CONCRETEWORKS

ALABAMA CONCRETE INDUSTRIES ASSOCIATION MAGAZINE







CONCRETEWORKS

JOHN SORRELL, Editor | BUTCH WYATT, Technical Editor



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 e-mail **jsorrell@alconcrete.org** with any comments regarding featured articles in ConcreteWorks or to suggest a story idea for a future edition.

ALABAMA CONCRETE INDUSTRIES ASSOCIATION

1745 Platt Place | Montgomery, Alabama 36117 | (800) 732-9118 | www.alconcrete.org

CONCRETE BLOCK EARNS TOP MARKS: 02

A number of school replacement projects in Alabama chose concrete block as the primary building material for its safety, long term durability and low-maintenance

requirements.

ENTERTAINING IN OUTDOOR ROOMS:

Concrete pavers and retaining wall units create a new entertainment courtyard ready for outdoor gatherings while providing both low maintenance and environmental

benefits to the homeowner.

CAST STONE STANDS ALONE: 10

Cast stone provides the crisp, clean lines of classic cut stone masonry at an affordable price and is the focal point of several major building projects in Alabama ranging

from golf resorts to churches and shopping malls.

SELF CONSOLIDATING CONCRETE: 13

This ConcreteWorks special report focuses on the Valley Creek Wastewater Treatment plant and its use of Self Consolidating Concrete to strengthen perimeter walls,

the first major project in Alabama to use SCC.

REPAIR PROCESS SAVES TIME/LABOR:

One Northwest Alabama county turns to Full Depth Reclamation to help ease constant repairs to heavily traveled roadways while saving time, labor and material

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NEW LOOK FOR MOBILE'S SKYLINE:

The RSA Battle House Tower, a 35-story, 745-foot structure, is the tallest building in Alabama and has a concrete superstructure ready to stand up to the salty air of its

coastal climate.





CONCRETE MASONRY HELPS NEW ALABAMA SCHOOLS

MAKE THE GRADE

With aging schools and growing enrollments, school districts across the country are looking for ways to stretch their dollars with buildings built to last. Over the years, concrete masonry has become a clear product of choice for schools because it meets both economic and aesthetic qualities designers are looking for.

Architect Tom McElrath, of McElrath & Oliver, Architects, P.C., says, "day in and day out concrete masonry weathers very well and needs only periodic cleaning. It is simply as low maintenance a product as you can get on a building."

The school has brick facing on the exterior with a steel frame inside filled with 300,000 concrete masonry blocks. McElrath and school administrators also chose concrete masonry for the interior of the new Gadsden City High School (pictured at right) located on Black Creek Parkway. The new facility opened its doors for classes last August, combining students from three area high schools. This year the school has 1,500 students and has room for 250 more in the future.

Gadsden Superintendent Bob Russell is impressed with both the performance and look of concrete block. He says they are "very satisfied" with the finished school along with the students and parents "who love it." Russell says the chief selling points on the concrete masonry were the economy of block, its look, and durability.

Architect McElrath says Gadsden City High School has been a good selling point for other projects. He says his firm has been selected to design a new city high school in Tarrant "as a result of administrators touring the new Gadsden school." He says this building went a long way toward getting his firm on board with the Tarrant Board of Education.



W. Lee Bryant, Vice President of Lathan Associates Architects, P.C. of Birmingham, serves as architect for the new Calera High School and Helena Middle School. Both schools are in the early stages of construction with completion set for fall of 2008.

Bryant shares the positive views of those on the Gadsden school project calling it "a no brainer to use concrete masonry on the interior" of schools. In the short term he says, "it is not the cheapest product to use. But over the life cycle of the school, when you consider that is so durable and maintenance free, it is less expensive."

Bryant says new building codes which took effect in 2003, became much more stringent when it comes to engineering school walls for reinforcement and load bearing. He says concrete masonry "meets those requirements" and holds up well in storms. Schools are also designed with a number of firewalls and concrete masonry is a non-combustible product. Bryant says installation takes "skill and care with inspectors doing checks at regular intervals."

Bryant calls the selection of concrete masonry a joint decision between the school system and architect. Calera High School is 185,000 square feet at a cost of 25 million dollars. Helena Middle School is 170,000 square feet with a 24 million dollar price tag. Both are designed to initially hold 800 students with room for expansion. Combined, these two projects will require an estimated 575,000 concrete masonry units.

