



# Project Overview

## FRP REPAIR OF PRESTRESSED CONCRETE BEAMS IN PARKING STRUCTURE

**Name:** Panorama Condominiums  
**Type:** Parking Structure  
**Location:** Las Vegas, Nevada  
**Completed:** January, 2007

### PROBLEM

The twin tower luxury condominium complex overlooks the Las Vegas Strip. One tower was under construction and the other was occupied. The parking garages were constructed with prestressed double tee beams. Due to a manufacturing problem, several prestressed beam stems had little or no concrete cover over the steel reinforcement and corrosion of the steel reinforcement was a mayor concern.

The double tee stems had to be repaired with minimum disturbance to the tower residents using the parking structure and to the electrical and fire protection hardware already in place.



### SOLUTION

QuakeWrap® FRP Repair System was selected since it could be applied quickly while the parking structure remained open. The stems were retrofitted with QuakeWrap® FRP carbon fabric to seal the areas of potential steel reinforcement corrosion.

For the areas where steel reinforcement was exposed and corroded, the FRP fabric provided the necessary shear reinforcement.



## Technical Highlights

- Luxury condominium complex
- 56 stems of prestressed double tee beams in parking garage needed repair with minimum disturbance to residents and installations attached to the beams.
- Stems retrofitted with QuakeWrap® FRP fabric.
- Job was completed with a 3 man crew in 3 days.

## Credits

Contractor: Coreslab Structures, Inc., Phoenix, Arizona.



*“The FRP Retrofit Experts”*