

CASE STUDY

TEEING UP FLEXIBLE POWER:

Modernized Golf Cart Charging with Starline Busway

EXECUTIVE SUMMARY



CUSTOMER

Butler Country Club, a family eighteen-hole country club located in western Pennsylvania, upgraded their electric golf cart charging infrastructure to a track busway system to better support efficient operations for their electric golf cart fleet.

CHALLENGES

- The club was unable to charge all 60 carts at one time, resulting in staff needing to rotate carts in and out of the barn.
- Low-hanging and tightly compacted charging equipment posed overhead and tripping hazards.
- A lack of spare electrical outlets limited the club's ability to power additional equipment.

SOLUTIONS

- The club installed three 50-foot runs of 100-amp T3 Track Busway.
- Plug-in units with four 20-amp circuit breakers and 20-amp receptacles are spaced along the busway.
- Each plug-in accommodates four E-Z-GO 3-M Gen II Chargers with custom mounting brackets.

BENEFITS

- Continuous access design delivers flexibility for moving or adding chargers
- Faster, simpler, and lower cost installation compared to traditional pipe and wire
- Reusable materials if club expands or builds a new facility in the future
- Improved safety and cord management
- Increased usable floor space in cart barn

INFLEXIBLE, INEFFICIENT POWER INFRASTRUCTURE

Founded in 1904, Butler Country Club is a private club with over 350 members in Butler, Pennsylvania. With a legacy charging system installed in their cart barn, the club's operations team faced electrical and space limitations when charging their 60-cart fleet. Their charging setup consisted of bulky metal racks hung low from the ceiling. Dozens of electrical cables, also known as home runs, ran from their main electrical box through the barn to power their charging stations.



Butler's legacy charging system hung low and had limited outlets.

"The cart charging system before was a little archaic," said Micah Lowell, Grounds Superintendent for Butler Country Club. "The chargers came down from the ceiling; they were really low. I could hit them with my head, and they were pretty tightly packed, so there were a lot of cords on top of each other."

With 25% membership growth over six years and 23,000 rounds played annually, the club faced growing demands on their fleet operations. When hosting larger events such as invitationals, they were unable to plug in all 60 carts at once, which posed an operational challenge.

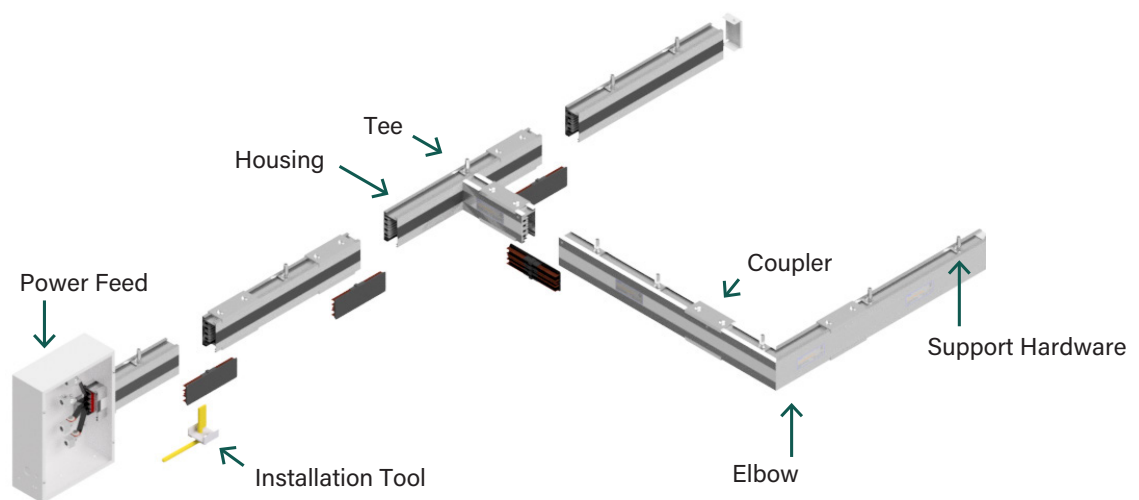
"We would pull the 48 that we needed out, take the 12 that hadn't been charging overnight, park them first thing in the morning, and then it's a time crunch to get them out for the golfers," said John Brautigam, Head Professional at Butler Country Club. "We made it work, but obviously it wasn't ideal."

FLEXIBLE BUSWAY SOLUTION

To accommodate the power demands of their electric fleet, Butler Country Club installed 100-amp T3 Starline Track Busway (100a/600V). Suspended from the ceiling, the busway's open channel design enabled the club to install enough chargers to support their entire fleet, delivering flexibility and streamlining operations.