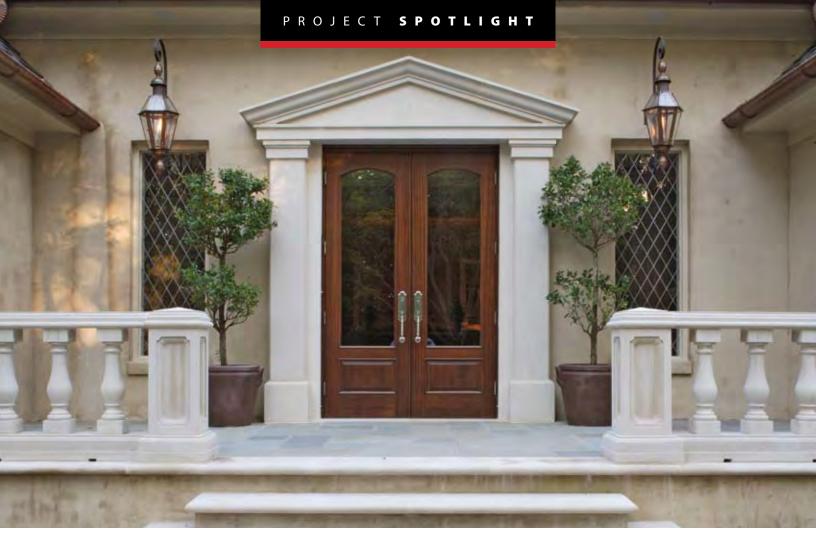
Research studies have found that the quality of a school's facilities can have an impact on how well students do in school. In 1999, Jeffrey Lackney, Ph.D. told a Congressional briefing "the evidence is overwhelming that school buildings are of critical importance to the teaching and learning process."

Children spend so much of their day in a school, it is critical that they are in a quality, safe environment. That is something Gadsden, Helena and Calera were buying into when they selected concrete block as a major component in the construction of their schools.









Judy Ross spent all winter waiting for warm weather, eager to entertain in her new courtyard featuring concrete pavers and retaining wall units.

Ross recently had her 1979 French custom-designed home updated to a more modern residence with Mediterranean influences.

When the remodel was completed, it was time to turn to the home's land-scaping, which needed a makeover to complement the home's new identity.

Ross consulted Rip Weaver, a member of the American Society of Landscape Architects (ASLA), to help her renovate the outside of her home to match the newly remodeled interior. "We considered asphalt, stamped concrete and pavers," said Weaver of the landscape planning, "but pavers gave us exactly the color and pattern we wanted."

The project was not only an asthetic one, there were also practical concerns. The parking area needed to be moved



closer to the house. But she didn't want a large tree at the designated parking end of the house disturbed. Pavers solved that environmental concern. The favorite Japanese maple could still get the nutrients it needed thanks to the paver installation. Plus, the units could handle car traffic that might ordinarily damage the tree's roots.

Ross also wanted space for outdoor entertaining. A retaining wall was added to the project when part of the yard was leveled to extend the courtyard/parking area. The five-foot high wall was built using concrete segmental retaining wall units, Weaver says, for the same reason the pavers were used: "Those retaining wall units met the same requirements of flexibility and modular construction."

Weaver is a strong advocate of pavers and concrete retaining wall systems. He has overseen the design of miles of concrete paver sidewalks and one of the largest concrete segmental retaining walls in Alabama at The Town of Mt Laurel, an upscale planned community in Shelby County, just outside Birmingham.

He said pavers' multiple benefits include their flexibility. If the ground must be accessed for line repairs or if the paver becomes displaced because of frozen water or other concerns, sections can be simply replaced. "I've always liked concrete pavers," says Weaver. "I've always felt they were an extremely durable surface. They're so forgiving."

