

TENNESSEE

Spring 2015  
VOL. 29, NO. 1

# CONCRETE

MAGAZINE



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705 Fort Negley Court  
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Phone: 615-360-7393  
Fax: 615-360-6670  
Website: [www.tnconcrete.org](http://www.tnconcrete.org)

**Publisher:**

The KaHoy Group, LLC

**Editor:**

Alan Sparkman

**Advertising Director:**

Morris Woods

**Art Design:**

Donna Heninger

For advertising rates and information, contact Morris at 800.315.9950 x602.

Subscriptions in US, free upon request. Outside US, \$12 per year. To subscribe, contact TCA at the above address.

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**Bate Bond**  
2015 TCA President

Tennessee is in  
desperate need of  
funding in order to  
turn these numbers  
around and build  
an infrastructure  
that can handle  
future growth and  
development.

# ADEQUATE INFRASTRUCTURE is as Essential to **ECONOMIC GROWTH** as **ECONOMIC GROWTH** is to **INDIVIDUAL PROSPERITY**<sup>1</sup>

**W**hen looking for the individual transportation infrastructure needs for each county, the Tennessee Advisory Commission on Intergovernmental Relations (TACIR) has some great information on its web page in an article entitled “Building Tennessee’s Tomorrow” where you can access reports on both the county and state needs and see what stage they are in. Transportation infrastructure has become a prevalent topic in Tennessee lately due to the Highway and Transportation Funding Act of 2014 that Congress passed which gave an eight-month extension to the Federal Surface Transportation program. This program is what states rely on for road, highway, bridge, and transit funding and will run through May 31, 2015. “In addition to extending the current authorization of the highway and public transportation programs, the legislation will transfer nearly \$11 billion into the Highway Trust Fund to preserve existing levels of highway and public transportation investment through the end of May, 2015. Congress will need to pass new legislation prior to the May 31 extension expiration to ensure prompt federal reimbursements to states for road, highway, bridge, and transit repairs and improvements.”<sup>2</sup>

Just to get an idea of how badly we need this funding to be maintained, here are some facts about Tennessee’s highway infrastructure:

- 19,740 Bridges
- 1.104 Interstate Miles
- 13,884 State Maintained Highway Miles
- 95,523 Total Highway Miles
- 7% TN Major Roads in Poor Condition
- 20% TN Bridges are Structurally Deficient or Functionally Obsolete
- 43% TN Major Urban Highways are Congested
- Tennessee’s highway vehicle travel has increased by 52% from 1990 to 2013<sup>3</sup>

These numbers make it plain that Tennessee is in desperate need of funding in order to turn these numbers around and build an infrastructure that can handle future growth and development.

The funding that TDOT receives from the State totals about \$826 million, of which roughly \$393 million originates from Tennessee’s gasoline tax. This budget is used for operating costs, highway maintenance contracts, and other areas such as resurfacing, bridges, major reconstruction, and new construction. However, the amount of funds TDOT has available for use has fallen each year due to rising operational and maintenance costs.

It is also important to consider the costs incurred by the public and the State due to roads that are in disrepair. It costs Tennessee motorists \$1.3 billion a year in extra vehicle repairs and operating costs, roughly \$278 per motorist. On a national level, congestion costs American motorists \$121 billion a year in wasted time and fuel costs. We should also view this issue from a public wellness standpoint. Roadway conditions are a significant factor in approximately one-third of traffic fatalities. Highway improvements such as removing obstacles, widening lanes, upgrading from two-lane roads to four-lane roads, and improving road markings can reduce traffic fatalities and accidents and improve traffic flow.

As Tennesseans, we need to do everything we can and talk to our representatives and colleagues in an effort to ensure that Tennessee gets as much funding as possible and that federal funding, such as the Highway and Transportation Act of 2014, continues to exist.

As I stated at the beginning, infrastructure is essential to economic growth. Every pothole and every crack is a larger hole in TDOT’s budget and costs us more in the long run.

