Project Overview

FRP STRENGTHENING OF CORBELS IN PARKING STRUCTURE

Name: Banner Desert Medical Center
Type: Parking Structure
Location: Mesa, Arizona
Completed: December, 2006

PROBLEM

A new parking structure on the south side of Banner Desert Medical Center Campus was due to open on January, 2007. All architectural finishes, as well as most of the electrical and mechanical installations were in place.

15 Corbels were poured non-monolithically with precast concrete columns. Original design assumed monolithical construction and as a result of the change in the friction coefficient on the corbel-column interface, additional horizontal steel reinforcement was required.

SOLUTION

QuakeWrap® Fiber Reinforced Polymer (FRP) Strengthening System was selected due to its fast installation process and ease of installation around tight spaces. The 15 corbels were completely wrapped with two layers of FRP fiberglass composite fabric to account for the missing horizontal steel reinforcement. No interference or damage to architectural finished or other installations occurred.

Technical Highlights

- New parking structure required FRP strengthening of corbels.
- FRP fiberglass composite fabric was used.

o 15 corbels were retrofitted using QuakeWrap® FRP Strengthening System.
o No interference or damage to architectural finishes and other installations in place.
o FRP strengthening of corbels completed in 2 days with a 3 man installation crew.

Credits

Structural Engineer: Coreslab Structures, Inc., Phoenix, Arizona
General Contractor: Kitchell Contractors, Inc., Phoenix, Arizona

"The FRP Retrofit Experts"