



# Project Overview

## SHEAR REPAIR OF BRIDGE BEAMS WITH GLASS FRP

**Name:** Challenger Middle School  
**Type:** School Building  
**Location:** Tucson, Arizona  
**Completed:** December 2004

### PROBLEM

The two main buildings on this school campus are connected by three pedestrian bridges. Six of the bridge beams exhibited excessive cracking due to high shear stresses near the supports. The school district required the repair work to be completed rapidly over the Christmas break.



### SOLUTION

QuakeWrap® FRP Repair System was selected given the rigorous time constraints. Each bridge beam targeted for retrofit was repaired with QuakeWrap® composite glass fabric placed in “U” shape wraps at the damaged locations. Work was completed in three days while the school was on holiday.



## Technical Highlights

- Six bridge beams required shear strengthening at support locations.
- Work had to be completed quickly (while the school was not in session).
  - Composite glass fabric was used to strengthen the beams
  - Repair was completed in three days and at minimal cost

The project was covered in a newspaper story (*Arizona Daily Star*, 12/24/2004).



## Credits

Consultant: Grenier Structural Engineering, Tucson, AZ  
Contractor: QuakeWrap, Inc. Tucson, AZ

*“The FRP Retrofit Experts”*