<sup>1</sup> <http://tn.gov/tacir/infrastructure.html>

<sup>2</sup> [www.tripnet.org/docs/factsheetnational.pdf](http://www.tripnet.org/docs/factsheetnational.pdf)

<sup>3</sup> [www.tdot.state.tn.us/transportationsystem.htm](http://www.tdot.state.tn.us/transportationsystem.htm)



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# CHALLENGE YOURSELF to a HIGHER STANDARD



**Alan Sparkman**  
*Executive Director*

It's challenging to make time to regularly take in new information. In fact, it's really tempting to just keep doing the same old things as long as they are not producing obvious problems or failures.

.....  
Focus more on those things that bring in nutritional information to help...function at a higher level with more effectiveness and less busyness. It's a challenge, but it's one that is well worth undertaking!

**W**elcome to the 2015 Awards Issue of Tennessee Concrete magazine! Please enjoy reading about the best concrete projects from across Tennessee (completed in 2014) and I also invite you to enjoy the winning entry from our 2014 High School Concrete Essay contest.

As you review the projects and the essays, my hope is that you will pick up some new ideas and even some inspiration for improving your business and raising your personal standard of performance during the remainder of 2015.

**It's challenging to make time to regularly take in new information.** In fact, it's really tempting to just keep doing the same old things as long as they are not producing obvious problems or failures. It might even seem smart to not 'waste time' attending a conference, taking a class, or increasing the depth of your personal network. After all, most of us have plenty to do as the construction recovery kicks into higher gear and adding anything else to our already full plate sounds like a bad idea.

**Certainly it is easier to just stay in the rut you've created and to not challenge yourself to achieve a higher standard.** Learning "new stuff" slows us down and dilutes our focus on the urgent and demanding tasks at hand. Implementing what we have learned always takes longer than expected, and it usually involves transmitting our knowledge to others in our organization—also a time and energy intensive undertaking. Far better to just keep operating on the tried and true information we already have....

If you find yourself agreeing wholeheartedly with the previous paragraph, you obviously

didn't pick up on my tone of voice—just one of the significant limitations of 'traditional' communication via the written word. One problem (and I could name several!) with holding on to tried-and-true information is that the useful life of information is shrinking much more rapidly than it used to—the longer you hang on to aging data the more likely it is that the data has been supplanted by new learning and new understanding.

For example... in the not-too-distant past most of us in the concrete world solved mix design problems in a similar fashion. If a mix wouldn't pump, or if contractors complained about finishability, or test results indicated potential low-strength problems - our response would most likely have been to "throw in some more powder" or more specifically, more Portland cement. The conventional wisdom of the day told us this should be our first response to a variety of problems and, to some extent, this is still our thinking today. But a lot of new information has become available over the years and the preponderance of this new information tells us that our traditional approach is only rarely the most effective way to address issues in our mix designs. In addition to often being an expensive solution, other approaches such as modifying aggregates or using chemical or mineral admixtures often provide much better results without producing so many negative side effects. Ongoing research into aggregate optimization, cement hydration chemistry and nano-scale behavior of various concrete ingredients will no doubt continue to make the conventional wisdom of the past much more foolish than wise.



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In our world where anyone with a smart phone can shoot a video and upload that for the world to see in a matter of seconds, access to new knowledge is not really the problem. Discerning valuable content is a much more difficult task in today's content-saturated environment, and in some ways it makes it more difficult to locate and take in information that is relevant and true. In spite of that difficulty, the risks of relying on conventional wisdom that has become current foolishness is rising with every passing month.

I have realized anew the importance of a strategy to insure I continue to ingest relevant, reliable, and current information on a regular basis. Like most of you, I have a plate full of responsibilities, commitments and activities so I am making a conscious effort to remove from my plate those things that contribute to my schedule being "over-weight" and to focus more on those things that bring in nutritional information to help me function at a higher level with more effectiveness and less busyness.

It's a challenge, but it's one that is well worth undertaking!

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# 2015 CONCRETE AWARD WINNERS



# HUEY'S RESTAURANT GERMANTOWN

.....  
Memphis Ready Mix  
Baltz & Sons Concrete, LLC  
.....

