



Applying LEED to data center projects

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What are the advantages of using LEED for data centers?

USGBC has adapted both the LEED for Building Design and Construction (BD+C) and LEED for Operations and Maintenance (O+M) rating systems to make room for the needs of the technology sector and bring even more solutions for data centers. LEED is the world's first green building rating system to address data centers. By bringing these projects into the suite of LEED rating systems, USGBC is addressing barriers so these facilities and their owners can successfully demonstrate their sustainability goals. LEED-certified data centers are the triple bottom line in action; benefiting people, planet, and profit. By earning LEED certification, these projects can consume less energy, less water, fewer natural resources and are ultimately aimed to reduce the overall impact of development on the local, regional, and global environment.

What issues are unique to data center projects?

Predictions as of 2024 stated that the power demand of data centers would grow 160% by 2030. Additionally, they predict the percentage worldwide power consumption will increase from the 1-2% currently to 3-4% by the end of the decade. ([Reference link](#))

Data centers are therefore a unique project type and have their own set of challenges and opportunities. They have very few occupants but have a high energy use. A typical building is designed to meet heating and cooling needs for occupant comfort whereas a data center must provide massive cooling power for its servers. Water use is also a key target area for data centers if the facility uses water for cooling. LEED addresses the unique needs of these energy-intense and water-intense buildings to improve efficiency.

How do data centers earn LEED certification?

Data centers can be certified under different LEED rating systems at different stages of the building's lifecycle. Buildings specifically designed and equipped to meet the needs of high-density computing equipment such as server racks, used for data storage and processing should apply for the data centers adaptation(s).

- LEED BD+C: Data Centers is the most appropriate rating system for new data centers that addresses whole-building data centers only. To apply this rating system, at least 60% of the project's gross floor area (GFA) must be [complete](#) for its intended use by the time of certification.
- LEED BD+C: Core and Shell (CS) is appropriate for data centers where more than 40% of GFA is incomplete at the time of certification.
- LEED O+M can be applied to existing data centers that are fully operational and occupied for at least one year. The project may be undergoing improvement work or little to no construction and must also include the entire building's GFA in the project.

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How can colocation data centers apply LEED?

A colocation data center is a type of data center where equipment, space, and bandwidth are leased to customers. In a colocation data center, if more than 40% of GFA is [incomplete](#) at the time of certification, then such projects may use BD+C: CS, in lieu of BD+C: Data Centers. LEED does not distinguish between the two building types based on phased IT equipment and energy demands.

If the project is pursuing BD+C: Data Centers, the Minimum Energy Performance prerequisite provides guidance on modeling phased equipment specific to data centers. [LEED Interpretation 10494](#) helps colocation data center projects using v4 in recognition of their limited control of the building's total energy usage.

How does LEED address the unique challenges of data centers?

LEED v5 is the most current version of the rating system and is available for all commercial projects pursuing certification under New Construction, Core and Shell, Commercial Interiors and Existing Buildings. Many of the strategies developed for data centers under previous versions of LEED, have been adapted for LEED v5 or can be found in the new Project Priorities and Innovation credit category. Credits in this category offer greater flexibility to address unique project contexts and priorities, including typology, culture, location, areas of innovation and individual performance objectives. Sector specific Project Priority credits are continuously being developed and will be released in the [Project Priority Library](#) for use.

When developing the LEED v4 and LEED v4.1 rating systems, certain prerequisites and credits were adapted to reflect the specific needs of the data centers. For example, EA Credit: Optimize Energy Performance in LEED v4.1 BD+C allows data centers with at least 40% gross colocation data center area to use the LEED BD+C: CS percentage improvement thresholds in lieu of the LEED BD+C: NC thresholds. A new option – 'System Optimization' was introduced in LEED v4.1 to address the overall systems efficiency in Data Centers.

Additional prerequisites and credits in LEED BD+C where data center-specific guidance is provided include the following:

- Surrounding Density and Diverse Uses
- Fundamental and Enhanced Commissioning and Verification
- Minimum and Optimize Energy Performance
- Building Level Energy Metering and Advanced Energy Metering
- Minimum IAQ Performance
- Enhanced IAQ Strategies
- Thermal Comfort

In LEED O+M, specific guidance is provided for data centers under 'EA Prerequisite: Energy Efficiency Best Management Practices' wherein the projects can use the U.S. Department of Energy's DC PRO Profiling Tool to perform a preliminary assessment of energy consumption in data center spaces for critical systems. Existing data center projects that are having trouble meeting LEED prerequisites due to

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high energy and/or water loads, or ventilation requirements for staffed data center floors are encouraged to contact USGBC for technical support.

How many data centers are registered and certified under LEED?

As of June 2025, there are over 1,610 LEED-certified and registered data centers representing 478 million square feet (over 44 million square meters) across the globe.

How does the Arc platform relate to data centers?

The LEED v4.1 O+M rating offers a unique performance-based pathway to certify existing data centers that use [Arc](#), a state-of-the-art technology platform to collect, manage, and benchmark projects across five performance categories: energy, water, waste, transportation, and human experience.

LEED v4.1 O+M can be used to compare a data center to other similar facilities pursuing high-performance measures from around the world. Facility managers and owners can continuously monitor the data and make informed decisions to optimize the building performance based on real-time data and analytics. This performance pathway can then be used to certify and recertify the project every three years. [Learn more](#).

[LEED v5 BD+C](#), [ID+C](#) and [O+M](#) rating systems allow for all space types to certify utilizing the new [Arc experience](#), which offers fluidity and flexibility for users. All performance, certification and reporting will be delivered in one place.

What technical resources are available for data centers pursuing LEED?

There are many resources available for data centers pursuing LEED certification. Here are a few examples:

- [LEED v5 BD+C, ID+C and O+M Rating Systems](#) and [LEED v5 guides](#)
- [LEED v4.1 BD+C Adaptation for Data Centers](#)
- [LEED v4 and LEED v4.1 O+M Data Center Profiling \(DC Pro\) Tool](#)
- [LEED Interpretation #10497](#) – allows the use of the Electrical Loss Component (ELC) calculated in accordance with ANSI/ASHRAE Standard 90.4-2016, Section 8 in lieu of the Electrical System Efficiency calculated in the LEED Data Center Calculator
- [LEED Interpretation #10494](#) – allows colocation data centers to use EA point thresholds from the CS adaptation in LEED v4

Where can I find owner profiles and case studies on data centers?

- [LEED BD+C certified data centers](#)
- [LEED O+M certified data centers](#)

Does USGBC offer any education for project teams wanting to learn more about data centers pursuing green building measures?

Yes, refer to the following sessions in the USGBC online course catalog:

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- [How the LEED Rating Program Accommodates Data Centers](#)
- [Development Trend and Application of LEED for Data Centers](#)
- [LEED v4.1 O+M for Data Centers](#)
- [Achieving Sustainability in Warehouses, Distribution Centers & Data Centers](#)

Who can I contact for more information?

For more information about LEED and data centers, [contact us](#).