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ConcreteWorks is a publication of the **Alabama Concrete Industries Association** and features articles and photographs pertaining to product applications, educational opportunities, as well as innovative construction techniques impacting the industry.

Please email kward@alconcrete.org with any comments regarding featured articles in *ConcreteWorks* or to suggest a story idea or a future edition.

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Ground & Glazed

A NEW TWIST ON CMUs

PHOTOGRAPHY PROVIDED BY
BARGE WAGGONER SUMNER & CANNON, INC.

When members of Envision Opelika got together in 2003 and 2004 to discuss plans for the area's recreational facilities, they were not afraid to dream big. Taking its name to heart, this organization, dedicated to improving the quality of life for the residents of the Opelika, Alabama community, imagined every possibility, from racquetball courts to an ice skating rink. They enlisted the help of architects, city planners, contractors and developers to whittle the dream into a workable and affordable plan. When the Opelika SportsPlex & Aquatics Center opened in 2009, concrete helped turn their dreams into reality.

The \$35 million facility is set on an 80-acre site and includes a fitness center, aquatics center, Charter Foundation Adult Activities Center for area senior citizens, splash pad and park, outdoor amphitheater and a therapeutic recreation center, among its many amenities. The main facility encompasses 78,000 square feet, plus five soccer fields with two adjoining outbuildings for concessions and restrooms, and a separate maintenance building. The total project covers about

81,536 square feet.

"Our existing facilities were built in the early 1960s and were getting long in the tooth," said Opelika Mayor Gary Fuller. "There is no question our citizens wanted and deserved a new facility. We thought the investment would be around \$10 million. It ended up at about \$32 million, and I believe it was a great investment! This facility should serve our community for the next 65 plus years."

With that kind of longevity in the forefront of expectations, anticipation of high volume of daily traffic and the type of heavy wear-and-tear that's par for the course with a recreational facility, concrete was a logical go-to for architects and contractors. Concrete provided long-term durability, structural strength and low maintenance.

"We did use thousands of yards of concrete to build this, because we believe it will be rock solid forever and that concrete will be a big part of this." Mayor Fuller says.

First, concrete was used to lend structural strength. The main





facility used about 1,500 cubic yards of concrete for the slab on grade alone, in addition to concrete block walls that are reinforced with bonded concrete beams placed at 2-foot intervals vertically and horizontally. Poured-in-place concrete slabs also were used for the main gymnasium and racquetball floors, as well as the second-floor aerobics room and karate room. This process was a bit challenging because these floors had to be recessed and topped with wood floors.

"The slab is actually poured first, but it has to be recessed precisely," explains Andy P. Donnelly, AIA, design architect and architect of record for the project, with Barge, Waggoner, Sumner, Cannon. A subfloor is installed over the concrete slab, using wood beams called "sleepers." The wood flooring is then attached to the sleepers. "We had to be sure of the exact manufacturing dimensions for the wood floors – and each manufacturer has a different depth – before the slab could be poured. It has to be exact," he said.

Concrete also factored heavily into the construction of the facility's Aquatic Center, which features a 25-meter, 8-lane pool with a zero-entry on one end and a concrete perimeter. The pool and pool enclosure are poured-in-place concrete.

The outdoor amphitheater features a poured-in-place concrete

slab, and the splash pad is constructed using a concrete slab that is sloped toward the drains, topped with a special non-slip, rubberized coating.

In addition to providing strength, the interior of the building also incorporates concrete as a decorative element, marrying beauty with durability. This includes products such as stained concrete block, ground-faced CMU (concrete masonry unit) blocks and glazed-faced CMU blocks, all very long-lasting and low-maintenance products that provide an attractive finish.

"I worked hand in hand with the Parks & Recreation Department director, Bill Harrison, during the course of the project, and he emphasized that the old rec center was standard concrete block and painted block. He said he really wanted the new facility to still be durable and low-maintenance, but he also wanted something more interesting," Donnelly says. "Using prefinished materials like ground-faced CMU and brightly colored glazed-faced CMU answers that question. They give you that added element, that extra something."

