

Instruction for classes (exercises)

LEED Leadership in Energy and Environmental Design – system requirements and benefits of certification

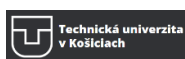
Guidelines for exercises

Exercise 1

1. Download LEED v4 for Homes Design and Construction <https://www.usgbc.org/resources/leed-v4-homes-design-and-construction-checklist> (also in Annex 1)
2. Complete the empty columns in worksheet (paste “P” if prerequisite – for required criteria).
3. Compare the different scores. Indicate which criteria are more important for each type of building.
4. Provide the most important conclusions in the context of the system requirements for buildings.

	Schools	Warehouses and Distribution Centers	Healthcare
INTEGRATIVE PROCESS			
Integrative Project Planning and Design			
Integrative Process			
LOCATION AND TRANSPORTATION			
LEED for Neighborhood Development Location			
Sensitive Land Protection			
High-Priority Site and Equitable Development			
Surrounding Density and Diverse Uses			
Access to Quality Transit			
Bicycle Facilities			
Reduced Parking Footprint			
Electric Vehicles			
SUSTAINABLE SITES			
Construction Activity Pollution Prevention			
Environmental Site Assessment			
Site Assessment			
Protect or Restore Habitat			
Open Space			
Rainwater Management			

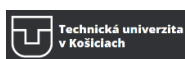
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Heat Island Reduction			
Light Pollution Reduction			
Site Master Plan			
Tenant Design and Construction Guidelines			
Places of Respite			
Direct Exterior Access			
Joint Use of Facilities			
WATER EFFICIENCY			
Outdoor Water Use Reduction			
Indoor Water Use Reduction			
Building-Level Water Metering			
Outdoor Water Use Reduction			
Indoor Water Use Reduction			
Optimize Process Water Use			
Water Metering			
ENERGY AND ATMOSPHERE			
Fundamental Commissioning and Verification			
Minimum Energy Performance			
Building-Level Energy Metering			
Fundamental Refrigerant Management			
Enhanced Commissioning			
Optimize Energy Performance			
Advanced Energy Metering			
Grid Harmonization			
Renewable Energy			
Enhanced Refrigerant Management			
MATERIALS AND RESOURCES			
Storage and Collection of Recyclables			
Construction and Demolition			
Waste Management Planning			
PBT Source Reduction– Mercury			
Building Life-Cycle Impact Reduction			
Building Product Disclosure and Optimization – EPD			
Building Product Disclosure and Optimization – Sourcing of Raw Materials			
Building Product Disclosure and Optimization – Material Ingredients			
PBT Source Reduction – Mercury			
PBT Source Reduction – Lead, Cadmium, and Copper			
Furniture and Medical Furnishings			
Design for Flexibility			
Construction and Demolition Waste Management			
INDOOR ENVIRONMENTAL QUALITY			
Minimum Indoor Air QualityPerformance			
Environmental Tobacco Smoke Control			
Minimum Acoustic Performance			
Enhanced Indoor Air Quality Strategies			
Low-Emitting Materials			
Construction Indoor Air Quality Management Plan			
Indoor Air Quality Assessment			
Thermal Comfort			
Interior Lighting			
Daylight			
Quality Views			

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Acoustic Performance			
INNOVATION			
Innovation			
LEED Accredited Professional			
REGIONAL PRIORITY			
Regional Priority			

Exercise 2

- Please read case studies and complete the empty columns in worksheet
 - <https://www.cagbc.org/kingelementary>
 - https://www.cagbc.org/Archives/EN/CaGBC_Green_Building_Case_Studies/prairie_architects.aspx
 - <https://www.usgbc.org/projects/japan-post-holdings-headquarter-project>
 - <https://www.usgbc.org/projects/newyork-presbyterian-david-h-koch-ctr>
- Provide the most important conclusions. What are the long-term benefits for building owners?

Project name				
Rating System				
Total Points earned				
Certification Level				
Key solutions in building				
Results / benefits				
Any other interesting Issues				

References: Dariusz Wyrwa, Janusz Strojny, LEED Leadership in Energy and Environmental Design – system requirements and benefits of certification, Instruction for classes (exercises) for Pilot course on “Environmental labelling in circular economy”, on-line event within the ECOLABELLING project (Innovations in circular economy – environmental labels and declarations), Visegrad+ Grant No. 21920002 (2019-2021), Poland, Rzeszów 05.02.2021. <https://ecolabelling.prz.edu.pl/en/pilot-course-on-environmental-labelling-in-circular-economy>