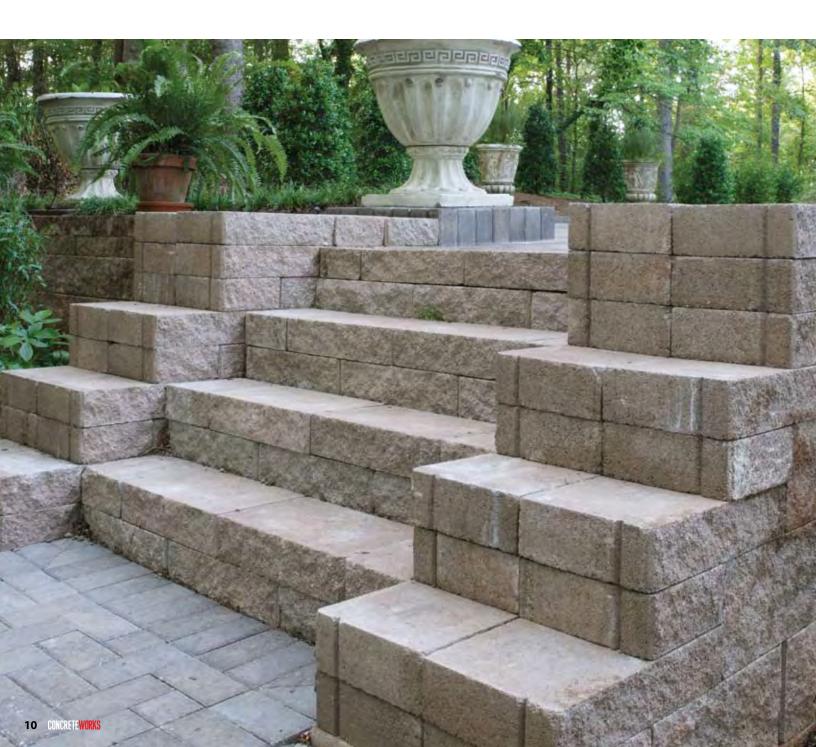
Weaver, who is also the landscape architect for the development The Town of Mt Laurel said pavers are especially well-suited

to current design tastes that include Old World style. He also tells clients that the cost benefits extend for many years.

"You never lose your original investment," says Weaver, reminding clients of pavers that still line the Roman Road. He said the thickness of concrete pavers make them especially versatile, especially when placed on a crushed stone bed.

Ross considers her new entertaining area "an extension of my living room," and is grateful for how it has cut down on her yard maintenance. Embellished with antique urns, the area evokes exactly the relaxed sophistication she envisioned.

And that gives this Alabama homeowner just one more reason to look forward to every summer.





Cast Stone Stands Test of Time

Cast Stone is an artisan's craft requiring specially designed molds, careful handling, and skilled installers. The end-result? Long lasting stone-like elements with crisp, clean lines.

It takes a true professional to distinguish between limestone and its cast stone alternative. Just ask anyone who has visited Birmingham's Renaissance Ross Bridge Golf Resort and admired the exterior stone-like building elements throughout the project.

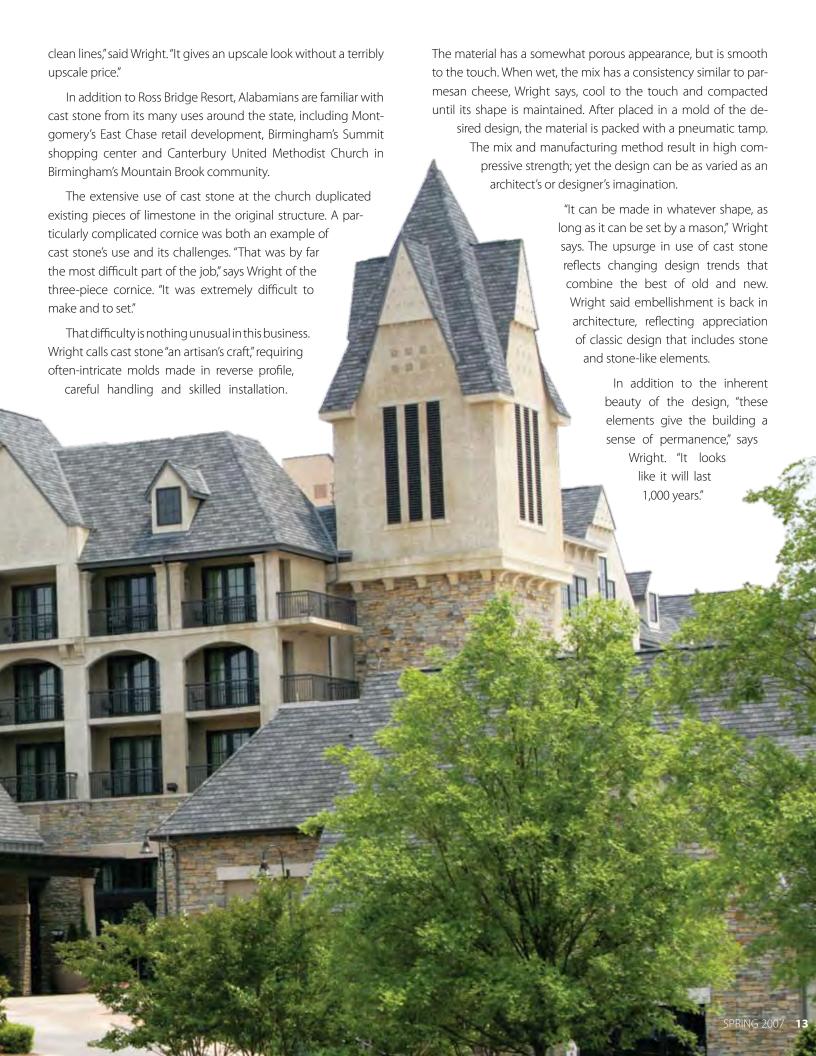
Cast stone, an increasingly popular option for architects and builders, is a masonry product now offering new options. The U.S. Cast Stone Institute was organized in 1927, but the earliest known use of cast stone was in Europe in the year 1138. The product was

