



Project Overview

FRP STRENGTHENING OF WOODEN BEAMS IN WAREHOUSE FACILITY

Name: Tucson Police Substation
Type: Warehouse Facility
Location: Tucson, Arizona
Completed: March 2006

PROBLEM

The city of Tucson had acquired a 35-year old K-Mart store building and wished to convert a portion of the building with an area of about 55,000 square feet into a police substation. The changes in use and loading required many of the glue-laminated and sawn lumber beams to be strengthened.

A total of 160 wooden beams were detected in need of strengthening. The building was vacant at the time, allowing easy access to the beams.



SOLUTION

QuakeWrap® FRP Strengthening System was selected given the ease and lightness of the application, which required scissor lift mainly for access purposes. A combination of QuakeWrap® carbon and glass FRP fabrics was used to strengthen the wooden beams; flexural strengthening was limited to the middle half of the beam span to minimize cost.



Technical Highlights

- 55,000 square feet warehouse
- Roof beams required strengthening
- Nine glue-laminated beams (5"x29"x50 ft) and
- 153 sawn lumber beams (4"x18"x30 ft) were strengthened with unidirectional FRP carbon and glass fabric.

Credits

Consultant: Schneider and Associates Inc., Tucson, AZ
General Contractor: Lloyd Construction Company Inc., Tucson, AZ

"The FRP Retrofit Experts"

