

Down by the River

BY GEOFF WEISENBERGER, LEED GA

An Italian steel bridge project keeps the fabrication as close as possible.

THERE ARE MANY WAYS a steel fabricator can reduce its environmental footprint—optimizing cut lengths, installing more energy-efficient lighting, reducing the idle time of the shot-blaster, building a temporary facility right next to a project.

Wait, what? A temporary steel fabrication facility? Building a temporary mix plant next to a large concrete project is nothing new, but a temporary fabrication shop isn't something you see everyday.

But it happened—in Italy. Following a flood of the Po River in April 2009, an historic bridge collapsed and needed to be replaced quickly. The bridge spanned the Po between the regions of Lombardy and Emilia-Romagna at Piacenza, Italy. The replacement bridge, just over 0.7 miles long, consists of 11 sections made of approximately 8,200 tons of steel. Structural engineer MCA Engineering, which has offices in Rome and Milan, wanted to reduce the transportation impact of bridge components from a remote fabrication facility (thus incurring hundreds of truck trips) and so decided to construct a temporary fabrication shop at the Lombardy end of the bridge. The shop employed 160 workers who were able to build the bridge assemblies in 18 months.

The on-site construction facility not only had a positive impact from an environmental standpoint—it contributed to the project reducing its carbon footprint by 10% in comparison to a traditional project—but it also facilitated efficiency and timing. The bridge was the first large project in Italy to encompass a complete and preliminary calculation of the carbon footprint of each and every phase, as well as the first project in Italy to go through a life-cycle assessment (LCA).

Is such a practice suitable for every building or bridge project? Of course not. But it's a great example of how certain innovative ideas can be appropriate under the right circumstances. Not only that, but it also demonstrates how opportunities for lowering the environmental impact of a project can vary depending on the project itself.

And in the grand scheme of things, whether it's practical and

widespread or not, this project pushed the boundaries of normal practice and did something completely different. That's impressive from any standpoint, especially sustainability, where raising the bar is pretty much the name of the game. In this case, the reduced environmental impact came from cutting a link out of the transportation chain. In another project, a different tactic might lead to environmental and economic gains. It's a good reminder to always keep your eyes open for opportunities to do things differently when it makes sense.

If this short overview leaves you wanting to know more, don't despair. I'm using this column as a movie trailer to entice you without giving too much away. A full article on this project, which will include other environmentally friendly practices used in the construction, will appear in the August issue. **MSC**



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- ▲ The new Po River Bridge near Piacenza, Italy, features a reticular spacial structure supported on many of the original piers, which have been completely reinforced and restored.
- ▼ A view from inside the large fabrication facility that was built on site to reduce the transportation impact on the project.



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