

Spring 2010  
VOL. 24, NO. 1

# TENNESSEE CONCRETE MAGAZINE



## **BEST CONCRETE PARKING LOT**

*See pages 8-19 for  
Concrete Design Awards*

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# contents

Spring 2010 VOL. 24, NO. 1



## 4 PRESIDENT'S COLUMN

WHAT A PRIVILEGE  
by Phillip Palczer



## 6 DIRECTOR'S COLUMN

SPRING HAS ARRIVED,  
AT LEAST ON THE CALENDAR  
by Alan Sparkman



## 8 CONCRETE DESIGN AWARDS

SEE PAGES 8-19 FOR A COMPLETE VIEWING  
OF THE 2010 CONCRETE DESIGN AWARDS



## 20 FIRST PLACE ESSAY WINNER

JONATHON TYLER VANDERGRUFF  
Sponsored by TCA



## 20 SECOND PLACE ESSAY WINNER

HUAJUN LIU  
Sponsored by TCA



## 21 THIRD PLACE ESSAY WINNER

KALEN JOHNSON  
Sponsored by TCA



## 22 CIM UPDATE

DECORATIVE COUNCIL GETS CREATIVE  
Dr. Heather J. Brown



## 24 INFO LINK

LIST OF ADVERTISERS



**Phillip Palczer**  
2010 TCA President

By the way,  
the really  
handsome one  
in the picture  
is Pervious, the  
Wonder Dog.  
Actually,  
his name is  
Angus, but  
wouldn't it be  
great if his  
name was  
really  
Pervious?

# What a Privilege

One of the duties or privileges of being the president of the Tennessee Concrete Association is to write an article for our magazine. Of course, this means picking out a topic and then pretending you are knowledgeable on it. I'd like to say from the get-go that I don't give advice—I will give opinions, but I don't feel like I know enough about anything to give anyone advice. I guess there is one exception—I have a bad habit of offering advice to my son, but I have gotten better over the years at keeping it to myself.

There is money to be made by giving advice, or I should say selling advice. That's why there are so many books, newspaper columns, magazine articles, seminars, etc. I have been indoctrinated by many of the companies that I worked for into one new philosophy or another. For example, I have had to look for cheese, become 'data driven,' learn someone else's habits to be successful, learn how to get the right people on the bus in the right seats, gotten my paradigms shifted, and been coached on how to 'win the game'—thank you Mr. Nepereny for being the boss that you are.

None of it really worked for me. It certainly didn't hurt me to be exposed to all these ideas, but it's my opinion that you can't think for others—they have to want to be successful, or productive, or valuable to their family, country or company or, whatever is important to them, on their own. Which leads me to the reason I agreed to serve in the Tennessee Concrete Association when solicited, and to the reason I believe anyone reading this that is not a member, or is already a member but not actively participating, should do so. I have been involved in the TCA for three years. I have seen three TCA Presidents in action: Rick Odle, Denny Underwood and John Curtis. It is largely because of them that I serve. They didn't serve because of inflated egos (ok, Curtis has a little bit of ego) or because of the pay (which is zero) or because they had a lot of free time on their

hands (they don't). They served because they care about our industry and our Association. Their results, of course with outstanding support from the TCA staff, speak for themselves. TCA has thrived during the hardest economic times most of have ever faced. Just go by the TCA offices and see for yourself—to me what has been built there is an incredible achievement. I have to say I am more impressed with the Concrete Village than if we had built the original new, from the ground up, concept because it has been a group effort and I believe it brought all of us closer together.

I'll be blunt—the TCA needs more people to step up to get our message out. The Concrete Day on the Hill sponsored by the Concrete Pavement Association of Tennessee was just held on March 2, 2010 and we had a good turnout—not a great turnout, but a good one. It's my opinion that the only way for our industry to grow is through promotion, promotion and more promotion. Our pie need to be bigger. As one of the speakers, Dr. Ramon Carrasquillo, at our most recent Convention said, ready-mix producers should realize their main competition is wood, steel and asphalt, not just each other. The legislators I met all said much the same thing—they want to meet us and hear what we have to say. I was told by one senator that the best lobbyists were not the smooth professionals, but people actually in the business that have the real-world perspective they need to hear. Another said that we were on the right track, but that we must continue to come up on the Hill and speak out for ourselves.

We have a great product but we have not positioned ourselves for the success we deserve. I don't want to make anyone uncomfortable. I just want them involved. I promise to do my part to the best of my ability, but I also know that TCA needs as much help as possible. Thank you for the opportunity to be the President of TCA. I look forward to our continued progress.

**Dennie Underwood**

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Alan Sparkman  
Executive Director

For me, one  
of the key  
points about  
the Green-Star  
process is that  
you start from  
where you are  
and focus on  
getting better  
as you move  
forward.

# Spring Has Arrived

## —At Least On The Calendar

**S**pring has arrived—at least on the calendar—and all of us are looking forward to warmer (and drier!) weather. And all of us are hoping that better weather will produce a crop of new work along with those beautiful spring flowers....

Many of the people I talk with are expecting 2010 to be at least marginally better than 2009. Most have made the painful adjustments necessary to conduct their business at dramatically lower volume levels. Now I am beginning to see some cautious optimism about improvements in both the amount of work on the horizon and a return to profitable operations. With this in mind, it seems reasonable to think about what kind of new projects we may be seeing in the coming year and that brings us directly to the topic I promised to cover in my last column—sustainability and the construction industry.

