



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®).

MTU MRO1 Serbia

Project ID 1000142950
Rating system & version LEED V4 BD+C: NC
Project registration date 04/01/2021



Gold Certified

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

LEED v4 BD+C: New Construction

Attempted: 64, Denied: 0, Pending: 0, Awarded: 63 of 110 points

INTEGRATIVE PROCESS	1 OF 1
Integrative Process	1 / 1
LOCATION AND TRANSPORTATION	4 OF 16
LEED for Neighborhood Development Location	0 / 16
Sensitive Land Protection	0 / 1
High Priority Site	1 / 2
Surrounding Density and Diverse Uses	0 / 5
Access to Quality Transit	0 / 5
Bicycle Facilities	1 / 1
Reduced Parking Footprint	1 / 1
Green Vehicles	1 / 1
SUSTAINABLE SITES	10 OF 10
Construction Activity Pollution Prevention	Y
Site Assessment	1 / 1
Site Development - Protect or Restore Habitat	2 / 2
Open Space	1 / 1
Rainwater Mgmt	3 / 3
Heat Island Reduction	2 / 2
Light Pollution Reduction	1 / 1
WATER EFFICIENCY	11 OF 11
Outdoor Water Use Reduction	Y
Outdoor Water Use Reduction	2 / 2
Indoor Water Use Reduction	Y
Indoor Water Use Reduction	6 / 6
Building-Level Water Metering	Y
Cooling Tower Water Use	2 / 2
Water Metering	1 / 1
ENERGY AND ATMOSPHERE	9 OF 33
Fundamental Commissioning and Verification	Y
Minimum Energy Performance	Y
Optimize Energy Performance	6 / 18
Building-Level Energy Metering	Y
Fundamental Refrigerant Mgmt	Y
Enhanced Commissioning	0 / 6
Advanced Energy Metering	1 / 1
Demand Response	1 / 2
Renewable Energy Production	0 / 3
Enhanced Refrigerant Mgmt	1 / 1
Green Power and Carbon Offsets	0 / 2

MATERIALS AND RESOURCES	9 OF 13
Storage and Collection of Recyclables	Y
Construction and Demolition Waste Mgmt Planning	Y
Building Life-Cycle Impact Reduction	2 / 5
Product disclosure & optimization - Environmental Product Declarations	1 / 2
Product disclosure & optimization - Sourcing of Raw Materials	2 / 2
Product disclosure & optimization - Material Ingredients	2 / 2
Construction and Demolition Waste Mgmt	2 / 2
INDOOR ENVIRONMENTAL QUALITY	9 OF 16
Minimum IAQ Performance	Y
Environmental Tobacco Smoke Control	Y
Enhanced IAQ Strategies	2 / 2
Low-Emitting Materials	3 / 3
Construction IAQ Mgmt Plan	1 / 1
IAQ Assessment	0 / 2
Thermal Comfort	1 / 1
Interior Lighting	1 / 2
Daylight	0 / 3
Quality Views	0 / 1
Acoustic Performance	1 / 1
INNOVATION	6 OF 6
Innovation	5 / 5
LEED Accredited Professional	1 / 1
REGIONAL PRIORITY CREDITS	4 OF 4
Site Development - Protect or Restore Habitat	1 / 1
Rainwater Mgmt	1 / 1
Light Pollution Reduction	1 / 1
Thermal Comfort	1 / 1
TOTAL	63 OF 110

Credit details



PROJECT INFORMATION

Project Information

Awarded

Design Preliminary Review

Thank you for submitting your project for review. We hope you find the following review comments helpful. If you have questions about this review or if you would like to request a call to discuss your project, please contact us at <http://www.gbci.org/contact>. If requesting a call, please provide your availability and your detailed question(s) so that GBCI may prepare for the call.

To help us continuously improve, we would be grateful for your feedback about the certification process. This survey can be completed in about one minute: <http://bit.ly/LEED-Review-Survey>.

The Project Information form has been completed and the supporting documentation has been provided.



INTEGRATIVE PROCESS

Integrative Process

Possible points: 1

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

Awarded : 1

Design Preliminary Review

Awarded.



LOCATION AND TRANSPORTATION

LEED for Neighborhood Development Location
Possible points: 16

Not attempted

Sensitive Land Protection
Possible points: 1

Not attempted

High Priority Site
Possible points: 2
Attempted: 1, Denied: 0, Pending: 0, Awarded: 1

Awarded : 1 ⓘ

Design Preliminary Review

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Awarded.

