

MUTD Board of Directors Meeting Staff Report

To: Board of Directors **From:** Frank Kuhl

Meeting Date: September 3, 2025

Attachments

- 1. Geothermal Design Through Construction Option Proposal
- 2. Geothermal Solar LEED Summary
- 3. LEED Checklist

Agenda Item: 5.3 Geothermal Design Through Construction

Recommendation: Approve the execution of a contract option with Wendel Companies to continue geothermal design through construction.

Discussion: Over the last year, the agency has signed two contract options regarding geothermal services for the new facility. The board approved a geothermal feasibility study on September 26, 2024. On April 8, 2025, the general manager authorized the geothermal option to be included in the 30% packet. Due to an internal error, this second contract option was not brought to the board prior to execution.

This proposal is for Wendel to provide the geothermal design system phases at 60%, 90% and 100%, and includes Cushing Terrell as the construction administration services provider. Wendel will manage the geothermal system and coordinate the design between the agency, Cushing Terrell and its engineering team.

Cushing Terrell will provide 60% design deliverables (site plan drawings, piping schematic diagram, hydraulic calculations, production and injection well design, draft specifications, and cost estimate). Additionally, it will support bidding and construction administration, including submittal review, requests for information and site visits.

The 90% and 100% construction documents will include final drawings and piping diagrams, specifications, cost estimate, onsite drilling coordination, Department of Natural Resources, and Missoula County permitting.

Financial Impact and Funding Source: This contract is for a lump sum fee of \$101,495. \$91,900 is allocated to Cushing Terrell, Wendel will be paid \$5,000, and the remaining \$4,595 is designated as a 5% subconsultant markup.



June 12, 2025

Colin Woodrow
Director of Capital Projects, Planning & Technology
Mountain Line (MUTD)
1221 Shakespeare Street
Missoula, MT 59802

SUBJECT: MOUNTAIN LINE MOAB

ADDITIONAL SERVICES REQUEST: GEOTHERMAL DESIGN THROUGH CONSTRUCTION

Dear Colin:

Wendel is pleased to submit this proposal for additional professional services associated with the Mountain Line MOAB project. This proposal will set specific scope and fee parameters based on our understanding of the project services required. Cushing Terrell provided Geothermal test wells and 30% design under previously approved scopes of work. This proposal is for the completion of design (60%, 90% and 100%), bidding and construction administration services for Cushing Terrell for the Geothermal system.

A. SCOPE OF WORK

The following represents our understanding of the scope of services required of Wendel and Cushing Terrell for this project.

Wendel

- 1) Project management and coordination with Mountain Line and Cushing Terrell.
- 2) Design coordination between engineering disciplines.

Cushing Terrell

- 1) Cushing Terrell is providing design (60%, 90% and 100%), bidding and construction administration services for the Geothermal system.
- 2) See attached proposal.

B. ASSUMPTIONS

1) Wendel personnel will have access to the site, owner's personnel and information in support of existing condition investigations.

C. PROPOSAL FEE

We trust the above scope of work meets Mountain Line's requirements. We are proposing to perform the scope of work presented in this proposal for a lump sum fee, on a task-by-task basis. The proposed fee for the project is detailed below.

PROPOSAL FEE						
Task Proposed Fee						
Company	Labor	Expenses				
Wendel	\$5,000.00	\$0				
Cushing Terrell	\$91,900.00	\$0				
5% Subconsultant Mark-Up	\$4,595.00	\$0				
TOTAL	\$101,495.00	\$0				

Fee Notes:

- 1) Expenses such as plotting costs, postage, telephone charges are included in the fee.
- 2) Should Wendel be required to perform additional services beyond those outlined above, Wendel shall be compensated on an hourly or fixed sum basis for a mutually agreed scope of services.
- 3) Our fee and schedule proposal are valid for 60 days. If we do not receive a signed notice to proceed before that date, we reserve the right to re-evaluate our proposal.

D. PROPOSED SCHEDULE

We anticipate Cushing Terrell's design, bid and construction administration services to follow the overall MOAB project schedule.

E. TERMS

This proposal and the Standard Form of Agreement Between Owner and Architect dated February 14, 2024 intended to represent the entire contractual relationship. Please contact me if you have any questions. If this proposal and attached general conditions are acceptable to you, please indicate your acceptance by signing both originals and return one (1) executed original to our office.