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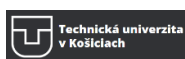
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Annex 1. Project Checklists

LEED v4 for BD+C: Schools

Credit	Integrative Process	1
Location and Transportation		15
Credit	LEED for Neighborhood Development Location	15
Credit	Sensitive Land Protection	1
Credit	High Priority Site	2
Credit	Surrounding Density and Diverse Uses	5
Credit	Access to Quality Transit	4
Credit	Bicycle Facilities	1
Credit	Reduced Parking Footprint	1
Credit	Green Vehicles	1
Sustainable Sites		12
Prereq	Construction Activity Pollution Prevention	Required
Prereq	Environmental Site Assessment	Required
Credit	Site Assessment	1
Credit	Site Development - Protect or Restore Habitat	2
Credit	Open Space	1
Credit	Rainwater Management	3
Credit	Heat Island Reduction	2
Credit	Light Pollution Reduction	1
Credit	Site Master Plan	1
Credit	Joint Use of Facilities	1
Water Efficiency		12
Prereq	Outdoor Water Use Reduction	Required
Prereq	Indoor Water Use Reduction	Required
Prereq	Building-Level Water Metering	Required
Credit	Outdoor Water Use Reduction	2
Credit	Indoor Water Use Reduction	7
Credit	Cooling Tower Water Use	2
Credit	Water Metering	1
Energy and Atmosphere		31
Prereq	Fundamental Commissioning and Verification	Required
Prereq	Minimum Energy Performance	Required
Prereq	Building-Level Energy Metering	Required
Prereq	Fundamental Refrigerant Management	Required
Credit	Enhanced Commissioning	6
Credit	Optimize Energy Performance	16
Credit	Advanced Energy Metering	1
Credit	Demand Response	2
Credit	Renewable Energy Production	3
Credit	Enhanced Refrigerant Management	1
Credit	Green Power and Carbon Offsets	2
Materials and Resources		13
Prereq	Storage and Collection of Recyclables	Required
Prereq	Construction and Demolition Waste Management Planning	Required
Credit	Building Life-Cycle Impact Reduction	5

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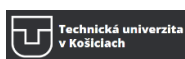
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Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
Credit	Building Product Disclosure and Optimization - Material Ingredients	2
Credit	Construction and Demolition Waste Management	2
Indoor Environmental Quality		16
Prereq	Minimum Indoor Air Quality Performance	Required
Prereq	Environmental Tobacco Smoke Control	Required
Prereq	Minimum Acoustic Performance	Required
Credit	Enhanced Indoor Air Quality Strategies	2
Credit	Low-Emitting Materials	3
Credit	Construction Indoor Air Quality Management Plan	1
Credit	Indoor Air Quality Assessment	2
Credit	Thermal Comfort	1
Credit	Interior Lighting	2
Credit	Daylight	3
Credit	Quality Views	1
Credit	Acoustic Performance	1
Innovation		6
Credit	Innovation	5
Credit	LEED Accredited Professional	1
Regional Priority		4
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
TOTALS		Possible Points: 110

LEED v4 for BD+C: Warehouses and Distribution Centers

Credit	Integrative Process	1
Location and Transportation		16
Credit	LEED for Neighborhood Development Location	16
Credit	Sensitive Land Protection	1
Credit	High Priority Site	2
Credit	Surrounding Density and Diverse Uses	5
Credit	Access to Quality Transit	5
Credit	Bicycle Facilities	1
Credit	Reduced Parking Footprint	1
Credit	Green Vehicles	1
Sustainable Sites		10
Prereq	Construction Activity Pollution Prevention	Required
Credit	Site Assessment	1
Credit	Site Development - Protect or Restore Habitat	2
Credit	Open Space	1
Credit	Rainwater Management	3
Credit	Heat Island Reduction	2
Credit	Light Pollution Reduction	1
Water Efficiency		11

