

# PARKING GARAGE STRUCTURAL REPAIR WITH FRP++

CONTRACTOR: UNITED STRUCTURAL SYSTEMS

## Project Overview

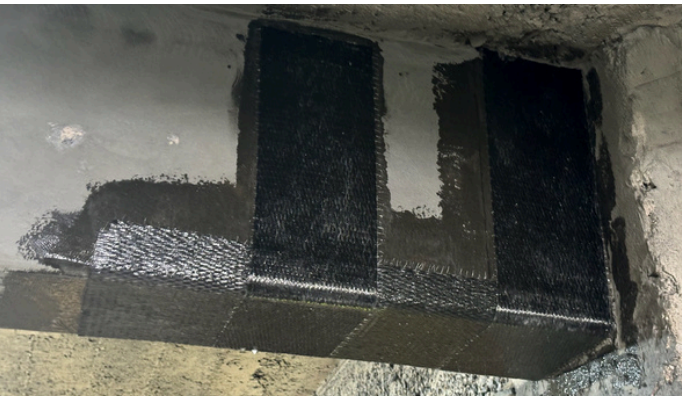
A multi-level parking garage was experiencing severe structural deterioration, including cracked concrete, exposed reinforcement, and compromised load-bearing elements. SRS partnered with USS to evaluate the damage and assist the Engineer of Record (EOR) in developing effective repair solutions to restore the structure's integrity.

## Challenges

- Concrete deterioration and reinforcement corrosion affecting structural integrity
- High structural demands due to vehicle loads and environmental exposure
- Ensuring long-term durability without costly demolition

## Solution

To restore the structural integrity of the parking facility, SRS-600UNI Carbon Fiber Reinforcement System was selected for its high tensile strength, lightweight application, and ability to conform and bond seamlessly to concrete surfaces.



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## A SMARTER, STRONGER SOLUTION



### The Repair Process Included:

- Surface Prep – Loose concrete was removed
- Corrosion Mitigation – SRS-4100 Steel Guard was applied to prevent further deterioration of exposed rebar and reduce demolition
- Concrete Treatment – SRS-4000 Concrete Guard was utilized to strengthen existing concrete by reducing porosity, preventing future moisture infiltration, and improving adhesion of FRP
- FRP Application – SRS-600UNI carbon fiber fabric was installed using SRS-1000 structural epoxy, reinforcing critical structural elements
- Protective Coating – A final sealant was used to safeguard against moisture and environmental exposure



### Results

- Restored Structural Integrity – Carbon fiber reinforcement restored the strength and stability of critical load-bearing components
- Increased Load Capacity – The application of high-strength carbon fiber significantly enhanced the structural capacity to support vehicle loads
- Cost-Effective Solution – Reinforcing existing elements eliminated the need for costly demolition and rebuilding
- Long-Term Durability – The combination of carbon fiber reinforcement and corrosion protection provided a lasting, reliable solution

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CASE STUDY

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## PARKING GARAGE STRUCTURAL REPAIR



### Conclusion

This project demonstrates the effectiveness of carbon fiber reinforcement for revitalizing deteriorated concrete structures. By utilizing SRS carbon fiber solutions, the property owner ensured long-term durability, enhanced safety, and structural reliability.

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