Ground-faced CMU is finished on a grindstone, so that it shows all the rock face, and then is polished smooth. Glazed-faced CMU is available in a variety of colors, which provides aesthetic enhancement and variety combined with greater durability and lower maintenance



than a painted surface.

"A big priority of this project was low-maintenance, and concrete is definitely going to be a good choice for that," agreed Johnathan Peavy, Project Manager with Robins & Morton construction company. "The engineers and architects designed for as little maintenance as possible. This building is pretty much designed to be a tank," he said with a laugh. "This is a very active place, lots of kids playing, lots of sports and traffic in and out. With concrete, you don't have to worry about patching drywall or painting. These concrete surfaces hold up to constant activity."

Decorative elements also were factored into the exterior of the SportsPlex & Aquatics Center using a combination of masonry products including split-faced concrete block, a type of CMU that has a rugged rocky texture and natural appearance, and cast-in-place concrete columns for architectural accent. Patios adjoining the pool and the adult activity center use a decorative etched concrete floor in a herringbone pattern. In some areas, concrete was integrated with other materials. For example, there are integrated concrete bands with brick pavers for sidewalks.

The building centers on a main, two-story lobby, with activity and non-activity areas branching off of that, surrounded by a core of locker



rooms. There are both “dry” and “wet” locker rooms, attached either to the gym, weight room and racquetball courts, or the pool. The “quiet side” or non-activity side of the main floor features office space for the City Parks & Recreation Department, public meeting space that can be opened to use as one large room or subdivided into three smaller spaces, and the Adult Activity Center for seniors. The Activity Center features a large dance space, small stage, computer and library with internet access, and a general-purpose activities room.

The upper level of the facility includes a walking track that is open to the gym and lobby, the aerobics room and karate room, as well as areas for spinning classes and a stationary equipment room with cardiovascular equipment like treadmills and elliptical machines.

In May, the City of Opelika was honored by the Alabama League of Municipalities at its statewide conference, with the 2010 “Municipal Quality of Life Award” for the new SportsPlex & Aquatics Center.

“Our primary reason for doing this was to serve the citizens of Opelika but, yes, we did think it would be a quality of life project to help us recruit new business and industry,” Mayor Fuller says. “You can imagine what kind of ‘wow’ factor we’re getting when we show prospects around our community and they see something like this. No question it is state of the art and is the best facility in the State of Alabama.”

■ Wendi Lewis



PERVIOUS PROTECTS SENSITIVE SITE

PHOTOGRAPHY PROVIDED BY JEFF TESNEY

Beautiful Mobile Bay is an Alabama treasure, and nobody understands this better than the people who live near it. The citizens of Mobile and the surrounding areas have long loved to play on and around the bay, and now there is a new park that will help them do that. Arlington Park in Mobile opened in June 2010 and is allowing the public increased access to the waterfront while also protecting this natural resource.

The new, public, green space on the western shore of Mobile Bay was a former industrial site that was transformed into a park by the Alabama State Port Authority.

“The idea came about when we were building a new container terminal, and we were doing our environmental impact statement for our building permit,” Bob Harris, the Port Authority’s director of environmental and program management, said. “During that process, we got feedback from the public that let us know they

would like more access to the bay. So we decided to create the park as part of a wetland mitigation project.”

The Port Authority acquired the land and constructed the park for approximately \$7 million; construction began in 2009. The park’s ownership was transferred to the city of Mobile upon its opening.

As soon as the decision was made to build Arlington Park, another important decision was made—the decision to use pervious concrete as one of the site’s main building materials.

The park has an approximately 1100-foot-long entrance road leading to a 700 foot fishing pier; there is also loop road that leads to the Visitors’ Center. Approximately 8,200 square

yards of pervious concrete were used for both roadways, and another 4,300 square yards were used for a one-mile-long hiking and biking trail that rings the perimeter of the park.



Since pervious concrete is an effective way to capture storm water and allow it to seep into the ground, this material is instrumental in recharging groundwater, reducing runoff and meeting U.S. Environmental Protection Agency (EPA) storm-water regulations.

"Using pervious concrete for this project was in keeping with our director's commitment to make this an environmentally friendly park," Harris said. "He wanted minimizing storm-water runoff incorporated into the plan from the beginning."