Sometimes referred to as Dry Pack or Vibrant Dry Tamp, the

Portland cement, mineral oxide pigments, chemical admixtures and water. Available in a wide variety of colors and finishes, this stone-like product is used for both ornament and function, from simple exterior building bands to complex pediments.

Castone Corporation in Opelika is a member of ACIA and a

southeastern regional supplier of the product and of architectural precast concrete. Architectural Precast is used for exterior walls, window units, large cornice pieces and column surrounds as used extensively in London by the 1900's. well as Class-A office buildings and other large structures. Cast stone is used as a signature architectural element that produces "exceedingly crisp-lookmaterial simulates natuing lines," says Mo Wright, project ral cut stone but is manager for the firm. "The made from fine and main thing about cast coarse aggregates, stone is that it produces incredibly 12 CONCRETE





SFLF CONSOLIDATING CONCRETE IN ALABAMA:

Valley Creek Wastewater Plant First Major Project in Alabama to Use SCC

segregating concrete that can

spread into place, fill the formwork,

and encapsulate the reinforcement

without mechanical consolidation.

What does a wastewater treatment plant in Alabama have in common with Atlanta's new Georgia Aquarium, other than processing large amounts of liquids? Like the entertainment venue, construction crews are using Self Consolidating Concrete (SCC) in work at the Valley Creek Wastewater Treatment Plant.

SCC is being used to strengthen the perimeter walls in one of the pump stations at the plant. Daniel White, Chief Civil Engineer of Jefferson County's Environmental Services Department, says "the product has met all the required specifications and is performing as it should."

He says this mix is "unique because of its high strength." Among the challenges presented on this project is pumping the concrete some eighty feet underground through small holes inside a pump station. Crews needed a product that would fill around the forms and rebar without leaving voids. Project contractor, Brasfield and Gorrie, suggested the county use SCC to address the unique set of circumstances presented on this construction work. SCC is highly flowable, non-

Pat Popwell, project foreman, gives SCC a "big thumbs up." He says, "We are pouring down inside holes we can't get to with a crane. A lot of it is being poured through a six inch hole."

When work is finished reinforcing the underground walls, they will be twelve feet thick. Popwell says, "SCC is easier to work with. You don't have to move the hoses as it flows. And that means you don't need as many people on the job." With 29 crew members, he says everything is going well. While it can be more expensive on the front end for the product, a savings on time, labor and durability can make SCC more cost efficient in the end

Self Consolidating Concrete is promoted as a concrete that can flow down into small spaces without segregating. Another big plus, "SCC requires no vibration." That's especially useful on a project like the Valley Creek Plant where crews are working in extremely tight areas.

Tom Marcum, Valley Creek Project Manager for Brasfield and Gorrie says this is the first time his company has tried SCC in Alabama. He adds, "I'm happy with it. It's good for this specific use." He echoes Popwell's satisfaction with SCC saying, "Its flow and our lack of access to the point of placement on this project mesh well together."

