

CITY OF KEOSAUQUA

DISTRIBUTION POLE UPGRADE

Case Study



DISTRIBUTION POLE REPLACEMENT PROGRAM BECOMES ENVIABLE SYSTEM WIDE UPGRADE

SUMMARY

The City of Keosauqua, Iowa was frustrated by the constant cycle of repairs and replacements required to maintain their system of distribution lines on wood poles. To reduce maintenance requirements, the City of Keosauqua Light & Power Board divided the city into 10 sections to evaluate a number of infrastructure options. With a different option per section, the testing process was underway. After completing the section using StressCrete prestressed, spun concrete poles, the Board approved the use of concrete across the whole city. Over the next 10 years, they replaced the entire distribution pole system with 334 Class E concrete poles, ranging from 30' to 50'.

PROJECT HIGHLIGHTS

Project Site: Keosauqua, Iowa

Dates: 2005 to 2015

Pole Details: 334 Class E concrete poles (Class 3 Wood Pole Equivalent) ranging between 30' and 50'



THE CHALLENGE

The City of Keosauqua is responsible for approximately 10-15 miles of overhead and underground distribution lines from two substations outside of the city. Like many municipalities, they had been using wood poles; however, they were getting increasingly frustrated by the constant maintenance that the wood pole system required. On average, the poles were being replaced every 10-15 years, in addition to the ongoing maintenance. The board decided to look into alternatives to wood poles to see if there was a better solution available.

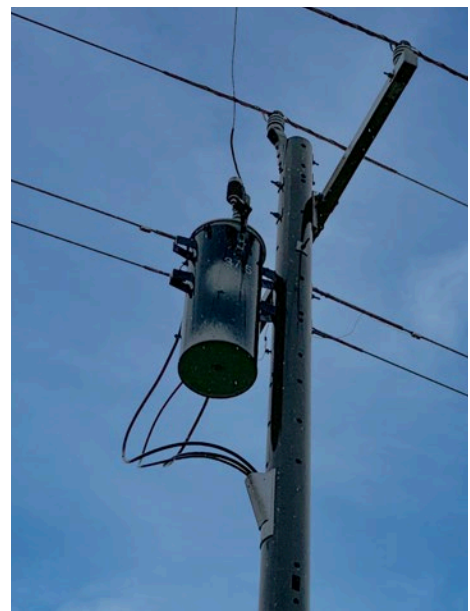
THE SOLUTION

In an effort to improve the overall distribution system for the city, the board divided the city into 10 sections, with the intent of trying multiple solutions across different sections. The city used concrete poles for the first section and discovered many benefits to the prestressed, spun concrete pole solution. With a little bit of pre-planning, the city realized that StressCrete can manufacture the pole with all of the various configurations in place, which has reduced the installation time as crews do not need to drill into the pole on-site. They also discovered the flexibility of the option to have a universal layout with additional holes in the pole to accommodate future expansion.

