Civil Engineers Build Infrastructure

Eric L. Martz, P.E. of KCI Technologies, Inc.

Society must be prepared to meet present and future infrastructure challenges created by a continually growing population. These challenges provide many opportunities for trained, professional civil engineers.
John H. Sununu, Ph.D. - former White House Chief of Staff to President George H. W. Bush.

When asked by an interviewer if he was a lawyer by trade, Dr. Sununu replied,

“No sir, I’m an Engineer. I solve problems.”
Speaking Points

• Introduction
• Example Project: Maysville Bridge
• Qualities of a Successful Engineer
• Employment Opportunities
• What You Can Do as Educators to Train the Next Generation of Engineers
Eric L. Martz, P.E.

- Office Manager / Senior Associate & Regional Structures Practice Leader: Greater Mid-Atlantic
- Joined KCI Technologies, Inc. in February 2013
- Employed by Michael Baker Jr., Inc. from July 1994 to January 2013
- BSCE from WVU (1994)
- Registered Professional Engineer in PA, MD & VA
What is Infrastructure?

- Roads, Highways, & Interstates
- Airports, Ports, & Harbors
- Buildings, Bridges, Tunnels, & Other Structures
- Waterways & Dams
- Water, Sewer, & Other Utilities
Example Project: Maysville Bridge

Quick Facts:

- **Client:** Kentucky Transportation Cabinet
- **Consultant:** American Consulting Engineers, PLC
- **Sub-consultant:** Michael Baker Jr., Inc.
- **Contractor:** Traylor Brothers, Inc.
- **Open to traffic in the summer of 2000 with an approximate construction cost of $37 million.**
- **Bridge carries U.S. 62/68 over the Ohio River between Maysville, KY and Aberdeen, OH.**
- **Bridge type is a steel cable-stayed bridge with main river spans totaling 2,100 feet.**
The bridge is located approximately 1 hour upstream of Cincinnati, OH.
Maysville Bridge

Aerial view taken in summer of 2000 just after completion.
Maysville Bridge

ANSYS computer model of the cable-stayed spans.
Maysville Bridge

One of the concrete towers is being constructed.
Maysville Bridge

A segment of the steel superstructure is erected.
A worker is attaching the girder segment via a girder splice.
Maysville Bridge

Temporary bents support the superstructure during erection.
Maysville Bridge

Aerial view of the superstructure erection.
Maysville Bridge

View from bridge deck prior to completion.
Maysville Bridge

Construction is completed by using a barge-mounted crane.
On October 9, 2000, the bridge was dedicated as the William H. Harsha Bridge.
The design teams of American Consulting Engineers and Michael Baker Jr., Inc. were honored for the Maysville Bridge design by being presented with the “2001 Grand Conceptor Award” from the American Consulting Engineers Council. This award is the most prestigious bridge design award in the United States.
Qualities of a Successful Engineer

• Logical Thinker
• Teamwork
• Creativity
• Effective Communicator
• Flexibility
• Enthusiasm
Employment Opportunities

- Federal, State, or Local Government Agencies
- Consulting (Analysis, Design, Management, etc.)
- Construction (Fabrication, Erection, & Management)
- Academia (Teaching & Research)
- Military Service
What You Can Do as Educators

Teach & Foster:

• Problem Solving
• Effective Verbal & Written Communication
• Teamwork
• Math
• Science
• Business Acumen

Example: Popsicle Bridge

Thank You

Eric L. Martz, P.E.
Office Manager
Regional Practice Leader
KCI Technologies, Inc.
5001 Louise Drive, Suite 201
Mechanicsburg, PA 17055
(717) 516-7595
e-mail: eric.martz@kci.com

Questions/Comments?