The Valley Creek Plant, one of nine wastewater treatment plants in Jefferson County, is the largest in the state of Alabama. Slated to open in January of 2008, the plant is located in the city of Bessemer off Interstate 20/59 near the Alabama Adventure Theme Park. White says it will serve customers in "Bessemer, Hoover, parts of Birmingham and Irondale. "The new plant is designed to handle growth in the area.

While SCC has been used quite a bit in larger metropolitan areas like Atlanta, local companies say this is the first time this particular mix has been used in Alabama. Now that everyone is seeing how it performs, contractors believe you will see more of it in the future. SCC helped shape the Georgia Aquarium in Atlanta which opened in 2006 to huge crowds.

> The aquarium is the "largest in the world and holds eight million gallons of fresh and saltwater," according to managers. SCC was the choice for use in the massive tank walls because of all the pipes and congested steel. Project designers say SCC helped save costs and construction time on the aquarium.

With economic, engineering and design benefits, some predict Self Consolidating Concrete will be the wave of the future when it comes to high performance concrete (see page 15).

Self Consolidating Concrete (SCC), as defined by ACI Committee 237) is "highly flowable, nonsegregating concrete that can spread into place, fill the formwork, and encapsulate the reinforcement without any mechanical consolidation." Contractors are currently exploring the use of SCC because it may produce members with homogeneous quality even in highly congested, narrow members such as prestressed concrete.

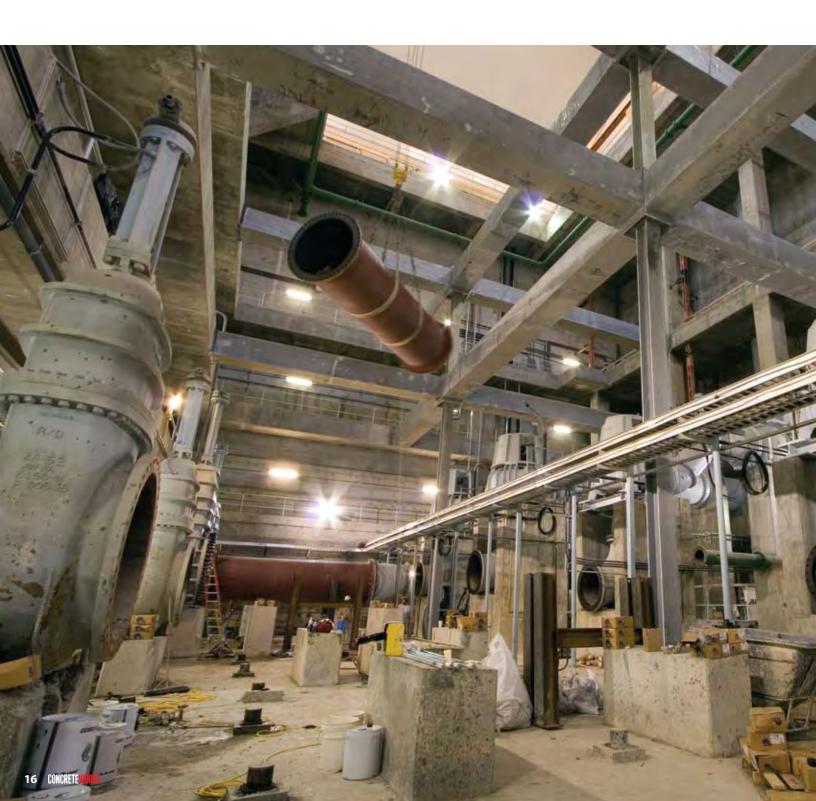
The use of SCC may also reduce construction costs because it is quicker and easier to pour, requiring less labor. Safety and noise concerns are also reduced because there is no need for consolidation. "Whatever conventional concrete can do, Self Consolidating Concrete can do better, faster, and cheaper, especially for concrete elements with special textures, complex shapes, and congested reinforcements," says Myint Lwin, Director of the Federal Highway Administration's (FHWA) Office of Bridge Technology. (Focus Magazine, Nov. 2005)

Recently some large-scale projects have used SCC like the Trump Tower in Chicago, Georgia Aquarium in Atlanta, and Stockholm Airport Tower. Transportation departments in states like New York and Virginia have used SCC to build bridges.

Experts say this product gives architects much more flexibility when it comes to vertical and horizontal designs creating structures that are more aesthetically appealing with few defects. There are also more options when it comes to the color and texture of surfaces.

