



Citigroup Center is a steel frame commercial high-rise building. The building was constructed adjacent to an old train station. The train tracks are located at the 2nd floor of the original building. Below the track level, there is a loading dock and an indoor parking garage. The parking garage is part of the old train station structure. The south portion of the parking garage is located above interior storage spaces in the basement level. This area measures approximately 13,150 square feet. The remaining portion of the parking garage is constructed on grade. The on-grade portion of the garage measures approximately 9,330 square feet.

The space was converted to an indoor garage during the original construction of the Citigroup building in the early 1980s. The elevated portions of the structural slab originally consisted of reinforced concrete arches supported with steel joists and columns. During the conversion, an EPDM waterproofing membrane was installed over the structural slab, and a reinforced lightweight concrete topping was cast over the waterproofing membrane to act as the wearing surface for the elevated garage deck. The on-grade portion of the garage slab is a reinforced, normal-weight concrete slab-on-grade.

Cracking, delamination, and surface deterioration of the parking garage slabs, both in the elevated and on-grade portions, had occurred. Water leakage also was reported in the basement below the south portion of the garage.

BTC's evaluation consisted of complete sounding of the slab surfaces to detect delamination, coring, sampling for chloride content tests, and exploratory openings. The findings indicated significant deterioration of the reinforced concrete topping of the south portion. BTC prepared 2 alternative repair approaches consisting of localized repairs and complete rehabilitation. BTC also provided cost estimates and anticipated useful lives for each repair approach.

Project Name:
*Parking Garage Evaluation
Citigroup Center*

Project Location:
*500 West Madison
Chicago, Illinois*

Client:
*MB Real Estate
500 West Madison
Chicago, Illinois 60661*

Approximate Construction Cost:
Not Available

Year Completed:
2012

Nature of Services:
*Assessment of Water Leakage and
Condition Evaluation of Parking
Garage*

