

Rehabilitation Honorable Mentions

Madison Avenue Water Main Rehabilitation

In conjunction with crews from Halcyon Construction Corp., Insituform has been working in the heart of the Big Apple to renew 10,000 ft of a 48-in. Madison Avenue water main since July 2008. With a documented history of pipe failure, rehabilitation of the 150-year-old cast-iron water main, stretching from 40th Street to 75th Street, will be completed by fall 2009. To date, more than 5,200 ft of water main has been renewed using the InsituGuard rehabilitation system. With installations completed only on the weekends, the sections of installed pipe have ranged from 500 to over 1,100 ft. Traffic is able to continue around the jobsite and money is saved by completing the work below ground.

Installation has encountered a variety of challenges throughout the duration of the project including thunderstorms and rain, traffic congestion, street fairs and workers' holiday schedules. To date, each individual installation shot has reached successful completion before the start of the Monday morning rush.

Project Owner: City of New York
Engineer: Insituform (for this section)
Contractor: Halcyon Construction Corp.,
Insituform Technologies



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Emergency Structural Rehabilitation of a Mile-Long 7-ft Diameter Pipeline

The "El Encanto" power plant, 75 miles northwest of San Jose, Costa Rica, conveys river water from an upstream dam to the turbine complex downstream. The pipeline is built of cast-in-place reinforced concrete, with an inner diameter of 7 ft, and a total length of 5,742 ft. But upon being put into service, the pipeline developed cracks resulting in a 20 percent decrease in flow that rendered the plant inoperable. After other repair methods failed, QuakeWrap was contacted for engineering consultation and a repair using fiber-reinforced polymer was developed.

The repair used an FRP lining system consisting of one layer of bidirectional glass fabric designed to provide a humidity barrier, to provide an effective crack control mechanism and to provide additional hoop strength to account for future losses of hoop steel due to corrosion. The significant variations in the vertical and horizontal alignment, as well as the length of the pipeline, posed unique challenges to the engineering design phase, such as special details for vertical and horizontal curves, steep slope transitions and construction joints.

Project Owner: Costa Rica Light & Power
Engineer: QuakeWrap Inc.
Contractor: Ghella SpA & QuakeWrap, Inc.



The repair involved using a fiber-reinforced polymer.