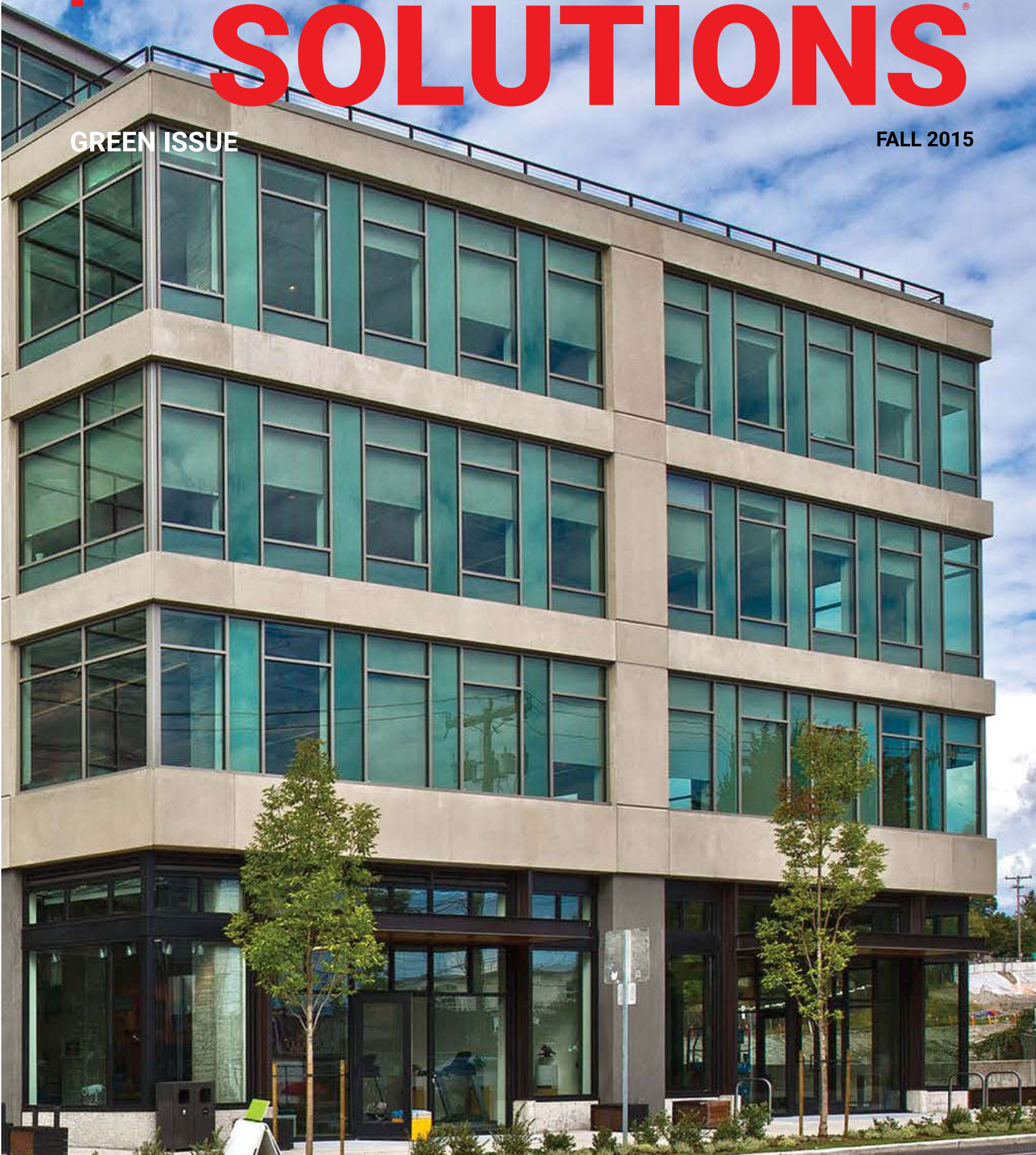


Sustainability Awards / Precast Goes LEED Platinum / Solar Roadways

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GREEN ISSUE

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ON THE COVER:

Follow the LEEDer: Olympian Precast of Redmond, Wash., manufactured a variety of precast concrete products – including exterior panels, stair treads and planters – to help Seattle's Stone34 mixed-use building earn LEED Platinum certification. Discover how precast's many sustainable properties offered the perfect solution for project owners. Story on page 16.

