoor Water Use Reduction.

Provide revised documentation demonstrating that at least 80% of the indoor fixtures described in WEp Indoor Water Use Reduction are metered separately, either directly or by deducting all other measured water use from the measured total water consumption of the building and grounds.

2. The metering diagram indicates that the makeup water serving the evaporative cooling system is submetered. As stated in the LEED BD+C v4 Reference Guide, cooling tower and evaporative condenser submeters are addressed separately, under WE Prerequisite Indoor Water Use Reduction, and are therefore ineligible for this credit.

Provide revised documentation demonstrating that the project meters at least two water subsystems beyond the makeup water meters required for WEp Indoor Water Use Reduction.

## ENERGY AND ATMOSPHERE

### Fundamental Commissioning and Verification — Awarded

**Design and Construction Preliminary Review**

Awarded.

### Minimum Energy Performance — Awarded

**Design and Construction Preliminary Review**

The 6MW IT load prototype energy model in climate zone 3A has been used for this project. An energy cost savings of 72.7% is claimed with Option 1: Whole Building Energy Simulation, and 22.2% energy cost savings come from building power and cooling infrastructure.

### Optimize Energy Performance — Awarded : 18

Possible points: 18
Attempted: 18, Denied: 0, Pending: 0, Awarded: 18

**Design and Construction Preliminary Review**

An energy cost savings of 72.7% is claimed with Option 1: Whole Building Energy Simulation.

### Building-Level Energy Metering — Awarded

**Design and Construction Preliminary Review**

Awarded.

### Fundamental Refrigerant Management — Awarded

**Design and Construction Preliminary Review**

Awarded.

### Enhanced Commissioning — Awarded : 4

Possible points: 6
Attempted: 4, Denied: 0, Pending: 0, Awarded: 4

**Design and Construction Final Review**

Option 1. Path 2. Enhanced and monitoring-based commissioning

Awarded.

**Design and Construction Preliminary Review**

Option 1. Enhanced systems commissioning, Path 2. Enhanced and monitoring-based commissioning

1. The documentation has not been provided demonstrating that functional performance tests have been completed for the BMS and EPMS systems as part of the monitoring-based commisisoning.

Provide documentation such as sample functional performance tests to demonstrate that functional performance tests have been completed for the BMS and EPMS systems for monitoring-based commisisoning.

### Advanced Energy Metering — Awarded : 1

Possible points: 1
Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

**Design and Construction Preliminary Review**

Awarded.

**Demand Response** — **Not attempted**
Possible points: 2

**Renewable Energy Production** — **Awarded : 3**
Possible points: 3
Attempted: 3, Denied: 0, Pending: 0, Awarded: 3

**Design and Construction Preliminary Review**

53% Tier 2 renewable energy has been approved for all Microsoft data center volume projects with LEED v4.1 EAc Renewable Energy substitution.

Three points awarded.

**Enhanced Refrigerant Management** — **Not attempted**
Possible points: 1

**Green Power and Carbon Offsets** — **Awarded : 2**
Possible points: 2
Attempted: 2, Denied: 0, Pending: 0, Awarded: 2

**Design and Construction Preliminary Review**

53% Tier 2 renewable energy has been approved for all Microsoft data center volume projects with LEED v4.1 EAc Renewable Energy substitution.

Two points awarded.

## MATERIALS AND RESOURCES

**Storage and Collection of Recyclables** **Awarded**

### Design and Construction Preliminary Review

Awarded.

**Construction and Demolition Waste Management Planning** **Awarded**

### Design and Construction Final Review

Awarded.

For future projects, ensure the construction management plan addresses whether the recycling facilities used alternative daily cover (ADC) and considered it recycled content in their reporting.

### Design and Construction Preliminary Review

1. The CWMP does not address alternative daily cover (ADC).

Provide a narrative addressing whether the recycling facilities used alternative daily cover (ADC) and considered it recycled content in their reporting. Note that any ADC produced by the facilities is to be included in the final waste report as landfill waste.

**Building Life-Cycle Impact Reduction** **Awarded : 1**

Possible points: 5

Attempted: 3, Denied: 0, Pending: 0, Awarded: 1

### Design and Construction Final Review

LEED v4.1 Option 2: Whole-Building Life-Cycle Assessment, Path 1

A revised LCA report that addresses preliminary review comment #1 has not been provided. For future projects ensure the gross floor is reported consistently across all credits. Compliance is not affected in this instance.

