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Experiential learning delivered  
by modern concrete pipe plants



American Concrete Pipe Association

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# Experiential learning delivered by modern concrete pipe plants

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

Many modern concrete plants have become centers for experiential learning. The editorial in the CPI 5-2017 (October) described how concrete pipe producers are accommodating a need for educating specifiers, design engineers, regulators, elected representatives, contractors, and the public about the applied science of buried rigid and flexible pipelines and culverts. Long gone are the days when a pipe plant was solely a production site for precast products. The way that industry is preparing for its future is through experiential learning.

## Visitors to production facilities

When concrete pipe producers receive visitors at their facilities, there is an orientation on what visitors can expect to see,

the safety equipment to be worn, and safety procedures that must be followed. Procedures and reminders about the mandatory use of safety gear are strategically displayed. This is the same everyday experience of employees where safety becomes habitual. Visitors experiences the use of some of the same personal protective equipment (PPE), guidelines and codes that employees follow. They are given opportunity for reflection, critical analysis and synthesis of information and knowledge being shared. Throughout the experience, visitors can engage corporate officials and operators intellectually and creatively, especially at stations where product testing and lab-work is performed.



Visitors learning about and observing autogenous healing of concrete



Plant visitors engage employees intellectually and creatively.



■ 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.

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### Grooming future industry leaders

Concrete pipe producers are constantly upgrading plant technology, introducing precast materials designs, product applications, and preparing career paths for the industry's future production personnel and leaders. How does this happen through an environment of experiential learning?

Industry supports and sponsors the Concrete Industry Management (CIM) program at Middle Tennessee State University. The program gives students entering the concrete work force an advantage since they gain valuable industry experience early in their careers, unlike others who have generic business degrees. The program's courses utilize practical case studies and an internship to make sure students obtain experience essential to starting a successful career.

Modern production facilities, although automated and in many instances robotic, are labor-intensive, providing seasonal employment for students and workers seeking careers. People are welcomed into the industry and trained on the job. As they advance in skill sets and knowledge about concrete pipe and precast box production, they are encouraged to broaden their knowledge through formal education programs. The concrete pipe industry wants an educated and skilled workforce that can learn from natural consequences and successes, while taking the initiative, making decisions, and being accountable for the results. These are the people who rise through the various positions in a production facility and become industry leaders.

### P3 training for ACPA members

ACPA is committed to industry education through its Professional Product Proficiency Training (P3) program to equip member and associate personnel in promoting concrete pipe. Training focuses on technical, sales and marketing. By completing the P3 training, staff of member companies become knowledgeable in concrete pipe technology and effective selling techniques.

ACPA's Regional Engineers and technical staff often deliver the program in the production facilities of its members, or at centralized venues where training can be delivered to a group. In doing so, participants familiar with a production facility, enjoy immediate access to all elements of the facility

when, or if needed to engage intellectually, creatively, emotionally, socially, and physically in the content of the courses. Corporate staff may participate, thereby lending lessons learned to the participants and introducing issues related to competitive products. The program, including testing, can be delivered over three days. Graduates receive professional development hours for taking the program, and are recognized with a P3 Award, whether taken online or off.

### Infrastructure Training Academy

ACPA recognizes that an industry capable of providing quality training influences the pipe selection process. The association's initial Instructor Training Course consists of proper facilitation practices, pipe installation practices, and post installation inspection/acceptance practices. The Academy will be providing certifications for the training modules in addition to offering a Leadership Track beginning in 2020.

### QCast Quality School

Each year, ACPA organizes and facilitates an accreditation program for staffs of member companies (experienced in pipe and precast box production) at its annual Pipe School and Pipe Show. Delegates bring this knowledge to the classroom setting where they can reflect on their skills and experience, analyse techniques and standards used, and synthesize information presented by the trainers. Nowhere, other than the Quality Cast School, can experienced production personnel test their knowledge against industry-wide benchmarks and then challenge exams for accreditation.

### Installation

Installation training is the most challenging for experiential learning. ACPA does arrange for groups to view demonstrations where a flexible thermoplastic and rigid concrete pipe systems are installed according to manufacturer's and regulated standards. The challenge is allowing delegates into a trench to experience use of the equipment. There are opportunities during post installation inspection where delegates to an installation training program can interact with technicians controlling deflection measuring device, such as mandrels, and video

inspection equipment that has been pre-approved by a local authority. To compensate for restricted access to trench installations, ACPA has produced time lapse video, and produced a series of technical brochures about the use of video inspection equipment for post installation inspection.

### Looking ahead

Various elements of experiential learning are being delivered at modern concrete pipe plants and nearby meeting facilities



*Visitors on plant tour inspect concrete pipe with help of production and testing staffs.*

by ACPA's Regional Engineers, technical staffs, and state concrete pipe association engineers. Many members are using their plant facilities for workshops and seminars to teach local DOT personnel and their consultants about concrete pipe and its performance compared to competitive products. Such experiences are experiential in nature, and bridge gaps between theory and practice. The movement of 21st century education is toward experiential learning. The concrete pipe industry gets it, and is moving as quickly as it can in that direction. ■

### FURTHER INFORMATION



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#### Photos:

Courtesy of the ACPA and its members.

#### References:

Experiential Learning Center, University of Colorado Denver: <http://www.ucdenver.edu/life/services/ExperientialLearning/about/Pages/WhatisExperientialLearning.aspx>