

# Parking Structure Assessment and Restoration

## ▪ Anchorage ACDA Parking Structures Multi-Year Restoration 2014 to Present

*Anchorage, AK*

Restoration of three separate parking structures for the Anchorage Community Development Authority, two Post-Tensioned reinforced concrete structures & one hybrid cast-in-place / precast concrete structure. Initial project scope included the field condition assessment of all structures via site observations & survey, concrete delamination survey via soundings, both destructive and non-destructive testing, concrete reinforcing cover survey, select coring & sampling for laboratory analysis. Findings from the condition assessment were developed into multi-year restoration project, repairs were prioritized to minimize life cycle maintenance costs and to maximize the life of the structures. Considerations were also given to improve overall customer experience incorporating a rooftop recreational area on 5<sup>th</sup> & G ramp. Incorporating and accommodating the Owner's (ACDA) budgets and operational requirements into the project design including allowing for continuous parking operations, adjacent occupancy of ACDA operational offices and retail / commercial lease clients within the footprint of parking structures. Additionally, an Anchorage based engineering company, BBFM Engineers, joined the design team. BBFM proved invaluable for seismic design expertise and assisted in construction design and administration.

Restoration phase project scope included separate public bidding of construction documents every other year, each phase included coordination of restoration schedule and phasing plans between the Contractors, ACDA & Engineering staff. Repair and restoration work was performed on all parking levels for all three structures which constitutes over 750,000 square feet of parking. All work was phased so that parking garages remained operational during construction.

This multi-year restoration project included structural concrete restoration, high performance vehicular hybrid coatings (for studded tires), waterproofing, and sealants. Repairs varied from basic crack sealing, to complex concrete removal and repair at post-tensioned decks over occupied retail space. Improvements were completed in the stair towers in 2 of the 3 buildings.



ACDA 5<sup>th</sup> & B



ACDA 6<sup>th</sup> & H



ACDA 7<sup>th</sup> & G

## ▪ Children's Hospital of Wisconsin (CHW) North & West Parking Structures 2009 to Present

*Wauwatosa, WI*

Two separate precast parking structures are on the Children's Hospital campus, located in a Milwaukee, WI suburb. The eight-story north parking structure provides 1,600 stalls of parking for doctors, patients & visitors. The nine-story west parking structure with 1,464 stalls provides hospital staff parking.

Structural restoration includes concrete repairs to drive surface precast TTs, precast columns, beams & cast-in-place pour strips. Sealant between precast members are removed and replaced in-order to expose the underlying steel connections for evaluation, protection, repair and or replacement.



CHW West Parking

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- **SSM Health, Employee Parking Structure 2013 to Present** *Madison, WI*  
Site observation, conditional assessment, development of construction documents, & construction administration for annual restoration project including: Precast concrete & component connections, traffic membranes, expansion joints & sealants
  - **SSM Health S. Park Street Parking Structure 2013 to Present** *Madison, WI*  
Site observation, conditional assessment, development of construction documents, & construction administration for annual restoration project including: Precast concrete & component connections, vehicular membranes, expansion joints & sealants
  - **Ascension Se Wisconsin Hospital Parking Structure Restoration 2019 to Present** *Milwaukee, WI*  
Conditional assessment, design of repairs and construction administration for including: Concrete Restoration, Post-Tensioned reinforcing repairs & failed strand replacements, replacement of failed P-T vehicular barriers system, expansion joint replacement, sealant & vehicular traffic membrane removal & replacement.
  - **Concourse Hotel Parking Structure, Slab Replacements & Restoration 2011 to 2019** *Madison, WI*  
Site observation, conditional assessment, development of construction documents, & construction administration for annual full removal & replacement of chloride contaminated / deteriorated structural slabs, shoring & restoration of CIP structural frame and foundation for 3 level below grade parking structure, including expansion joints, vehicular membranes & sealants
  - **Urban Land Interests: Block 89 Annual Repairs 2012 to Present** *Madison, WI*  
Site observation, conditional assessment, development of construction documents, & construction administration for annual concrete repair, sealant, and traffic membrane project for five-story below grade, 2 way slab, cast-in-place concrete structure.
  - **Urban Land Interests: US Bank Parking Structure Restoration 2012, 2014 to Present** *Madison, WI*  
Site observation, conditional assessment, design of repairs & construction administration for three-story below grade, 2 way slab, cast-in-place concrete structure. Including topside & underside concrete slab repairs, sealant, and traffic membranes
  - **Urban Land Interests: Tenney Parking Structure Restoration 2012 to Present** *Madison, WI*  
Site observation, conditional assessment, design of repairs and construction administration for including: Concrete & masonry Restoration, replacement of failed P-T vehicular barrier system with new steel vehicular & pedestrian system, water-repellant application & sealants
  - **Artis REIT: 525 Junction Rd Parking Structure Restoration 2018 to 2019** *Madison, WI*  
Site observation, conditional assessment, development of construction documents, & construction administration for annual restoration project including: Precast concrete & component connections, traffic membranes, expansion joints & sealants
  - **Artis REIT: 8485 Market St Parking Structure Restoration 2018 to Present** *Madison, WI*  
Site observation, conditional assessment, development of construction documents, & construction administration for annual restoration project including: Precast concrete & component connections, traffic membranes, expansion joints & sealants
  - **UW Health: 20 S. Park St Parking Structure Restoration 2018 to 2019** *Madison, WI*  
Site observation, conditional assessment, design of repairs and construction administration including: Concrete & masonry Restoration, replacement of failed P-T vehicular barrier system with new steel vehicular & pedestrian system, water-repellant application & sealants