The word ‘sustainability’ is certainly over-used these days, so much so that it is difficult to pin down exactly what it means. Many people turn to the definition that goes something like this: “Providing for the needs of the present without compromising the ability of future generations to provide for their needs.” I believe this is a good definition and I also believe that most of us would agree that this is a worthwhile and reasonable principal by which to live. (It goes along quite well with the last column’s theme of ‘Taking Responsibility.’)

But what does that really mean for each of us? How can we make our individual lives and our businesses more sustainable? A good place to start might be with an audit of our typical behaviors. Many of us act out of long-time habit without really stopping to consider the impact everyday choices can have on sustainability. A prime example might be bottled water. Many of us are trying to drink more water for health reasons and a lot of us drink bottled water

because it is convenient. (How many of you laughed the first time you saw water for sale alongside sodas?)

But is consuming bottled water really a good choice for sustainability? After all, bottled water uses an enormous amount of plastic (primarily derived from oil, in most cases) and much is thrown away and not recycled. Several brands of bottled water are imported from other countries, incurring significant energy consumption for shipping. Domestically, some bottlers simply put regular tap water through a bottling process and then ship it to stores—that’s pretty hard to defend from a sustainability viewpoint. So while drinking more water is a good health choice, it would be much more sustainable to have your own re-usable water bottle and fill it from the tap.

And this brings us to another important point about sustainability—it is often less expensive than the current practice! At a \$1.50 per quart (or more), the economic cost of bottled water can mount pretty quickly, so switching to your own bottle can save you some serious money in addition to reducing oil consumption for producing all those plastic bottles, saving an awful lot of landfill space that is currently devoted to bottles that don’t get recycled, and reducing the plastic litter problem that is literally clogging streams, rivers and even our oceans.

On the business side, the concrete industry would do well to also start their sustainability audit with water. There is increasing pressure for businesses to disclose more information about the various ‘footprints’ of their products. We have all heard of carbon footprints, but water consumption is being recognized as a vital sustainability indicator as well. With a little thought, most ready mix operations could decrease their water consumption significantly and do so in a matter of days, not years. The concrete industry has set a goal to reduce potable water

consumption in the ready mix industry by 10 percent by 2020 and by 20 percent by 2030. (The National Ready Mixed Concrete Association has adopted a formal Sustainability Initiative that can be viewed at <http://www.nrmca.org/sustainability/index.asp>.) Companies that get started today to make these reductions will be helping to conserve our precious water resources and they will be saving money in the process.

Preserving resources for our kids and grandkids—learning to live with a sustainable mindset—is a huge task. It’s easy to be intimidated by the enormity of the challenge, but the very best thing any of us can do to contribute to the sustainability solution is simply to get started—like drinking water from a good old-fashioned glass. Here’s what TCA is doing today as we seek to shift our thinking to a sustainable perspective.

TCA has joined the Tennessee Pollution Prevention Partnership (TP3) and we are working our way to the top level of Performer. We started by taking stock of our current operations—basically a self-audit—and then we started thinking about how we can improve. This led to the creation of a simple plan to help us improve, and put us on a path of continuous improvement (the fancy term for this is an Environmental Management System or EMS). Any organization or individual in Tennessee can become a part of the TP3 program—it’s a great way to formalize your organizations commitment to improving (and to saving operating dollars!).


TCA has also launched an initiative to help their ready mix producers get started on the path to more sustainable concrete operations through NRMCA’s Green-Star Plant program. This program requires a concrete batch plant to be operating in compliance with all their existing permits, and then to move forward by developing an EMS for that plant that contains goals for improvements in five major areas. Once the plan is developed, the plant is audited for compliance by an approved Green-Star Auditor. Ongoing audits and documentation of continuous improvement is required for a plant to maintain their Green-Star status.

For me, one of the key points about the Green-Star process is that you start from where you are and focus on getting better as you move

forward. The process doesn’t require a lot of money to get started—it just requires you to get started. Taking a series of small steps, and making a commitment to look at your operations with a sustainable mindset, is something all of us can do. Let’s get started!

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**BEST**  
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PARKING LOT





*Congratulations*

# Williamson Co. Ready Mix & Century Construction



## **BEST** **CONCRETE** **PARKING LOT**

Project Name: Franklin High School Parking Lot  
Ready Mix Company: Williamson County Ready Mix  
Concrete Contractor: Century Construction



**K**evin Fortney, Director of Operations at the Williamson County School System, wanted to create a showplace parking lot for the entire county. He did so with the design of the new concrete parking lot for Franklin High School. The parking lot is utilized for band practice as well as parking, so the light color makes those late summer practices more bearable for the band members. Concrete's inherent light color reduces Urban Heat Island effect and its durability will ensure many, many years of maintenance free service for the school system. Century Construction was the



general contractor, Ralph Beard was the concrete contractor, and Williamson County Ready Mix, Inc. was the concrete supplier for the project. The project was originally scheduled to be completed over Christmas Break 2008. After several delays due to bad weather and subgrade concerns, almost 1,000 yards of concrete was placed on April 17 and 18, 2009, in a continuous placement. This concrete parking lot is a great model for future construction of parking lots in Williamson and surrounding counties.

See pages 8–19 for a complete viewing of the 2010 Concrete Design Awards



# 2010 CONCRETE AWARD WINNERS

## ARCHITECT/ENGINEER—NON-BUILDING STRUCTURE

Project Name: Basswood/West Park Equalization Tank

Ready Mix Company: imi

Architect or Engineer: Brown and Caldwell

Concrete Contractor: W.L. Hailey & Company, Inc.,  
The Crom Corporation



**T**he Basswood/West Park Equalization Basin is a ten million gallon waste water tank. The Metro Water Services Department had to increase the capacity for storage of sanitary sewer to reduce overflows they had experienced. After the engineering, design, and bidding process, the job was awarded to The Crom Corporation, a prestressed concrete tank builder from Gainesville, Florida. Construction began in March 2008 with IMI supplying the concrete.