SCC, which is known in Europe and Japan as self-compacting concrete, was first developed in the 1980's.

In the United States statistics show over the past five years, use of SCC in Precast/Prestressed Concrete applications has risen by more than 14%, up from .22% in 2000 to 14.6% in 2005. By comparison, SCC use in Ready-Mixed Concrete has been very slow, growing only 1.45% over the same time period.



SELF CONSOLIDATING CONCRETE IN ALABAMA:

Professor Expects SCC Will Become a Significant Part of Construction Market

Dr. Anton Schindler, a Gottlieb Assistant Professor of Civil Engineering at Auburn University, is among those predicting "with time, appropriate training, and more experience SCC will be a major factor in the construction market."

Dr. Schindler says the benefits of SCC include ease of placement, little to no vibration required and reduced labor costs. He estimates labor may be reduced by "30-40 percent." He adds SCC looks better with a smoother formed surface with virtually no "honeycombing" or "bug holes." Schindler says it has a "great potential for prestressed airders."

Dr. Schindler says SCC is made with the same general materials as conventional concrete, but differing proportions. SCC

generally requires higher dosages of superplastisizers, increased cementitious materials contents, smaller coarse aggregate sizes, and high fine aggregates dosages.

Those changes he says will make the product itself more expensive per yard. The payoff comes in terms of "reduced labor and a better form finish on the final product with fewer defects you will have to patch and repair."

Dr. Schindler believed SCC's slow growth in the market is due to a number of factors including the "lack of standardized test procedures, lack of performance data, an uncertainty regarding the applicability of current design procedures to members made with SCC, and the usual slow introduction of new techniques in the concrete industry." He adds the biggest limitation is the lack of "performance data over the life of a structure." He says the concrete industry is understandably "conservative when it comes to new materials."

There are now three standardized ASTM test procedures to help quantify and control these fresh properties and it's predicted that will help spur the use of SCC. "Now we need to get technicians certified and people have to know how to perform these tests appropriately," says Schindler. In 2005, the first SCC Standard



Dr. Anton Schindler of Auburn University

was published, ASTM 1611, Test Method SCC. Recently ASTM has also released ASTM C 1610: Test Method for Static Segregation of SCC using Column Technique, and ASTM 1611: Test Method for Passing Ability of SCC by J-Ring.

Dr. Schindler says "there is a learning curve that one will have to go through when you make SCC for the first time." The PCI Interim Guidelines (2003) state "SCC will require a higher level of quality control, a greater awareness of aggregate gradation, mix water control. SCC will not replace conventional-slump concrete in all applications and agrees a higher level of quality control, admixture knowledge, and production control is required for SCC." But he says SCC also provides excellent fresh concrete properties,

"which may minimize some of the problems encountered in the past."

He advises contractors to always use a trial placement on a mock up of the actual member to evaluate SCC. Dr. Schindler says you should reproduce and evaluate the reinforcement congestion of the actual member, member size, and intricate formwork details, placement temperature conditions, and haul time of concrete including potential delays. Evaluation should include all the properties that may affect construction and the in-place behavior of the structural member; these may include fresh properties, strength, stiffness, shrinkage, permeability, and aggregate distribution.

Right now Drs. Schindler and Dr. Robert Barnes at Auburn University are working on a project with the Alabama Department of Transportation to evaluate the use of SCC prestressed bridge girders. This project requires that full-scale girders be produced and that their structural performance be evaluated. Dr. Schindler predicts a full-scale application for SCC "sometime in 2008."

Experts say it will take a lot more time and education within the concrete industry to convince contractors SCC is not a risky proposition, but a product with huge potential.



Repairing Rural Roadways

A process known as Full Depth Reclamation is saving cash-strapped counties both time and labor costs while solving the problem of poor quality road bases that frequently fail.

Franklin County engineer David Palmer is more than familiar with roadway base failures. Like many rural counties, roadways in his part of Northwest Alabama have had their share of problems. "Many of our roads were built decades ago on top of poor bases," says Palmer. "Now, increasing traffic and heavy trucks have taken a toll," he says. Palmer says in the past, roads that needed frequent repair only got temporary patches that never really addressed the underlying problem.

That all changed ten years ago when an equipment salesman Palmer showed picture of a machine called а roadway reclaimer. The machine pulverizes an existing asphalt road and its underlying base. The resulting material is then mixed onsite with cement and water.