Thank you for considering Wendel!

Respectfully Submitted,

Lindsay	Brownschole
Lindsay Brown	nschidle, PMP

Lindsay Brownschidle, PMI Project Manager Ronald H. Reekes Principal-in-Charge

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Enc.

Should Wendel's proposal be accepted, Wendel Architecture P.C., a Montana State licensed architecture and engineering firm that is part of a consolidated group of Wendel Companies, will contract to undertake the work. Our letterhead and plans will still prominently say "Wendel" and we will refer to ourselves as Wendel throughout the project.

ACCEPTANCE / AUTHORIZATION:							
Accepted this	_ day of	_, 20					
Print Name:							
Signature:							
Title:							

RETURN TO:

Wendel Lindsay Brownschidle Ibrownschidle@wendelcompanies.com



Lindsay Brownschidle

Wendel

Centerline Corporate Park, 375 Essjay Road, Suite 200

Williamsville, NY, 14221

Ibrownschidle@wendelcompanies.com

Re: Mountain Line MOAB Geothermal 60% CD, 100% CD, BID and CA Fee Proposal

Lindsay:

CTA Inc. (dba Cushing Terrell) is pleased to provide this fee proposal to provide geothermal design services for the new Mountain Line MOAB site located on two parcels at 4094 and 4065 Whippoorwill Drive in Missoula, MT. We are excited and pleased at the opportunity to work with you on this project.

This fee proposal provides geothermal design services to align the geothermal design scope with Wendel's 60% Construction Document deliverable package, and a future 100% Construction Document deliverable. The fee outlined below would be in addition to the 30% design fee captured in the contract amendment dated April 3, 2025.

The attached proposal provides a description of Cushing Terrell's understanding of the project scope and discusses the scope of services Cushing Terrell will provide. It also lists our proposed team, which accounts for the disciplines and expertise required for a project of this nature.

Please review the proposed services and fees attached. Do not hesitate to call or email if you have any questions about the content therein. If you find this proposal meets your expectations, please sign and return this fee proposal.

Thank you for this opportunity.

Sincerely,

CUSHING TERRELL

Alex Russell, PE

hy Of

Director of Energy Services | Associate Principal

cc: Cushing Terrell File - MUTD_MOAB

Attachments: Proposal

Cushing Terrell.

Proposal for Mountain Line MOAB Geothermal Test Wells

SCOPE OF PROJECT

Wendel is seeking professional design services for a geothermal system for the new Mountain Line MOAB site located in the Missoula, MT. At Wendel's request, the fee has been broken into two phases: a 60% CD fee (supplemental to 30% CD fee) and a 100% CD design fee. The project will include the following:

60% Construction Documents Design (30% design fee proposal scope items plus): \$20,000

- Site plan drawings showing preliminary geothermal field arrangement
- Piping schematic diagram showing system components and flows (geothermal design info based on building design input from Wendel)
- Hydraulic calculations to support extraction and injection wellfield design assumptions
- Production and Injection well design
- Geothermal scope would include components of the geo-thermal system on the source side of the building heat exchanger
- Engineering design guidelines for building MEP design teams
- Draft geothermal specifications
- 60% CD Cost Estimates

100% Construction Documents Design: \$51,900

- Final site plan drawings showing geothermal field arrangement
- Final piping schematic diagram showing system components and flows (geothermal design info based on building design input from Wendel)
- Final Geothermal scope would include components of the geo-thermal system on the source side of the building heat exchanger
- Engineering design guidelines for building MEP design teams
- Geothermal specifications
- Cost Estimates
- Geothermal Drilling bid solicitation package, bid coordination and bid review with recommendation to owner
- Onsite drilling coordination: Includes data logging, well testing, material samples from water bearing zones, oversight of final well construction and development sign off.
- Develop and compile detailed well logs and project record for owner.
- DNRC and Missoula County permitting including all permitting fees, coordination, equipment, and supplies necessary for permit filing.