Awarded with one point.

### Design and Construction Preliminary Review

LEED v4.1 Option 2: Whole-Building Life-Cycle Assessment, Path 2

This credit was not prototyped and is pursued as an individual credit.

1. The gross floor area of the model stated in the summary report (9,100 square meters) is inconsistent with the gross floor area reported in LEED Online Details Tab (2,670 square meters).

Provide a narrative describing the reason for the difference or revised report to ensure the gross floor is reported consistently across all credits.

2. The optimization strategies include 10% fly ash content in concrete mix design but it is unclear how the concrete mix design was established for the baseline case (0% flyash) and if this produces a fair comparison. The baseline mix should be functionally equivalent to the proposed, industry-standard, and typical for the region.

Provide a narrative describing how the baseline concrete mix design was determined and a revised LCA report as necessary. Describe any references that were used to determine the regionally appropriate baseline. Assumption data should be applicable to the time period in which the project was constructed.

It is noted that three points have been attempted for this credit within LEED Online, whereas the LEED v4.1 path pursued is eligible for two points.

**Building Product Disclosure and Optimization - Environmental Product Declarations** **Awarded : 1**

Possible points: 2

Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

### Design and Construction Preliminary Review

LEED v4.1 Option 1: Environmental Product Declaration, 27 products

The documentation provided demonstrates that at least 20 weighted products, sourced from at least five different manufacturers, meet the requirements for environmental product declarations. Product documentation has been reviewed for materials listed in the Building Products Calculator: Rows 9, 12-18, 20-25.

Awarded.

Items that do not require a response for this project, but should be considered for future projects:

1. Products on rows 9, 12-18, 22 and 23 have been entered into the MR Building Product Calculator as Product-specific Type III, Internal EPD and products on rows 20 and 21 have been entered as Product-specific LCA; however, the provided documentation appears to be Product-specific Type III external EPD worth 1.5 products.

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**Building Product Disclosure and Optimization - Sourcing of Raw Materials** **Not attempted**

Possible points: 2

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**Building Product Disclosure and Optimization - Material Ingredients** **Not attempted**

Possible points: 2

### Design and Construction Final Review

This review is currently in progress.

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**Construction and Demolition Waste Management** **Awarded : 2**

Possible points: 2

Attempted: 2, Denied: 0, Pending: 0, Awarded: 2

### Revised Review Comment

Option 1: Diversion, Path 2 – 97.68% and 9 material streams

Awarded.

This review is currently in progress.

### Design and Construction Final Review

This review is currently in progress.

### Design and Construction Preliminary Review

Option 1: Diversion, Path 2 – 75.21% and 4 material streams

1. It is not clear if alternative daily cover (ADC) has been included as landfill waste in the calculations, as required.

Provide a narrative confirming that ADC has been included as waste rather than as diverted. If necessary, revise the documentation so the calculations exclude ADC.

2. The calculator incorrectly selects landfill waste (Rockwool) as diverted. Additionally, the diversion rate of commingled waste is listed as 100%, which is unusual.

Provide revised calculations to confirm the total waste diverted from landfill.

## INDOOR ENVIRONMENTAL QUALITY

### Minimum Indoor Air Quality Performance — Awarded

**Design and Construction Preliminary Review**

Option 1. ASHRAE Standard 62.1-2010

Awarded.

### Environmental Tobacco Smoke Control — Awarded

**Design and Construction Preliminary Review**

Awarded.

### Enhanced Indoor Air Quality Strategies — Awarded : 2

Possible points: 2
Attempted: 2, Denied: 0, Pending: 0, Awarded: 2

**Design and Construction Final Review**

Option 1. Enhanced IAQ strategies

Awarded.

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Option 2. Additional Enhanced IAQ Strategies

B. Increased Ventilation

Awarded.

**Design and Construction Preliminary Review**

Option 1. Enhanced IAQ strategies

1. Documentation for the cleaning room separation has not been provided.

Provide documentation to demonstrate that the cleaning room has deck-to-deck partition walls or hard-lid ceiling.

