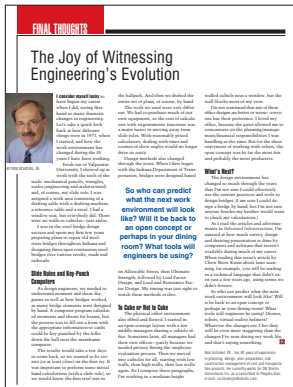


The Joy of Witnessing Engineering's Evolution

By Rob Schickel, P.E.

September/October 2016, *Informed Infrastructure*



Your thoughtful and touching article, "Final Thoughts: The Joy of Witnessing Engineering's Evolution," is the best and most-touching memory-lane trip—if I may use this term with due respect.

As a former electronics engineer working on many defense projects in the United States during the mid-1960s to 1975, your chronology is bringing back lots of good things in life that I had taken for granted too much. I started working in 1966, while you started in 1971—about

the same time period. My late parents and I expected myself to be a civil engineer when I started college in 1961 at San Jose State University, right in the heart of the Silicon Valley. In those days, enrollment at the civil engineering department was frightening low, while it seemed every student headed for the electrical/electronics engineering department.

In many ways, and with hindsight, I think you are very lucky to have a career in civil engineering where you literally work very close to and with Mother Nature. My electronic world of virtual reality is getting too much for me right now! Looking back, I regret that I did not take good care of my slide rule and lost it along the way. My grandchildren would love to see it, but you cannot find one anywhere now.

Thank you, again, for your beautiful article.

Amnard (Ted) Vorachard
President & CEO
ADE Action Dynamics Enterprises Group
Bangkok, Thailand

I am still working at GAI Consultants, a 975-professional-staff company, for the last 43 years doing engineering work in the United States. I am with you in wondering how far we have come in the field of engineering and where it is going. Here in Pittsburgh, Pa., we have top universities with robots with sentiments and driverless cars. The concept of simple beams and columns has gone beyond at least my comprehension. I feel awed, just like you.

Khalid H. Khilji, P.E.
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When Should Aging Infrastructure Be Replaced or Removed

"Future Forward" profile of Megan Lawson

January/February 2017, *Informed Infrastructure*

Thank you for providing us *Informed Infrastructure* magazine. I was particularly interested in the article interviewing Megan Lawson, "When Should Aging Infrastructure Be Replaced or Removed."

I am a Civil Engineer (P.E.) with Eastham & Associates, a consulting firm located in Chesapeake, Ohio, just across the Ohio River from Huntington, W.Va. We provide a variety of engineering and surveying services, including those related to small dams. In our area, there are several small dams on private property that are controlled and inspected by the Ohio Department of Natural Resources in accordance with Ohio statutes. Several of them are aging, and some have had to be drained for safety concerns. Another one is currently being reviewed for possible demolition or draining.

Ms. Lawson's article provides vital and relevant information regarding removal of dams. I especially note she points out that "decisions ... should be made rationally based on well-considered comparisons of benefits and costs, but also must acknowledge political considerations." In our work here, along with my 30-year career with the Army Corps of Engineers in water-resources planning, I became keenly aware of both the economics of benefit/cost (B/C) ratios and environmental factors, and, in my opinion, she is "right-on" here. I believe the considerations she mentioned should also include impacts on the environment, while noting that it is not possible to quantify economic factors for many environmental parameters.

As a case in point, we have looked at a local project that was built in the 1930s and is still serving as the prime feature of a large recreational community. It has suffered through several significant adverse impacts, including being damaged by acid mine drainage from a now-inactive upstream mining operation, an infusion of an invasive plant (*Parasitic Lotus*), unusually large sediment concentrations, expensive requirements to obtain federal permits for handling and disposal of dredge spoils, and state-required dam improvements. However, the community has always opted to retain the structure to provide boating, fishing, picnicking areas, aesthetic considerations and habitat for a teaming population of fish, wildlife and fowls, including the rare and endangered "Cricket Frog," beavers and other aquatic flora and fauna. While economically it is highly questionable that it would/could survive a B/C ratio test, it remains a valuable environmental feature for the entire county.

I applaud your magazine for making articles such as this available.

