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Project of the Year

2002 REHABILITATION PROJECT OF THE YEAR

■ The Reconstruction of St. Felix Street

St. Felix Street was a quiet, historic street located over a subway line in Brooklyn until January 23, 1997 when an 8-in.-dia. water main broke and a century's worth of problems surfaced.

Street conditions became hazardous and adjacent residences were put in danger. Front stoops even separated from their buildings and facades began to buckle.

With the stability of the buildings in question, subway traffic was temporarily halted and the New York City Department of Transportation (NYCDOT) issued an emergency declaration. Within a week, an emergency forensic investigation was performed and plans were developed for the reconstruction of St. Felix Street.

Investigation of the conditions of the problems revealed that the street had sunk 2 ft. in some locations, indicating a huge amount of displaced soil. Inspection of the sewers under the street followed, including a 14-ft.-dia. abandoned brick sewer, over 1,000 ft. of sewer lines, subway tunnels, a pump station and 24 homes.

The mystery of the missing soil required further investigation. With the cooperation of public agencies and private utility firms, all available records were searched, including historical records. This led to the discovery that the problem actually began 75 years earlier.

The story began in 1916 when a tunnel was constructed for the Brighton Beach line, 60 ft. below the surface of St. Felix Street. The surface of the street was replaced with a wooden deck supported on a latticework of timber trestles. This allowed the contractor to build the tunnel and proceed with work in the trench beneath the street. On April 17, 1917, the deck system collapsed, killing at least two people. Soil borings and test pits strongly suggested that the timber from the collapsed deck was left in the trench and the



rest of the trench was filled with loose dirt and debris, leaving huge voids below the street surface. Over 75 years, the soil shifted into the voids wreaking havoc on the water mains. The water from the broken mains washed away even more soil, and ultimately the street sank.

Once the problem was discovered, a two-stage construction plan was developed. The plan called for filling in the voids in the street's subsurface and above the subway using cement-like grout. Next, 4 ft. of soil immediately below the street surface was replaced with compacted soil. Then, a new street surface was placed down. The end result was a stabilization of the upper street level.

To minimize disruption to area residents, coordination and support with public agencies and private utilities was required.

Furthermore, extensive work with the New York City Landmarks Commission was required since the street is in a historic area. Historic research helped in the restoration of the streetscape and rehabilitation of area structures.

The jury said the reconstruction of St. Felix Street was "a long, deferred project that was finally rehabilitated." They also

called it "a very complex project whose project team members faced technical challenges such as keeping the Brooklyn Academy of Music operational and building near subways."

DEVELOPMENT TEAM

OWNER: New York City Department of Transportation, Division of Bridges, NYC

ARCHITECT: Kuplec Architects, NYC

STRUCTURAL, CIVIL & SURVEY ENGINEER: Vollmer Associates, NYC

GEOTECHNICAL ENGINEER: Muesser Rutledge Consulting Engineers, NYC

HISTORIC PRESERVATION CONSULTANT: Jablonski Berkowitz Conservation Inc., NYC

HISTORIC RESEARCH CONSULTANT: Allee King Rosen & Fleming Inc., NYC

FACADE CONSULTANT: Feld, Kaminetzky & Cohen, NYC

GENERAL CONTRACTOR (PHASE 1: GROUTING): Nicholson Picone, a joint venture, Lawrence, NY

GENERAL CONTRACTOR (PHASE 2: STREET & BUILDING RESTORATION): Tully Construction Co., Flushing, NY

SPONSORING AGENCY: Landmarks Preservation Commission, NYC