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Option 2. Additional Enhanced IAQ Strategies

B. Increased Ventilation

Awarded.

### Low-Emitting Materials — Awarded : 1

Possible points: 3
Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

**Design and Construction Final Review**

LEEDv4.1 Categories attempted: Insulation (100%), and Furniture (113%)

This credit was not prototyped and is pursued as an individual credit.

Awarded with one point.

**Design and Construction Preliminary Review**

LEEDv4.1 Categories attempted: Flooring (100%), Insulation (100%), Furniture (113%)

This credit was not prototyped and is pursued as an individual credit.

Compliance is demonstrated for furniture category.

FLOORING

1. It does not appear that all flooring products installed within the waterproofing membrane have been entered in the calculator, including but not limited to Interface Composure Carpet Tile, and Marazzi Ceramic Tiles which are documented within the MRc BPDO Calculator.

Provide the following:

a. A revised Low-Emitting Materials Calculator that includes all products, in the attempted categories, installed within the waterproofing membrane.

b. The VOC emissions evaluations.

2. Sikafloor Syntop Concrete Hardener is listed in the Flooring category as inherently nonemitting. Products that are inherently nonemitting sources of VOCs are considered fully compliant without any emissions testing only if they do not include integral organic surface coatings, binders, or sealants. Concrete with mixed-in chemical additives is not inherently nonemitting.

Provide documentation, such as a statement from the Contractor, the concrete mix description from the Manufacturer, and/or the concrete specification, demonstrating that the concrete does not contain any mixed-in chemical additives including, but not limited to, admixtures, bonding agents, or plasticizers.

3. The documentation provided for the following products does not satisfy the criteria for a qualifying VOC emissions evaluation:

- Forbo Colorex (The test report does not state the TVOC results, Additionally, it is unclear if it uses ISO 16000 test method - compliance with all of the German AgBB thresholds)

- Forbo Surestep (test date is more than three years old, the descriptions of materials in the calculator is not consistent with the supporting documentation. Note that manufacturer-given model names should be used rather than generic descriptors)

- Roppe 700 Wall Base (certification period begins after the project's construction period).

Note that third-party certifications and programs that test to CDPH Standard Method v1.2-2017 are listed here: http://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/CDPH%20Document%20Library/List%20of%203rd%20party%20certifications%20for%20CDPH%20v1.2-Oct-10-2019%20ADA.pdf. The modeling scenario used must be private office (unless the product is installed in a classroom) and the TVOC results must be stated. Third-party certifications and programs that test to EN 16516 are listed in the D+C v4.1-beta Guide, Amended Feb 2021, International Tips section. The certification period on a third-party certificate must cover the date the installed product was manufactured.

Additionally, note that any manufacturer claims provided must include all of the following criteria:

- Declaration that the product has been tested according to CDPH SM v1.2-2017 and complies with the VOC limits in Table 4-1 of the method; OR declaration that the product has been tested according to EN 16516:2017 with 2018 updates and complies with the German AgBB Testing and Evaluation Scheme (2015/2018) thresholds and a formaldehyde limit of 10 µg/m3 after 28 days (the formaldehyde content may be documented separately);

- TVOC results at 14 days measured as specified in CDPH SM v1.2; OR for EN: TVOC value measured after 28 days and is < 1000 ug/m3;

- Test date (must be less than three years old / must cover the time the installed product was manufactured for the project and cannot begin after the product was manufactured);

- For CDPH, the modeling scenario used (must be private office unless the product is installed in a classroom);

- For wet-applied products, the amount of wet-applied product in mass per surface area (during testing);

- The name of the laboratory that performed the evaluation and documentation (such as accreditation number or certificate with scope of accreditation) demonstrating the accreditation under ISO/IEC 17025 for the test method they used (CDPH SM v1.2 or EN 16516:2017);

Provide the following:

a. A qualifying third-party certificate or a manufacturer claim of VOC emissions evaluation for each product listed above.

b. A revised calculation, as necessary.

INSULATION

1. VOC emissions evaluations have not been provided for Isover Acoustic Roll. The documentation provided is a claim of certification rather than the third-party certificate.

Provide the following:

a. VOC emissions evaluations for the above noted products.

b. A revised Low-Emitting Materials Calculator, as necessary.