When IMI received the purchase order from Crom, there were some quick changes that needed to be made. The specification for the project that was set forth from Brown and Caldwell, the engineering firm contracted to design the tank, had utilized a different type of material that was not kept at the Nashville plant. A plan was devised calculating when and how to replace the material in the silos without disrupting any of the current jobs. The technical services department began making new mixes to meet the specifications.

The next quandary faced was meeting the demands of the 2,800 yard continuous pour. IMI was asked to deliver 300 yards an hour. Utilizing the West Nashville dry batch plant, the Nashville central batch plant and eighteen mixers, IMI was able to meet and exceed the planned timeline.

Once the slab for the tank was complete, the steel shell diaphragm was erected. The exterior and interior encasement of the shell is pneumatically placed by successive layers of shotcrete. This was accomplished by attaching their line pump to the front of the mixer while the mixer operators drove in reverse around the tank pulling the pump and the shotcrete nozzleman. While circling the tank, the pump operator sprayed the shotcrete to create an eight inch layer of shotcrete encasement.

The roof is wood formed to create the curvature of the dome. Once the forms were complete, concrete was pumped onto the roof to a depth of six inches. IMI had to ensure all trucks arrived within the acceptable slump range to facilitate the placement on the slope. This creates the cast-in-place free span dome roof.

The overall size and design added to the unique constraints that were successfully overcome. The President had to negotiate pricing for the new material needed at our Nashville plants. Operations had to create a plan to make the material change happen. Technical services had to design new mixes. Mixer operators had to become very proficient driving in reverse in a very small area. This project was very challenging to the whole team.

# 2010 CONCRETE AWARD WINNERS



## ARCHITECT/ENGINEER—COMMERCIAL BUILDING

Project Name: Rhythm at Music Row  
Ready Mix Company: Metro Ready Mix  
Architect or Engineer: Wakefield Beasley & Associates  
Project Owner: Village Real Estate Services  
Concrete Contractor: Choate Construction



**A**long the famed stretch of Demonbreun St. in Nashville known as Music Row, rises an impressive fourteen story above grade condominium, pool, and retail complex, known to its new residents as Rhythm on Music Row.

To construct this impressive building, designed with a concrete reinforced building frame, contractor Choate Construction Company needed 10,838 cubic yards of concrete placed on site. Strengths throughout the structure

varied from 3,000 psi to 8,000 psi. Throughout the project, pouring the post-tension slabs proved to be very difficult. Because of the fast paced schedule of this project, the post-tension mix designs were constantly being changed in order to keep on schedule. Maturity meters were utilized to monitor the strength of the mix, so the contractor could know when to pull the cables.

Among the challenges facing Metro Ready Mix while pouring the slabs for the Rhythm were serious logistical obstacles that had to be overcome. The site lacked any place for either a staging area or parking for mixer trucks, which meant that all the pours had to be done at night.

Once completed, the Rhythm at Music Row provided its new residents with remarkable panoramic views from the balconies of each condo unit. The high rise complex is an exciting addition to the Nashville skyline and a wonderful new place for upscale urban city living.

## BEST LEED PROJECT USING CONCRETE

Project Name: Terrazzo Retail, Office, and Residential Park  
Ready Mix Company: Metro Ready Mix  
Architect or Engineer: Hastings Architecture Associates  
Project Owner: Crosland, Inc.



**A**s young residents of Nashville sought out new centrally located areas to live and socialize in, the area known as the Gulch began to develop into an urban hotspot. Among the collection of new high rise condo-



# 2010 CONCRETE AWARD WINNERS

## BEST LEED PROJECT USING CONCRETE CONT.—



minium structures recently built in the area is the stylish and impressive seventeen level Terrazzo building. With ground level retail space, four floors of office space, and the remaining stories holding upscale condominiums complete with a 60' x 20' outdoor rooftop pool, Terrazzo is simply an exciting property.

Terrazzo's fourteen above grade floors were poured with 4,000 psi and 5,000 psi post-tension concrete, while the mixes for the columns varied in strength from 6,000 psi to 10,000 psi. The three subterranean levels of the parking garage were poured with mixes that included three gallon doses of DCI per yard so as to increase the life cycle of the garage. Throughout the project, an Engiuis Intellirock System was also used to monitor post-tension cable strengths.

Logistically, this project was a very difficult one for Metro Ready Mix, as space was too limited around the site in the day time to allow any parking for Mixer Trucks. As a result, most of the pours had to be done at night. High summertime heat also challenged the pours, so ice was incorporated into the mix designs to control temperatures. Additionally, Self Consolidated Concrete mixes had to be used for some of Terrazzo's walls, due to the tight concentration of reinforcement steel.

To complete the 504,000 square foot, \$51.1 million project for Parent Company, 19,103 cubic yards of concrete were placed on site.

In September 2009, the beautifully constructed Terrazzo was granted Silver LEED-certification for its environmentally "Green" design, making it the first high-rise structure in Nashville to be LEED certified. In addition to being an environmentally friendly facility, anyone who sees the Terrazzo also recognizes it as one spectacular focal point of the revitalized Gulch area.

