



CalStar



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Reinventing the BRICK

The process of building bricks and manufacturing concrete is known for being highly energy-intensive – a significant user of resources. As the nation's only manufacturer of sustainable brick and masonry products, CalStar is looking to change that.

Written by Leon Bracey

Since its start in 2011, the company has continued to build and develop products that are not only environmentally friendly, but that offer a variety of styles and looks that cater to the needs of customers.

Chief Marketing Manager John Stephenson discusses how CalStar has evolved since its start and how the team has invested in ongoing research and development to improving its processes.

“Brickmaking is a huge CO² contributor,” Stephenson explains. “Digging clay out of ground and putting it in a kiln for five days takes a lot of energy. We’ve reinvented the brick that is hard, structurally sound, and passes the same test. Our bricks look like bricks, our concrete looks like concrete, but they are made up of 37 percent recycled material, 81 percent less energy, and emit 84 percent less CO².”

After building a pilot plant in Racine, Wisconsin in 2011 to experiment with the technology needed to develop these bricks and concrete blocks, the company really took off in 2014 after opening a full-scale plant in Columbus, Mississippi; CalStar also maintains Research & Development facilities in California’s Silicon Valley and is headquartered in Durham, North Carolina.

The company has since worked on more than 450 large-scale projects throughout the country. Hotels such as Hyatt House and retailers such as Walgreens and CVS use CalStar’s bricks,

while restaurants such as McDonald’s and Taco Bell use the company’s bricks at their new locations. “We offer a clean, crisp product line when companies want a good look for their stores,” says Stephenson.

Since its founding in 2011, CalStar Products has developed technologies to ease the immense burden building materials can place on the environment. The company’s masonry products are designed with aesthetics and performance equal to or better than traditional products – but with a dramatically lower energy and carbon footprint. CalStar has made a commitment to leading the industry in both carbon and cost reduction with its available products and the new technologies it has under development.

CalStar offers an extensive line of brick and concrete products to meet the needs and desires of all its customers. With more than 50 colors and 50 shapes, Mr. Stephenson guarantees these are far from “ugly cinder blocks,” and that clients will be excited to use the products on their buildings.

After coming out of one of the worst housing and building markets since the Great Depression, the overall industry is now growing again at a steady rate. While Stephenson acknowledges there is still a long growth curve ahead for the industry, he feels that CalStar is positioned well from a supply standpoint. “During the last building boom, brick manufacturers had to ration supplies and there not enough to go around,” he shares. ►►





WE'RE BUILDING A BETTER WORLD

▶ "It could happen again, and some companies took capacity off the market. We have capacity, and it is a good time to be in the sustainable brick and concrete business."

CalStar's bricks are produced using less than 20 percent of the energy required to make conventional clay brick; they are cured at less than 200 degrees Fahrenheit overnight rather than being fired in a kiln at thousands of degrees for several days. The bricks are freeze and thaw resistant, meet FBX dimensional requirements and offer a plug-and-play replacement for energy-intensive clay bricks on projects of all sizes.

In commercial construction projects, the use of CalStar brick can significantly reduce a project's environmental impact. For example, on a 100,000-brick project, using CalStar brick can divert more than 85 tons of landfill waste, avoid 210 tons of new raw material mining, reduce CO² emissions by more than 80,000 lbs (40 tons), and save 500 million BTUs of energy.

CalStar's STRUCTURE products are designed to offer the best of both worlds – as an attractive brick appearance with the struc-

tural performance of concrete block. Customers who purchase STRUCTURE products can reduce their material and labor costs by laying one product instead of two, saving time and money. And like its bricks, the STRUCTURE line is available in a variety of shapes and sizes. "Not everyone makes these types and sizes of bricks," Stephenson says. "There is often only one resource but we make them right there in plant, so it is cost-effective for clients."

CalStar's Hardscape Collection comprises natural-looking landscaping products that boast low embodied energy and are manufactured with high recycled content, eliminating the need for fired clay or Portland cement. The company's Hardscape Collection is well suited for upscale residential and commercial projects that require a high aesthetic value.

CalStar's TechSTONE units, meanwhile, offer more exciting new options and flexibility for masonry design than ever before – whether the richly colored architectural facing units, beautiful rock-faced oversized units for base courses at grade, precise sills and contrast bands, or just about anything customers can

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dream up. To manufacture TechSTONE's cast stone trim and accent pieces, the company uses its innovative technology matched with casting methods using historical, natural stone. This enables CalStar to offer the texture and beauty of limestone without the negative environmental impacts that come with quarrying it.

As a new entrant into the industry, CalStar has faced some challenges from companies that may be skeptical about how they develop their bricks, but the team is not fazed by this. "Any time you have a new technology in an older industry such as masonry, there is a need for awareness and adoption, but people who try our products choose to use them again. We're a fast growing company, but we are something new and disruptive. If someone who is used to buying a VCR now has to buy a DVD player after many years, it can be a hard sell."

However, the fact that CalStar is reinventing how bricks are created has become appealing to a surprising demographic. "We are a grassroots marketing company; we're the underdog and a lot of people like the underdog. Our company consists of architects and masons who like green energy and sustainability projects and they have been the ones who have spread the word. We have a young audience on our social media pages because that is the group this resonates with. As that group becomes older and makes more purchasing decisions for companies, that speaks well for us because they will consider our company."

Drug retailer Walgreens, for example, recently partnered with CalStar to build its first ever net-zero store in Evanston, Illinois. This means that the store generates enough energy on its own that it doesn't need to draw from the power grid. That helps the store save approximately 394 million BTUs, the equivalent to powering three large homes for a year.



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Another major recent project was the building of Invest Collegiate, a Charter School in Charlotte, North Carolina. Here CalStar used its TechSTONE as an exterior veneer for the school.

Hancock North Central Elementary in Kiln, Mississippi used CalStar's bricks when it was built in 2013. The design and use of the bricks has placed the school on track to achieve LEED certification – the first in the state to do so. The development of this building saved 71 tons of CO₂, the equivalent to removing more than 12 cars from the road for a year.

"Calstar is 'building a better world' in three ways," says Stephenson. "By building a better workplace by keeping it safe, clean, quiet, and cool; by building a better community by giving back to the community; and by trying to help build a better planet."

Although having only started in 2011, CalStar Products has already made a huge impact on the masonry and concrete industry by revolutionizing the way this keystone product is manufactured. As companies become more aware of sustainability and green energy, CalStar Products is well-poised for growth and for finding new markets in clients seeking to build more environmentally friendly structures.

"If you're an architect, contractor, or mason, think of CalStar products," says Stephenson. "We are a company that is about using recycled products to reduce the immense impact that the building industry has on the environment, and we will continue to be focused on reducing that impact." ■



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