That mixture compacted to produce a strong, durable base. No old material is hauled out or wasted. The area is then resurfaced and ready to

perform. The road never has to be closed and the labor costs are far reduced from former techniques.

This technique, called full depth reclamation, has made all the difference in Franklin County's road repairs.

"It's a minimal investment. We save eight people who can be working elsewhere," says Palmer, "and when you consider the time and people involved in a normal repair, you're far better off with this process."

The addition of cement with full-depth means the former requirement of hauling six, seven or eight truckloads of aggregate is no longer necessary, reducing both labor and trucking costs.

Robert Taylor, director of the southeast/Alabama chapter of the American Concrete Pavement Association, says Franklin County's experience is not unique. "The use of Full Depth Reclamation is growing within the state," said Taylor.

Taylor says reclamation with cement is often the cheapest and fastest fix for many troublesome roadways and a solution that offers lasting results. "That's why we think it will continue to grow,"



Either independent contractors or county crews can purchase the required equipment, ranging from an asphalt "zipper" for localized failures to a roadway reclaimer like the one Franklin County uses.

The Portland Cement Association explains that the old, brittle asphalt, when pulverized, "becomes a 'black gravel' that will bond to hydrated cement readily."

If the existing pavement has inadequate aggregate, additional ag-

gregate can be added. Palmer and other engineers determine whether a roadway is a candidate for full-depth by using a simple soil test. Taylor said most failures are candidates for the technique, which can be accomplished on either a small or large scale, depending upon the equipment.

In addition to Franklin County, Taylor said Elmore, Lamar, and Jefferson counties as well as the city of Tuscaloosa are using the technique, and word is spreading about its effectiveness.

THE RSA TOWER, MOBILE, ALABAMA:

STANDING STRONG

There is nothing small about the RSA Battle House Tower project: the building's height, amount of concrete, number of workers, even the number of hurricanes that crossed its path during construction break a record.

The 35-story, 745-foot RSA Tower

stands as the tallest building in

Alabama, is visible for 30 miles, and

ranks as RSA's largest construction

project to date.

This 35-story, 745-foot RSA Tower stands as the tallest building in the state and as the tallest on the Gulf Coast between Naples, Florida., and South Padre Beach, Texas. Visible for 30 miles, the downtown Mobile structure also ranks as RSA's largest project to date.

The Retirement Systems of Alabama invested \$162 million to construct the 35-story tower, reconstruct the seven-story Battle House Hotel and build a 600-car parking deck across the street

The enormity of the job is impressive. Over a period of 23 hours, 2,300 concrete truck cycles were completed by 300 men on less than one city block. It was a carefully choreographed maneuvering of men and \$15 million worth of equipment.

"The Big Pour," as it came to be known, took place Novem-

ber 7, 2003. "Over two pours, we used 11,300 cubic yards of 7,000 PSI concrete," says RSA project manager Ron Blount. The second pour was two weeks later on November 21.

The decision to choose concrete over steel construction for the superstructure was easy, as the salty air of coastal climates can breed rust. "On this job, there

was no doubt that concrete was cheaper," he explains, "and being on the Coast, concrete is a more durable material."

The foundation slab is seven feet thick, and high-strength mixes of 7,000 PSI on the horizontal components and 10,000 PSI on the vertical provide the strength and resistance needed to withstand wind and storms along the Gulf Coast – and to support the 35 floors.

Two interior, U-shaped walls of reinforced concrete are surrounded by concrete shear-wall construction, with the interior of the building column-free.

An 850-ton steel crown sits atop the concrete superstructure, which is made up of 40,000 yards of concrete. A Sikorsky S-61 helicopter was required to place the 91-foot fiberglass spire on top of the building – a sight that drew large crowds to watch from nearby spots like Battleship Park.

The RSA Tower was designed in 2002 to bring together history and modern construction. The namesake Battle House Hotel – rebuilt in 1905 after a fire destroyed the original building – is part of the project, undergoing extensive rebuilding and renovation. The 250-room, seven-story hotel recently opened as a Marriott Renaissance.

Throughout its reconstruction, the differences in concrete technology a century ago were apparent. The way the concrete had been hoisted and vibrated more than 100 years earlier posed what Blount calls "some interesting challenges."

> The opportunity to reconstruct the hotel and revive it as part of the RSA project, however, provided a glimpse into the city's past as RSA helped reshape its skyline – and future.