## BEST PERVIOUS CONCRETE PARKING LOT

Project Name: Wellmont: Holston Valley Medical Center  
Ready Mix Company: Ready Mix USA  
Concrete Contractor: Thomas Construction



The pervious parking lot at the Holston Valley Medical Center was a job that ran in conjunction with the new

# 2010 CONCRETE AWARD WINNERS



hospital addition constructed by Robins and Morton. During the design phase, the architects and engineers from Mattern and Craig had a lot of problems with underground storage due to the low lying area for the proposed parking lot. There were no options for underground piping or a rainwater catch basin. With this knowledge, Mattern and Craig specified a pervious parking lot which allowed underground water storage and natural water flow.

Thomas Construction, along with operations superintendent Chuch Hill, had previous experience with pervious concrete, but not to the magnitude of this type of yardage. Thomas poured 3200 yards of pervious for this project and another 3000 yards for an adjoining bridge complete with curb and gutter, and bridge walls. What made this project special was that Thomas used a Gomaco slip form paver to pour the long runs in the parking lot. In addition to using the paver, Chuck also used a truss screed around all of the islands and hard to get areas.

This project deserves recognition because green building is not only being embraced by suppliers, but also by separate entities including the City of Kingsport, Robins and Morton, and the engineers and architects at Mattern and Craig who are also looking to better their surroundings in a concrete way.

.....

## **BEST CONCRETE ARTISAN (TIE)**

Project Name: Chuckles Family Fun Center Mini Golf Course  
Ready Mix Company: imi  
Concrete Contractor: Teeples Landscaping Company  
Engineer: Environmental & Civil Engineering Services

**C**huckles Family Fun Center Mini Golf Course in Crossville, Tennessee was designed and constructed by Teeples Landscaping Company to create an inviting environment for families to enjoy.

The project included the use of polymer enriched concrete that was manipulated, hand stained and sealed to emulate the look of rocks and trees. These rocks and trees were used throughout the golf course in combination with



water features to create a magical setting for recreation to be enjoyed by both young and old.

One of the problems encountered during this project was to include a hole where the golf ball actually entered a water feature and exited back onto the turf course. This was solved by allowing the water to move the ball against fiber-reinforced concrete that was stamped to look like a tree. The ball was then redirected back onto the course by hand carved "branches" of the tree.

Other aspects of the project included a stamped patio that transitioned to the mini course. The use of color hardeners and acid stains highlighted this feature.

Other companies that facilitated this magical project were Environmental and Civil Engineering Services who provided consulting for concrete mix design and assisted with placement techniques and also IMI who provided twenty-five yards of concrete.

.....

## **BEST CONCRETE ARTISAN (TIE)**

Project Name: McCall Residence  
Ready Mix Company: Memphis Ready Mix  
Architect or Engineer: Baltz and Sons Concrete

**A**t first glance, this project is simply a stamped and washed finish patio - but the real feature is the foot bridge spanning the Koi pond. Not wanting to introduce any wood structures to their low maintenance project, the



# 2010 CONCRETE AWARD WINNERS

## BEST CONCRETE ARTISAN (TIE), CONT.—



homeowners embraced Baltz and Sons Concrete’s concept of installing a concrete footbridge, one that would mimic a wooden bridge. Baltz and Sons Concrete built a form for the bridge off-site, while the first phases of installing a washed limestone hybrid mix patio, with southwest slate perimeter and cross-bands was started. Afterwards, the bridge-form was placed, secured and then poured in place, using Buckeye UF500 reinforced, #4,000 psi concrete supplied by Memphis Ready Mix. The surface was then stamped using a boardwalk texture. After ample curing, the forms were removed, followed by intricate grinding and touch up. Finally, acid stains and topical pigments helped to complete the illusion. This project has garnered national acclaim on the Concrete Network as an example of how concrete can replace wood as a building medium.

## BEST CONCRETE HOME

Project Name: Villa Rich  
 Ready Mix Company: imi  
 Concrete Contractor: Stan Reece Concrete

**A**n uniquely designed concrete custom home was recently erected in the Nashville area by Stan Reece Concrete. The 17,000 square foot home was originally designed to be three stories; however, to be able to achieve the designed height of the home (73 feet) in a residential area, the use of mezzanines was employed bringing the



total to six stories. The house is built structurally with 6” to 1’ thick concrete walls and steel framing. The walls were constructed in 4 to 6 foot lifts utilizing approximately 80 to 120 yards of concrete per lift.

Per the architect’s design for a textured finish, form work containing rough cut lumber was crafted for the exterior walls of the home and surrounding privacy fence. In order to achieve the desired wood grain appearance, imix Ultra 180 was chosen. Self consolidating concrete had the desired characteristics necessary to self level in the form work and fill the voids of the lumber allowing the concrete to have a smooth, natural wood grain finish. Overall, this project utilized approximately 2,100 yards of concrete.

# 2010 CONCRETE AWARD WINNERS



Not only is the concrete visible on the exterior of the home, but displayed throughout the interior as well. To top off this residential marvel, the roof houses a gunite infinity pool and hot tub that overlooks the Nashville skyline.

