

# Aesthetic Master Planning

## More than pretty bridges

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Communities have realized that their highways and bridges can serve more than just a functional purpose. They also can be landmarks that reflect an area's history, culture, and aspirations. A primary tool for reaching this goal has been the concept of context-sensitive solutions (CSS), which was developed in the late 1990s by the Federal Highway Administration. But the reality of putting these ideas into practice can be challenging.

One of the core tenets of CSS is to create transportation infrastructure that "exercises flexibility and creativity to shape effective transportation solutions while preserving and enhancing community and natural environments." To some bridge owners, that sounds expensive. Typically, department of transportation projects set aside 1 to 2% of construction costs for aesthetic enhancement, which leads engineers to fear that CSS aesthetic improvements will cause costs to rise and schedules to lengthen. In fact, incorporating strong aesthetics doesn't have to set back timetables or exceed the project's budget.

An example of what can be accomplished can be seen in Creative Design Resolutions Inc.'s (CDR's) creation of an aesthetic master plan for an interchange outside Little Rock, Ark. The project's engineers were



Piers for the new 193<sup>rd</sup> Street Bridge in Catoosa, Okla., feature an aesthetic design that was able to meet the requirements of all the stakeholders. Photo: Steven Weitzman/ Creative Design Resolutions.

won over by the plan's treatment of aesthetics as an integral part of the bridge rather than as an add-on after the fact that increased load or structurally changed the planned bridge. Aesthetic designs were created that became integral to the bridge's fabrication process.

The design components were diverse: mechanically stabilized earth walls, bridge parapets, slope walls, and massive flyover piers. The CDR team was sensitive to the scale of the project and its budget, creating a plan that maximized aesthetics and limited

costs. The designs were approached modularly, like puzzle pieces, so the client needed to invest only in a finite number of formliners that could be reconfigured to produce multiple unique vignettes. The project will be completed in spring 2015.

### Bridging Differences

In some cases, mediation is required between groups having different visions for a project. One example involved a bridge in Oklahoma that was built adjacent to the Cherokee Nation's land. The city of Catoosa, where the bridge was



The aesthetic master plan created for the I-630/I-430 Interchange in Little Rock, Ark., won approval by treating the aesthetics as an integral part of the project rather than as an add-on that would increase load or change the structural design. The aesthetic design was created to be integral during the fabrication process. Photos: Arkansas State Highway & Transportation Department.



One of the mechanically stabilized earth walls for the 193<sup>rd</sup> Street Bridge in Catoosa, Okla., which features an aesthetic design that was able to meet the requirements of all the stakeholders. Photo: Steven Weitzman/Creative Design Resolutions.

located, wanted a say in the bridge's appearance, but the Cherokee Nation had a significant financial investment in the bridge's construction and also wanted their concepts considered. Oklahoma Department of Transportation, which funded and managed the project, asked CDR to listen to the differing opinions and create a design that would embrace ideas from everyone. That is typically easier said than done.

The presentation given to the stakeholders offered a variety of options for aesthetic enhancements used in other projects around the country that fit into this project's budget. The emphasis was placed on the common base on which the seemingly disparate groups agreed: ultimately, they all wanted a successful, beautiful bridge.

Feedback was gathered to draw out specific concepts each group wanted to have incorporated. This type of inclusive meeting and gathering of opinions represents a key step in using CSS concepts. It's important for stakeholders and the community to feel included from the beginning and not come to feel that an idea is being pushed on them at the last minute, regardless of its suitability.

After hearing all sides, CDR created feedback proposals and returned to Oklahoma

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to meet separately with the invested parties to show them design options. The city, the Cherokee Nation, and the Oklahoma Department of Transportation all picked the same design independently. The 193<sup>rd</sup> Street Bridge now stands as an attractive testament to the process of community outreach and design mediation.

### Building from the Land and Community

The 1950s saw a boom in infrastructure across the country, making automobile travel faster and easier. That boom is causing a secondary one today, as many of those bridges have reached the end of their service lives almost simultaneously. As a result, we find ourselves at a critical time in highway infrastructure. These roads and bridges, built decades ago, now need reinvestment to continue to function. Fortunately, they also represent opportunities for creating new impressions by incorporating CSS concepts.

An example can be found in Norman, Okla., where the I-35 corridor traversing the city was completed in 1959. Fifty years later, the eight consecutive bridges that had made the city's development possible began to show signs of deterioration and needed to be replaced. City officials realized this simultaneous need created an opportunity to speak to the city's rich cultural and environmental history by designing new bridges that incorporated aesthetic improvements.

The master plan for the eight bridges focused on telling Norman's history. CDR worked with Oklahoma Art in Public Places to set community meetings and gather feedback that informed the design process. The goal was to have each bridge highlight a unique aspect of Norman's character.

As a result, rather than having an anonymous highway corridor bisecting the city, the new series of bridges provides a picturesque highway experience that shows residents and travelers alike the city's rich past and future. (For more on this project, see the article in the Fall 2013 issue of *ASPIRE*.™)

Bridges' proximity and importance to communities, combined with the availability of cost-effective, high-quality aesthetic designs, mean a pragmatic approach to bridge design and construction is no longer sufficient. We need to take into account the quality of life of those living near these projects and use these structures to enliven and beautify their communities. Integrated aesthetics can fill this role, without compromising the safety, budget, or scheduling concerns for a given project.

Aesthetically designed bridges that take full advantage of CSS concepts can be built economically, providing landmarks for the area that are a point of pride. CSS can help create structures that function beyond just their structural purpose to provide an aesthetic landmark that can stitch together communities. 