Scenes of failed metal or plastic drainage systems in the wake of flooding and wildfires that defined 2017 as a year of natural disasters contrast sharply with the American Concrete Pipe Association’s assurance: “Reinforced Concrete Pipe…It is rugged, rigid, and resilient.”

In his first 2018 letter to members and their public or private construction customers, ACPA President Russell Tripp, P.E., noted last year’s 16 events that represented $1 billion or higher in repair and rebuilding costs, plus post-disaster reports of irreparably damaged pipeline systems or culverts of construction other than concrete. “Designers of pipeline systems and culverts have choices of when to specify structural concrete pipes, flexible thermoplastic conduits, or corrugated metal conduits,” he concluded. “When considering total installation and life-cycle costs, site conditions, structural bedding/embedment materials, hydrostatic pressures, and hazards caused by nature or humankind, reinforced concrete pipe and boxes are the clear choice. Where the threat is obvious to health and safety and the economy of an entire region or city through critical buried infrastructure, why would anything other than concrete pipe and precast boxes be specified?”

Tripp and ACPA members have a seasoned leader in 2018 Chairman Mark Omelaniec, president of British Columbia-based Langley Concrete Group, to convey the “rugged, rigid, resilient” message as part of a campaign promoting engineer knowledge and independence; proper drainage system installation methods; follow up inspection of drainage systems, regardless of material specs; and, the technology and integrity at work in concrete pipe and precast operations across North America.

“I want to focus on leadership training, mentoring and promoting the industry and association participation to the next generation,” says Omelaniec. “There is huge potential growth for our businesses by developing young people who are examining career options. The successful people in this industry are the ones who have passion. We can develop that passion in the next group of leaders.”

In 2017, the association formally chartered the ACPA Research and Education Foundation as a separate 501(c) (3) organization dedicated to advancing manufactured-concrete drainage products, structures and methods. ACPA Vice President of Operations Kim Spahn, P.E., serves as Foundation president. Topping projects she oversees is one quantifying the negligible effect of micro-cracking (< 0.01 in.) in concrete pipe and box culverts.

To address concerns some agencies have raised on structure durability and service life, University of Texas at Arlington Structural and Applied Mechanics Professor Seyedali Abolmaali is leading an investigation to a) classify the most common types of cracks developing in concrete drainage structures; and, b) test reinforcing steel corrosion potential in crack-bearing specimens. Testing is staged near the UT Arlington campus and involves specimens from multiple ACPA producer plants. Investigators are studying
performance of pipe sections housed in individual shipping containers with tightly controlled environmental conditions.

“We have always acknowledged that stress-rooted cracks can occur in concrete pipe, and can prove that they do not affect drainage system performance or service life,” notes Mark Omelaniec. “Competitors have convinced certain agencies that cracks in concrete pipe are a sign of failure. Our research will counter that claim.”

Alongside the crack-classifying investigation, Dr. Abolmaali and his UT Arlington team are testing thin wall specimens with an eye to identifying site and soil conditions to which lighter than conventional concrete pipe products are suited—and competitively positioned against lesser alternatives. Thin wall pipe testing represents the second phase of a 2016 ACPA research project confirming the engineering basis for synthetic or steel fiber replacement of conventional cages in certain concrete drainage structures.

PIPE SCHOOL, SHOW, WEEK
Eight Langley Concrete Group managers and plant staff ventured in mid-January to Middle Tennessee State University, Murfreesboro, for the 2018 ACPA Pipe School and Pipe Show. Home to the charter Concrete Industry Management degree program, the Middle Tennessee campus drew a solid crowd from across North America for the third installment of ACPA’s annual education and trade exhibit.

“We had a record participation at the 2018 Pipe School and Pipe Show—440 attendees, including 45 state or municipal agency guests,” Omelaniec affirms. “The School program had 30 to 40 percent new attendees, and was filled with great training exercises; marketing, management and education tracks; and a first-time offering, production management certification. Strong Pipe Show interest from producer and associate members proved the industry’s commitment to capital investment and quality. The entire event was filled with productive activities and had very encouraging engagement of younger people.”

Pipe School participation reflects the success ACPA has realized with its nine-member state and regional engineer and allied association network, he adds, plus a harmonizing of activities with the Canadian Concrete Pipe and Precast Association (CCPPA). The latter

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LANGLEY CONCRETE GROUP At-A-Glance
A fixture in drainage construction for more than six decades, Langley Concrete Group produces pipe and standard or custom precast structures for Pacific Northwest markets from two British Columbia operations: the flagship Langley Concrete LP, with a 110,000 sq. ft. facility in Chilliwack, and Lombard Precast LP in Victoria. Permitting and site work are under way for an advanced facility on Vancouver Island to serve as the new Lombard Precast home.

Dy or wet cast concrete offerings from the two plants include pipe, manhole, box culvert, catch basins, headwalls, vaults, oil interceptors and the Stormceptor product line. Langley Concrete Group holds American Concrete Pipe Association QCast Plant Certification and in recent audits has scored among top performers in the program’s Full Plant, Box Culvert and Manholes, Storm and Sanitary Sewer Pipe, and Precast Structures categories.

Langley Concrete Group delivered precast concrete box culvert and headwall structures from its QCast-certified operations for a British Columbia Ministry of Transportation contract aimed at improving road safety and drainage system capacity.
Marked growth in Concrete Pipe Week participation was evident last year, thanks especially to the efforts of Mountain States Concrete Pipe Association and peer groups from coast to coast.