## **BEST FINISHING—COMMERCIAL DECORATIVE**

Project Name: O'More College of Design - Phase II  
Ready Mix Company: Williamson County Ready Mix  
Concrete Contractor: Dusty & Sons Concrete, LLC



**D**usty and Sons Concrete, LLC. was asked to come back to O'More College of Design and put new sidewalks at a new building on their campus between Christmas and New Years. However, the project was already running behind with cold weather and rain coming for the next two weeks. Dusty and Sons Concrete, LLC. poured, stamped and sealed 27 yards of concrete in temperatures that did not get above 45 degrees with nights getting down to 22 degrees with a few snow flurries on a couple of nights. They did the job in that time frame, and that helped them get back on schedule. Williamson County Ready Mix supplied the concrete that was 3,500 psi straight cement with 2% non-chloride accelerator. The pours were done during the day when it was the warmest. Many different existing grades had to be tied into it, along with a curvy layout of the concrete including an area for a tree in the middle of the patio. This also included a stamped handicap ramp for one door. The ashler slate pattern was stamped into the con-

crete. Color hardener and colored antique releases were used to color the concrete. Also, an anti-skid was mixed into the sealer to make the concrete less slippery.

## **BEST FINISHING—RESIDENTIAL DECORATIVE INTERIOR**

Project Name: Herb Lester Home  
Ready Mix Company: Metro Ready Mix  
Concrete Contractor: Lonnie Patton



**U**pon first entering the garage side entrance of the newly constructed log home of Mr. Herb Lester, eyes are immediately drawn downward to the breezeway room floor, where a rustic looking brown cobblestone path invites you inside to his home. Once inside, a large circular design pattern ties this uniquely shaped six sided room together, and again captures your attention.

Located in Milton, Tennessee, the concrete floor of this room in Mr. Lester's home utilizes an Artcrete Old English Cobblestone stencil pattern, which gives the floor a hand laid stone floor look and feel. For this project, a stencil was used instead of a stamping pattern. This was chosen because the homeowner wanted to maintain a shallow grout line in the floor, so that cleanup would be easier.

The floor was poured with a 3,000 psi chip mix provided by Metro Ready Mix and was colored with Artcrete's Autumn Brown shake on color hardener. Because the floor is inside the home, all of the concrete had to be wheelbarrowed inside to



# 2010 CONCRETE AWARD WINNERS

pour. In addition to the extra labor, another big challenge for this project was centering the stencil pattern in the six sided room. But with the skillful craftsmanship of concrete contractor Lonnie Patton and home builder Randy Johns, the floor looks great and truly compliments Mr. Lester's beautiful new home.

.....  
**BEST FINISHING—RESIDENTIAL EXTERIOR**

Project Name: Pallera Residence  
Ready Mix Company: Memphis Ready Mix  
Concrete Contractor: Baltz and Sons Concrete, JBrownlee Designs



**T**his phenomenal project is a custom effort of JBrownlee Design, and the result is nothing short of spectacular. Concrete played an integral role throughout the project, from the structure and walls of the custom pool, to the footers for the adjacent walls and various stone features, to the deco-

orative stamped finish decking and patios. Baltz and Sons Concrete faced the challenge of maintaining consistency throughout a project which stages were separated by weeks, and sometimes months at a time. Adding their trademark artistic touch, Baltz and Sons Concrete implemented many decorative icon stamps throughout the Italian Slate stamped deck, including starfish, sea turtles, geckos and butterflies. The fireplace patio features a custom hand-cut floral sunburst emanating from the hearth. The adjacent pool house has scored and stained concrete floors, featuring a decorative compass rose icon as a focal point in the entry hall. Memphis Ready Mix provided #4,000 psi pea gravel mix, reinforced with Buckeye Ultrafiber 500 for this project.

.....  
**BEST FINISHING—RESIDENTIAL DECORATIVE EXTERIOR**

Project Name: Cherry Grove Subdivision, Pool Courtyard  
Ready Mix Company: Williamson County Ready Mix  
Concrete Contractor: Dusty and Sons Concrete, LLC



**D**usty and Sons Concrete, LLC, was approached by committee members of the Cherry Grove subdivision in Spring Hill, Tennessee, and asked to submit a plan for an outdoor patio next to their pool. Dusty and Sons came up with a plan that was all cast-in-place concrete, requiring little maintenance. With job acquired, the dirt floor had to be dug out and hauled off, making a flat patio area. Next, seven steps were poured to the existing concrete area around the pool to make the new patio. To give the steps some color, a sandy integral color was used. A seating



# 2010 CONCRETE AWARD WINNERS



wall was poured and caps later poured on both the seating wall and retaining wall. The seating wall cap was trowelled with a bull nose finish on the edge and the retaining wall cap was textured and engraved to look like stone. The floor has a stamped texture surface center piece with a compass cut into it.

Dusty and Sons Concrete, LLC, designed the formwork of the center piece to coordinate with signs in the subdivision. Around the center piece is concrete with a different slate texture and tiles saw-cut into it. Finally, a sprayed-on overlay was put on all exposed walls. Shake-on color hardener was used to color the concrete tiles around the center piece. Everything else was colored using acid stain. Both saw-cut and engraving methods were used to create different looks in the job. Some problems encountered were: working within a fenced area, avoiding small loads of concrete, wheelbarrowing all the concrete, and rain. Williamson County Ready Mix supplied all concrete.

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## **BEST FINISHING—COMMERCIAL**

Project Name: Hill Center at Belle Meade  
Ready Mix Company: Metro Ready Mix  
Concrete Contractor: J E Crain & Son, REI Concrete



**T**he Hill Center at Belle Meade mixed-use development project is a 117,000 square foot complex that houses a Publix supermarket, a multi-level office and retail building, and an underground parking garage. Owned by the H.G. Hill Realty Company and located at 4320 Harding Pike in the upscale Belle Meade area of Nashville, this

facility replaces the H.G. Hill Food Store that previously stood on the site.

