CONGRUEX
NETWORKS BUILT BETTER

CASE STUDY

CONGRUEX'S GUY-LOCK™: SAVING TIME AND MONEY FOR A MAJOR U.S. MOBILE OPERATOR

INTRODUCTION

Corrosion remains a persistent challenge within the telecommunications industry, particularly when it comes to maintaining the integrity of guyed towers. Traditional methods of addressing corroded guy anchors often involve extensive digging to access the block or foundation, posing safety risks, escalating costs, and prolonging project timelines. In response to these challenges, Congruex developed the patented Guy-Lock™ method, designed to streamline the replacement of guy anchors while significantly enhancing safety.

CHALLENGE

In February 2022, a major U.S. Mobile Network Operator (MNO) engaged Congruex to evaluate their plans for demolishing a 400 ft. guyed tower heavily affected by corrosion. Recognizing the potential of the Guy-Lock™ solution, the Congruex team proposed a novel approach: instead of demolishing the tower, they would remediate the corrosion in the inner guy anchors using Guy-Lock™ technology.

The initial assessment revealed that the corrosion problem could be addressed without the need for a complete tower demolition. The traditional process would have required disconnecting the guy wires and significant excavation, increasing both safety hazards and costs.

Guy-Lock™ connects new anchor shaft steel to the existing anchor head plate without disconnecting guy wires.

SOLUTION

The Guy-Lock™ solution eliminates the need for digging to the block, disconnecting guy wires, or establishing new anchorage points. It allows for connecting new anchor shaft steel to existing anchor head plates using a uniquely shaped concrete structure. This process can be done entirely by a civil crew on the ground, eliminating the need to climb the tower or deploy additional crews.

Key Benefits of Guy-Lock™:

- **Corrosion Prevention**: Keeps all steel away from soil, preventing future corrosion without needing sacrificial anodes.
- **Restored Capacity**: Returns inner guy anchors to their original strength, ensuring the tower's stability.
- **Operational Continuity**: Allows the site to remain operational throughout the project by using a phased approach.

RESULTS

The implementation of the Guy-Lock™ solution yielded substantial benefits for the MNO:

- **Cost Savings**: The operator saved approximately **$300,000** by salvaging the existing tower instead of constructing a new one.
- **Time Efficiency**: The entire remediation process was completed in less than one month.
- **Environmental Impact**: Reducing the tower height below 200 ft. allowed the operator to avoid the need for tower lighting, making the site more environmentally friendly.

Congruex's Guy-Lock™ solution represents a significant advancement for telecom operators facing the complexities of guy anchor corrosion. By opting for Guy-Lock™, network providers not only preserve their valuable infrastructure assets but also achieve remarkable time and cost savings.

In addition to the Guy-Lock™ innovation, Congruex holds a portfolio of patents addressing some of the telecom industry's most pressing challenges in cell site deployments. As a dedicated design-build firm, Congruex is committed to transforming cell site infrastructure through innovative solutions that enable operators to manage their assets more efficiently, automate operations, and make informed, data-driven decisions.

For more information on Congruex's solutions, visit Congruex Patented Solutions.

[1] U.S. Patent Nos. 10,538,935. See https://www.congruex.com/patented-solutions/tes-patented-solutions/