

American Concrete Pipe Association, Irving, Texas 75063-2595, USA

# Concrete pipe facilities are far more than production plants

■ Russell Tripp, P.E., President, American Concrete Pipe Association

**Producer members of the American Concrete Pipe Association (ACPA) began retooling the concrete pipe industry in the mid to late 90s to accommodate market demand and the production of 21<sup>st</sup> century precast concrete pipe and boxes. What they did not foresee was a greater demand placed on concrete pipe producers in educating specifiers, design engineers, regulators, elected representatives, contractors, and the public about the applied science of buried rigid and flexible pipelines and culverts. Concrete pipe and precast box production facilities have evolved over a very short period to be both production facilities and education centers.**

ACPA's strategic partners such as the Structural Engineering and Applied Mechanics Department at the University of Texas at Arlington, and Concrete Industry Management program at Middle Tennessee State University, provide an academic environment for research and the preparation of graduates for a career in the concrete pipe industry. To complement the academic basics of the concrete pipe technology, modern plants are industry "theatres" that provide the visual and tactile experience of a total learning experience.

With academic programs and practical experience in place, The ACPA works as a liaison between academia and industry to close the gap between theory and practice. ACPA hosted its annual Pipe School in 2016 and 2017 at the campus of the University of Texas at Arlington (UTA) in early January. In 2018, January 15 to 18, Pipe School and Pipe Show will be hosted at Middle Tennessee State University (MTSU) in Murfreesboro, home of the Concrete Industry Management (CIM) program and one of four campuses that offer the CIM program. Industry, academic, and public-sector delegates from across the USA, Canada, Mexico, and other countries earn professional development hours (PDH) when attending Pipe School seminars and certification classes. These include quality/basic production; advanced production and plant management; technical marketing and sales; engineering; electrical and automation; safety; personal development; and, specialty sessions dealing with precast production and design. There is usually a summit for the industry's emerging leaders and a business-to-business exchange where suppliers and producers learn details of products and services. The popular "Technical Poster Session" features some forty posters describing technology, projects, industry issues, and new ideas. But, the highlight of every Pipe School is the plant tour.



*Educating specifiers, design engineers, regulators, elected representatives, contractors, and the public at concrete pipe plants about the applied science of buried rigid and flexible pipelines and culverts*

# EVERY DAY MATTERS



ACPA 2018 Pipe School and Pipe Show  
Middle Tennessee State University  
January 16 - 18, 2018 Murfreesboro, TN

American  
Concrete Pipe  
Association

## 2018 ACPA Pipe School and Pipe Show

Tennessee is more than a place to most Americans. The name itself summons unforgettable images of America through the acts of congressman **David Crockett**, governor **Sam Houston**, Medal of Honor recipient **Sgt. York**, singers **Bessie Smith**, **Elvis**, **Aretha**, **Dolly**, and actor **Morgan Freeman** – to name a few famous people from the Volunteer State. In Tennessee, everyday matters, and at Middle Tennessee State University, Murfreesboro, we will learn how **Every Day Matters** when America's drainage pipeline systems and culverts are at stake.

Sewers and culverts must be resilient and regarded as critical to America's health and safety. In 2009, the Federal Highway Administration (FHWA) launched **Every Day Counts** (EDC) in cooperation with the American Association of State Highway and Transportation Officials (AASHTO) to speed up the delivery of highway projects and to address the challenges presented by limited budgets. Accelerated Bridge Construction is the way FHWA and its partners are making this happen. ACPA coined the term Accelerated Precast Construction to help deliver small bridges and culverts within the umbrella of EDC.

In the concrete pipe industry, **Every Day Matters**. FHWA launched **Every Day Counts** to build a better America, quickly. Register to attend the 2018 Pipe School and Pipe Show for training and education to improve services nation-wide. While there, learn a new way of leadership through Bob Chapman's business success described in **Everybody Matters**.

Register for Pipe School 2018 [www.concretepipe.org/education/pipe-school](http://www.concretepipe.org/education/pipe-school).

concretepipe.org



■ Russell Tripp, P.E., Clemson University alumnus, earned his Bachelor of Science degree in Civil Engineering in 1982. He spent the first 21 years of his professional career working in the natural gas industry. He then served three years in the PVC sheet pile industry and four years in the plastic drainage industry before joining the ACPA. [rtripp@concretepipe.org](mailto:rtripp@concretepipe.org)



*Autogenous healing seminar and demonstration at County Materials plant in Astatula, Florida*



*Demonstration of pipe strength with the three-edge bearing (TEB) test*

Plant tours demonstrate the performance of concrete pipe through onsite laboratories and testing equipment, such as the load rate used to break compression test cylinders and the three-edge bearing (TEB) test. Visuals go a long way in helping specifiers and design engineers understand strength of concrete pipe. On plant tours, questions can be asked by experienced field inspectors and producers can explain by demonstration.

When visiting local pipe plants, delegates may witness the largest precast concrete pipe facilities in the world, both automated and fully robotic. These facilities feature pipe machines, manhole manufacturing, various precast processes, and precast box production (wetcast and drycast). Visitors observe the fabrication of steel cages used in reinforced concrete pipe and precast concrete boxes, and all stages of product manufacturing. Tours attract professionals from DOTs, academia, public works, AE firms, professional associations, and member companies.

Demonstrations are a way of explaining phenomena associated with concrete, such as autogenous healing. This aspect of concrete and concrete pipe is mostly discussed and not witnessed because pipelines and culverts that undergo strengthening and self-repair (because of this phenomenon) are most often out of site and out of mind. At a tour of the County Materials plant in Astatula, Florida in July this year, Florida DOT officials observed autogenous healing. An 18-inch diameter pipe was pre-cracked and then placed vertically and filled with water only. After a couple of months, there was calcification through the crack and no moisture weeping through the wall. Autogenous healing of concrete occurs when the continuity between two sides of a crack is restored without repair work. According to the Concrete Society, based in the UK, "Autogenous healing is the natural process of crack repair that can occur in the presence of moisture and the absence of tensile stress." The formation of calcium carbonate crystals,  $\text{CaCO}_3$  is the primary cause for self-healing. The County Materials production facility in Astatula serves as a classroom, bridging theory and practice.