In the entire project, 7,507 cubic yards of concrete were placed. Columns for the four story office and retail building were poured with a 5,000 psi mix, and the remainder of the facility was poured with a 4,000 psi post-tension mix without air entrainment.

The underground parking garage consists of four levels and was poured with a 4,000 psi mix with a 3 gallon dosage of DCI included in each yard. Slabs for the garage were poured in cold winter time conditions and averaged 600+ yards per pour.

The biggest obstacle that Metro Ready Mix had to overcome was pouring the concrete in the cold weather. With pour times starting at 2:00 AM and temperatures below freezing, mixer operators had to be equipped with items necessary to combat the freezing conditions. The extra effort and hard work of the mixer operators paid off, as each pour went very well.

This newly completed project is now a beautiful addition to the Belle Meade community. Both shoppers and retailers will no doubt enjoy this excellent new facility.

---

## **BEST TILT-UP PROJECT**

Project Name: FRANKE Foodservice Systems  
Ready Mix Company: Metro Ready Mix  
Concrete Contractor: Ray Atkinson, Hardaway Const.



**L**ocated on a 40 acre tract along Highway 41 in Smyrna, Tennessee, and within sight of the Smyrna Airport



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## BEST TILT-UP, CONT.

is the impressive new North American corporate office and warehouse complex of FrankE Foodservice Systems, Inc. For this project, Hastings Architecture and contractor Hardaway Construction Corp. worked closely with the Swiss based FrankE Foodservice Systems, Inc. team to design and build an elaborate corporate campus that brings a distinctively modern-European look to Middle Tennessee.

The focal point of this facility is the spectacular 103,700 square foot, two story main office building. Across the front facade is a curtain of glass that showers the interior of both floors with natural daylight. Trimming other large sections of the facility are beautiful Brazilian wood accent panels.

Just behind the office building is the large 19 bay, 122,000 square foot warehouse. Constructed with tilt-up walls by Ray Atkinson Construction, this modern warehouse was designed

with 50 foot walls that allow a 38 foot clear working height which accommodates FrankE Foodservice, Inc.'s automated warehouse shipping system and product storage. For the entire campus, 11,378 cubic yards of concrete were placed by Metro Ready Mix.

For this project, staying on schedule was critical as FrankE Foodservice Systems, Inc. had to vacate their old facility by a specific date and move into this one right on time. Delays of any kind were not an option. Thanks to the hard work of everyone involved, the entire job went very smooth. One of the only major challenges faced on this project was in lifting the massive 50 foot sections of the warehouse wall.

Designed to be energy efficient and constructed with LEED building elements, this wonderful new facility is currently seeking Silver LEED Certification.

## BEST SPECIALTY PROJECT

Project Name: Hartsville Prison Cells

Ready Mix Company: imi

Concrete Contractor: Rotondo Weirich



The Hartsville Prison Cells is a unique project that consisted of constructing modular units that would later be assembled. The project had three critical potential problems that had to be averted to protect the integrity of the concrete. First, the high density of rebar required for each modular unit required a mix that was flowable. Any voids would weaken the structure. IMI supplied a self-

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consolidating, flowable concrete mix. This helped speed up pours and ensured that the rebar was fully encased in the concrete with no spaces or air pockets. The second issue was the large amount of concrete needed. The contract called for 288 units poured with an eight yard bucket and crane. IMI supplied 7,100 yards to the site, with up to 60 yards per day to meet the demands of the client. Each day concrete would be delivered between 1:00–5:00 p.m. so the contractor, Rotondo Weirich, could pull their molds between 6:00–7:00 a.m. the following morning. Thirdly, high summer temperatures created a potential problem with set times. With a 40 minute drive from plant to site and our batch temperature at 86 degrees and ambient temperature 95 degrees the potential for the concrete setting up in the mixer was very real. At the customers request the concrete was delivered on 2–3 inch slump and then they dosed concrete with a high range water reducer. IMI used special admixtures and chilled water plus 80 pounds of ice per yard to keep set times at normal rates on the way to the job site. Concrete temperatures could not reach 95 degrees or the load would be rejected. In the winter months, concrete had to be batched with hot water, non-chloride accelerator and the contractor used steam to enhance early strengths so they could pull the molds every 14 hours. Concrete had to reach 2,500 psi in 14 hours.

## MOST INNOVATIVE PROJECT

Project Name: imix Winter Abrasive

Ready Mix Company: imi

Concrete Contractor: City of Waverly Public Works

**i**mix Winter Abrasive is a proprietary blend of environmentally friendly materials that keep water from freezing on roadways even at temperatures well below zero. This product was created to be a cost-effective solution for clearing roadways during wintry weather as an alternative to salt. It is more economical, works at lower temperatures, and will help keep roadways safe.

The City of Waverly, in Humphreys County, was one of the

first in the Tennessee market to be prepared for the winter weather. With a limited supply of salt and its rising cost to \$700 per ton, John Whitfield, Public Works Director for the City of Waverly, saw this as a less expensive solution for their icy roads and a salt shortage. Imi delivered the Winter Abrasive mix to their salt shed to have on hand for the remaining winter days.



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# 2010 ESSAY CONTEST

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## **TYLER VANDERGRIF FIRST PLACE**

**I**s we rode along the road into town, my son Justin noticed an abandoned block building, an old grocery store, being torn down. “Dad,” he said, “why are they taking so much care with that concrete?” “I’m not sure son,” I said. “They usually just tear it down and haul it to the landfill. When we get home we will call Uncle Larry and ask him. You know he is retired from the local concrete plant, so he may know what’s going on.”