THE RESULTS

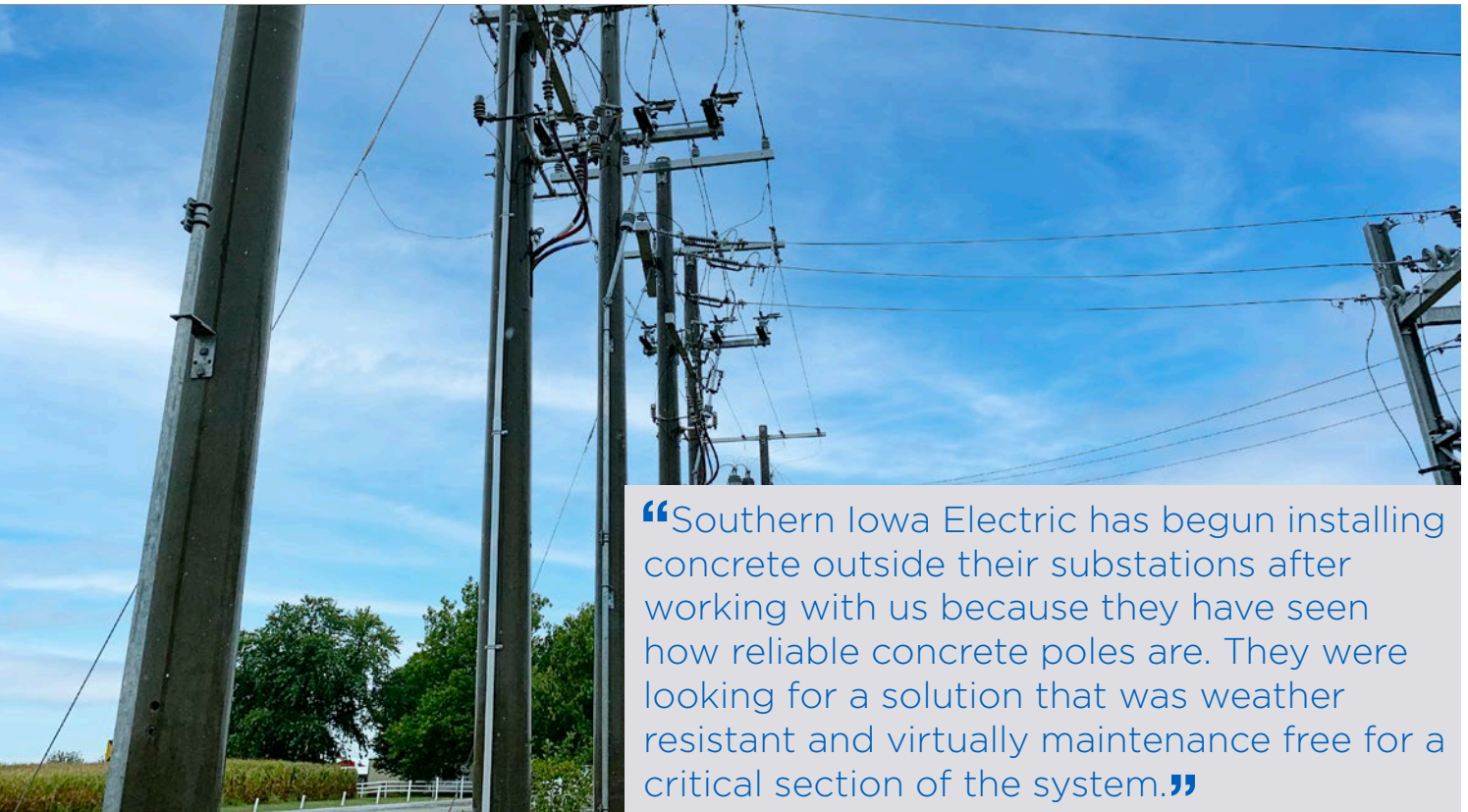
For the first installation, both the city and their contractor were unfamiliar with concrete, so they were unsure of what it would require. Once they got through the first few poles, they both realized that the installation process is not any different than a wood pole, so the remaining installations were done at the same rate as wood poles. The city was so impressed with the concrete poles, they decided to convert the entire distribution system to concrete poles over a period of 10 years.

In addition to the ease of installation and longer lifespan, the City of Keosauqua also discovered additional benefits. The cable entrance cover that directs conductors down the interior raceway of the pole results in a cleaner look that is also easier to expand, as splices for additional homes can now occur below grade. The internal grounding system initially caused issues for State inspectors unsure of how to verify it was working; however, once they learned how the system works, they realized the value and now the complete concrete pole system is considered one of the best in Iowa.



“Once they are installed they are virtually maintenance free. There’s no difference in the installation of a wood pole to a concrete pole. It’s just as easy, if not easier, to install concrete.”

Stan Whitten,
Electric Superintendent,
City of Keosauqua



“Southern Iowa Electric has begun installing concrete outside their substations after working with us because they have seen how reliable concrete poles are. They were looking for a solution that was weather resistant and virtually maintenance free for a critical section of the system.”

City of Keosauqua, Electric Superintendent

HIGHLIGHTS

Product Details:

- 334 utility distribution poles.
- Pole lengths ranging from 30' to 50' overall length, direct buried.
- Pole class E (Class 3 WPE).

Unique Features:

- Cable Entrance Covers provide aesthetic improvements.
 - Keeps out birds.
 - Utilizes interior runway of the pole instead of exterior conduit.
 - Reduces number of risers as distribution to individual homes can occur below grade.
- Internal grounding.
 - Rarely written up by inspectors.

Key Benefits:

- Increased reliability reduces service outages.
- Cost effective due to long service life, maintenance free, and lifetime warranty.
- Customized hole layout for ease of installation and improved future expansion.



STRESSCRETE GROUP

With manufacturing facilities in five North American locations, StressCrete Group produces an extensive line of high performance decorative outdoor lighting fixtures, decorative spun concrete and metal poles, plus pole arms and accessories, bollards and site amenities. We also manufacture a vast range of spun concrete poles for power distribution and transmission, sports lighting, high-mast lighting, and specialty poles for the electrical and communications industries.

We are a family business that operates by the core values of honesty, integrity, compassion and respect to better the lives of our employees, their families, our customers and the communities we represent. StressCrete Group services multiple market segments through two divisions:

- StressCrete Ltd., established in 1953, is the longest-operating, most experienced manufacturer of spun concrete poles in North America. With plants in Alabama, Kansas and Ontario, we offer the broadest, most diverse range of spun concrete poles and bollards in the industry, with quality second to none.
- King Luminaire Co. Inc. produces a comprehensive assortment of high performance outdoor luminaires, metal poles, pole arms and accessories, plus bollards and site amenities. With an array of state-of-the-art LED Technology and HID optical systems, and plants in Ohio and Ontario, King Luminaire is a North American leader in the outdoor lighting industry.

At StressCrete Group, we provide every customer with the highest quality innovative products and work as a team to create and maintain life-long customers through world class service.