



The 474 North Lake Shore Drive Condominium Building is a 62-story, concrete framed structure, built in 1990. The first 15 stories of the high-rise tower is a parking structure, which extends to the west of the high-rise tower into an adjacent 15-story structure. The 2 independent structures are separated by a continuous expansion joint at each level. The 15-story portion of the parking garage is constructed with post-tensioned (PT) reinforced concrete slabs while the high-rise side is constructed with conventionally-reinforced concrete slabs.

The expansion joint assemblies exhibited deterioration causing significant distress in the surrounding concrete and water leakage. BTC was retained in 2011 to design repairs for the expansion joints and other components of the garage. BTC's scope of work included working in collaboration with the Association and the commercial parking garage operator to develop options for phasing of the project.

BTC's design included developing details for 15 types of concrete repairs, and a wider expansion joint system that could accommodate the anticipated movements between the 2 structures. The expansion joint repairs required modification of slab-to-shear wall joints to accommodate uneven shear wall surfaces and provide a uniform joint width. Our design also included application of a traffic bearing membrane (TBM) to improve the durability of the parking structure.

BTC also provided bidding assistance and contract administration services during construction. In addition to construction costs, other considerations included vehicle relocation costs, commercial owner's lost revenues, and potential costs of deferring work due to continued deterioration. BTC worked closely with the Association and contractor to shorten the project schedule and minimize the total cost impact of the project. The project finished ahead of schedule and under budget.

Project Name:

*Parking Garage Repairs
474 North Lake Shore Drive
Condominiums*

Project Location:

*474 North Lake Shore Drive
Chicago, Illinois*

Client:

*474 North Lake Shore Drive
Condominium Association; DK Condo*

Approximate Construction Cost:

Over \$3,000,000

Year Completed:

Phase 1: 2013

Phase 2: 2014

Phase 3: 2015

Nature of Services:

*Design of Expansion Joint and
Miscellaneous Concrete Repairs,
Bidding Assistance, and Construction
Contract Administration*

