

How DC Power and IoT Technology Will **REVOLUTIONIZE YOUR NEXT BUILDING**



Enabling Smart Buildings



The architectural and building development landscape is always changing to adapt to peoples' needs and wants. For example, due to recent global events, building occupants have heightened concerns regarding air quality, cleanliness and occupancy. Monitoring and controlling these metrics will be a driving factor in determining organizations' success in the coming months. A digitally connected building is the ideal platform for providing timely, validated metrics to building owners and occupants.

As new buildings and renovation projects alike focus on customization, automation, and an emphasis on renewable energy and sustainability, there is a growing need for solutions that are cutting-edge, cost-effective and one-of-a-kind.

Incorporating PoE solutions, IoT technology and DC power distribution in buildings helps achieve those key objectives. Igor recently worked on a building project with two revolutionary companies: VoltServer, a modern electricity vendor specializing in DC power, and Baird, Hampton & Brown (BHB), an engineering firm known for

their innovative approach to new building designs.

The collaboration between Igor, VoltServer and BHB proved that, together, forward-thinking organizations can implement radical sustainability practices, ultra-efficient DC power distribution and other unprecedented smart building solutions that foster occupant confidence and productivity.

What is DC Power?

Direct current (DC) power differs from alternating current (AC) power. Virtually all municipal power grids deliver AC power to commercial and residential buildings through power lines. AC power has its benefits and advantages, but DC power is growing in popularity as individuals rely more on DC-powered devices and appliances.

Renewable energy sources such as solar panels generate DC power that can be supplied directly to power appliances and devices. This is just one example of how using DC power in buildings enables a shift toward efficient, sustainable energy.

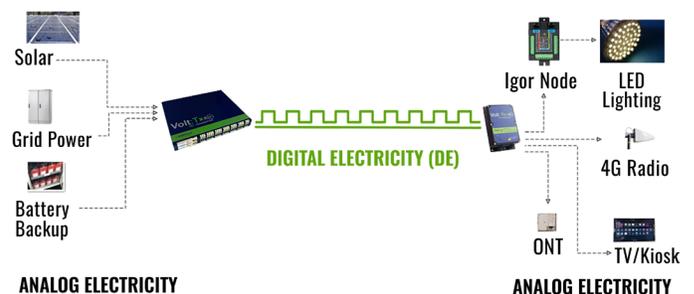
VoltServer: Enabling DC Power Distribution in Buildings

Because of this focus on efficiency, renewable energy and intelligent building devices, new electricity vendors, such as VoltServer, have emerged in recent years. These companies are revolutionizing the power distribution industry with innovative new solutions. VoltServer's platform, Digital Electricity™, enables the distribution of electricity in natively digital format. Digital Electricity™ has the power capability of traditional AC, but the safety and ease of use of low voltage DC while traveling side-by-side with data.

VoltServer's electricity platform delivers power to buildings efficiently and reliably. Their method is also safer, it installs rapidly without electrical conduit and it is easily modified. This slashes labor costs, reduces time for installation and helps minimize materials costs. Overall,

Digital Electricity™ is more efficient and more cost-effective than traditional electrical installations.

VoltServer's progressive solution takes the concept and benefits of direct current power to the next level by supplying power digitally, allowing further innovation for IoT and PoE technology applications.



Combining DC Power with IoT Technology Applications

Digital Electricity™ utilizes advanced transmitters and receivers to distribute electrical energy efficiently and reliably throughout a building without the use of a traditional electrical infrastructure. This solution also allows for seamless integration with PoE switches and IoT devices.

Igor's relationship with VoltServer made sense from the start. Combining VoltServer's power distribution method with Igor's PoE solutions creates limitless opportunities for advanced smart building technology applications, including IoT lighting, security cameras, asset tracking, door locks, thermostats, automated window shades and more.

The VoltServer and Igor partnership is on display at The Sinclair Hotel in Fort Worth, Texas, a smart hotel project involving a number of innovative vendors. At the Sinclair Hotel, Igor's PoE lighting devices are connected to VoltServer power transmitters, enabling a connected experience with increased automation and control for hotel staff and guests.

The hospitality industry is just one area seeing revolutionary new applications for IoT and PoE solutions. Smart building technology now reaches into nearly every industry, including education, healthcare, office spaces and more.

Working With Engineering Partners to Integrate DC Power in Buildings

During the Sinclair Hotel project, Igor and VoltServer benefitted from a close relationship with a third partner — Baird, Hampton & Brown (BHB), a North Texas engineering firm. BHB played an essential role in managing various aspects of the project, including electrical solutions, emergency power programs and more.