Bill Phillips with Moffatt & Nichol, an engineering firm, was project manager for Arlington Park, and he echoed Harris' statement. "Pervious concrete was chosen for its obvious environmental benefits," he said. "The intent is to capture the first flush of water, which has the highest percentage of pollution. Pervious concrete does that."

Paul Nevenglosky, also with Moffatt & Nichol, was the project engineer. "Pervious made sense for this project," he said. "Its passive infiltration means less impact on the site."

The park's upland area is approximately 16 acres and features gazebos, picnic areas with grills, a boardwalk over the wetlands and bay, a kayak/canoe launch and the hike/bike trail. The park also contains 25 acres of wetlands created to provide wildlife feeding and nesting habitats, fish and macro invertebrate nursery and feeding habitats, as well as water treatment and sediment retention.

According to Harris, the pervious concrete has done its job. "It has functioned very well and done just what it should," he said. "And it looks great with the rest of the site."

"The park was completed in early 2010 and was open to the public briefly, even before the formal dedication and opening," Phillips agreed. "The pervious concrete has held up very well so far; there have been no signs of deterioration or chipping."

The long-term maintenance requirements for pervious concrete are pretty simple and straightforward, but you do have to keep an eye on it. "You have to keep that upper layer's pores as clear as possible to





allow the water to infiltrate,” Phillips said. According to Nevenglosky, that means once or twice yearly inspections and then vacuuming, sweeping or power washing if needed.

While keeping it clean and its voids free of debris are important to pervious concrete’s performance, Phillips explained that proper installation is absolutely crucial. “The top layer is where failure can start with pervious concrete; you need a lot of cohesion and bonding in that layer,” he said. “The contractor has to get the mix and the installation procedures right in the beginning. To do this, you need to test the concrete both in its fresh and cured state. There is more coordination required than with just pouring regular concrete, and it requires more from the contractor.” Nevenglosky added, “The void ratio is very important too, and that is based on the installation.”

Mike Pitts, owner of Pitts Construction, sub-contractor to Ladas Construction, LLC the general contractor for the park, knows first-hand how installation is key. His company put down the pervious concrete at the park. “Pervious is definitely more complex than standard concrete,” he said. “Both products are cement-based, but that’s where similarity ends. The installation is vastly different.”

While Pitts Construction had worked with pervious in the past, Arlington was its largest installation by far, and Pitts is proud to have it under his belt. “We did test panels and just kept tweaking until we got it right,” Pitts said. “It was a combined effort between our supplier and Moffatt & Nichol; and my field crew went above and beyond on this one. For the complexity of it, it went very smoothly, and I’m happy to now have the experience with this product. I think we’re going to





see a huge swing toward using pervious concrete more often.”

Both Phillips and Nevenglosky were also very pleased with the job done by Pitts. “Once we got the mix and procedure right, the contractors did the rest of the job very well, following the proven procedure to the letter,” Phillips said. “They did a great job.”

Arlington Park was the first project in which Moffatt & Nichol had used pervious concrete in a major way. “Material choice is very specific to each design and dependant on existing site conditions, but we’ll use pervious concrete again,” Nevenglosky said.

Pervious concrete is a product that is still “new” to many. It has been used in the United States since the 1970s, and while it’s still not considered mainstream, the market is growing every year, due to its eco-friendly status. “The U.S. Green Building Council is pushing pervious concrete,” said Matt Offenber, Southeastern U.S. Technical Services Manager for WR Grace and a pervious concrete expert. “Things are trending toward low-impact development, and pervious concrete fits into that.”

“Green” building is great, but cost is still a consideration. Compared to regular concrete, pervious is more expensive. “But if you look at an entire site with pervious versus regular, the cost is similar,” Offenber said. “The overall cost will be similar because you don’t have to pay to dig a retention pond and lay pipes, etc.”

Pervious concrete also fits into concrete’s proven reputation for strength—when it’s used in the right places. “Arlington Park will have two or three buses a day come through it; pervious will take that,” Offenber said, “and some residential streets use pervious concrete, and it can handle the garbage truck three times a week. But it can’t take highway traffic.”