Les Tinkham, P.E.
Eastham & Associates
Chesapeake, Ohio



The Evolution of Women in Engineering: Moving from Ground Zero

By Rob Schickel, P.E.
March/April 2017, *Informed Infrastructure*

FINAL THOUGHTS

The Evolution of Women in Engineering: Moving from Ground Zero



I have been asked to write this article many times. It is a topic that is always relevant and always important. As a man, I have often been asked to write about the challenges women face in engineering. I have always been happy to do so. I have always been happy to share my own experiences and to share the experiences of others. I have always been happy to help women in engineering. I have always been happy to be a part of the solution. I have always been happy to be a part of the team. I have always been happy to be a part of the future.

Our challenge is to make sure we never stand in the way and help pave the road for women to enter, excel in and lead our profession.

Engineers First

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Thank you so much for sharing your views and publishing them in *Informed Infrastructure*. I'm a strong advocate of gender issues in engineering. I graduated Laval University

(Quebec City) civil engineering class of 1993, with women about 25 percent of the class, but most left the field for the reasons you noted and the hegemonic masculine culture of engineering itself, in general.

Throughout my career and all the places I have worked at, I have always been around less than 5 percent of women engineers. It's even worse in the steel industry or other product-manufacturing industries. I've brought it up recently as a concern to the company I work for, and that was quickly dismissed and treated unworthy of serious consideration. For as much as I tried to stay out of leadership roles, I have been "pushed" and "incented" to go there throughout my career.

It's refreshing to get the male perspective. I wish more men like you would come forward and bring the subject up on the table.

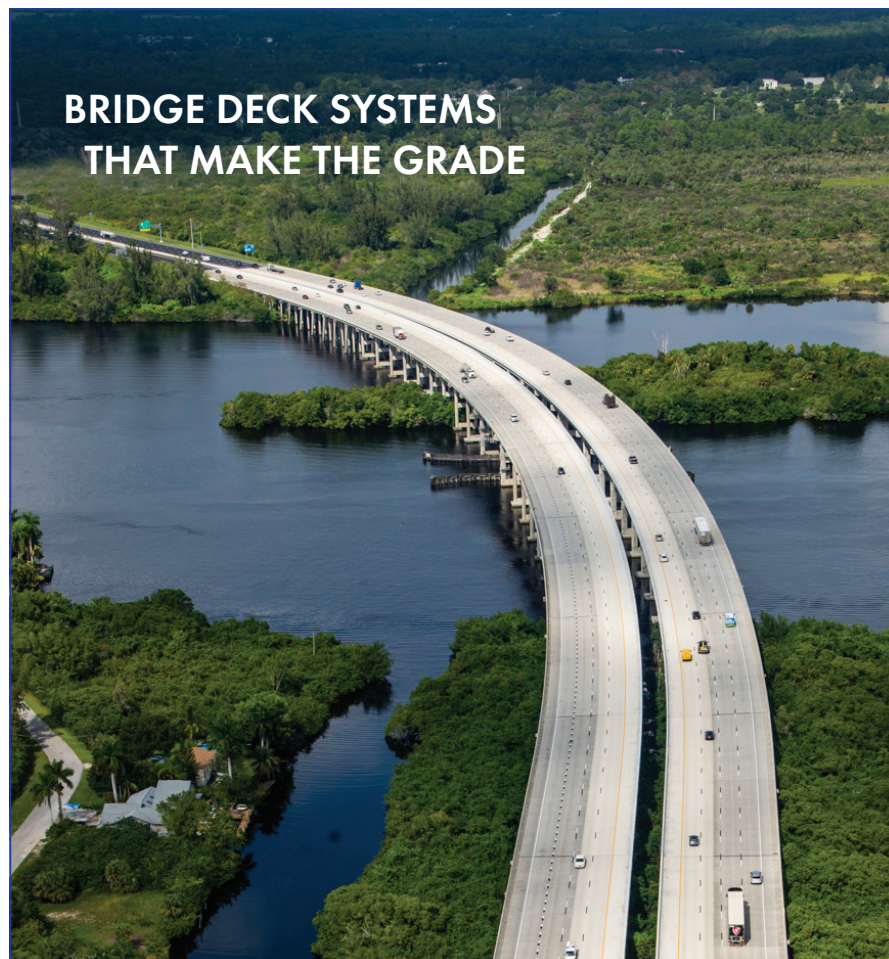
"The culture has to learn to take women seriously" (1).

(1)Read full article: Harvard Business Review, Aug. 23, 2016
<https://hbr.org/2016/08/why-do-so-many-women-who-study-engineering-leave-the-field>

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