Later in the evening, after supper, we called him. Dad spoke to him first and then gave me the phone. “Hey, Uncle Larry! How are you doing?” I began the conversation. He said he knew the place I was talking about, in fact, the contractor was a friend of his. Larry said that years ago Dad would be right. They used to just demolish the building and haul it to the landfill, but the contractor was now saving as many blocks as possible to use on another job. He was making money three ways, all while helping the environment. He was being paid to raze the building, sell reclaimed blocks and had the lowest bid to build the new building.

Larry continued, “Justin, even the slab will be put to use.” “What can they do with it? Surely they can’t move it,” I asked. “No,” said Larry. “They will break it up and haul it to the plant where it will be crushed to use as aggregate for new concrete. Even the blocks that can’t be reused will end up in the hopper. They use old concrete, fly ash, and even combustion blast furnace slag these days.” Larry said that all of it use to go to the landfill but now they are able to save millions of metric tons from filling up from those

places. It makes concrete a more green product.

“Wow, Larry!” I told him, “I had no idea they went to all that trouble.” “It’s not really trouble Justin. It just makes good sense,” said Larry. “Don’t you recycle cans, plastic, and paper at home?” I said, “You know we do, and we even recycle at school.” Larry continued, “Well, it all helps, but if the construction material suppliers can do the same, they can have a major impact because of the tonnage we can reclaim on each job. They’re not only saving landfill spaces, but the carbon dioxide release has decreased drastically over the years. They live in the community, and they have become more environmentally conscious over the years. Some by Federal regulations and some even more on our own.”

“Thanks Larry, I never knew any of that, but I am impressed with their care and concern. When I get ready to build a house, I think I will look first at concrete. Well, I have to go now and get on my homework. I have to write a paper on going green. I think I will use what I just learned,” I said. “I will talk to you later.”



## **HUAJUN LIU SECOND PLACE**

**A**s a noisy loud bell rings in a hall of a suburban middle school on a Monday morning, John is excitedly going to his 1st period classroom. Mrs. Smith is his 1st block teacher. She teaches science, which is John’s favorite subject. In the beginning of the class, she told every student that the topic of today is concrete. The students just stared at each other and confusingly think about why she chose this boring topic today,

while other topics are so interesting like steel, laster, spacecraft, etc. Mrs. Smith asked, “Does anybody know what is the composition of concrete?” John immediately raised his hand and answered the question. “Wow, good job!” Mrs. Smith smiled and replied, “Concrete has many tremendous effects on our surroundings. For example, humans use concrete more than any man made material in the world, so most highways, bridges, houses and architectural structures use this type of chemical mixture. Concrete has a high compressive strength which protects us from earthquakes, lighting, or even tornados. If it is combined with steel, then it becomes even stronger. There are more than 20 types of concrete, every type has a specific property and usage. Just imagine what you could build if you had a truck load.”

A girl sitting beside John asked, “With that much concrete, how does it affect the economy?” “That is an excellent question.” Mrs. Smith responding, “Well, the concrete industry is worth 35 billion dollars and employs 2 million workers in America alone.” “No way,” the girl answers. “What about the history of concrete, when was it first used?” Mrs. Smith replied, “Well Romans were the first inventors of concrete, the used it to build some of the most impressive infrastructures like aqueducts, the Pantheon, and public bathes. Back in the day, their concrete was a little difference from ours, mostly in mixture.”

Right at this moment, Mrs. Smith’s speech was interrupted by a yawn from Billy in the back of the room. “I heard that concrete is polluting the environment,” Billy said with a smirk on his face. Mrs. Smith quickly responded, “While it has been said that the concrete industry is a major contributor to carbon dioxide pollution into the atmosphere, it is true that some carbon dioxide escapes when the calcium carbonate is heated during the manufacturing process, but it was also proven in the biosphere project that exposed concrete actually absorbs CO<sup>2</sup> from the air after being poured for up to

# 2010 ESSAY CONTEST

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five years until fully cured.” Time is flying by, while everybody is engaging in the interesting conversation, class was almost over, but John has one more question to ask. He said “Mrs. Smith, how do you think concrete affects us overall?” Mrs. Smith answered, “Could you look out a 100 story window or cross over Oakland Bay without concrete? Sure, buildings or bridges could be made from other materials, but what would their foundations consist of? Concrete has allowed us a window into our past. It has allowed us to learn

about previous cultures and even helped us to trace our family histories in the form of tombstones. Concrete manufacturing is now becoming more integrated with automation and more precisioned means of installations which is allowing it to be utilized in new and innovated ways that could not be done before. I tell you what, John, we could discuss this all day and not ready a conclusion, but I will give you some extra credit if you do a research paper on concrete,” Mrs. Smith said with a smile.



**KALEN JOHNSON  
THIRD PLACE**

Concrete and I have a unique relationship. It has mysteriously shifted from a utilitarian substance to a concept with which I feel camaraderie. Looking back, this partnership with concrete was always subtle, always fleeting, and never, well, concrete. But somehow over the years it has developed into a soft, unspoken friendship. Its embrace is warmth and its gift is strength.

