

## **Building energy consumption monitoring system**

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Building Energy Management Systems (BEMS) are used by to reduce the energy consumption and improve overall sustainability of large commercial buildings. In this blog we'll explore the basic architecture of a BEMS system, the difference between building energy management systems and building management systems, along with core benefits and key features of BEMS systems.

Building Energy Management Systems (BEMS) connects a commercial building's HVAC, lighting, fire, and plant room equipment systems on to a single software platform to monitor energy consumption and waste.

Using a BEMS technology, building owners, operators, and occupiers can optimize energy use and reduce costs across multiple facilities, resulting in anywhere from 10-30% improvement in energy efficiency.

It is important to note that BEMS systems consist of both hardware and software components and that most BEMS systems rely on hardware like Building management systems, controls, and meters within the building in order to materially reduce energy.

On left hand side, data from the building's building management system, utility provider, and water provider is pulled into a building analytics system like CIM's PEAK platform. Next the building analytics system enables a series of outcomes including reducing energy and downtime, improving indoor environment temperatures and circulation, and benchmarking the asset (building's) performance.

As mentioned previously, to be effective, a building energy management system needs hardware connections and endpoints pulling in operational data. If a building does not have any sensors pulling in data or a centrally controlled BMS, a BEMS system will struggle to make any effect with limited data. To understand how a building energy management system works, it helps to first understand its connection point: the building management system

The Building Management System (BMS) is designed for control, centralizing the oversight of a building's various systems, including elevators and fire safety. Building management systems consist of all the sensors monitoring operational functions, the controllers that aggregate data from those sensors, and finally the human interface that allows for quick and easy control commands from a desktop or touch points.

Most BMS systems connect controllers to sensors via a wired connection, such as twisted pair cables. Because the BMS wiring is integrated into the fabric of the building, a BMS controller with an RJ25 cable is the most natural place for building energy management system to tap into a building 's data.



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