# 2015 CONCRETE AWARD WINNERS



## BEST CONCRETE ARTISAN

### Huey's Restaurant - Germantown

Memphis Ready Mix  
Baltz & Sons Concrete, LLC



**A**nother collaboration with Traditional Construction, Baltz & Sons Concrete was tapped to refurbish the entry vestibule and outer patio for this iconic Memphis restaurant chain. Originally constructed as a bank, the entire site was heavily re-configured to accommodate the "corner bar" layout that has become Huey's Restaurant's staple design. Baltz cleaned and resurfaced the entry vestibule with pigmented concrete, using a self-leveling flowable mix so as to produce a super smooth and level surface. This was critical for the subsequent stages where Baltz & Sons' artist used a CNC engraving device to layout a template of the restaurant's trademark logo. After hours of careful handwork a beautiful rendition of the restaurant's name and logo are now engraved into the entryway.

Baltz then turned their artistry to the new outer patio dining area. Originally a drive-thru teller area for the former bank, the new patio was installed using a lightly exposed white limestone/white sand mix so as to produce an adequate canvas for the subsequent "ribbons" that were carved in and pigmented. Baltz selected a range of colors for the ribbons, using this element to tie together the original brick color of the building with the materials used for the new construction.

—Awards continue on page 10



# 2015 CONCRETE AWARD WINNERS

## BEST CONCRETE HOME

### Pennington Property

Williamson Co. Ready Mix  
Dusty & Sons Concrete, LLC



**D**usty & Sons Concrete, LLC was contracted by the Pennington family about doing all the concrete work on their new house in College Grove, Tenn. They placed a bid to do footings, poured walls, waterproofing, garage slabs, basement slab, porches, and two retaining walls. Williamson County Ready Mix supplied all of the concrete for the project, and three separate Premier pump trucks were used on the job.

This house was about 6,000 square feet with a lot of corners. Due to the number of corners and the size of the foundation, the cast-in-place poured walls had to be broken up in two pours. After all of the walls were poured, while the contractor was trying to get the garage and basement slabs poured, large amounts of rain came.

The porches were colored with integral color concrete using Solomon color, and the surfaces were finished with a sponge finish. This gave the porches the look of old Spanish tile. Also, with the porch capped and everything being poured concrete it became, in effect, a safe room.

Dusty & Sons Concrete, LLC placed approximately 250 yards of concrete in the job, without any driveway. In the end, the foundation worked out great, and the homeowners were very happy with their solid foundation.

## BEST FINISHING – COMMERCIAL DECORATIVE

### Second Line Restaurant Patio & Bar

Memphis Ready Mix  
Baltz & Sons Concrete, LLC



**T**his spectacular project was especially rewarding in that the developers granted a considerable degree of creative autonomy to Kevin Baltz & Sons Concrete when they asked Baltz to come up with a design for a new restaurant they were building in Overton Square in Memphis.

The new restaurant, Chef Kelly English's "The Second Line", has a heavy New Orleans theme. As an extension of this, Baltz designed a courtyard patio that would capture the character of the historic French Quarter by installing stamped concrete featuring old world cobblestone and seamless slate patterns, as well as a custom scored re-creation of the restaurant's logo.

A raised patio features a hand scored Harlequin pattern with whimsical decorative wall patterns that bring Mardi Gras to mind. Baltz also created custom ornamental "cocktail tables" that double as supports for the overhead patio light strings. A second phase included installing a two-tiered concrete bar-top with custom pigmentation and finishing techniques. French Quarter inspired "wrought iron" scrolls and fleur-de-lis icons grace various locations throughout the project, adding character and interest to the overall design. The front patio was also enlarged and includes a seamless slate finish on what looks like large slabs of stone. Special thanks to Designer Jackie Glisson, and contractor Traditional Construction.

# 2015 CONCRETE AWARD WINNERS



.....

## BEST FINISHING – COMMERCIAL WINNER 1

### SoftNer Warehouse

IMI

Bowman's Works]



**B**owman's Works began this project in November, 2013. As often happens, the weather played a large part in the construction process. The footer and slab on grade were performed through the winter months. The tilt-up walls were completed in May 2014. In addition to the warehouse construction, two bridges were constructed for deliveries and the building entrance. Several subs played a part in this project, and that alone can offer some challenges, but in the end everything went smoothly and the owners were handed the keys to a very appealing building.