But maybe one day, it will. “As an industry, we are currently trying to figure out how to make pervious concrete even more durable where it can take a lot of heavy traffic,” Offenber said. “We’re just not there yet.” ■ Jennifer Kornegay

PAVERS SAVE THE PARKS

PHOTOGRAPHY PROVIDED BY JEFF TESNEY

Alabama is a state blessed with water, from the many rivers that traverse our land to the multiple lakes that dot our map, but our coastal areas — the bays, marshes and estuaries — are truly special places, places that need and deserve our protection.

The devastation of the recent oil spill in the Gulf of Mexico has only highlighted the fragility of these areas and their ecological importance.

However, their worth, from both a recreational and commercial standpoint, has long been appreciated and understood by the Alabama Department of Conservation and Natural Resources (ADCNR). That's why it's no surprise that this state agency would choose to use an innovative concrete product in an effort to ensure the least environmental impact for several of its past projects.

Permeable concrete pavers provide a solid stable surface while allowing water from storms and other sources to drain easily and naturally back into the ground beneath through the spaces between the pavers. This is

instead of the water running off over the surface (picking up dirt, car oil and other pollutants along the way) and then finding its way back into the ground water or into nearby streams, lakes, rivers or ponds.



An obvious benefit of permeable pavers is their environmentally-friendly nature. As "green" building practices become more and more mainstream, and as requirements from the Environmental Protection Agency (EPA) concerning storm runoff become more stringent, permeable pavers are getting more attention, particularly for parking lot projects.

At Boggy Point Boat Ramp in Orange Beach, protecting the water directly adjacent to the parking area was a major concern for the ADCNR. So the decision to use permeable pavers was an easy one, as Terry Boyd, Chief Engineer for ADCNR, explained. "Boggy Point has an approximately 60,000-square-foot parking lot that is constructed from permeable

pavers," he said. "We wanted to make sure that we protected the coastal environment, and we didn't want any oil sheen to run off into



the water. That's why we picked the pavers."

Boggy Point was completed in July 2005, and Boyd and his colleagues were so pleased with the pavers' ability to manage storm water runoff, that when it came time to choose materials for a site that was to be a "conservation showplace," they turned to permeable pavers again. The 5 Rivers Delta Center in Spanish Fort offers visitors the opportunity to discover and experience the area's natural wonders. This resource Center took its name from the five rivers (Mobile, Spanish, Tensaw, Apalachee and Blakeley) that converge at the Mobile-Tensaw Delta and flow into the bay, and it was designed for outdoor recreation, conservation and land stewardship education. "The pavers were doing exactly what we wanted them to do at Boggy Point," Boyd said. "Since 5 Rivers is an environmental center, we really wanted to use this product to show others how it can be used and why it should be used."

According to Clif Dixon, Landscape Architect for ADCNR, the first phase of construction at 5 Rivers was a demonstration project that used several different paving surfaces that were environmentally friendly. "We used some pervious concrete and had that in place for year and a half," he said. "Then we decided to use the permeable pavers for the four parking lots at the center. The aesthetics are compatible."

Dixon echoed Boyd on the importance of the Center's visitors being aware of the choice. "We wanted to be able to demonstrate to visitors some ways that you can use sustainable building products, and the pavers were a great way to do that," he said. "This Center is all about conservation and being good stewards, so we certainly wanted to be good stewards when building it."

Permeable pavers were also used at May Day Park & Pier in Daphne, and again, the "green" aspect gave impetus to the choice.



"For May Day, the pavers were used for the same reason they were used at Boggy Point," Boyd said. "To mitigate any negative environmental impact."

While they've certainly proven that they are eco-friendly, permeable pavers are made of concrete, and that means they are inherently strong and durable too. Some of the pavers' staying power relates to their individual nature, and this results in another positive that Boyd liked, specifically for Boggy Point. "We felt like the pavers would hold up better in a hurricane if water came up over the parking lot," he said. "We had an asphalt parking lot at a similar waterfront site that Hurricane Ivan destroyed. We thought if water got over it the pavers, thanks to the holes, there wouldn't be so much of a threat of hydrostatic pressure building up and 'floating' the parking lot up."

During Hurricane Katrina, the parking lot at Boggy Point proved Boyd right when it held up well despite taking a beating from the

storm and rising water. "We might have had one little corner that sand came out from under and the block settled back wrong, but that was the only damage," he said.