Bidding Support: \$2,000

- Coordination with Wendel to support GMP
- Coordination with bidders and bid review

Construction Administration: \$18,000

- Coordination/OAC Meeting
 - Assumed PM attendance virtually for bi-weekly meetings for 12 months
- Submittal Review
- RFI/ASI/PR support as required
- 3 site visits with field reports
- 1 warranty walk through
- All required permitting coordination
- Geothermal as-built documents
- No reimbursables are anticipated

SCOPE OF SERVICES

Cushing Terrell will manage this project from our Missoula office. Our professional team will be led by the following key team members:

Principal-in-Charge: Alan Bronec, PE Project Manager: Alex Russell, PE

Cushing Terrell will provide all services with hydrogeologic consulting by TetraTech.

Basic and Supplemental Services

Basic and Supplemental services for this project consist of engineering services and hydrogeologic services for the design of the geothermal system.

Exclusions

- Geothermal Well Drilling
- Geothermal System Commissioning

COMPENSATION PROPOSAL

This proposed fee is a fixed fee lump sum. This fee assumes 3 production wells and 5 injection wells with 8 hours of oversight per well. Permitting fees have been estimated using previous experience and those associated costs. If the final configuration of the geothermal system varies greatly from our current understanding, Cushing Terrell will not exceed the proposed cost estimate without written approval of Wendel. The total cost for the 60% CD phase is \$20,000. The total cost for the 100% CD phase is \$51,900.

Bidding support is \$2,000. Construction administration for this project is \$18,000. The total cost for this proposed scope is \$91,900.

PROJECT SCHEDULE

Wendel's current 60% CD pencils down delivery date is July 9, 2025. No 100% CD delivery date has been established.

This proposal is valid for 90 (ninety) days from date of issue.



MOAB - Geothermal, LEED Gold Certification and Solar Update

Geothermal

The geothermal system has been incorporated into the 60% design deliverable on the Geo Civil and Geo Mechanical drawings. Between the 30% and 60% deliverables, the geothermal loads were increased by ~10% due to fine tuning calculations and the inclusion of a 140MBH Heat Pump Hot Water Tank (the overall efficiency of the system or aquifer has not changed between 30% and 60% design). The 60% design incorporates two productions wells, each served by two injection wells (total of four injection wells). This was done to provide lead-standby redundancy, as each production well and corresponding injection wells are fully sized to serve the Phase 1 build-out. The second production well and its corresponding two injection wells will not be used during normal operations, and total annual energy consumption will not be impacted.

LEED Gold Certification

The current LEED checklist is attached. To achieve gold certification the project needs between 60 and 79 points. The current checklist shows 53 points in the "yes" column, 32 in the "maybe" column and 25 in the "no" column. It is important to note that these numbers will remain in flux for a while. The design team is currently assuming a total of 4 points in the yes column for having the solar array. The larger pot of points associated with "Optimize Energy Performance" and "Indoor Water Use Reduction" will not be fully realized until closer to 90% design at the earliest and are currently conservative best guesses. Of the 32 points in the yellow column, the design team is targeting at least 10 to move over to yes column, assuming we keep the solar array – the LEED application should pursue at least 60 points + a small contingency in case we get denied any. The current plan is to submit the design application to GBCI in early to mid-2026.

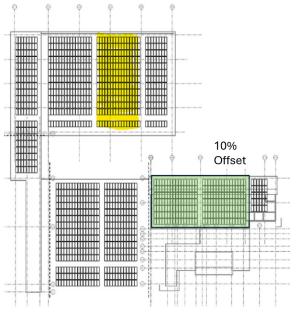
Solar

The 4 points for LEED for the solar array represent a 10% offset of the building's annual energy use. The current path forward for solar is for Mountain Line to pursue a Power Purchase Agreement up until September 30th, 2025. A PPA is a contract between Mountain Line and a developer to buy electricity from a solar panel system. The developer owns and maintains the system, and Mountain Line hosts it on their property. If Mountain Line has an agreement in place by then, then the developer can coordinate with Quality Construction on installation, design, schedule, etc. The design team will coordinate with the developer on LEED points. If Mountain Line doesn't have a PPA in place by then, the design team will design the minimum solar array required to achieve the 4 points and provide it to Quality for inclusion in the GMP. Based on a preliminary analysis, it is expected that the Maintenance Bay roof area, if completely covered with solar panels as shown in Cushing Terrell's 30% design documents, is sufficient to provide the 10% offset required for LEED. As the design continues to progress, the exact output and solar array size may need to be adjusted.