Photo courtesy of Michael Walmsley.

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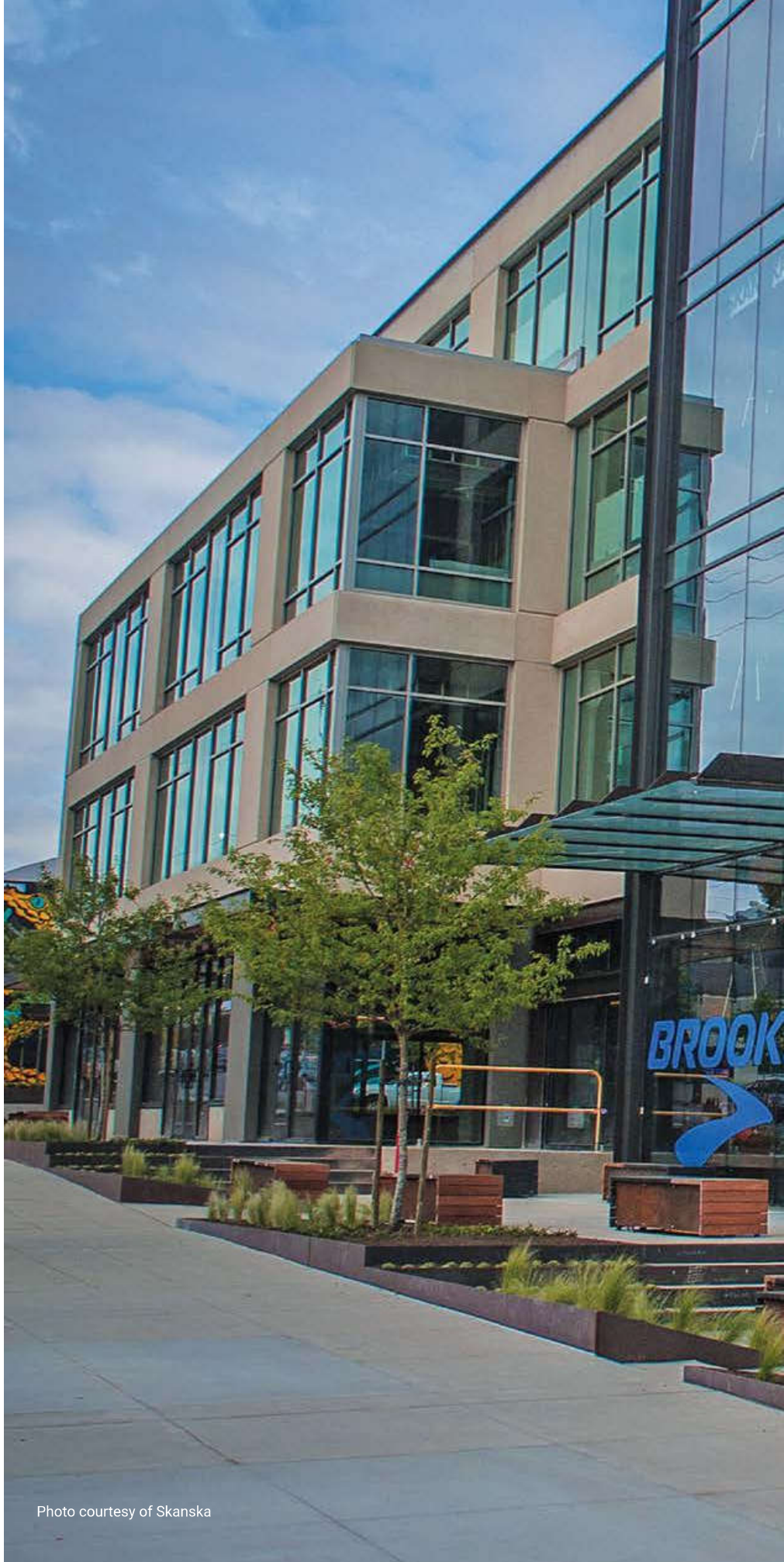


Photo courtesy of Skanska

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Taking Precast to School

Specifiers turn to precast concrete for a wide variety of projects at educational institutions.