Surrounding Density and Diverse Uses
Possible points: 5

Not attempted

Access to Quality Transit
Possible points: 5

Not attempted

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

Awarded : 1 ⓘ

Design Preliminary Review

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Awarded.

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

Awarded : 1 ⓘ

Design Preliminary Review

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Awarded.

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

Awarded : 1

Design Preliminary Review

Option 1: Electric Vehicle Charging

Awarded.



SUSTAINABLE SITES

Construction Activity Pollution Prevention

Awarded

Construction Preliminary Review

EPA Construction General Permit

Awarded.

Site Assessment

Possible points: 1

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

Awarded : 1

Design Preliminary Review

Awarded.

Site Development - Protect or Restore Habitat

Possible points: 2

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

Awarded : 2

Design Preliminary Review

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Awarded.

Open Space

Possible points: 1

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

Awarded : 1

Design Preliminary Review

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Awarded.

Rainwater Management

Possible points: 3

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

Awarded : 3

Design Preliminary Review

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Option 1: Percentile Rain Events, Path 1

Awarded.

Heat Island Reduction

Possible points: 2

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

Awarded : 2

Design Preliminary Review

Option 1. Non roof and roof

Awarded.

Light Pollution Reduction

Possible points: 1

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

Awarded : 1

Design Preliminary Review

Uplight: Option 1, BUG Rating Method

Awarded.

Light Trespass: Option 1, BUG Rating Method

Awarded.



WATER EFFICIENCY

Outdoor Water Use Reduction

Awarded

Design Preliminary Review

Option 2: Reduced Irrigation

Awarded.

Outdoor Water Use Reduction

Possible points: 2

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

Awarded : 2

Design Preliminary Review

Option 2: Reduced Irrigation, 100%

Awarded.

Indoor Water Use Reduction

Awarded

Indoor Water Use Reduction

Possible points: 6

Attempted: 6, Denied: 0, Pending: 0, Awarded: 6

Awarded : 6

Design Preliminary Review

Usage-based Calculation, 56.38%

Awarded.

When the issue noted in the WEp Indoor Water Use Reduction is addressed and the form is recalculated, the project has reduced potable water use by 55,28%. This issue does not affect credit compliance.

Building-Level Water Metering

Awarded

Design Preliminary Review

Awarded.

Cooling Tower Water Use

Possible points: 2

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

Awarded : 2

Design Preliminary Review

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Increased system performance achieved by increasing the number of cycles by a minimum of 25% is awarded.

Water Metering

Possible points: 1

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

Awarded : 1

Design Preliminary Review

Awarded.



ENERGY AND ATMOSPHERE

Fundamental Commissioning and Verification

Awarded

Construction Preliminary Review

Awarded.

Minimum Energy Performance

Awarded

Design Final Review

Option 1: Whole-Building Energy Simulation, 16.6% ASHRAE 90.1-2010 Appendix G energy cost savings.

Awarded.

The total predicted annual energy consumption for the project is 12,494,991 kWh/year of electricity and 2,230,764 kWh/year of natural gas.

Design Preliminary Review

Option 1: Whole-Building Energy Simulation, 16.6% ASHRAE 90.1-2010 Appendix G energy cost savings.

1. Provide the following:

- a. A narrative response to each Preliminary Review comment.
- b. A narrative describing any additional changes made to the energy models, or any significant changes to energy performance as a result of these changes (e.g., Baseline or Proposed energy consumption per end-use, Baseline or Proposed cost, etc.)
- c. LEED Minimum Energy Performance Calculator (MEPC) updated to address the comments below.
- d. Simulation input/output summary reports for the Baseline and Proposed models updated to address the comments below.

2. The energy modeling narrative indicates that compressor heat recovery is modeled for credit to provide additional recovered heat to the Proposed building. Section G2.5 of ASHRAE Standard 90.1-2010 indicates that "When the simulation program does not model a design, material, or device of the proposed design, an Exceptional Calculation Method shall be used if approved by the Rating Authority." It is unclear if the simulation program is able to model compressor heat recovery.