.....

## BEST FINISHING – COMMERCIAL WINNER 2

### Comfort Inn - Pulaski

Mid South Concrete Inc.

New South Concrete

**M**r. Mayuer Patel, owner of the Comfort Inn in Pulaski, wanted to enhance the outside appearance of the motel so he hired New South Concrete (Greg Lunn & Tommy Campbell) to remove old asphalt and replace it with 3000 psi concrete. Lunn & Campbell also designed a new curb, new flower beds with stamped concrete, a new stamped entrance, patio area, and pool area. Night lighting was also improved. All of this was done in a manner that limited



customer inconveniences. Total concrete used was approximately 1200 yds.

.....

## BEST FINISHING – DECORATIVE EXTERIOR

### McNeece Project - Transforming the steps

IMI

Dusty & Sons Concrete, LLC



**D**usty & Sons Concrete, LLC was approached by the McNeece family in Columbia, TN jazzing up the entry way into their home. The existing sidewalk and steps were made from old stones. After looking at the company's picture profile book, and some product samples, the homeowner shared a few of his own ideas for the job while giving Dusty & Sons a lot of artistic freedom.

—Continued on page 12



# 2015 CONCRETE AWARD WINNERS

First Dusty & Sons Concrete, LLC had to remove a few steps, but mainly they capped the existing sidewalk and steps with 4 inches of concrete. The concrete was supplied by IMI using a 2-inch line pump mix. The concrete was pumped about 150 feet with a line pump. Placing the concrete was a careful process, as it was important that concrete did not get on the house. It was tricky forming the steps because some of them were longer than 12 feet. Holes had to be drilled and stakes driven into them for support. Another challenge was doing the forming around the existing rock walls. A slate texture form liner was placed on the steps, and the surface of the concrete was textured with slate texture.

Borders were cut around the edges; designs were cut into it and stones were also cut into the concrete. In fact, the stone lines were sealed before the acid stain color was applied so the lines would look more like gray grout lines. The customer wanted all of the stones to be individual colors. Dusty & Sons Concrete, LLC used all of the acid stain colors, and then combined many to create different colors.

After everything was tediously stained, cleaned off, and sealed the outcome was great. The homeowners were in love with it, and have booked another job at their house with Dusty & Sons Concrete, LLC in 2015!



Many obstacles were faced in placing the concrete under the soldier course of the paver sidewalk. The weather turned unusually cold, and most of the concrete had to have blankets placed on it. All of the concrete was placed with a wheelbarrow or a bobcat, and in about 300 linear feet sections. Also, one subcontractor did not adhere to the timeline in removing old concrete and hauling off dirt; because of this, Dusty & Sons was contracted to help do some of this work in order to keep the whole project moving forward.

The pervious concrete had to be placed with a Georgia buggy about 300 feet away from where the concrete truck could maneuver, and this was challenging. Also, integral color was mixed in with the concrete. Plastic was placed over the concrete to let it cure, and because the sidewalk was curved, the overlaps in the plastic made tiger stripes on the concrete, causing a color variation in the appearance. To fix that, Dusty & Sons put some Clemons Concrete sealer on the concrete to get a uniform look. Time management also became a challenge; each excavation required that archeologists be called in to sift through the soil for artifacts.

By the time the job was done, the contract had grown larger because of Dusty & Sons Concrete, LLC's work ethic and their ability to get things done. They placed 2500 linear feet of footing under the soldier course pavers, hauled off old concrete and dirt, placed about 20 yards of integral colored pervious concrete, and placed pea rock gravel over some existing trails to clean up the area.

.....

## **BEST PERVIOUS CONCRETE - COMMERCIAL**

### **Andrew Jackson Home**

Williamson Co. Ready Mix  
Dusty & Sons Concrete, LLC

**D**usty & Sons Concrete, LLC received a request from a contractor to bid some concrete footings under the paver sidewalks at the Andrew Jackson Home in Nashville, TN. After looking at the plans, they discovered that some pervious concrete had also been added. They then talked to the contractor about bidding all of the concrete for the Andrew Jackson Home. Dusty & Sons tried many different ways and methods to get the appearance of pea rock gravel to meet everyone's approval. Williamson County Ready Mix supplied the concrete for the job.