Ease of installation and little to no maintenance needed after installation also make permeable pavers appealing. "At Boggy Point, the pavers were laid with a machine," Boyd said. "Because of the way the blocks fit together, the interlocking L-shape, the machine could grab a stack and do several at once. It was pretty easy to do."

Dixon agreed, adding that contractors seem to like using it. "We've been very pleased with the ability of contractors to use it. We haven't had the first bit of trouble on that front. It's been really good for our projects; I'd certainly use it again."

Pav'R Construction actually put the pavers down at 5 Rivers, and Robert Davies with Pav'R said installation was a cinch. "Putting in permeable pavers is a very straightforward installation," he said. "You



BOGGY POINT BOAT RAMP
ORANGE BEACH, AL

don't have to worry about cracks, and because they are individual, you can change elevations easily."

Neither Boyd nor Dixon expects any maintenance issues to pop up either. "I don't expect a lot of maintenance," Dixon said. "There won't be any re-surfacing to do, like you would have to think about with asphalt," Boyd added. Also, because it is put down in segments, portions can be removed easily for any underground repairs or other needs.

As a strong and durable, eco-friendly, simple-to-install, low maintenance product, permeable pavers seem to have it all. And they look good too. "The pavers have a great look and add a nice aesthetic to a site," Boyd said. "They also allow you flexibility to do different patterns and colors."

May Day Park took advantage of the pavers' versatility. "One thing they did on that project was to use blue and white pavers to make the stripes needed for the parking lot spaces," Boyd said. "Instead of painting the stripes on, they used a saw to cut out spaces and then added the colored pavers. It turned out really neat, and there will be no maintenance or repainting the stripes needed."

But with all these benefits, how do permeable pavers compare to other materials in terms of cost? "Permeable pavers are more expensive than asphalt, but they are more durable," Boyd said. "Boggy Point survived a hurricane. And it's hard to put a price on the environmental aspect. Because you don't have to do anything else to them, permeable pavers are a 100-year solution versus a 15-year solution, so in the life of the project, they may turn out to be cheaper. And for some sites, you may escape the need for a retention pond since they drain themselves. That's a cost savings." ■ Jennifer Kornegay





MAYDAY PARK
DAPHNE, AL



BOGGY POINT BOAT RAMP
ORANGE BEACH, AL



BOGGY POINT BOAT RAMP
ORANGE BEACH, AL

DESIGNED WITH EXPANSION IN MIND

Completed in October 2009, Montgomery's newest YMCA takes the organization's ideal of a neighborhood facility and expands on it. The Wilson YMCA – named for benefactor James W. Wilson, Jr. – is a companion to the James W. Wilson Jr. Elementary School, and is located at the heart of the New Park residential development off Ray Thorington Road in East Montgomery. The project joins education, recreation, sport and amenity under one roof, and it is specially designed to expand along with the neighborhood. In order to ensure the YMCA doesn't show its age as it grows up with the families it serves, concrete provides durability and longevity.

"This is the first YMCA that was actually built to be expanded," says Bob McGaughey, CEO of Montgomery YMCA. "Now, we have



eventually expanded all our buildings, but they were not actually designed for that," he says with a chuckle. "This one was planned from the beginning to grow as the use expands. It makes it affordable now and also realistic for the long term."

The \$4 million building currently encompasses 20,000 square feet. One of the building's most interesting aspects is actually something that's no longer visible – its foundation. The YMCA is constructed on a post-tension slab on grade, anchored by drill piers. This foundation was designed to accommodate the site's soil, which has a lot of clay. Clay can

cause the soil to shrink or expand depending on moisture. This creates extra stress on the foundation, particularly one covering a large area like the YMCA.

A post-tension slab is created by weaving steel cable through the slab. Pressure is put on the cables, and they are tightened as the concrete is poured for the slab. This makes it very strong and stable, protecting it from shifting or cracking. Additionally, the slab was poured over what is called a form void, which is made of material that basically disintegrates from underneath the slab after the process is complete.