By Mason Nichols

From the moment we enter the world, life is filled with endless possibilities. As we gain control of our basic senses, we realize we can see, hear and feel new things. In turn, our environments become infinitely complex. And just when we think we have a grasp on all there is to know about life, everything is turned upside down when our parents send us to school for the first time.

A solid education serves as the foundation for a successful career and helps us unlock our full potential. Precast concrete functions in much the same way, enabling architects, engineers and project owners alike to accomplish nearly anything. As the projects below demonstrate, precast solutions save money and reduce on-site construction time at schools, providing the durable backbone educational institutions need to consistently provide students with the training necessary for their lives ahead.

TOP-NOTCH WALL FOR MIDWAY

Last summer, a retaining wall at Midway Middle School in central Tennessee began to fail, resulting in portions of the wall spilling onto the adjacent roadway. School administrators knew they had to act fast to correct the problem.

"We had less than 30 days to install the structure, which needed to be in place and functioning before the new 2014-15 school year," said Kevin Alley, operations manager for contracting firm Charles Blalock & Sons, Inc., of Sevierville, Tenn. "That timeline gave us no room for error."

With a compressed schedule and the need for a new retaining wall that would function for the long term, administrators chose precast concrete. According to Eric Barger, vice president of C.R. Barger & Sons in Lenoir City, Tenn., precast provided a variety of advantages.

"We've found the Stone Strong block to be very competitive compared to a pour-in-place product," he said. "The choice of material provided an economical solution to meet the budget for the project and the school, allowing the school to once again use