What is Track Busway?

Track busway is a power distribution system that uses a continuous open access design to provide power at the exact point of use. Busway systems are made up of several interconnected components, such as feeds, straights, and elbows, that are configured to meet the layout requirements of each facility. Plug-in units are inserted into the open channel and locked into place, directly delivering power to equipment.



Busway uses modular components for a flexible layout.



Plug-in unit inserted into busway housing.

BENEFITS

STREAMLINED INSTALLATION

The Starline Services team installed three 50-foot busway runs in the club's cart barn. Plug-in units, each designed with four 20-amp breakers and 20-amp receptacles to power four chargers, were installed down the busway next to custom mounting brackets for the club's E-Z-GO chargers.

"Butler's biggest thing was they did not want [the installation] to interrupt their operations. Our install team was able to have the busway hung and energized all within two days," said Nick Funyak, Field Services Program Manager for Starline.



E-Z-GO chargers mounted on custom brackets sit directly above the carts.

Considering Conduit or Pipe and Wire

For Butler, upgrading their legacy charging system with a new conduit and wire layout would have been difficult to justify. The club would have needed to install an entirely new electrical panel, then run conduit and pull wire across the entire building.

In addition to high labor costs, this option would have significantly interrupted golf operations. The course would have been without carts for multiple days. With busway, three wires coming into the system end feeds eliminated all the individual conduit runs.

Busway systems can be installed in one to two days. "If you have a pipe-and-wire-type system, it may take one to one-and-a-half weeks to set everything up," said Funyak.

IMPROVED OPERATIONAL EFFICIENCY

Starline Track Busway's open channel design enabled Butler Country Club to increase the number of available outlets in their cart barn. With the ability to install additional plugs and chargers, the club no longer has to cycle carts in and out of their barn.

This increased electrical access also allowed the club to power the additional equipment housed in their cart barn such as Tempo Walk caddies, utility carts, and other maintenance tools that were previously difficult to power.

"If we had to plug in more carts, we had to get creative. We had to move them around in the shop, maybe in our lower part of the shop or in corners. It was tricky," said Lowell. "The busway gives us a lot of flexibility on how many pieces of equipment we can plug in, let alone more than just golf carts."

INCREASED SAFETY AND USABLE SPACE

The original charging stations' low clearance presented safety and cord management issues for the club. With busway, the chargers and support hardware were installed higher, providing safer working conditions for employees and better cord management.

The overhead solution eliminated the excess conduit and extension cords often associated with inflexible pipe and wire installations. "Since the installation, charging has been much smoother," said Brautigam. "The busway is higher, which allows us to get our carts in and out without tangling any of the cords. There's more space in between the rows of carts so that we can move freely."



Butler Country Club has streamlined charging with the new busway layout.

CUSTOM BRACKETS FOR CHARGING EQUIPMENT

Custom brackets were designed based on the E-Z-GO charger dimensions. The double-sided brackets allowed the chargers to be hung directly on the busway housing with no additional support required. Customizable for any cart charger, the bracket design enables the club to move chargers wherever they are needed along the busway.

"In the previous system, they [the E-Z-GO chargers] just sat on top of a bracket. Now with the configuration of the new brackets on the busway, we can see that they're charging from the front of the cart barn," said Brautigam.



Custom brackets supporting the chargers are hung directly on the busway.

FUTURE FLEXIBILITY AND SCALABILITY

Busways are designed to simplify and expedite modifications to electrical layouts. If additional carts or equipment are needed, club operators can add or move plug-in units from one location to another in minutes, without needing to hire an electrician.

"The new Starline [busway] is really flexible in that you can move your plugs all along if you need to move carts or equipment into different areas," said Lowell.

If the club decides to expand or move the system to a new building in the future, the busway can be disassembled and reassembled, reducing cost and material waste. By design, additional sections can be installed to expand the busway run if needed.

CONCLUSION

By upgrading their electrical infrastructure to busway, Butler Country Club improved the flexibility, safety, and efficiency of their golf operations. Installed in less than two days, Starline Track Busway helped to streamline their current operations while setting the club up for future expansion.

"Golf courses should consider installing busway to charge their cart fleets. It gives flexibility for varying number of carts or other electrical needs. And from a safety standpoint, having them higher, having the cords organized can easily get your staff in and out without any safety concerns," said Brautigam.

"If anybody was considering buying busway systems, I would highly recommend it," said Lowell. "It's going to make things more efficient. It's going to give you more options."

Starline Track Busway is available from 40 to 1200 amps.

To learn more visit
starlinepower.com/golf

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