Researchers design protective wall to shield bridges from terrorist attacks

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Government officials have acknowledged the transportation system's vulnerability to terrorist attacks. Bridges are among the most vulnerable. Because of this reality, researchers at the University of Missouri-Columbia are working with federal highway officials to develop a new technology that can protect bridges against such attacks.

Sam Kiger, associate dean for research in the College of Engineering, and Hani Salim, assistant professor of civil engineering in the college, have received $85,000 from the U.S. Department of Transportation to design a protective wall capable of withstanding an explosion. They are collaborating with engineers from the University of Missouri-Rolla.

The wall will shield a bridge's crucial areas, such as its piers and towers. Ideally, it would be easy to add to existing bridges – and just as easy to remove, if warranted, Kiger said. The technology also will be incorporated into new construction.

"A blast would destroy the protective wall, but the bridge will be safe because the wall will block most of the blast's shockwaves," Salim said.

The research team is now examining materials to determine the combination of strength and flexibility necessary to protect bridges from a blast and resulting debris from the wall. This month, two high explosive tests will be conducted in cooperation with the U.S. Army Engineer Research and Development Center and Federal Highway Administration researchers.

“To control costs, our research will focus on using concrete and steel, materials that bridge engineers are familiar with,” Kiger said. “We’re trying to figure out the most practical way to do this.”

The final results of the research will be available to transportation officials across the country.

Source: University of Missouri-Columbia

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