# 2015 CONCRETE AWARD WINNERS



## BEST PERVIOUS CONCRETE - RESIDENTIAL

### Hopkins Pervious Driveway

Memphis Ready Mix  
Baltz & Sons Concrete, LLC



**T**his project—a driveway threaded alongside a line of mature trees on a heavily wooded lot where the trees were a critical component of the home’s character and appeal—is an example of selecting the right material for the job.

The clients, having grown weary of the pervious gravel driveway, wanted a rigid driveway material but were adamant that the trees not be harmed. John Griffen, a local designer, tapped Kevin Baltz, of Baltz & sons, to implement a tree-friendly hardscape of pervious concrete. To add some character and beauty to what can sometimes be a more utilitarian finish, Griffen designed a series of cobblestone bands throughout the driveway, as well as the entry inlet and central detail.

Baltz installed a series of strategically positioned notched voids in the pervious pavement and had Travis Nabors Masonry install the beautiful cobblestone bands and inlet, using a material that was reclaimed and re-purposed for this application. The end result is a beautiful mix of old and new materials that blend seamlessly with the setting, all with virtually no hardscape footprint in terms of the impact on the surrounding venue.

## BEST PRECAST

### Wolf Creek Bridge US25/70

Ready Mix USA  
Bell & Associates Construction L.P.



**T**he Wolf Creek Bridge over the French Broad River and Norfolk Southern Railroad in Cocke County, TN, is a five span, reinforced concrete spandrel arch bridge. The bridge was designed by the State of Tennessee in 1925 and constructed in 1926. It is 629'- 6" long and consists of five arched spans. Its historical significance, scenic setting, and strong aesthetic appeal merited TDOT’s decision to invest nearly \$9 million in an extensive renovation of the bridge.

The bridge is a vital link to several small communities between Tennessee and North Carolina. A primary challenge was the construction and maintenance of a haul road to provide access for equipment and personnel and to facilitate demolition operations and the containment of debris.

Bell utilized a LIDAR Scanner to perfectly document the existing bridge. This allowed them to replicate architectural features, dimensions of the structural components, and elevations of the existing bridge. The new bridge was designed and constructed with the highest quality in mind.

Accuracy in the As-Built: ground-based LiDAR or “laser scanning” was utilized for the as-built drawings, allowing Bell to visualize each element of the structure. The data gave exact measurements and allowed Bell to line up the sub-structure. The laser scanner provided more than 21 million points of data.

—Continued on page 14



# 2015 CONCRETE AWARD WINNERS

**Obstacle 1:** Cherokee National Forest on one end had limited access. Solution: Bell planned accordingly and scheduled all materials to access the site from the other side.

**Obstacle 2:** Spans 1 through 3 were constructed over a haul road that was built into the French Broad River. It is important to note that the French Broad River drains approximately 1700 sq. miles of mountains in both NC and TN. The project was at high risk of increased water volumes because the river levels would rise quickly from rain events as far as 60 miles away. This resulted in multiple overtopping events through construction. Solution: Bell built gabion baskets and chain link fence to confine the rock during these rain events.

**Obstacle 3:** Span 4 was over the river channel and Bell was unable to shore reconstruction of the arch installation of precast because the lengths of the arch pours were decreased. It was difficult to move and contain concrete debris during demolition of span 4. Solution: Platforms were constructed to suspend from the arch. This allowed Bell to contain debris and provide access for demolition personnel and equipment.

**Obstacle 4:** Span 1 was over an active Norfolk Southern Railroad, where multiple trains passed through daily. Work had to be stopped during the presence of the train. In addition, the terrain was rugged and steep adjacent to the track. Solution: Personnel, material and equipment had to be lowered down with a crane. And smaller equipment had to be utilized to maneuver around the area.

.....