"This is a foundation that will pay dividends in the long term," says Tim Cantey, project manager with TCU Consulting Services, LLC. "Instead of a typical foundation preparation, where you would dig out the site and then fill it with concrete, we went with a post-tension slab on drill piers. The piers' legs went into the ground and the slab literally had a void underneath, like a crawl space. Then if there's expansion in the soil from moisture, there won't be pressure on the slab. The pressure is carried down into the soil by the piers. This works really well with the clay-type soil."

The piers on this project also were formed from concrete, instead of using traditional steel piers. "Concrete is longer lasting, and a

concrete cylinder in the ground provides better friction against the soil to prevent the foundation from shifting," Cantey explains. "The circumference of the concrete piers is broader and they are harder, and they are consistent all the way down. This provides longevity. Concrete is going to take a beating over time."

Concrete also was used throughout the interior and exterior of the new facility. The building includes additional poured concrete floors, poured and decorative stained concrete floors throughout the building, and concrete block throughout. There also are standard concrete curbs and gutters, and concrete was used for exterior walkways and entrance pads.

"With concrete walls and floors, you don't have to worry about broken tiles or other maintenance issues like that," says Travis Rocques, the Wilson Y branch manager. "The entire building is concrete block. It really stands up to the traffic in and out and makes it easy to maintain on a day-to-day-basis."

Because it was constructed in partnership with the Jim Wilson, Jr. Elementary School, the facility is used every day during the school





CHILD WATCH

year for physical education classes, so it's always full of rambunctious children, making easy maintenance a must. However, the facility also is an amenity for individuals and families in the neighborhood. Each new home purchase in the New Park neighborhood comes with a free 1-year membership to the Wilson YMCA. It was important to devise a beautiful and appealing facility for people of all ages, not just a rough-and-tumble PE playground.

Decorative concrete was used to accomplish this goal, most notably in the stained concrete floors that run throughout the facility. They are low-maintenance, but also provide color and texture that's aesthetically appealing.

"The reasons we chose stained concrete as a floor surface for the Wilson YMCA at New Park include durability, cost effectiveness

and ease of cleaning," said Daniel E. Woods, AIA, architect with Goodwin Mills and Cawood. "We, along with the owner, wanted the major circulation corridor to be durable, yet still be an accent feature. The color variation and texture of stained concrete allows us that opportunity."

There are plans to add a swimming pool to the Wilson YMCA in the future, which also factored into the choice, Woods said. "The circulation paths from the locker rooms to the exercise area and the future pools were a consideration in the selection of this material," he said. Concrete will easily stand up to wet feet and dripping bathers, without worries about surface damage or refinishing issues.

Woods says he has selected exposed concrete for both floor and wall materials on several projects. "The texture, color and formwork



imperfections add character to the surface, which is a desired quality,” he explains.

Existing facilities at the new Wilson YMCA include a full size basketball court with six goals, so it can be used for full or cross-court games. The court can also be divided by a curtain so other activities can take place on one side while a cross-court game is in play on the other. The building also houses a full wellness facility with cardiovascular equipment, weight machines and free weights. There are two sets of locker rooms, one for families and youths younger than 16, the other for adults only.

The Wilson YMCA is the first brand-new full-service standalone YMCA facility to be built in Montgomery in 15 years. It was made possible by the generous gift of 17 acres and \$1 million from the Wilson family. The Wilsons have shaped the landscape of Montgomery and the River Region, and beyond, through Jim Wilson & Associates, LLC, a real estate services and management company that develops retail, office and residential spaces. The company was founded by Jim Wilson, Jr. Although he passed away in 2006, his sons Jim Wilson, III and Will Wilson honor their father’s legacy through their support of the community. When they began developing the New Park neighborhood, they envisioned a community school and recreational facility as part of the plan to bear his name. ■ Wendi Lewis



FULTONDALE ELEMENTARY

FULFILLING A COMMUNITY'S VISION

Fultondale Elementary School is a community school in the truest sense. Its construction represents the vision of City leaders and the commitment of area residents to the future. In this case, not just the future of the area's children – although that is always of primary importance when making plans for a new school – but also to the future health and growth of its economy. With a price tag of \$16.3 million, the facility also needed to last for generations. Beauty, plus durability – the natural material selection was concrete.