The project is eligible for a third point for reaching the 90% threshold in three product categories.

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**Construction Indoor Air Quality Management Plan** **Awarded : 1**

Possible points: 1

Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

### Design and Construction Preliminary Review

Awarded.

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**Indoor Air Quality Assessment** **Awarded : 1**

Possible points: 2

Attempted: 2, Denied: 1, Pending: 0, Awarded: 1

### Revised Review Comment

LEED v4.1 Option 2. IAQ Testing

Path 1. Particulate Matter and Inorganic Gases

1. The additional information provided for the particle counter (Lighthouse 3016 IAQ) used for PM2.5 and PM10 is its particle measurement range and the flow rate. No information regarding the credit required accuracy has been provided. An independent internet search indicates that this particle counter converts the counts to mass ("Approximate Mass Concentration in µg / m3"). This type of devices will convert the particle counts to mass based on some assumptions. Because particle sizes are in ranges, for example, pm2.5 is a range of particles two and one half microns or less, the type of devices are likely to use assumption of particle sizes and mass based on counts to convert to the mass result, which is not accurate. The documentation does not demonstrate Path 1 compliance.

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Path 2. Volatile Organic Compounds

Awarded.

### Design and Construction Final Review

Path 2. Volatile Organic Compounds

Awarded.

### Design and Construction Final Review

LEED v4.1 Option 2. IAQ Testing

Path 1. Particulate Matter and Inorganic Gases

1. The additional information provided for the particle counter (Lighthouse 3016 IAQ) used for PM2.5 and PM10 is its particle measurement range and the flow rate. No information regarding the credit required accuracy has been provided. An independent internet search indicates that this particle counter converts the

counts to mass ("Approximate Mass Concentration in µg / m3"). This type of devices will convert the particle counts to mass based on some assumptions. Because particle sizes are in ranges, for example, pm2.5 is a range of particles two and one half microns or less, the type of devices are likely to use assumption of particle sizes and mass based on counts to convert to the mass result, which is not accurate. The documentation does not demonstrate Path 1 compliance.

Path 2. Volatile Organic Compounds

1. The response narrative states that the laboratory's ISO 17025 accreditation for test method ISO 16000-6 will be issued in January 2023. However, the updated laboratory's schedule of accreditation document in the provided link (Issue No. 077, Issued on February 13, 2023) does not include this accreditation. The documentation does not demonstrate Path 2 compliance.

### Design and Construction Preliminary Review

LEED v4.1 Option 2. IAQ Testing

Path 1. Particulate Matter and Inorganic Gases and Path 2. Volatile Organic Compounds (1 point)

1. The accuracy information provided for the equipment measuring PM2.5 and PM10 is based on the percent of particles counted rather than mass (micrograms/m3). It is unclear whether the accuracy requirement is met.

Provide further information demonstrate that the PM2.5 and PM10 monitoring device meets the accuracy requirements by this credit.

2. The IAQ testing occurred in July 2022. However, Project Information indicates that the substantial completion of construction was October 27, 2022. IAQ testing must be done after construction is complete.

Clarify the construction completion date of the project.

3. The provided certificate of ISO/IEC 17025 does not indicate what test methods are accredited. For path 2, the credit requires that laboratories that conduct the tests must be accredited under ISO/IEC 17025 for the test methods used.

Demonstrate that the laboratory is accredited under ISO/IEC 17025 for the test methods used in the IAQ testing for this project.

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**Thermal Comfort** — **Not attempted**
Possible points: 1

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**Interior Lighting** — **Awarded : 1**
Possible points: 2
Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

### Design and Construction Final Review

LEED v4.1 Option 2. Lighting Quality

Glare Control

One point awarded.

### Design and Construction Preliminary Review

Option 2: Lighting Quality

1. The Luminaire A1 Radiance datasheet photometrics do not provide the cd/m2 luminance information.

Provide the cd/m2 luminance table for Luminaire A1 and demonstrate that A1 has a luminance of less than 2,500 cd/m2 between 45 and 90 degrees from nadir.

2. The CRI and life information for other lighitng fixtures installed on the project has not been provided. The credit requires that the lighting fixtures in the entire project meet a CRI of 80 or higher, excluding specially used lighting and site lighting, and lighting sources of 75% of total connected lighting load have a rated life of at least 24,000 hours.

