



EMERALD BUILT  
ENVIRONMENTS

Case Study  
Big River Steel

## How Emerald helped Big River Steel become the first ever LEED-certified steel production facility

### EXECUTIVE SUMMARY

Big River Steel (BRS) opened its first steel mill in 2017, bringing online a new, technologically-innovative steelmaking process. Located in Arkansas along the Mississippi River, the mill was the first industrial facility of its kind to attempt LEED certification for a production center. Thanks to Emerald Built Environments, BRS achieved two Gold and two Silver LEED certifications on its Osceola production site.



### ABOUT BIG RIVER STEEL

Big River Steel is a new steel manufacturing company in the U.S. that focuses on leveraging technology to improve efficiency, win market share, and drive performance. In fact, BRS calls itself a technology company that also makes steel. Its facility is unique when compared to other steel mills because of its innovative Flex Mill™ technology – a process that combines the wide product mix and superior capabilities of a more traditional steel mill, with the nimbleness of technologically-advanced mini mills.

This steel company soon found out that technology and efficiency are valuable not just for succeeding as a business, but for environmental sustainability as well.

## THE CHALLENGE

Before breaking ground, Emerald Built Environments principals Laura Steinbrink and Matthew Setzekorn engaged with Big River Steel (BRS) executives in conversations about technology and efficiency. They demonstrated how BRS's values had already put them on a path toward sustainable business practices and that pursuing further commitment to sustainability standards would make them stand out from other businesses of the same kind and enhance their marketing strategies.

After these discussions with Emerald, Big River Steel CEO Dave Sticker decided this steel production facility would become the first of its kind to receive LEED certification. All four buildings on the 1,300-acre campus were to get certified: the mill, an admin building, an employee services building (ESB), and a warehouse. By including the mill in this process, BRS became the first heavy-industrial facility to even attempt LEED certification.

This was, of course, no easy task. There's a reason BRS's competitors have limited their LEED efforts to executive buildings and R&D offices. A steel mill consumes so much energy and water as part of the manufacturing process that LEED certification seems impossible. BRS's Flex Mill™ consumes less of these raw resources, but the newness of this technology meant that there was no easy way to quantify these savings for certification. But Emerald proved that it can be done.

## THE SOLUTION

Because the Flex Mill™ concept was a new technology, there were no comparisons to calculate process energy and water savings. Instead, Emerald used the Credit Interpretation Ruling (CIR) process with Green Business Certification, Inc. (GBCI). By engaging the review team in a discussion about the mill and what makes it unique, Emerald was able to help them evaluate the new technology. This review process, which ultimately included two CIRs, compared patent filings and process designs to existing energy documentation guidelines to create a model of the mill's energy and water baselines and projected savings.

This CIR process will pave the way for future industrial facilities to document their process energy and water savings.

For the mill, as well as the other three buildings on campus, Emerald implemented an integrated design process, in which all players were involved in the project from the beginning to focus on the owner's project requirements and to ensure the best outcome. In this manner, at least 14 different standards and design parameters were met in the production of the facility and its modular spaces.



### THE OUTCOME

On March 2, 2017, Big River Steel held its grand opening and hosted a global audience of steel industry leaders, at which time it publicly announced its LEED certification. Of the four main buildings on campus, two earned Silver (Mill Building and Warehouse A), and the other two earned Gold (ESB and Admin Building).

BRS committed to a number of sustainability practices on their 1,300-acre site, which included the following outcomes:

✓ **PROTECTION**  
of an ancient Quapaw Burial Mound

 **30%**  
**MINIMUM RECYCLED**  
Materials on buildings constructed

 **5+** **ACRES**  
PLANTED  
of new trees

✓ **OVER 80%**  
**CONSTRUCTION WASTE**  
diverted from landfills  
(wood and metal scrap)

✓ **100%**  
**PROCESS WASTE**  
& **STORM WATER**  
Captured, Treated & Returned  
to the Mississippi

 **30%**  
**WETLAND ACRES**  
Mitigated & Protected

 **50%+**  
**NATURAL AREAS**  
Preserved & Protected

✓ **OVER 40%**  
**LOCALLY SOURCED**  
building materials (within 500 miles)

### WHAT'S NEXT

Through BRS's demonstration of the business and environmental benefits of this new Flex Mill™ technology, Emerald has created a precedent and a clear path for other steel mills to follow.

Learn how Emerald can help with your certification strategy. Schedule a consultation with one of our experts today.

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