



The Metropolis Condominium Building is a 23-story steel frame building constructed in 1912. The building was renovated and converted to condominiums in 2006. As part of the renovation, the 3 basement levels were retrofitted with ramps for use as an underground parking garage.

The garage is primarily constructed of concrete-encased steel beams and columns. The suspended floor systems consist of a combination of cast-in-place concrete slabs, concrete slabs with metal decking, and clay tile flat arches with a concrete topping. Significant deterioration was noted at several of these building components. As such, BTC was retained to assess the level of deterioration and design repairs that would address all potential safety concerns resulting from the observed deterioration. Continued operation of the parking garage during construction was a high priority.

BTC's design included the removal of severely deteriorated clay tile flat arches and replacing them with arched concrete panels. In other locations, the design called for the repair of deteriorated overhead concrete beams and slabs, and the repair of deteriorated and/or missing concrete encasement material at existing steel beams. BTC determined that the most efficient way to address all of these various types of repairs would be through the use of shotcrete. The shotcrete offered strength and workability characteristics that were beneficial for both the structural panels and the encasement material. In using shotcrete, the contractor was able to quickly complete all of the repairs on 1 floor while keeping the other 2 floors operational.

Project Name:
Metropolis Condominium Building
Parking Garage Repairs

Project Location:
Chicago, Illinois

Client:
Metropolis Condominium Association
8 West Monroe Street
Chicago, Illinois

Approximate Construction Cost:
\$160,000

Year Completed:
2011

Nature of Services:
Evaluation, Repair Design, Bidding Assistance, and Construction Phase Services

