



Residences of Riverwoods is an 8-story steel frame structure built in 2004. The building frame consists of structural steel with composite concrete/steel deck floor slabs supported by steel beams and girders. The lower 2 floors of the building are primarily occupied by an indoor parking garage. Access to the 2<sup>nd</sup> level of the garage is via an exposed ramp. The floor slab for the upper parking deck and its access ramp are also constructed using a composite steel/concrete deck supported by steel members.

No traffic bearing membrane had been applied over the upper parking deck or the ramp during the original construction. Shortly after completion of the construction, several issues were uncovered throughout the building. BTC was retained to provide consulting services to evaluate these issues, which included facade deficiencies, roofing problems, and water leakage in the garage.

Due to the construction of the garage slab, and lack of a surface waterproofing, water and deicing salts had penetrated cracks in the concrete slab and initiated corrosion of the steel deck. BTC investigated the extent of steel deck corrosion using non-destructive methods. BTC was subsequently retained to design repairs to address the cracks in the upper deck slab, and provide a waterproofing membrane over the slab top surfaces. The application of a waterproofing membrane over the top slab surfaces was challenging due to concerns for entrapment of moisture within the concrete.

BTC evaluated the moisture emission rates from the slab top surfaces, and after trial repairs, designed a traffic bearing membrane to be applied over the slab. BTC also provided bidding assistance and construction phase services during implementation of the repairs.

**Project Name:**

*Garage Repairs  
Residences of Riverwoods  
Condominiums*

**Project Location:**

*1700 Riverwoods Drive  
Melrose Park, Illinois 60160*

**Client:**

*Residences of Riverwoods  
Condominiums  
Melrose Park, Illinois 60160*

**Approximate Construction Cost:**

*\$330,000*

**Year Completed:**

*2007*

**Nature of Services:**

*Investigation of Slab Moisture Emission  
and Concrete Deterioration, Design of  
Repairs, Bidding Assistance and  
Construction Phase Services*

