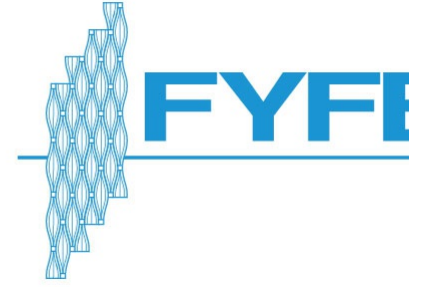




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College of Dupage Retaining Wall Strengthening

A retaining wall at the College of Dupage underwent a renovation in 2011-2012. The wall had two problems. First, it had water infiltration through the masonry blocks and second, it was not designed to withstand the existing hydrostatic pressures.

The general contractor addressed the water seepage by applying a Xypex coating which fills the pores in the block and seals the wall against any water seepage. However, the concern was the adhesion between the Xypex coating and the glass fiber reinforced polymer (GFRP). Fibrwrap performed several adhesion tests on the coating to verify its adhesion to the CMU wall. Because the test results indicated very high adhesion results, the project was able to move forward with the GFRP installation.

The Fyfe design called for 100% coverage using one layer of vertically-applied GFRP. This layer was sufficient to meet the additional moment demands due to the water pressures. The wall, at 112 feet long and 12 feet high, was rehabilitated inside an enclosed space. The surface preparation was done by grinding. No coating was applied to the GFRP, and drywall was erected over the installation. The general contractor had a different subcontractor apply the Xypex.

To our knowledge, this marks the first application of FRP over a Xypex coating. Based on the adhesion results, it is compatible and able to be used again. This application was discovered during the renovation and was not anticipated until the wall was uncovered. Due to the compressed construction schedule, the design, pricing and testing had to be done quickly. The general contractor contacted Fibrwrap in January and the work was completed in February.