



# Project Overview

## FRP RETROFIT OF CONCRETE FRAMES IN PARKING STRUCTURE

**Name:** Phoenician Resort  
**Type:** Parking Structure  
**Location:** Scottsdale, Arizona  
**Completed:** September 1999

### PROBLEM

ITT Sheraton's Phoenician is a 4-diamond, 5-star luxury resort in Scottsdale, Arizona. The 28,000 ft<sup>2</sup> parking garage has a 422 vehicle capacity.

Columns in the parking garage were splitting vertically due to movement of beams. The ends of the beams were also deficient in shear.



### SOLUTION

QuakeWrap® FRP Retrofit System was selected since it could strengthen the concrete frame without closing the parking structure. QuakeWrap® composite carbon fabrics were used to provide confining action to the columns in order to prevent future cracking and to provide shear retrofit to the ends of the beams.



## Technical Highlights

- 5-star luxury resort opened in 1988
- 28,000 ft<sup>2</sup> parking garage
- Repair could not close down the structure
- 45 columns wrapped with carbon FRP
- 60 beams strengthened for shear

## Credits

Consultant: KPFF Consulting Engineers, Phoenix, AZ  
General Contractor: Bunney's Inc., Phoenix, AZ



*"The FRP Retrofit Experts"*