From 30% Design Presentation:

	Solar Option 1 - 2% Offset	Solar Option 2 - 5% Offset	Solar Option 3 - 10% Offset	Solar Option 4 - PPA (private solar array)
Summary	Provide a roof mounted solar array that offsets 2% of the yearly building electrical consumption (approximately 24kw array for 24,000 kwh/yr). USGBC does not require the electricity used for BEB/EV charging to be taken into account for offset percentages.	array for 60,000 kwh/yr).	Provide a roof mounted solar array that offsets 10% of the yearly building electrical consumption (approximately 120 kw array/300 panels for 120,000 kwh/yr).	A solar power purchase
Construction Cost	ADD \$90,000	ADD \$180,000	ADD \$320,000	Moves from Capital to Operating. Can Vary depending on the negotiated terms and rate.
ROI or Payback Period	7 - 16 years, pending supplier (25 yr lifetime)	7 - 16 years, pending supplier (25 yr lifetime)	7 - 16 years, pending supplier (25 yr lifetime)	Depends on contract, lower utility payments and green attributes in lieu of "simple payback"
Pros	Provides 2 LEED Points. Solar can be added on the entire roof in the future - the capacity in the building steel will be provided.	Provides 3 LEED Points. Solar can be provided on the entire roof in the future - the capacity in the building steel will be provided.	Provides 4 LEED Points which is needed to meet LEED Gold certification. Solar can be provided on the entire roof in the future capacity in the building steel will be provided.	Can be used for LEED credits. Reduces capital costs - the developer handles design, installation and permitting. Lower electricity costs.
Cons	Will not meet LEED Gold certification. Mountain Line is responsible for maintenance costs.	Will not meet LEED Gold certification. Mountain Line is responsible for maintenance costs.	Mountain Line is responsible for maintenance costs.	Mountain Line does not own the solar array.



Solar Option 1 - 2% Offset	Solar Option 2 -	Solar Option 3 - 10%	Solar Option 4 - PPA
	5% Offset	Offset	(private solar array)
Provide a roof mounted	Provide a roof	Provide a roof	A solar power purchase
solar array that offsets 2%	mounted solar	mounted solar array	agreement (PPA) is a
of the yearly building	array that offsets	that offsets 10% of the	contract between Mountain
electrical consumption	5% of the yearly	yearly building	Line and a developer to buy
(approximately 24kw	building electrical	electrical	electricity from a solar
array for 24,000 kwh/yr).	consumption	consumption	panel system. The
USGBC does not require	(approximately 60	(approximately 120 kw	developer owns and
the electricity used for	kw array for	array/300 panels for	maintains the system, and
BEB/EV charging to be	60,000 kwh/yr).	120,000 kwh/yr).	Mountain line hosts it on
taken into account for		_	their property.
offset percentages.			11.55.75.18.55.75.



LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist Proiect Name: Missoula **Design Credits** Date: 7/30/2025 **Construction Credits** Bold Numbers = all documentation in place, confirmed point will be ach Integrative Process Responsible Credit 1 Red Numbers = High liklihood point can be achieved, but not vet guaranteed Purple text = using LEED v4.1 reqs. (All other credits will use v4 reqs by def 5 3 5 Responsible Materials and Resources 1 | 1 | 14 **Location and Transportation** 16 **LEED for Neighborhood Development Location** Υ 16 SO Storage and Collection of Recyclables Sensitive Land Protection Υ Construction and Demolition Waste Management Plan 1 C S Credit 1 $\mathsf{S}\,\mathsf{B}$ Prerea 2 C S Credit **High Priority Site** 2 AS**Building Life-Cycle Impact Reduction** Credit Building Product Disclosure and Optimization - Enviror 5 S Credit Surrounding Density and Diverse Uses 5 ΑВ Access to Quality Transit Building Product Disclosure and Optimization - Sourcin 5 S ΑВ Credit 5 Credit Bicycle Facilities SA Credit ΑВ Building Product Disclosure and Optimization - Materia 1 Credit С Credit Reduced Parking Footprint 1 SB Credit Construction and Demolition Waste Management **Electric Vehicles** ΕA Credit 10 6 0 **Indoor Environmental Quality** 5 2 3 Sustainable Sites 10 Υ M Minimum Indoor Air Quality Performance Υ Υ SB Construction Activity Pollution Prevention Required SO **Environmental Tobacco Smoke Control** Prereg Enhanced Indoor Air Quality Strategies S Credit Site Assessment ΜА Credit CSO Site Development - Protect or Restore Habitat 2 **Low-Emitting Materials** 2 Credit 3 ΑВ Credit СА Open Space Construction Indoor Air Quality Management Plan Credit SB Credit 3 **Indoor Air Quality Assessment** СА Credit Rainwater Management 1 M, B, O Credit 2 СА **Heat Island Reduction** 2 Μ **Thermal Comfort** Credit Credit ΕA Credit Light Pollution Reduction 1 ΕA Credit Interior Lighting **Daylight** 3 Α Credit 4 2 5 Water Efficiency 11 1 **Quality Views** Α Credit Υ С Outdoor Water Use Reduction Required 1 Α Credit Acoustic Performance Prereq Υ Indoor Water Use Reduction PARequired Prereq Υ 6 0 0 Ρ **Building-Level Water Metering** Innovation Required С Outdoor Water Use Reduction 2 S Innovation Credit S LEED Accredited Professional 2 Indoor Water Use Reduction 6 Credit PACredit Cooling Tower Water Use / Optimize Process Water Use (v4.1) 2 Μ Credit Р Water Metering 1 3 0 **Regional Priority** Credit Renewable Energy Production, need 1 19 | 13 | 1 **Energy and Atmosphere** 33 Indoor Water Use Reduction, need 4 1 Credit Υ Fundamental Commissioning and Verification 1 Everyone Required Optimize Energy Performance, need 12 Credit Υ MEAMinimum Energy Performance Required Site Development - Protect / Restore Habitat, need 1 Prerea Υ Ε Prereq **Building-Level Energy Metering** Required Υ Fundamental Refrigerant Management Required **53** 32 **25 TOTALS** Μ Prereq Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points **Enhanced Commissioning** Everyone Credit 6 9 Optimize Energy Performance 9 MEACredit 18 Advanced Energy Metering S Sustainability EMCredit 2 С Civil / Landscape **Demand Response** ESO Credit Renewable Energy Production (2%, 5%, 10% offset) 3 Α Architecture EΑ Credit Μ **Enhanced Refrigerant Management Plumbing** Credit 1 Credit Green Power and Carbon Offsets М Mechanical / Energy Modeling SO2 E Electrical

- B Builder (CM, GC, etc)
- O Owner

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ault)

13
Required
Required
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2
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2

16
Required
Required
2
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1
2
1
2
3
1
1

	4
	1
	1
	1
	1
Possible Points:	110

6 5

s, **Platinum:** 80 to 110



LEED v4 for BD+C: Core and Shell

Project Checklist

Project Name: Date:

1

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		Credit	Integrative Process	

L	0	0	0	Locat	tion and Transportation	20
				Credit	LEED for Neighborhood Development Location	20
				Credit	Sensitive Land Protection	2
				Credit	High Priority Site	3
ı				Credit	Surrounding Density and Diverse Uses	6
				Credit	Access to Quality Transit	6
				Credit	Bicycle Facilities	1
				Credit	Reduced Parking Footprint	1
				Credit	Green Vehicles	1

0	0	0	Susta	Sustainable Sites			
Υ			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		
			Credit	Tenant Design and Construction Guidelines	1		

0	0	0	Water	Efficiency	11
Υ			Prereq	Outdoor Water Use Reduction	Required
Υ			Prereq	Indoor Water Use Reduction	Required
Υ			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

0	0	0	Energ	gy and Atmosphere	33
Υ			Prereq	Fundamental Commissioning and Verification	Required
Υ			Prereq	Minimum Energy Performance	Required
Υ			Prereq	Building-Level Energy Metering	Required
Υ			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

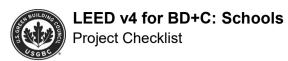
0	0	0	Mater	ials and Resources	14
Υ			Prereq	Storage and Collection of Recyclables	Required
Υ			Prereq	Construction and Demolition Waste Management Planning	Required
			Credit	Building Life-Cycle Impact Reduction	6
			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	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

0	0	0	Indoor	r Environmental Quality	10
Υ			Prereq	Minimum Indoor Air Quality Performance	Required
Υ			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	Daylight	3
			Credit	Quality Views	1