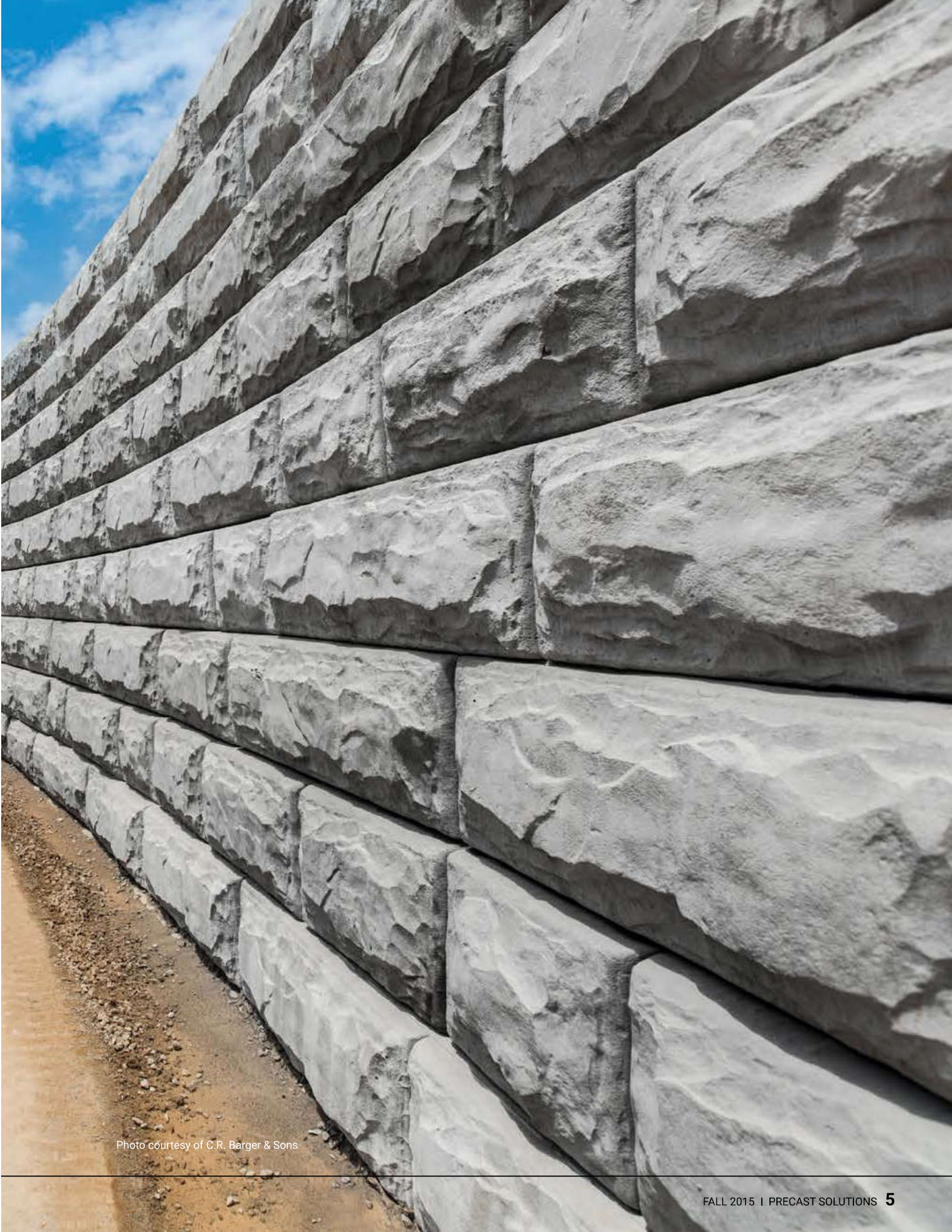


Photo courtesy of C.R. Barger & Sons



Photo courtesy of Brad Feinknopf

The dichroic glass fins reflect varying colors onto the precast concrete panels based on the angle of the sun.

the road for bus traffic.”

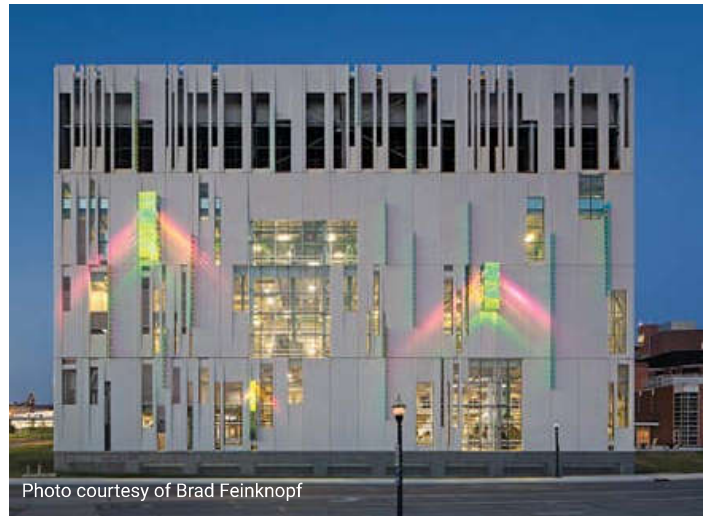
Barger & Sons manufactured 170 precast concrete blocks of varying sizes for the job. The new wall, which covers a total area of 2,140 ft², was erected in under a week thanks to the precaster’s close proximity to the construction site. This allowed the entire project to be efficiently completed within the short timeframe.

In addition to the new wall’s extended service life, each block’s chiseled granite pattern provides the aesthetic touch school administrators sought in their solution. Barger said the result was a happy customer.

“We’ve heard nothing but great comments from the school,” he said. “We expect the school to have safe access to the back of their building for years to come.”

CHILLING OUT

Ohio State University is one of the most respected universities in the U.S., recognized internationally for strong research programs and solid educational opportunities. It’s also one of the largest, boasting the third highest total enrollment in the country. The



school’s College of Medicine mirrors this scale and esteem, serving thousands of patients who check into OSU’s facilities each year.