Provide cut-sheets for other lighting fixture installed on the project to demonstrate that the requirements above are met.

3. Although fixture A1 and A1E has a microprism diffuser, it is still direct only lighting based on its photometrics. The fixture does not provide any light going upward.

Please consider a diferent strategy or use LEED v4.1 substitution for this credit.

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**Daylight** — **Not attempted**
Possible points: 3

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**Quality Views** — **Not attempted**
Possible points: 1

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**Acoustic Performance** — **Not attempted**
Possible points: 1

## INNOVATION

**Innovation** **Awarded : 4**

Possible points: 5

Attempted: 4, Denied: 0, Pending: 0, Awarded: 4

### Design and Construction Final Review

Strategy 3: Exemplary Performance - LTc Reduced Parking Footprint

Awarded.

### Design and Construction Preliminary Review

Strategy 1: Innovation – Purchasing Lamps

This credit was not prototyped. Awarded as an individual credit.

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Strategy 2: Pilot Credit - Integrative Analysis of Building Materials

This credit was not prototyped and is pursued as an individual credit. The project has used at least three permanently installed products from manufacturers that have a documented qualitative analysis of the potential health, safety and environmental impacts of the product in five stages of the product's life cycle. The Building Materials Worksheet and the registration and survey information have been provided.

Awarded.

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Strategy 3: Exemplary Performance - LTc Reduced Parking Footprint

This credit was not prototyped and is pursued as an individual credit.

1. The base credit has not been achieved. Refer to the comments within the base credit. 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 strategy for the Final Review.

One point is pending.

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Strategy 4: Exemplary Performance – EAc Optimize Energy Performance

Awarded.

**LEED Accredited Professional** **Awarded : 1**

Possible points: 1

Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

### Design and Construction Preliminary Review

Awarded.

## REGIONAL PRIORITY CREDITS

### Sensitive Land Protection
**Possible points: 1**

### Reduced Parking Footprint
**Possible points: 1**
**Attempted: 1, Denied: 0, Pending: 0, Awarded: 1**

### Green Vehicles
**Possible points: 1**
**Attempted: 1, Denied: 0, Pending: 0, Awarded: 1**

### Light Pollution Reduction
**Possible points: 1**
**Attempted: 1, Denied: 0, Pending: 0, Awarded: 1**

### Outdoor Water Use Reduction
**Possible points: 1**
**Attempted: 1, Denied: 0, Pending: 0, Awarded: 1**

### Daylight
**Possible points: 1**

| | | | | | |
|---|---|---|---|---|---|
| **TOTAL** | **110** | **63** | **1** | **0** | **60** |

# Review summary

| Review | Submitted | Returned | Points: Submitted | Denied | Pending | Awarded |
|---|---|---|---|---|---|---|
| **Design and Construction Preliminary** | **11/15/2022** | **12/24/2022** | **65** | **0** | **23** | **40** |