The new school project called for construction of a brand new elementary school building on a new site. Construction on the project started in November 2005 and

the school was complete within 14 months to open to students in January 2007, serving grades Kindergarten through 6th.



The use of concrete helped keep the project on schedule, said John G. Wyatt, Vice President with Gary C. Wyatt Contractor, LLC, the general contractor for the project. "The concrete was specified by the architect; however, as a contractor, we were able to coordinate our pour scheduled to accelerate our schedule. The short lead time of concrete allows us to pour as quickly as we can prepare the site," Wyatt explained. "We like to use concrete when we want affordable solutions as well as

predictable quality in our projects."



“This construction was a unique concept designed for their school, to meet their particular needs and suited to the location and property,” said Mark Lee AIA, LEED LP, architect with Payne & Associates L.L.C. “Nothing was taken from a school we had done before.”

Materials used in the project included concrete block, hollow core beams, concrete slabs, masonry block walls and uniquely scored concrete entrances. Incorporating a variety of materials, and using a comprehensive and cooperative approach, ensures a long-lasting and durable facility for the long term when using concrete, Wyatt says.

“When pouring slabs and especially when leaving the concrete exposed in applications like stained concrete, it is very important to pay attention to the finishing details and pour conditions,” Wyatt explains. “It is helpful to have the architect, engineers and concrete supplier come to a consensus on methods and then adhere to the agreed methods as a contractor. For quality purposes, it is also important to know rebar layouts, expansion joints and cutting times of those joints to ensure you get the most out of your concrete.”

The new facility features shared spaces with wings for each grade level radiating out from that. Concrete block was used extensively



throughout the project, utilizing load-bearing masonry construction. While this lends natural strength to the building, architects also designed a zone in each grade-level hallway that was specially reinforced with hollow-core concrete slab on masonry block. This was done to create “safe zones” in the event of severe weather.

“The reinforced walls are constructed of concrete block filled with rebar and grout with hollow core concrete planks for ceilings,” Wyatt explained.

“We had those zones for each hallway wing so students wouldn’t have to go far to get in a safe area,” Lee said.

The hollow-core slab also was used on the school’s mezzanine level, to carry mechanical equipment. This allowed architects to save space on the main level for necessary classrooms and student activity areas. “Concrete slab allowed us to get an advantage there,” Lee said.