Provide a narrative to indicate whether the simulation program is capable of directly modeling this energy conservation measure. If the program is capable, provide additional documentation, such as screenshots or input reports, to verify the capabilities and the input parameters.

If the simulation program is incapable, provide an Exceptional Calculation Method in accordance with G2.5. Provide supplemental documentation to verify the amount of energy recovered. The narrative and energy savings should be reported separately from the other efficiency measures on the Performance_Outputs_1 tab of the MEPC.

Optimize Energy Performance

Awarded : 6

Possible points: 18

Attempted: 6, Denied: 0, Pending: 0, Awarded: 6

Design Final Review

Option 1: Whole Building Energy Simulation, 16.6%

Awarded.

Design Preliminary Review

Option 1: Whole Building Energy Simulation, 16.6%

1. EAp Minimum Energy Performance is pending clarifications.

Refer to the comments within EAp Minimum Energy Performance and resubmit this credit.

Building-Level Energy Metering

Awarded

Design Preliminary Review

Awarded.

Fundamental Refrigerant Management

Awarded

Design Preliminary Review

Awarded.

Enhanced Commissioning

Possible points: 6

Not attempted

Advanced Energy Metering

Possible points: 1

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

Awarded : 1

Design Preliminary Review

Awarded.

Demand Response

Possible points: 2

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

Awarded : 1

Construction Preliminary Review

Case 2: Demand response program not available

Awarded.

Renewable Energy Production

Possible points: 3

Withdrawn

Enhanced Refrigerant Management

Possible points: 1

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

Awarded : 1

Design Preliminary Review

Option 2: Calculation of refrigerant impact

Awarded.

Green Power and Carbon Offsets

Possible points: 2

Not attempted



MATERIALS AND RESOURCES

Storage and Collection of Recyclables

Awarded

Design Preliminary Review

Awarded.

Construction and Demolition Waste Management Planning

Awarded

Construction Preliminary Review

Awarded.

Building Life-Cycle Impact Reduction

Awarded : 2 ⓘ

Possible points: 5

Attempted: 3, Denied: 0, Pending: 0, Awarded: 2

Construction Preliminary Review

The project is pursuing the LEED v4.1 substitution path for this credit.

Option 2: Whole-Building Life-Cycle Assessment, Path 2

Awarded.

Building Product Disclosure and Optimization - Environmental Product Declarations

Awarded : 1 ⓘ

Possible points: 2

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

Construction Preliminary Review

The project is pursuing the LEED v4.1 substitution path for this credit.

Option 1. Environmental Product Declaration, 47 EPD

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 on rows 9,10,14,15,18,30,33,34,35,36,38,39,40,41,42,43.

Building Product Disclosure and Optimization - Sourcing of Raw Materials

Awarded : 2 ⓘ

Possible points: 2

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

Construction Preliminary Review

The project is pursuing the LEED v4.1 substitution path for this credit.

The documentation provided demonstrates that at least 30%, by cost, sourced from at least three different manufacturers, meet the requirements for responsible sourcing and extraction. Product documentation has been reviewed for recycled content listed in the Building Products Calculator.

Awarded.

Building Product Disclosure and Optimization - Material Ingredients

Awarded : 2 ⓘ

Possible points: 2

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

Construction Preliminary Review

The project is pursuing the LEED v4.1 substitution path for this credit.

Option 1: Material Ingredient Reporting, 22 Products

The documentation provided demonstrates that at least 20 weighted products, sourced from at least five different manufacturers, meet the requirements for material ingredient reporting. Product documentation has been reviewed for materials listed in the Building Products Calculator: Rows 16, 38, 40-45, 50, 51, 55, 56, 67.

Awarded.

Option 2: Material Ingredient Optimization, 15,5 Products

The documentation provided demonstrates that at least five weighted products, sourced from at least three different manufacturers, meet the requirements for material ingredient optimization. Product documentation has been reviewed for materials listed in the Building Products Calculator: Rows 14, 16, 38, 40, 41.

Awarded.

Construction and Demolition Waste Management

Possible points: 2

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

Awarded : 2

Construction Preliminary Review

Option 1: Diversion, 78.9%

Awarded.



INDOOR ENVIRONMENTAL QUALITY

Minimum Indoor Air Quality Performance

Awarded

Design Preliminary Review

Option 1. ASHRAE Standard 62.1-2010

Awarded.

