BETTER BY DESIGN, LLC CASE STUDY

DURATION: 6 MONTHS

STERLING

GETTING TONS OF ROCK TO DAMAGED LEVEES

DURABLE, DEPENDABLE CONSTRUCTION MATS ARE CRITICAL TO PROJECT SUCCESS

Better By Design is a heavy civil construction company based in Missouri that serves government and commercial sectors. Recently their work has focused on repairing damaged levee systems along the Missouri River.

TerraLam® saved nearly one-third of the gravel and aggregate and helped create a safer jobsite.

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SITUATION

The central part of the United States has seen unprecedented amounts of precipitation in recent years. The Missouri River drains this part of the country from near the Canadian border to the Mississippi River at its confluence in St. Louis. This created multiple levee breaches along the river system, including Mill Creek and the Big Tarkio River near Craig, MO.

CHALLENGE

Three separate locations required site access roads and staging pads to facilitate delivery of approximately 550,000 tons of rock to close the levees. Normally, gravel and aggregate is used to construct access roads and pads around the levees; however, the amount of water present at each breach made this method impossible due to the hyper-saturated soils and the significant risk of gravel and aggravate getting washed out into the agricultural fields.

Better By Designed partnered with Sterling to propose using a system of TerraLam Cross-Laminated Timber (CLT) mats in lieu of the gravel. The Army Corps of Engineers approved the plan and awarded an emergency repair contract to Better By Design, who then turned to Sterling for matting and site access services.

RESULTS

By working closely with the client and conducting onsite research, the Sterling team determined that the TerraLam CLT mats would provide the stable roadway and work pads required to deliver the massive volume of rock needed to rebuild the levee system. In addition to their durability, TerraLam mats are constructed as a single, solid mat with no gaps between the overlapping timber layers. This reduces water and mud from hydraulically pumping onto the temporary work surfaces, which in turn prevents fall hazards for crews and rubber-tire equipment slide offs.

Among the TerraLam CLT options, the TerraLam® 508 mat was selected because of its thickness and exceptional durability in this application. Because soil conditions were less than favorable, a thicker mat was required to create stable roadways and work platforms that wouldn't be compromised by deep mud — which can be a serious problem with traditional bolted access mats. In fact, to offset this disparity, over 5,000 bolted access mats would have been required to complete the project. But with the TerraLam® 508 mat, only 2,300 mats were used. TerraLam mats also reduced the number of loads needed to ship the mats in and out of the job site by 50 percent, which in turn cut overall delivery and installation time by nearly half.

The benefits provided by the TerraLam® 508 mat dramatically elevated the safety, efficiency, savings, and overall success of the project.

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