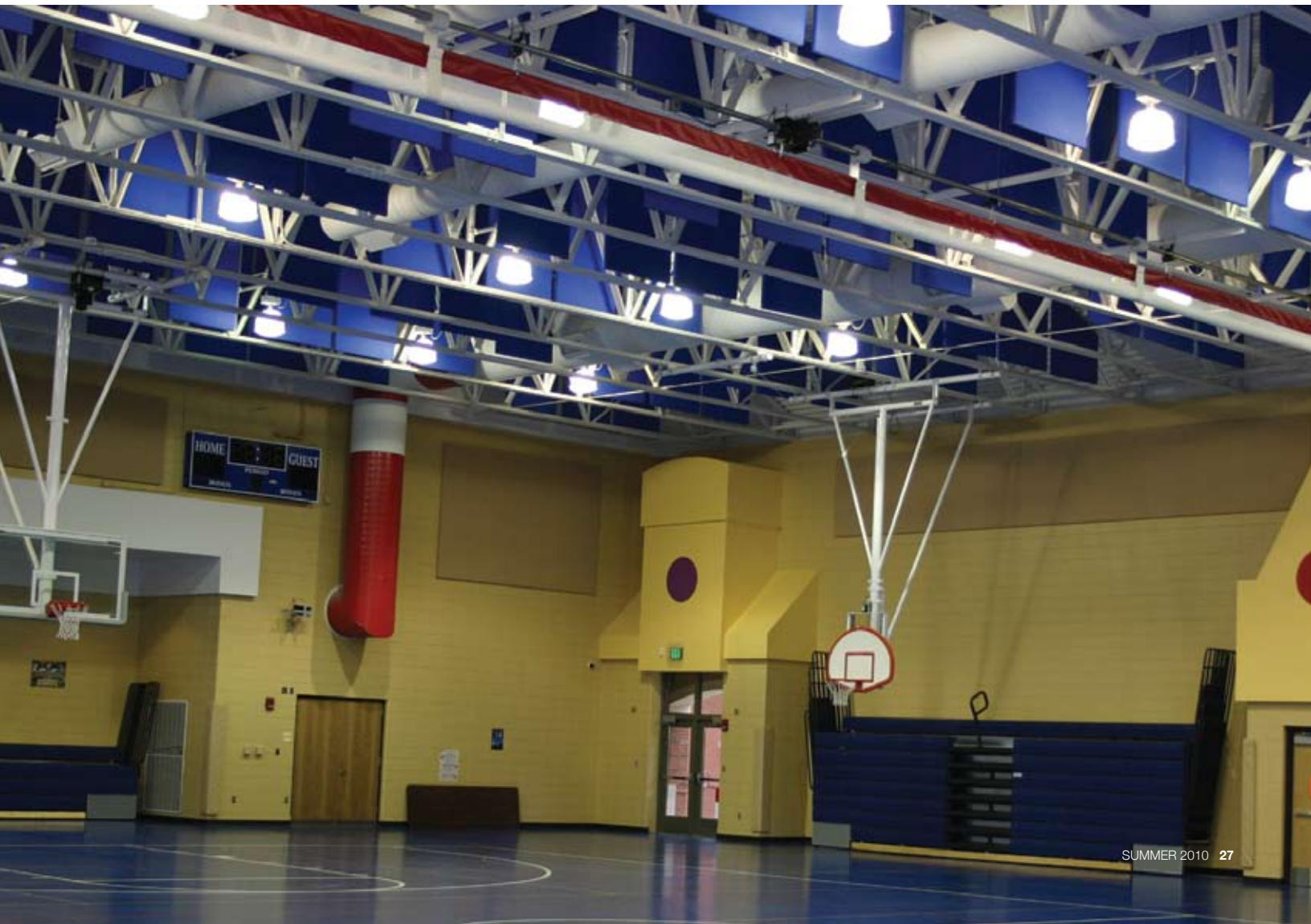
To enhance the building’s appearance, architects selected a special concrete block that has a v-joint. The masonry joint is the area of mortar in between the blocks. Architects had masons construct matching grout to give the areas utilizing these blocks a little bit of a different look and to create accent areas. As an added benefit, the



v-joint also is a very weather resistant form of jointing. Architects also chose pre-cast lentil seals and precast wall caps throughout the job. "It's decorative, and the wall cap sits on top of a pilaster wall to keep rain from going down into the wall cavity itself," Lee says. "We used it on all the gabled pediments."

The finished facility covers 124,000 square feet, including 42 classrooms, an 800-seat double gymnasium, kitchen, 600-seat cafeteria with stage and a 4,500-square-foot media center. The school also has a music/band room, art room, computer lab and multipurpose amphitheater with concrete risers. The cafeteria and a double gymnasium are located toward the rear of the school, as well as areas for bus and car loading. The site has parking for 300 cars, with bus and automobile traffic completely separated.

Fultondale Elementary School is part of the Jefferson County School System. In order to fund the new school, Jefferson County Commissioners voted for a new tax which would raise \$1.2 billion for the project. This money was dedicated for infrastructure development. The tax was voted in August 2004 but would not be finally approved



until two years later. In the meantime, residents of Fultondale agreed to advance the necessary funds to the school system to allow the project to go forward.

"They took this on and said this is so important to our community that we are going to build it," said Nez Calhoun, director of public information for the Jefferson County Board of Education. "A school is always the center of activity for a community. It's a point of pride. It's a cohesive point for people to build unity and see their taxpayer's money at work. They have a vested interest. All the way around, it's a plus."

As a result, the community enthusiastically supports the school, and area residents enjoy shared use of the school's athletic fields that front onto a public park and the gymnasium / auditorium that they can utilize for public meetings on weekends or during the year when school is not in session.

"This is a really neat aspect of this project where they are sharing community use of the facility," Lee says. "It's a neat, progressive-thinking thing to do."

Feedback from the community has been overwhelmingly positive as well. "The community feels that the school has a well thought-out design and has been an asset to community affairs," Wyatt said.

■ Wendi Lewis