It really all began the summer before my eighth-grade year. I was on the precipice of self-realization and personal development. It was the very first cross country practice and it was hot. Beginning on that day and for five summers to follow, I began to pound out my pain and joy onto the hard, grey surface—relentlessly, for hundreds of miles. I hated it because it was hot. I was attacked by the sun above and by the heat emanating up from the sidewalks below. I changed schools, churches and friends, but the sidewalk never changed. It was always hot; it was always hard. And after every mile, I beat and pounded and slapped it. The concrete had but one thing to say, “Come farther.” Forever it always stretched out before me, to welcome and challenge. If I sprinted or jogged or ran or walked, it simply stated, “You’ll get there, maybe not as soon as you’d like, but as long as you keep movin’ you’ll get there.” Though I kicked it and spat on it, concrete never had any word but encouragement to offer me. Encouragement and heat.

After long, arid runs in the afternoon, the sun would begin to wane and the breeze begins to refresh. Soon the long

—Continued on page 22

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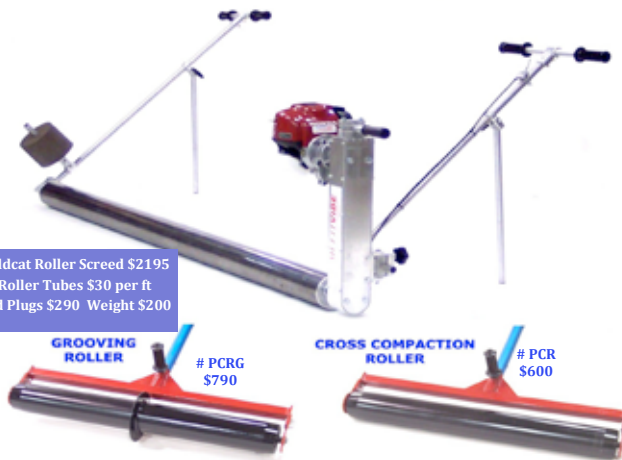


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**American  
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**CIM UPDATE**

by Dr. Heather J. Brown

## **Student Competitions**

Each year our students compete in American Concrete Institute student competitions that vary from concrete cubes to fiber reinforced bowling balls to pervious concrete cylinders. One competition that we have participated in for four years is the Concrete Construction competition. It involves receiving a construction problem via email and having the students provide a solution within a week and emailing a letter to the ACI Construction Liaison Committee for judging. This year's problem statement was:

"You work for a design-build company in the Chicago area. Two years ago, the design group within your company completed the design of a parking structure for a transit station, but the project was placed on hold because the owner couldn't get funding. Funds from the *American Recovery and Reinvestment Act* are now available so the transit structure has been given the green light. The project is to start in June 2010 and has a nine month schedule.

The project consists of a four-story reinforced concrete parking structure. Although the owner's project manager has approved the original design, he recently read an article about the Minneapolis I-35W Bridge in *Concrete International* and now has asked your firm to provide a cost estimate for incorporating a similar "green" concrete into this project. Although the manager doesn't know much about concrete, he has requested 85 percent replacement for portland cement in his structure saying, "If they can do it in Minneapolis, we can do it here."

MTSU CIM submitted three team entries and placed second, eighth, and tenth out of 46 teams. Our second place team consisting of Trevor Hartz, Daniel Cook, Andy Steffen, Manuel Carranza and Brady Turner were able to attend ACI Chicago to present their winning entry. A summary of their solution was to introduce an 85 percent cement replacement mix in all elements except horizontal members due to the ACI 318 building code requirement of not exceeding 50 percent replacement in severe environments. They were able to replace cement with GGBFS, Class F fly ash and silica fume for a proposed precast mix that would provide savings on project completion time and tighter quality control of finished product. The team would like to thank those consultants who assisted them in the project. Paul Lawson, Turner Universal; Kris Duran, Turner Universal; Kathy Buck, Neumann Smith Architects; Brian Koelsch, Metromont; Bate Bond, BT Redi-Mix; and Dennis Lind, BASF Admixtures. ❖

## **2010 ESSAY CONTEST**

KALEN JOHNSON CONTINUED FROM PAGE 21—

shadows of evening began to stretch before bed, and I myself began to stretch out on the same surface that only half an hour before I had detested. Its heat was a relief now with the breeze whispering over my skin, exposed by running clothes, and the sun's passion fleeting. My favorite moments are those spend lying on that hard, unforgiving, inflexible surface that offers no support to the curve and arch of my body. So I would lie on my back, with my face to the heavens, pondering the mysteries of God, creation and perfect love—reveling in the unknown, while my silent, but strong, companion radiated warmth into my body and relaxed my tense and stressed muscles. I have poured out more of myself onto concrete in this way than any grassy field or lush garden. When I look up from my hard bed and see a myriad of glittering and palpating stars that seem to have appeared without a word, I finally forget the world and find peace.

When I offer concrete my joys and my sorrows, my anger or amazement, it does not offer me bugs or words of wisdom like a field or a mentor, it gives me a warm place to rest, a silent sign of solidarity, and a commitment to always stretch out before me. The only words it whispers are, "Whenever you're ready, go. I'll be here." ❖



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# Info Link

Spring 2010 VOL. 24, NO. 1

American Geothermal, Inc. ....	23
BB&T .....	23
Blalock Ready Mix .....	5
Builders Supply Company .....	23
Carolina Stalite Company .....	7
Cemex Knoxville Plant .....	5
Durafiber, Inc.....	5
Dusty & Sons Concrete, LLC.....	7
Lafarge North America .....	19
Mid-South Concrete, Inc.....	2
Multi-Vibe.....	21
Propex Concrete Systems .....	22
Rogers Group.....	2
Sicalco, LTD.....	5
Southern Concrete.....	2
Systems & Controls.....	24
Vulcan Material .....	2
Westcon Mfg., Inc. – THEAM Conveyors .....	18

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