ARIZONA RAM JACK® FOUNDATION REPAIR SYSTEMS

PARTNERS WITH SOLUTIONS

ARIZONA REPAIR MASONS, INC.

INDUSTRY CASE STUDY

AmeriSchools Academy—Yuma
Carbon Fiber Reinforcement

The walls following sandblasting to remove the exterior paint. Fabric would be applied to the wide band at the top of the wall, and horizontal and vertical laminates would be applied around all of the window and door openings.

The above picture shows the crew installing carbon-fiber laminates on the interior walls and openings.

This picture shows the front entry after the application of bi-directional fabrics.

Situation:

The City of Yuma dictated that the AmeriSchools Academy, built of CMU masonry, be reinforced to protect the students, teachers and workers in case of an earthquake. After several solutions were investigated, it was determined that seismic reinforcement could best be achieved with carbon-fiber composites applied to the exterior and interior wall surfaces. The project had to be completed as part of other renovation repairs made by the academy, and time was of the essence. The academy had to re-open for students by the end of July, or the loss of a semester of revenues would prove catastrophic for the owner of the private school.

Challenges:

The crew had to work in cooperation with another renovation crew hired by AmeriSchools, to remove all the 2x4's and drywall in the interior walls, before the interior laminates could be installed. Furthermore, the job took place in summer, and the heat was between 110 and 120 degrees daily, which caused rapid cure times for the epoxies. The work on the exterior walls was completed first, to buy time for the other renovation crews to get their preparatory work done on the inside. The sandblasting crew, hired as a subcontractor, had to complete their work before the carbon-fiber products could be applied by our crew. Timing was critical, and walls were worked on in the morning or afternoon, depending on temperature and shade conditions.

Solution:

Carbon-fiber wrap of fabric around the parapet of the building, and laminates spaced vertically every 4'oc on bearing walls, and horizontally above and below all door and window openings, to reinforce the CMU masonry. The roof configuration would not allow solid-grouting of the masonry walls, and so the application of carbon-fiber fabrics and laminates was the least expensive and most efficient means of repair.

Conclusion:

The client was very satisfied with the final product and with the job coordination.