## BEST ROLLER COMPACTED CONCRETE

### Lentz Public Health Center

IMI

Four Star Paving, Gresham, Smith and Partners

**T**he Lentz Public Health Center is a public/private building partnership between the City of Nashville's Metro Public Health Department and the Hospital Corporation of America (HCA). The original design of the parking lot called for asphalt pavement. However, to enhance the LEED Silver certification, the architects and engineers switched to a



roller compacted concrete pavement (RCCP). The general contractor on this project was Bell/ICF.

Four Star Paving had been contracted to place the asphalt and had never been involved in a RCCP job prior to this. This was also the first time that the City of Nashville had used RCCP. IMI was able to educate the key players and helped facilitate a plan to move forward on the project.

RCCP is typically used where there are heavy loads, such as semi traffic or large industrial equipment. This project was different in that aspect because sustainability was more important than its strength. RCCP resists freeze and thaw cycle damage that would require normal pavement to be patched and replaced every few years.

The methods used to test and place RCCP, as well as monitoring moisture and aggregates, are all very different from regular concrete. The key was educating and following the Best Practices for this project, since this was the first use of RCCP in the Metro Nashville/ Davidson County area.

IMI supplied Four Star Paving with 3,000 yards of RCCP for this project. The biggest obstacle during this pavement was testing, moisture ratings, and adjusting for the ambient temperature because the temperature would rise drastically from early morning through midday when temperatures could exceed 90 degrees.

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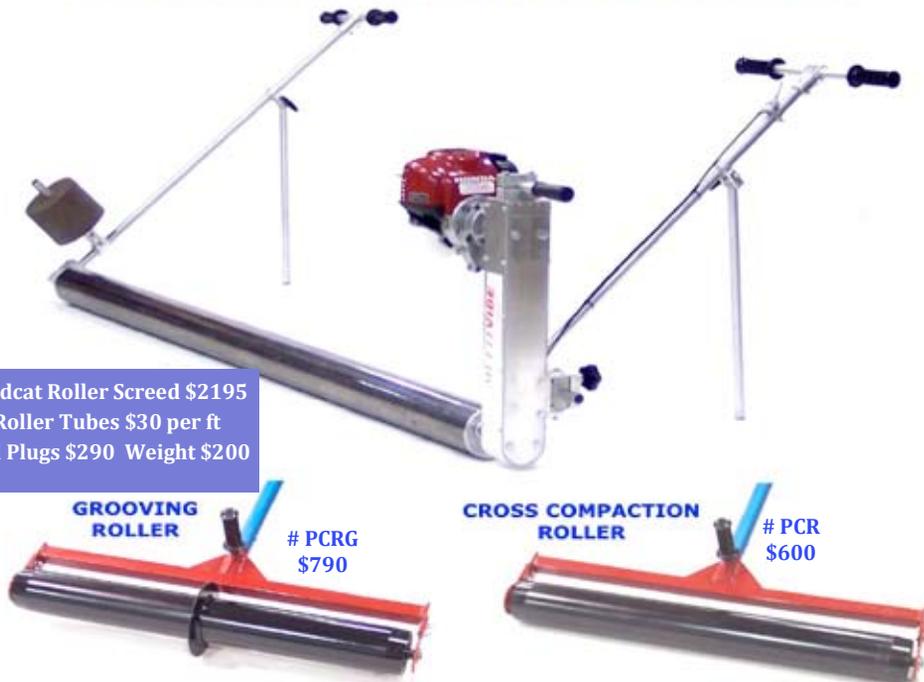


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# 2015 CONCRETE AWARD WINNERS

## BEST SPECIALTY CONCRETE PROJECT

### Lake Loudoun Plaza/ Pat Summitt Feature Wall

Ready Mix USA

Blount Contractors, Inc.

Merit Contractors, Inc.



The "Pat Summitt Plaza" on the University of Tennessee Knoxville campus includes a cast-in-place concrete "Feature Wall" that retains a hillside supporting a parking garage above, while creating the backdrop for a bronze statue of the legendary basketball coach of the Lady Volunteers. This wall also multi-curves, slopes, and batters as it rises from a height of 12 feet at its south end to a maximum of over 22 feet near its center.