Environmental Tobacco Smoke Control

Awarded

Design Preliminary Review

Awarded.

Enhanced Indoor Air Quality Strategies

Possible points: 2

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

Awarded : 2

Design Preliminary Review

Option 1: Enhanced IAQ Strategies

Awarded.

Option 2: Additional Enhanced IAQ Strategies

C. Carbon dioxide monitoring

Awarded.

Low-Emitting Materials

Possible points: 3

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

Awarded : 3

Construction Preliminary Review

The project is pursuing the LEED v4.1 substitution path for this credit.

The following product categories have been attempted: Paints and Coatings (100%), Adhesives and sealants (77%), Flooring (100%), Ceilings (94%).

Compliance has been demonstrated for four product categories: Paints and Coatings (100%), Adhesives and sealants (77%), Flooring (100%), Ceilings (94%).

Awarded.

Construction Indoor Air Quality Management Plan

Possible points: 1

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

Awarded : 1

Construction Preliminary Review

Awarded.

Indoor Air Quality Assessment

Possible points: 2

Not attempted

Thermal Comfort

Possible points: 1

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

Awarded : 1

Design Preliminary Review

Option 1: ASHRAE Standard 55-2010

Required thermal comfort controls are provided for 67.63% of individual occupant spaces and in 100% of shared multi-occupant spaces.

Awarded.

Interior Lighting

Possible points: 2

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

Awarded : 1 

Design Preliminary Review

The project meets the requirements using the LEED v4.1 substitution path for this credit.

A total of one strategy has been pursued.

Strategy 3: Lighting Control

Required lighting controls are provided for 100% of occupant spaces.

Awarded.

Daylight

Possible points: 3

Not attempted

Quality Views

Possible points: 1

Not attempted

Acoustic Performance

Possible points: 1

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

Awarded : 1 

Design Preliminary Review

The project meets the requirements using the LEED v4.1 substitution path for this credit.

HVAC Background Noise

Awarded.

Sound Transmission

Awarded.

**Innovation**

Possible points: 5

Attempted: 5, Denied: 0, Pending: 0, Awarded: 5

Awarded : 5**Design Preliminary Review****Strategy 1: Innovation - Purchasing Lamps**

The project team has developed and implemented a low-mercury lighting strategy. The all-LED design does not include any mercury. Lighting fixture cut sheets have been provided.

Awarded.

Strategy 2: Innovation - Sustainable wastewater management

The LEED Form states that the project team has developed and implemented a Sustainable wastewater management strategy. The project reuses the rainwater for the irrigation system and for the toilets.

Awarded.

Strategy 3: Pilot Credit - SSp55 - Bird collision deterrence

The LEED Form states that the project team has registered for Pilot Credit 55: Bird Collision Deterrence. The project complies with the pilot credit building façade and site structures, exterior lighting, and performance monitoring plan criteria.

The following documents have been provided:

- 1) For materials on the building and site with a Threat Factor of 15 or below, a narrative describing why the materials, and building in general, are "bird-friendly." Included is a material list and supporting data.
- 2) A completed Bird Collision Threat Rating spreadsheet.
- 3) Plan(s) and/or elevation(s) depicting the location of all materials and shading/screening devices used to comply with this credit.
- 4) Applicable specification details on all materials and shading/screening devices used to comply with this credit.
- 5) Site lighting plan with boundaries, elements, location of fixtures, lighting zone, and applicable measurements.
- 6) Luminaire schedule showing uplight ratings, nighttime off-time durations for a typical day, and manual override capability.
- 7) A copy of the post-construction monitoring plan.

Additionally, the registration and survey information have been provided.

Awarded.

Strategy 4: Exemplary Performance - WE Indoor Water Use Reduction

The requirement for exemplary performance is to reduce the water consumption of 55% and the project has documented 56,28%. When the issue noted in the WEp Indoor Water Use Reduction is addressed and the form is recalculated, the project has reduced potable water use by 55,28%.

Awarded.

Strategy 5: Exemplary Performance - SS Rainwater Management

The requirement for exemplary performance is retain on site the runoff from the 98 percentile and the project has documented that the project retain on site the 98 percentile.

Awarded.

5 points are awarded.

LEED Accredited Professional

Possible points: 1

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

Awarded : 1

Construction Preliminary Review

Awarded.



