EDITORIAL

Photo: PCI.

Old-School Practices, Innovation, and QA/QC Are All Critical to Success

William N. Nickas, *Editor-in-Chief*

Like many of you, I've finally had a chance to return to work in a more "normal" environment—how long that will last is apparently an unknown…

As you all know, I'm all about innovation, but you can also tell just by looking at me that I'm a seasoned engineer (I've had gray hair since I was 35) who's all about doing things right, double-checking the calcs and plans, and ensuring that our facilities support the traveling public and, above all, are safe.

Innovation moves our technology forward—we all want advances that deliver stronger, sustainable, durable, and attainable assets. But in his Professor's Perspective on page 40 of the Summer 2021 issue of *ASPIRE*®, "The Role of Analytical Tools in Innovation," Dr. John Stanton reflected that old-school techniques and practices can validate innovative ideas and concepts, and sometimes advanced programming and modeling breathe life into ideas not yet realized. His article is a great read for all engineering professionals, and I'd recommend it as a great primer for your engineer onboarding process.

Digital platforms and programs provide the calculating speed and modeling capabilities that influence our design solutions now and evermore, but there's still very much a place for old-school methodology in today's engineering. The tried-and-true systems of checking plans, calculations, and even new structural theorems are the bases for engineering assessments and quality control processes that digital programs don't necessarily take into account and, I'd argue, might bypass.

State-of-the-art computing and engineering require state-of-the-art quality programs. Craig Finley's Perspective on page 63 of this issue provides insight into the Finley Engineering Group's quality assurance/quality control (QA/QC) program deep dive. The decision to hit the pause button and look within is difficult when the pace of delivery directly conflicts with that choice, but in an effort to ensure that his company meets customer requirements while staying true to its standards of excellence, Finley did just that. He ordered an internal review and brought his QA/QC programs into the 21st century.

An academic or conceptual environment provides a space to test the boundaries of innovative ideas or "pie in the sky" concepts. It's truly the best place to allow creative ideas to grow, develop, succeed, or fail. Nobody gets hurt in a laboratory, and you've got your senior year or your master's or doctoral program to further an unproven concept before practitioners debate the deployment. Testing materials and structural systems during development and daily production can be challenging—testing is both art and science. In our profession, we live for the opportunity to test components beyond design capacity, chart failure, and apply the results to advance and strengthen analytical design models. Failure in the lab makes us stronger, but consistency in measuring is essential for the lab specimen and at the built bridge.

Back to analog versus digital. There is a place for both in today's testing world, and we must consider both to bring the best and safest product to the field. Our tried-and-true, consistent methods of testing are still very much valid. As we approach new testing concepts, we must demand the same procedural consistency as we expected in our previous testing. If laboratory environments aren't using evidence-based practices, results won't be consistent, and the lack of standardization may slow advancement, innovation, and implementation.

We're not the only industry that demands standardization in testing and in practical deployment, but at times we act like we are. Our challenge is to continue to seek new methods, practices, and products that deliver sustainable, efficient, and reliable systems without compromising the "old-school" methods that make us responsible engineers who deliver reliable and safe assets for the folks who use them.

Cover
In partnership with Parsons, SYSTRA-IBT designed a 5-mile precast concrete segmental elevated guideway for a new light-rail system now under construction for the Honolulu Authority for Rapid Transit.

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