Using a concept borrowed from wooden boat builders, Blount Contractors, Inc. (sub-contractor to GC Merit Construction, Inc.) devised a formwork system of rectangular wooden boxes, inside of which were a series of ribs and struts that conformed to the required curvatures of the wall. Faced with plywood, the panels were crane-set in place and then faced again with an FRP liner to provide a smooth casting surface.

BC was greatly assisted in the engineering of this formwork by Gates & Sons of Denver, Colorado. Utilizing 3D-modeling software and designer's CAD files, Gates derived the geometry of each of approximately 60 plywood ribs, then cut them out on a computer-controlled router table, from where

they were shipped "just-in-time" to BC's Alcoa, TN shop for Final Fabrication.

The concrete for this project was furnished by Ready Mix USA of Knoxville. The mix was integrally colored to precise standards, and delivered in small batches timed to allow continuous placement without exceeding the design pour rates of the formwork. After form removal the exposed wall surfaces were sandblasted to achieve their final texture.

This project serves as a lasting tribute to Coach Summitt and as a wonderful example of cast-in-place concrete's versatility as both a structural and architectural material, with no limitation to geometric possibilities. ♦

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# Congratulations



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THE FINAL CHAPTER**  
LAUREN HAMRICK

**A**ccording to biblical history and prophecy, the world began in a garden, but will end in a city. This is an interesting development to note; it signals predestined progression in the form of industrialization. Advancement takes the form of an urbanized landscape: a canopy of concrete buildings looms over our heads while a network of concrete pathways lies below our feet. A city is its own biome. Others argue that concrete is the antithesis of life, suffocating the natural ground and erecting itself in place of trees. However, concrete is an extension of life. It is our new home. We are constructing the framework of our future. Concrete, therefore, is an important part of the human story.

The average citizen does not often recognize the vital role concrete has in our daily lives. Concrete hosts the functions of society; it is used to build our schools, hospitals, homes, bridges, tunnels, dams, roads, and so on. It is the foundation of activity for the local workman, the traveling entrepreneur, the busy housewife, the becoming student, and every person whose work lies within its influence. As globalization facilitates the spread of development, this same opportunity will be made accessible to every man, woman and child. Concrete will aid the growth of cities in all nations, introducing support systems in places lacking. As the most used man-made material in the world, concrete will usher in a new era of effective living.

Concrete can be justifiably considered a part of nature because of its enhancing effects on the environment, both literally and figuratively. Its eco-friendly attributes provide strength and durability to modern architecture with low maintenance. Its affordability increases its practicality, making it a possible tool for the aspiring civilization. Its rediscovery in the early days of the First Industrial Revolution began its career as a useful, green material. It has paved the way for social, economic and political flourishing for centuries. It has established the setting for hallmark events that have shaped the past and led to the present. The backdrop of history is a fundamental part of the definition of humanity, for an environment is the image that represents the people. Where we live is characteristic of who we are.

As a community, we are meant to prosper together, to live with one another. As people migrated to cities, the center of life was relocated to urban areas. Without concrete, there would be no cities, and with no cities, there would be no social flourishing. Production supports the hopes and dreams of the individual, allowing him or her to reach new heights. In man's autobiography, concrete is a character in this story of success.

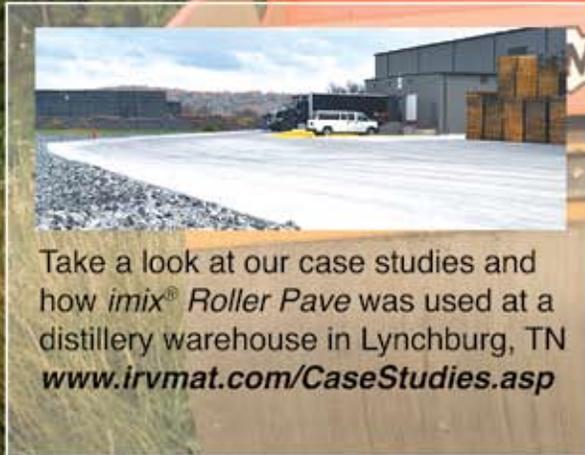




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