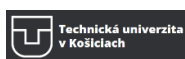
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Prereq	Outdoor Water Use Reduction	Required
Prereq	Indoor Water Use Reduction	Required
Prereq	Building-Level Water Metering	Required
Credit	Outdoor Water Use Reduction	2
Credit	Indoor Water Use Reduction	6
Credit	Cooling Tower Water Use	2
Credit	Water Metering	1
Energy and Atmosphere		33
Prereq	Fundamental Commissioning and Verification	Required
Prereq	Minimum Energy Performance	Required
Prereq	Building-Level Energy Metering	Required
Prereq	Fundamental Refrigerant Management	Required
Credit	Enhanced Commissioning	6
Credit	Optimize Energy Performance	18
Credit	Advanced Energy Metering	1
Credit	Demand Response	2
Credit	Renewable Energy Production	3
Credit	Enhanced Refrigerant Management	1
Credit	Green Power and Carbon Offsets	2
Materials and Resources		13
Prereq	Storage and Collection of Recyclables	Required
Prereq	Construction and Demolition Waste Management Planning	Required
Credit	Building Life-Cycle Impact Reduction	5
Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
Credit	Building Product Disclosure and Optimization - Material Ingredients	2
Credit	Construction and Demolition Waste Management	2
Indoor Environmental Quality		16
Prereq	Minimum Indoor Air Quality Performance	Required
Prereq	Environmental Tobacco Smoke Control	Required
Credit	Enhanced Indoor Air Quality Strategies	2
Credit	Low-Emitting Materials	3
Credit	Construction Indoor Air Quality Management Plan	1
Credit	Indoor Air Quality Assessment	2
Credit	Thermal Comfort	1
Credit	Interior Lighting	2
Credit	Daylight	3
Credit	Quality Views	1
Credit	Acoustic Performance	1
Innovation		6
Credit	Innovation	5
Credit	LEED Accredited Professional	1
Regional Priority		4
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
TOTALS		Possible Points: 110

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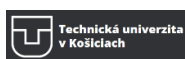


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LEED v4 for BD+C: Healthcare

Prereq	Integrative Project Planning and Design	Required
Credit	Integrative Process	1
Location and Transportation		9
Credit	LEED for Neighborhood Development Location	9
Credit	Sensitive Land Protection	1
Credit	High Priority Site	2
Credit	Surrounding Density and Diverse Uses	1
Credit	Access to Quality Transit	2
Credit	Bicycle Facilities	1
Credit	Reduced Parking Footprint	1
Credit	Green Vehicles	1
Sustainable Sites		9
Prereq	Construction Activity Pollution Prevention	Required
Prereq	Environmental Site Assessment	Required
Credit	Site Assessment	1
Credit	Site Development - Protect or Restore Habitat	1
Credit	Open Space	1
Credit	Rainwater Management	2
Credit	Heat Island Reduction	1
Credit	Light Pollution Reduction	1
Credit	Places of Respite	1
Credit	Direct Exterior Access	1
Water Efficiency		11
Prereq	Outdoor Water Use Reduction	Required
Prereq	Indoor Water Use Reduction	Required
Prereq	Building-Level Water Metering	Required
Credit	Outdoor Water Use Reduction	1
Credit	Indoor Water Use Reduction	7
Credit	Cooling Tower Water Use	2
Credit	Water Metering	1
Energy and Atmosphere		35
Prereq	Fundamental Commissioning and Verification	Required
Prereq	Minimum Energy Performance	Required
Prereq	Building-Level Energy Metering	Required
Prereq	Fundamental Refrigerant Management	Required
Credit	Enhanced Commissioning	6
Credit	Optimize Energy Performance	20
Credit	Advanced Energy Metering	1
Credit	Demand Response	2
Credit	Renewable Energy Production	3
Credit	Enhanced Refrigerant Management	1
Credit	Green Power and Carbon Offsets	2
Materials and Resources		19
Prereq	Storage and Collection of Recyclables	Required
Prereq	Construction and Demolition Waste Management Planning	Required
Prereq	PBT Source Reduction- Mercury	Required
Credit	Building Life-Cycle Impact Reduction	5

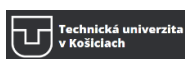
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Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
Credit	Building Product Disclosure and Optimization - Material Ingredients	2
Credit	PBT Source Reduction- Mercury	1
Credit	PBT Source Reduction- Lead, Cadmium, and Copper	2
Credit	Furniture and Medical Furnishings	2
Credit	Design for Flexibility	1
Credit	Construction and Demolition Waste Management	2
Indoor Environmental Quality		16
Prereq	Minimum Indoor Air Quality Performance	Required
Prereq	Environmental Tobacco Smoke Control	Required
Credit	Enhanced Indoor Air Quality Strategies	2
Credit	Low-Emitting Materials	3
Credit	Construction Indoor Air Quality Management Plan	1
Credit	Indoor Air Quality Assessment	2
Credit	Thermal Comfort	1
Credit	Interior Lighting	1
Credit	Daylight	2
Credit	Quality Views	2
Credit	Acoustic Performance	2
Innovation		6
Credit	Innovation	5
Credit	LEED Accredited Professional	1
Regional Priority		4
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
TOTALS		Possible Points: 110

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