SEAWALL REPAIR NETWORK

Case Study

Halifax River Seawall Revitalization



A 20-year-old concrete seawall along the Halifax River in Ormond Beach, Florida, faced significant structural and aesthetic challenges. The seawall, stretching approximately 170 feet, had endured years of soil erosion and environmental stress. The client sought a repair solution to stabilize the structure and prevent further damage to nearby property features, including a pool deck and house foundation.

Initial Assessment

Upon inspection, several critical issues emerged. The seawall cap showed extensive cracks and spalling, compromising both its appearance and structural integrity. While soil erosion was evident throughout much of the seawall, severe erosion near the pool area caused noticeable subsidence of the pool deck. Some weep holes lacked filter fabric, allowing the soil to erode directly through the wall during rainfall. Without intervention, continued erosion would have led to costly repairs for the pool area and potential structural damage to the house.

Proposed Solution

The repair plan aimed to stabilize the seawall structurally and address aesthetic concerns. It involved installing helical tiebacks to provide lateral support and prevent further movement or overturning. Additionally, polyurethane injection was planned to fill voids and stabilize eroded areas. The seawall cap was to be reconstructed using hydraulic cement and new rebar to restore its structural integrity and appearance.

Procedures

1. Helical Tieback Installation:
   - Tiebacks were installed at every other panel along the seawall.
   - These tiebacks provided lateral support to prevent further movement or overturning.

2. SW-RP1 Injection:
   - Injection points were spaced evenly between joints.
   - Due to large voids caused by severe soil erosion, 6–7 gallons of SW-RP1 foam were injected per vertical foot.
   - The foam expanded to fill voids, stabilize soil, and seal cracks in the wall.

3. Cap Reconstruction:
    - The damaged cap was removed and replaced with a new concrete cap reinforced with rebar.
    - Hydraulic cement was used to bond panels securely together.

Results

The repairs successfully stabilized the seawall, preventing further soil erosion and structural damage. The pool deck showed no further signs of subsidence after repairs. The client expressed satisfaction with completing the project at approximately 25% of the cost of a full seawall replacement. This project demonstrates how targeted repairs using helical tiebacks and SW-RP1 injection can effectively restore a seawall's integrity at a fraction of the cost of replacement, ensuring long-term durability while minimizing disruption to surrounding property features.