In 2013, the university constructed a new chiller plant to distribute cold water throughout the medical district. Given the high-profile nature of the selected site, school officials wanted a solution that would broadcast wide visual appeal while providing maximum utility. According to Eric Martin, AIA and principal at Ross Barney Architects of Chicago, the initial idea for the structure was to enclose the chiller equipment in glass. This would allow it to be viewed from the outside.

“We learned that with a glass box design, we would have to add cooling to the building and literally chill the chiller,” he said. “So we began looking for an alternate solution and precast concrete was chosen for its thermal properties.”

RBA connected with High Concrete Group of Springboro, Ohio, to design and develop more than 200 precast concrete panels for the chiller plant. Using a combination of extensive planning and building information modeling, the two parties devised an effective solution for the project.

Dwayne Robinson, midwest sales manager for High Concrete, said collaboration with RBA played an important role in the process.

“It was a real pleasure [working with RBA] because it was something different for us,” he said. “They were really helpful and gave us an idea of what vision and design concept they wanted. We worked well in tandem to get to where we’re at on the project.”

Each of the 11 different panel types making up the structure is fitted with dichroic glass fins. As rays of sunlight pass through a fin, various colors reflect on the surface of the concrete. The color patterns change based on the angle of the sun.

To make the effect more pronounced, all of the panels were polished – atypical for exterior precast of this type – to give them a noticeable sheen. The result is a stunning structure that’s as pleasing to the eye as it is functional. As Martin explained, precast



Photo courtesy of Tindall Corp.

Georgie D. Tyler Middle School is the first public middle school in Virginia to use structural and architectural precast concrete wall panels.

was the optimal choice to accomplish all of the project's goals.

"The design team felt that precast concrete panels were the best choice for the project given its demanding schedule," he said. "The size of the panels were also maximized to reduce the number required to clad the building while keeping in mind the capabilities of transporting them to the site."

A FIRST FOR PRECAST

Originally constructed in the 1950s, Georgie D. Tyler Middle School in Windsor, Va., was in need of a rebuild. As the design team from RRMM Architects got to work on the project in 2011, they realized a building material that could offer more permanence was necessary – one that would serve the sixth, seventh and eighth graders of the local community for decades to come. Their choice to make that possible was precast concrete.

Tindall Corp. of Spartanburg, S.C., was selected to manufacture the nearly 200 precast concrete panels that compose the exterior of the school. Working closely with general contractor Ritchie-Curbow Construction of Newport News, Va., Tindall developed a precast solution that provided many advantages to the project.

"There was plenty of thin brick cast in our pieces, so the project owners didn't have to worry about having that trade set up on site after some other system was used," said Patty Peterson, senior project manager for Tindall.

Chris Andrews, sales engineer with Tindall, added that speed of erection helped contribute to the success of the project. Workers were on site erecting the panels for just one month out of the 14-month construction period.

According to Summer Oostra, LEED AP and project manager for Ritchie-Curbow, the two companies had previously worked

together on other projects, which led to efficient interaction as they developed a joint solution.

"We always appreciate that Tindall has the expertise to come in, review the design and suggest some really valuable, time-saving options," she said. "They have always provided material on time and met or exceeded our schedule, so we're very happy to work with them."

Completed earlier this year, the resulting building is the first public middle school to use structural and architectural precast concrete wall panels in Virginia. And even though such a solution is a new concept for the state, all parties involved foresee a bright future packed with continued use of precast concrete products.

HONOR ROLL

From retaining walls to exterior panels and beyond, precast concrete is consistently the go-to building material for specifiers looking to ensure success with school projects. As professionals in the architectural, engineering and construction industries continue to push the boundaries of design, precast remains a top performer, rising to the head of the class with unmatched advantages. **PS**

Mason Nichols is the managing editor of Precast Solutions magazine and NPCA's external communication and marketing manager.