REGIONAL PRIORITY CREDITS

Sensitive Land Protection

Possible points: 1

Site Development - Protect or Restore Habitat

Possible points: 1

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

Rainwater Management

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

Optimize Energy Performance

Possible points: 1

Thermal Comfort

Possible points: 1

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

TOTAL

110

64

0










0

63

Review summary

Review	Submitted	Returned	Points: Submitted	Denied	Pending	Awarded
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Design Preliminary	04/20/2022	05/17/2022	48	0	6	42
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Credit	Status	Type	POINTS: Attempted	Denied	Pending	Awarded
Project Information	Anticipated		0	0	0	0
Integrative Process	Anticipated	Design	1	0	0	1
High Priority Site	Anticipated	Design	1	0	0	1 
Bicycle Facilities	Anticipated	Design	1	0	0	1 
Reduced Parking Footprint	Anticipated	Design	1	0	0	1 
Green Vehicles	Anticipated	Design	1	0	0	1
Site Assessment	Anticipated	Design	1	0	0	1
Site Development - Protect or Restore Habitat	Anticipated	Design	3	0	0	3 
Open Space	Anticipated	Design	1	0	0	1 
Rainwater Management	Anticipated	Design	4	0	0	4 
Heat Island Reduction	Anticipated	Design	2	0	0	2
Light Pollution Reduction	Anticipated	Design	2	0	0	2
Outdoor Water Use Reduction	Anticipated	Design	0	0	0	0
Outdoor Water Use Reduction	Anticipated	Design	2	0	0	2
Indoor Water Use Reduction	Anticipated	Design	0	0	0	0
Indoor Water Use Reduction	Anticipated	Design	6	0	0	6
Building-Level Water Metering	Anticipated	Design	0	0	0	0
Cooling Tower Water Use	Anticipated	Design	2	0	0	2 
Water Metering	Anticipated	Design	1	0	0	1
Minimum Energy Performance	Pending	Design	0	0	0	0
Optimize Energy Performance	Pending	Design	6	0	6	0
Building-Level Energy Metering	Anticipated	Design	0	0	0	0
Fundamental Refrigerant Management	Anticipated	Design	0	0	0	0
Advanced Energy Metering	Anticipated	Design	1	0	0	1
Enhanced Refrigerant Management	Anticipated	Design	1	0	0	1
Storage and Collection of Recyclables	Anticipated	Design	0	0	0	0
Minimum Indoor Air Quality Performance	Anticipated	Design	0	0	0	0
Environmental Tobacco Smoke Control	Anticipated	Design	0	0	0	0
Enhanced Indoor Air Quality Strategies	Anticipated	Design	2	0	0	2
Thermal Comfort	Anticipated	Design	2	0	0	2
Interior Lighting	Anticipated	Design	1	0	0	1 
Acoustic Performance	Anticipated	Design	1	0	0	1 

Design Final	06/02/2022	06/22/2022	6	0	0	6
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Credit	Status	Type	POINTS: Attempted	Denied	Pending	Awarded
Minimum Energy Performance	Anticipated	Design	0	0	0	0
Optimize Energy Performance	Anticipated	Design	6	0	0	6

Construction Preliminary

06/22/2023






07/20/2023

16

0

0

15

Credit	Status	Type	POINTS: Attempted	Denied	Pending	Awarded
Construction Activity Pollution Prevention	Awarded	Construction	0	0	0	0
Fundamental Commissioning and Verification	Awarded	Construction	0	0	0	0
Demand Response	Awarded	Construction	1	0	0	1
Construction and Demolition Waste Management Planning	Awarded	Construction	0	0	0	0
Building Life-Cycle Impact Reduction	Awarded	Design	3	0	0	2 
Building Product Disclosure and Optimization - Environmental Product Declarations	Awarded	Construction	1	0	0	1 
Building Product Disclosure and Optimization - Sourcing of Raw Materials	Awarded	Construction	2	0	0	2 
Building Product Disclosure and Optimization - Material Ingredients	Awarded	Construction	2	0	0	2 
Construction and Demolition Waste Management	Awarded	Construction	2	0	0	2
Low-Emitting Materials	Awarded	Construction	3	0	0	3 
Construction Indoor Air Quality Management Plan	Awarded	Construction	1	0	0	1
LEED Accredited Professional	Awarded	Construction	1	0	0	1