0	0	0	Innova	tion	6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1

0	0	0	Regio	onal 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

	Credit Region	nai Priority: Specific Cred	IIL		1
Γ	0 0 0 TOTALS			Possible Points:	110
	Certified: 40 to 49 points,	Silver: 50 to 59 points,	Gold: 60 to 79 points,	Platinum: 80 to 110	<u> </u>



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Credit Integrative Process

integrative Process

0	0	0	Loca	tion 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

0	0	0	Susta	ainable Sites	12
Υ			Prereq	Construction Activity Pollution Prevention	Required
Υ			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

0	0	0	Water	Efficiency	12
Υ			Prereq	Outdoor Water Use Reduction	Required
Υ			Prereq	Indoor Water Use Reduction	Required
Υ			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

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0	0	0	Ener	gy and Atmosphere	31
Υ			Prereq	Fundamental Commissioning and Verification	Required
Υ			Prereq	Minimum Energy Performance	Required
Υ			Prereq	Building-Level Energy Metering	Required
Υ			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

0	0	0	Mater	rials and Resources	13
Υ			Prereq	Storage and Collection of Recyclables	Required
Υ			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

0	0	0	Indoor	Environmental Quality	16
Υ			Prereq	Minimum Indoor Air Quality Performance	Required
Υ			Prereq	Environmental Tobacco Smoke Control	Required
Υ			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

0	0	0	Inno	vation	6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1
0	0	0	Regi	onal 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

0	0	0 TOTALS	Possible Points:	110
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Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110



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Credit Integrative Process

Integrative Process 1

0	0	0	Locat	ion 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

0	0	0	0 Sustainable Sites			
Υ			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	

0	0	0	Wate	r Efficiency	12
Υ			Prereq	Outdoor Water Use Reduction	Required
Υ			Prereq	Indoor Water Use Reduction	Required
Υ			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

0	0	Energ	gy 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
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0	0	0	Materi	als and Resources	13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			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

0	0	0	Indoor	Environmental Quality	15
Υ			Prereq	Minimum Indoor Air Quality Performance	Required
Υ			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

0	0	0	Innovat	Innovation		
			Credit	Innovation	5	
			Credit	LEED Accredited Professional	1	

0	0	0	Regional Priority		
			Credit Regional Priority: Specific	Credit 1	
			Credit Regional Priority: Specific	Credit 1	
			Credit Regional Priority: Specific	Credit 1	
			Credit Regional Priority: Specific	Credit 1	

0	0 TOTALS			Possible Poir	its: ′	110	
	Certified: 40 to 49 points,	Silver: 50 to 59 points,	Gold: 60 to 79 points,	Platinum: 80 to 1	10		



LEED v4 for BD+C: Data Centers

Project Checklist

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Integrative Process 1

0	0	0	Locat	tion 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

0	0	0	Susta	ainable Sites	10
Υ			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

0	0	0	Water	Efficiency	11
Υ			Prereq	Outdoor Water Use Reduction	Required
Υ			Prereq	Indoor Water Use Reduction	Required
Υ			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

0	0	0	Ener	gy and Atmosphere	33
Υ			Prereq	Fundamental Commissioning and Verification	Required
Υ			Prereq	Minimum Energy Performance	Required
Υ			Prereq	Building-Level Energy Metering	Required
Υ			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

Project Name: Date:

0	0	0	Materia	als and Resources	13
Υ			Prereq	Storage and Collection of Recyclables	Required
Υ			Prereq	Construction and Demolition Waste Management Planning	Required
			Credit	Building Life-Cycle Impact Reduction	5
			Credit	Building Product Disclosure and Optimization - Environmental Product Declaration	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

0	0	0	Indoor	Environmental Quality	16
Υ			Prereq	Minimum Indoor Air Quality Performance	Required
Υ			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

0	0	0	Innova	tion	6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1

0	0	0	Region	al 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

0 0 0 TOTALS		Pos	ssible Points:	110
Certified: 40 to 49 points,	Silver: 50 to 59 points,	Gold: 60 to 79 points,	Platinum: 80 to 110	



LEED v4 for BD+C: Warehouses and Distribution Centers

Project Checklist

Project Name: Date:

Integrative Process

0	0	0	Location and	Transportation	16
			Credit LEED for	Neighborhood Development Location	16
			Credit Sensitive	Land Protection	1
			Credit High Prio	rity Site	2
			Credit Surround	ing Density and Diverse Uses	5
			Credit Access to	o Quality Transit	5
			Credit Bicycle F	acilities	1
			Credit Reduced	Parking Footprint	1
			Credit Green Ve	ehicles	1

0	0	0	0 Sustainable Sites				
Υ			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		

0	0	0	Water	Efficiency	11
Υ			Prereq	Outdoor Water Use Reduction	Required
Υ			Prereq	Indoor Water Use Reduction	Required
Υ			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

0	0	0	Energ	gy and Atmosphere	33
Υ			Prereq	Fundamental Commissioning and Verification	Required
Υ			Prereq	Minimum Energy Performance	Required
Υ			Prereq	Building-Level Energy Metering	Required
Υ			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

0	0	0	Mater	ials and Resources	13
Υ			Prereq	Storage and Collection of Recyclables	Required
Υ			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

0	0	0	Indoor	Environmental Quality	16
Υ			Prereq	Minimum Indoor Air Quality Performance	Required
Υ			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

0	0	0	Innova	tion	6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1

0	0	0	Region	nal 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

0	0	0 TOTALS		Possible Points:	110
		Certified: 40 to 49 points,	Silver: 50 to 59 points,	Gold: 60 to 79 points, Platinum: 80	to 110



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Credit Integrative Process

	0	0	0	Locat	ion and Transportation	16
				Credit	LEED for Neighborhood Development Location	16
				Credit	Sensitive Land Protection	1
				Credit	High Priority Site	2
ı				Credit	Surrounding Density and Diverse Uses	5
l				Credit	Access to Quality Transit	5
				Credit	Bicycle Facilities	1
				Credit	Reduced Parking Footprint	1
				Credit	Green Vehicles	1

0	0	0	Susta	ainable Sites	10
Υ			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

0	0	0	Water	r Efficiency	11
Υ			Prereq	Outdoor Water Use Reduction	Required
Υ			Prereq	Indoor Water Use Reduction	Required
Υ			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

0	0	0	Energ	gy and Atmosphere	33
Υ			Prereq	Fundamental Commissioning and Verification	Required
Υ			Prereq	Minimum Energy Performance	Required
Υ			Prereq	Building-Level Energy Metering	Required
Υ			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

0	0	0	Mater	ials and Resources	13
Υ			Prereq	Storage and Collection of Recyclables	Required
Υ			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

0	0	0	Indoor	Environmental Quality	16
Υ			Prereq	Minimum Indoor Air Quality Performance	Required
Υ			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

0	0	0	Innovat	ion	6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1

0	0	0	Region	al 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

			_			
0	0	0	TOTALS		Possible Point	s: 110
			Certified: 40 to 49 points,	Silver: 50 to 59 points,	Gold: 60 to 79 points, Platinur	n : 80 to 110



Υ	?	N			
Υ			Prereq	Integrative Project Planning and Design	Required
			Credit	Integrative Process	1

0	0	0	Locat	tion 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

0	0	0	Susta	ainable Sites	9
Υ			Prereq	Construction Activity Pollution Prevention	Required
Υ			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

0	0	0	Wate	r Efficiency	11
Υ			Prereq	Outdoor Water Use Reduction	Required
Υ			Prereq	Indoor Water Use Reduction	Required
Υ			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

0	0	0	Energ	gy and Atmosphere	35
Υ			Prereq	Fundamental Commissioning and Verification	Required
Υ			Prereq	Minimum Energy Performance	Required
Υ			Prereq	Building-Level Energy Metering	Required
Υ			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

0	0	0	Materia	als and Resources	19		
Υ			Prereq	Storage and Collection of Recyclables	Required		
Υ			Prereq	Construction and Demolition Waste Management Planning	Required		
Υ			Prereq	PBT Source Reduction- Mercury			
			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	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		

0	0	0	Indoor	Environmental Quality	16
Υ			Prereq	Minimum Indoor Air Quality Performance	Required
Y			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

0	0	0	Innov	ation	6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1
			-		
0	0	0	Regio	onal 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

0 0 TOTALS

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110