

SOLAR + SPAN SMART ELECTRICAL UPGRADE



Location: Norwood, Massachusetts

Project Overview

When this Norwood homeowner decided to install solar, the existing electrical infrastructure also needed to be addressed. The homeowner had future plans for battery storage and additional electrification, but the property was limited to a 200A underground electrical service.

Rather than installing a conventional service upgrade that could create another infrastructure constraint down the road, BD Electrical & Solar designed the project around two SPAN smart electrical panels.

The result is a modern 200A electrical system capable of supporting solar today while preparing the home for future battery storage, EV charging, heat pumps, and other electric loads.



Scope:

- 200A electrical service upgrade
- Two SPAN smart electrical panels
- Electrical distribution upgrades
- Whole-home energy monitoring and circuit-level controls
- Solar PV installation
- Enphase solar equipment
- Future battery-ready electrical infrastructure
- Future electrification planning
- Utility coordination and permitting
- System commissioning



The Challenge

The homeowner wanted to make a long-term investment in the home's energy infrastructure.

Solar was the first step, but battery storage and additional electrification are planned for the future. The existing 200A service created a potential limitation as new electrical loads are added.

Increasing the property to a 400A service would have been significantly more involved because the utility service is underground. A future upgrade could require excavation, utility coordination, new underground service infrastructure, and restoration of the property.

The goal was to find a better way to use the existing 200A service capacity.



Smart Electrical Infrastructure with SPAN

BD installed two SPAN smart panels as part of the new 200A service.

Unlike a conventional electrical panel, SPAN provides circuit-level monitoring and control over the home's electrical loads. This gives the homeowner visibility into where electricity is being used while creating the infrastructure needed for intelligent load management. As additional electric loads are introduced, SPAN's load-management capabilities can be used to control available electrical capacity rather than simply increasing the size of the utility service.

For this home, that creates a pathway toward additional electrification while maintaining the existing 200A service.



Battery Ready Without Installing Batteries Today

The homeowner was interested in battery storage but wasn't ready to make that investment yet.

The electrical system was therefore designed with future battery integration in mind. By planning the service, distribution, solar equipment, and SPAN architecture together, BD was able to build the home's energy infrastructure once while leaving a clear path for battery storage later.

When the homeowner is ready to add batteries, much of the electrical foundation is already in place.

Solar Integration

BD also installed the home's rooftop solar system using Enphase technology.

Solar was integrated directly into the upgraded electrical infrastructure, allowing the homeowner to begin producing renewable energy immediately while establishing the foundation for a more comprehensive home energy system in the future.

The installation was designed around the architecture of the existing home, with arrays distributed across multiple roof planes.



Avoiding a Future 400A Service Upgrade

One of the most important aspects of this project is what the homeowner may never have to do.

Without intelligent load management, future electrification could eventually push the home beyond the practical capacity of its 200A service. Because the utility service is underground, upgrading to 400A could mean considerably more than replacing electrical equipment. It could involve excavation, utility work, new underground conductors, landscaping restoration, and additional project coordination. SPAN gives the homeowner another option by intelligently managing electrical loads within the available service capacity.



The Results

The homeowner now has a modern home energy platform designed to evolve over time.

The project combines solar generation, intelligent electrical distribution, circuit-level energy management, and infrastructure for future battery storage and electrification without unnecessarily increasing the home's utility service.

Instead of designing around what the home needs today, BD designed the electrical system around where the home is going.