There were times during the project that there were major doubts as to whether the tower would ever become part of the Mobile Skyline. During con-

struction the site was hit by five hurricanes (Frances, Ivan, Cindy, Dennis and Katrina). Katrina left behind seven feet of water at the job site, and after the water receded, two feet of mud and shrimp remained, says Blount.

The site suffered \$15 million worth of direct damage – duct work, conduit, drywall, and the loss of labor to the hardest-hit spots in Louisiana and Mississippi. "In spite of all of this, thanks to the hard work of a lot of people and to the concrete structure we were able to get the job done."

RSA provides retirement and other benefits to state employees. RSA maintains a large portfolio of real estate and other investments. They have utilized concrete construction on many of their other properties, including the new Montgomery Hotel and



Convention Center currently underway. The face of downtown Montgomery is changing as major renovations continue on the city's 30-year old civic center and construction of a luxury hotel progresses.

Project managers say, like RSA's Mobile project, "concrete is also playing a large role in the construction work in Montgomery,"

says Steve Timms, Director of Construction and Development for RSA. "Concrete was the best application for this market with its cost efficiency and fire resistance," Timms says.

The 175-million dollar project is funded by the city of Montgomery and RSA with completion projected for January of 2008. The newly renovated civic center

will have 70,000 square feet of exhibit space and an 1,800 seat performing arts center.

Another major component of this development is a four star hotel on the city's Riverfront. Developers say the twelve story Renaissance Hotel will feature an upscale restaurant and European style spa and will have a feel similar to the Plaza in New York. The

new six level parking deck, a precast concrete structure, will hold more than 600 cars. When complete, the 346 room hotel will connect to the convention center and will be less than two blocks away from the city's baseball stadium and river amphitheater.

"The hotel will emanate quality and high level service," says Tina McManama, Vice President of Marketing & Communications

> for the Montgomery Area Chamber of Commerce. "It will have a Renaissance brand affiliation that will tie into an international reservation system and a collection of first-class properties worldwide."

McManama notes with tourism in the city growing, the project will help put the city on track for even bigger things. "In the past, we couldn't get the big

conventions that were all going to Mobile and Birmingham. The additional space and hotel rooms will help us with downtown redevelopment and make a huge difference in our efforts to attract convention-goers and tourists to Montgomery." McManama says.



Another RSA project, the \$175-Million

Montgomery Hotel and Convention

Center, (below) is well on its way to meeting a projected January 2008

completion date.



The Alabama Concrete Industries Association held its 2nd annual Truckin' Rodeo on Saturday, May 19th.

A total of 67 drivers (above) from across Alabama took part in the event held at the Bessemer Civic Center with Alabama State Troopers judging the



1st: RICKY HENDRICKS



2nd: JONATHAN WALTON



3rd: WAYNE VARCOE

ers had to carefully position their truck's concrete chute to drop a softball into a specially designed target. The first place

bonus challenge: driv-

winner, awarded \$1,000, was **Ricky Hendricks** of Sherman Industries. The 2nd place spot went

to **Jonathan Walton**, a driver for Ready Mix USA who was awarded \$500. The \$250 3rd place prize went to driver **Wayne Varcoe** of Kirkpatrick Concrete. All three will go to a national competition later this year. The 3-Man Team Competition Award went to the drivers from Sherman Industries (below).

competition. Ready Mix concrete truck drivers put their skills to the test in a competition rating their abilities to maneuver their heavy trucks safely through a tough, 600-yard obstacle course with ten stations. Among the skills drivers were judged on included parallel parking, backing through a serpentine course, and a





The Town of Mt Laurel near Birmingham features a concrete segmental retaining wall that is 52 feet high and extends across the entire downstream side of a dam.

Walls like the one at Mt. Laurel are constructed using individual concrete units. While these units are strong and durable, they are not your ordinary concrete. They come in a variety of shapes, colors, and textures. When installed they become a functional, beautiful wall.



Alabama Masonry Institute

Rip Weaver, resident architect at Mt. Laurel, states "of all the options investigated, the segmental retaining wall met our aesthetic goals and what we were after engineering wise."

Look into the advantages of a segmental retaining wall for your commercial property, residence, or lakefront and you will agree "there is no equal".

For more information, call 1-800-732-9118 or visit www. alconcrete.org.

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