| Credit | Status | Type | POINTS: Attempted | Denied | Pending | Awarded |
|---|---|---|---|---|---|---|
| Project Information | Pending | | 0 | 0 | 0 | 0 |
| Surrounding Density and Diverse Uses | Awarded | Design | 1 | 0 | 0 | 1 |
| Reduced Parking Footprint | Pending | Design | 2 | 0 | 2 | 0 |
| Green Vehicles | Pending | Design | 2 | 0 | 2 | 0 |
| Construction Activity Pollution Prevention | Awarded | Construction | 0 | 0 | 0 | 0 |
| Site Assessment | Awarded | Design | 1 | 0 | 0 | 1 |
| Heat Island Reduction | Awarded | Design | 2 | 0 | 0 | 2 |
| Light Pollution Reduction | Pending | Design | 2 | 0 | 1 | 0 |
| Outdoor Water Use Reduction | Awarded | Design | 0 | 0 | 0 | 0 |
| Outdoor Water Use Reduction | Awarded | Design | 3 | 0 | 0 | 3 |
| Indoor Water Use Reduction | Pending | Design | 0 | 0 | 0 | 0 |
| Indoor Water Use Reduction | Pending | Design | 4 | 0 | 4 | 0 |
| Building-Level Water Metering | Awarded | Design | 0 | 0 | 0 | 0 |
| Fundamental Commissioning and Verification | Awarded | Construction | 0 | 0 | 0 | 0 |
| Minimum Energy Performance | Awarded | Design | 0 | 0 | 0 | 0 |
| Optimize Energy Performance | Awarded | Design | 18 | 0 | 0 | 18 |
| Building-Level Energy Metering | Awarded | Design | 0 | 0 | 0 | 0 |
| Fundamental Refrigerant Management | Awarded | Design | 0 | 0 | 0 | 0 |
| Enhanced Commissioning | Pending | Construction | 4 | 0 | 4 | 0 |
| Advanced Energy Metering | Awarded | Design | 1 | 0 | 0 | 1 |
| Renewable Energy Production | Awarded | Design | 3 | 0 | 0 | 3 |
| Green Power and Carbon Offsets | Awarded | Construction | 2 | 0 | 0 | 2 |
| Storage and Collection of Recyclables | Awarded | Design | 0 | 0 | 0 | 0 |
| Construction and Demolition Waste Management Planning | Pending | Construction | 0 | 0 | 0 | 0 |
| Building Life-Cycle Impact Reduction | Pending | Design | 3 | 0 | 2 | 0 |
| Building Product Disclosure and Optimization - Environmental Product Declarations | Awarded | Construction | 1 | 0 | 0 | 1 |
| Construction and Demolition Waste Management | Awarded | Construction | 2 | 0 | 0 | 2 |
| Minimum Indoor Air Quality Performance | Awarded | Design | 0 | 0 | 0 | 0 |
| Environmental Tobacco Smoke Control | Awarded | Design | 0 | 0 | 0 | 0 |
| Enhanced Indoor Air Quality Strategies | Pending | Design | 2 | 0 | 1 | 1 |
| Low-Emitting Materials | Pending | Construction | 2 | 0 | 2 | 0 |
| Construction Indoor Air Quality Management Plan | Awarded | Construction | 1 | 0 | 0 | 1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Indoor Air Quality Assessment | Pending | Construction | 2 | 0 | 2 | 0 |
| Interior Lighting | Pending | Design | 1 | 0 | 1 | 0 |
| Innovation | Pending | Design | 4 | 0 | 1 | 3 |
| LEED Accredited Professional | Awarded | Construction | 1 | 0 | 0 | 1 |
| | Pending | | 1 | 0 | 1 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Design and Construction Final** | **01/31/2023** | **06/13/2023** | **27** | **1** | **0** | **23** |

| Credit | Status | Type | POINTS: Attempted | Denied | Pending | Awarded |
|---|---|---|---|---|---|---|
| Project Information | Awarded | | 0 | 0 | 0 | 0 |
| Reduced Parking Footprint | Awarded | Design | 2 | 0 | 0 | 2 |
| Green Vehicles | Awarded | Design | 2 | 0 | 0 | 2 |
| Light Pollution Reduction | Awarded | Design | 2 | 0 | 0 | 1 |
| Indoor Water Use Reduction | Awarded | Design | 0 | 0 | 0 | 0 |
| Indoor Water Use Reduction | Awarded | Design | 4 | 0 | 0 | 4 |
| Enhanced Commissioning | Awarded | Construction | 4 | 0 | 0 | 4 |
| Construction and Demolition Waste Management Planning | Awarded | Construction | 0 | 0 | 0 | 0 |
| Building Life-Cycle Impact Reduction | Awarded | Design | 3 | 0 | 0 | 1 |
| Construction and Demolition Waste Management | Under review | Construction | 2 | 0 | 0 | 0 |
| Enhanced Indoor Air Quality Strategies | Awarded | Design | 2 | 0 | 0 | 2 |
| Low-Emitting Materials | Awarded | Construction | 1 | 0 | 0 | 1 |
| Indoor Air Quality Assessment | Awarded | Construction | 2 | 1 | 0 | 1 |
| Interior Lighting | Awarded | Design | 1 | 0 | 0 | 1 |
| Innovation | Awarded | Design | 4 | 0 | 0 | 4 |
| | Under review | | 1 | 0 | 0 | 0 |