

CASE STUDY



FEATURING



BRICK SEWER REHAB NEAR MASS GENERAL HOSPITAL

Pipe Relining Eliminates Need To Dig Up Old Brick Sewer Near Hospital's Entrance

PROJECT SNAPSHOT

Project

- BWSC Westside Interceptor

Problem

- Deteriorated and leaking brick sewer interceptor serving Massachusetts General Hospital and located in front of the ER entrance

Owner

- Boston Water & Sewer Commission

Dimensions

- 54" x 36", 1700 LF

Applications

- Quadex Lining Systems® / GeoKrete® in areas where CIPP could not be performed due to headwalls and obstructions
- CIPP in rounded sections of interceptor

Project Criteria

- Trenchless solution only option
- Minimal surface and street disruption
- Entrances/exits must remain open
- Environmentally safe method and materials
- Full structural restoration and corrosion protection
- Quick return to service

Contractor

- RJV Construction

Job Completed

- August 2016

SITUATION

A 54" x 36", 1700 LF brick sewer, located less than 30 yards from the hospital's ER entrance, was suffering from mortar failure and infiltration. The hospital, which records over 100,000 ER visits annually, could not afford to block or detour its entrance during the repair. With erosion and undermining of the road already taking place, a fast and effective solution was needed. Traditional "dig and replace" was immediately ruled out because it would have required road and entrance closures to the hospital. The Boston Water & Sewer Commission ultimately approved moving forward with a trenchless solution as the only viable option.



Before: The effects of age and corrosion caused the brick sewer to leak in critical sections of this tunnel, including three headwall obstructions.



After: 1.75" of QLS GeoKrete was spray-applied to the non-round areas of the tunnel and delivered the required structural and corrosion protection.





SOLUTION: A COMBINATION OF CIPP AND QUADEX LINING SYSTEMS® GEOKRETE® GEOPOLYMER

RJV Construction was awarded the contract to perform the work by offering two trenchless solutions to rehabilitate the old sewer. CIPP was recommended for the round sections where conditions and access were favorable. However, there were three sections of the sewer where concrete beam “obstructions” prevented the sewer from being CIPP lined. For these areas an alternative method of rehabilitation was required.

Since the sewer was in need of both structural renewal and corrosion protection, RJV recommended the Quadex Lining System, featuring GeoKrete Geopolymer. The team at Quadex has developed an advanced geopolymer that applies and cures quickly, while also delivering the structural integrity and corrosion resistance required for the job.

Only 1.75” of GeoKrete was needed to achieve the structural requirements. For this application, it was spray applied and then troweled to a smooth finish. The Quadex team completed this portion of the project in one week.

RESULTS

The old brick sewer has now been renewed to its original structural integrity and will be protected from corrosion for decades to come. The Boston Water & Sewer Commission is extremely pleased with the results. QLS continues to work with consultants to address large diameter and non-round segments that could benefit from GeoKrete being a cost-effective solution.

UPDATE

The Boston Water & Sewer Commission inspected the brick sewer one year after the project was completed. There were no visible signs of any degradation and was found to be in the same condition it was after the project was completed.



“Boston Water and Sewer Commission completed a one year post inspection of the West Side Interceptor and the GeoKrete Geopolymer liner is still in the same condition as the day it was installed. The Commission is pleased with the work done by Quadex Lining Systems to structurally rehabilitate this interceptor sewer.” — Irene McSweeney, Boston Water and Sewer Commission

[Watch The Inspection Video](#)

KEY REASONS CONTRACTOR CHOSE QLS OVER OTHER LINING SYSTEMS

- **Liner design allows for consistent thickness, fast drying time and quick cure**
- **Versatile applications: spray, spin and trowel — for any shape structure**
- **GeoKrete is a fully structural, corrosion resistant, and environmentally friendly material**
- **Small construction footprint**
- **Experienced crew with decades of experience**
- **Complete system with equipment, process, and material designed by Quadex, LLC**



GeoKrete is precision applied in uniform thickness — resulting in a smooth, fully structural finish.



Excessive I & I caused undermining of the street.



QLS requires a small construction footprint.