BHB coordinated the design and implementation with the local authority having jurisdiction and with Underwriters Laboratories. Although this project departed from conventional building practices, all partners were vigilant about adhering to safety codes and guidelines. BHB helped implement a UL labeled energy storage

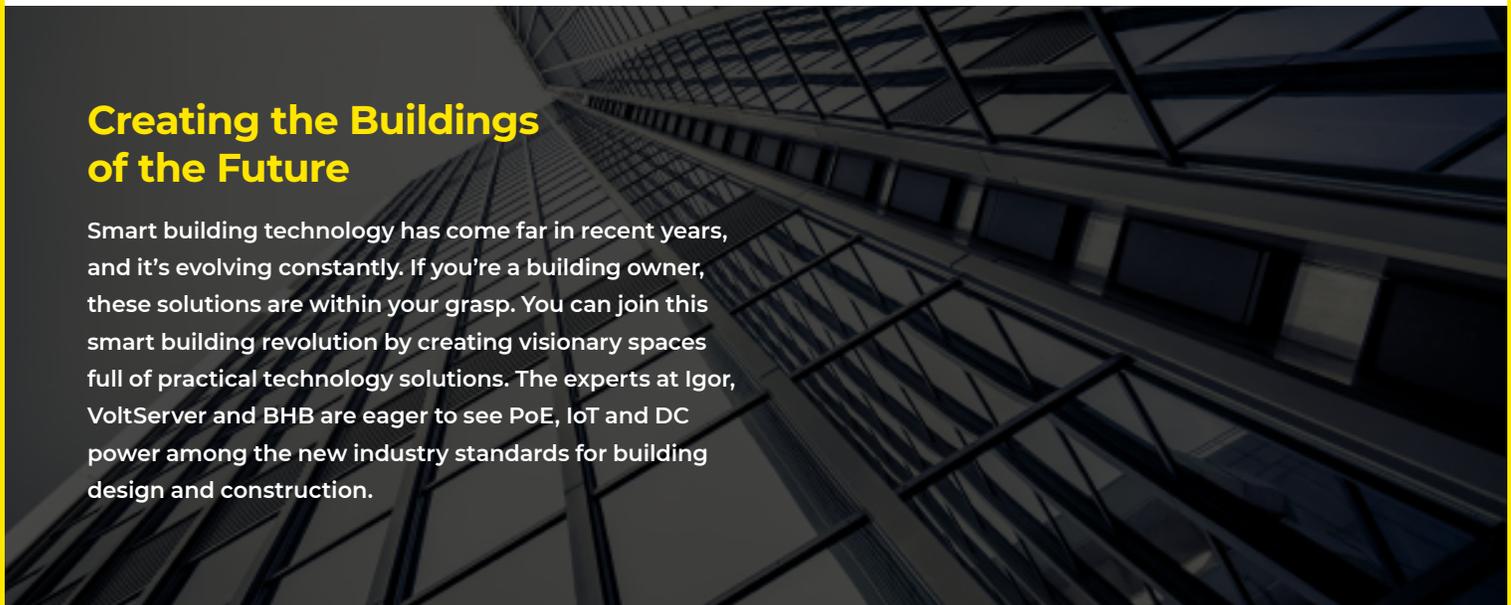
system that provides emergency power to the elevators, smoke exhaust fans, fire alarm system and lighting in the building.

In addition, Igor's patented central emergency backup system is UL 924 certified. As the first PoE-based solution to receive this distinction, Igor is well equipped to power emergency lighting and related smart devices.

Innovators looking for more direct current uses will find a practical connection between PoE technology and DC power. PoE has nearly limitless applications when paired with DC power, especially when vendors partner with innovative engineering firms like BHB.

Creating the Buildings of the Future

Smart building technology has come far in recent years, and it's evolving constantly. If you're a building owner, these solutions are within your grasp. You can join this smart building revolution by creating visionary spaces full of practical technology solutions. The experts at Igor, VoltServer and BHB are eager to see PoE, IoT and DC power among the new industry standards for building design and construction.



Uses of IoT Technology and DC Power for an Elevated Building Experience



1. PREMIUM FEATURES

There is a logical relationship between DC power and connectivity features. Because so many modern devices use DC power, it makes sense for direct current to power premium features such as automated window shades and custom lighting. The added convenience and comfort will encourage people to return to the building.



2. TAILORED EXPERIENCES

DC power and PoE make it easy to connect and control devices from a central hub. This enables a more tailored experience for occupants. Using an IoT platform, like Nexos by Igor, allows for adjustments to lights, temperature and more according to room occupancy, time of day or a number of other control factors.



3. SUSTAINABILITY

One of the greatest benefits of direct current power is the ability to eliminate the energy waste inherent in power conversion. DC power also allows for a shift toward renewable energy sources. For example, solar panels generate DC energy. When electrical energy is stored in batteries, it's typically stored as DC power.



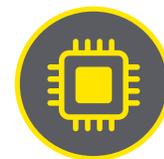
4. POTENTIAL FOR NET-ZERO ENERGY BUILDINGS

The future of DC power and sustainable solutions is net-zero energy buildings. Zero energy buildings are buildings that consume only as much energy as can be produced onsite through renewable resources. There are very few zero energy buildings in existence, but net-zero energy is increasingly achievable with modern technology solutions.



5. ENHANCED PRODUCTIVITY AND PROFITABILITY

DC power paired with PoE enables enhanced efficiency and productivity for building occupants. Providing building users with a customizable environment makes them more comfortable and more likely to enjoy the time they spend there. Always weigh these benefits against the upfront cost of funding and installing cutting-edge technology in a building.



6. FLEXIBILITY

As remote work becomes more prevalent, employers may need smaller office spaces with larger capacity for connectivity. PoE and DC power allow for access control, occupancy tracking, customizable work spaces and so much more. Customized, connected office spaces will also become an important perk to attract new talent.

Contact us about your next building project at:
igor-tech.com/contact • info@igor-tech.com • 877-588-2650

