



5000 North Marine Drive is a mid-rise residential structure built in the early 1900s. Along the west side of the building, there is an alley that provides access to the rear of the building. The alley is located over the vaulted area of the building's basement. Below the alley, there were storage areas and gas meter equipment. The vaulted area was originally constructed using a reinforced cast-in-place concrete slab supported by a concrete foundation wall along the exterior side, and a series of reinforced concrete beams on the other.

Concern was due to persistent water leakage into the vaulted area which had rendered the area unusable as storage for residents, and extensive deterioration of the slab and its supporting beams.

BTC was retained to investigate the structural integrity of the slab. The investigation revealed significant corrosion related deterioration due to years of chloride ingress into the slab and continued water leakage. The extent of the deterioration had resulted in a significant reduction in the structural capacity of the slab, which couldn't have been restored through localized patching. As a result, BTC prepared design documents for complete removal and replacement of the slab. The new structural framing system was designed to support a uniform load of 200 pounds per square foot and consisted of a one-way slab supported on the foundation wall along the exterior of the building, and a series of steel support brackets and beams along the building line. For durability, all structural steel members were hot-dipped galvanized, reinforcing steel in the slab was epoxy coated, and a traffic bearing membrane was applied over the top surface of the slab.

BTC assisted the building in obtaining competitive bids for the rehabilitation, and provided construction contract administration during the implementation of the repairs.

Project Name:
Vaulted Sidewalk Rehabilitation,
5000 North Marine Drive Building

Project Location:
5000 North Marine Drive
Chicago, Illinois

Client:
5000 North Marine Drive Corporation
5000 North Marine Drive
Chicago, Illinois

Approximate Construction Cost:
\$120,000

Year Completed:
2003

Nature of Services:
Evaluation of Existing Conditions,
Design, Bidding Assistance,
Construction Phase Services

