

# Professional engineers celebrate a century

## Construction's 'unsung heroes' work to raise awareness of their industry's role

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To celebrate the 100th anniversary of the professional engineer designation in the United States, engineers nationwide are working harder to change public perception about their industry and its role in construction.

While there are more than 2 million practicing engineers in the United States – and more than 14,000 in Missouri – most of their work goes unnoticed, even though it affects people every day.

There are 19 types of engineers who can earn the professional engineer designation, and whether they're handling site work, electrical, plumbing or structural aspects of a project, they get involved before building begins and play a key role in ensuring the safety of a building's end users. Most engineering work, however, isn't visible once construction gets under way.

"That's one of the challenges that the industry faces is that 'unsung hero' status," said Michael Pessina, PE, president of the Ozark Chapter of the Missouri Society of Professional Engineers and an engineer with Olsson Associates in Springfield. "People take engineering for granted and forget that it's necessary."

While the public may not notice the

work of engineers, they'll sure take advantage of it.

"When you wake up in the morning and brush your teeth, you don't give any thought to how the water got there and whether it's safe to use, but that was all planned by an engineer somewhere," said

King Coltrin, PE, senior engineer with Great River Engineering of Springfield Inc. "When it rains, you believe that your house will be safe and won't flood. When you get in your car, you believe it's safe and roadworthy. When you drive down the street, you believe it's designed for safe operation. All of those things are engineered."

### The necessity of regulation

The wide-reaching scope of the engineering profession, and the numerous ways it affects people, requires that engineers be well-trained.

While the requirements for the professional engineer designation vary by state, the PE designation by and large signifies that proper training has been completed.

Missouri's engineering licensure law, passed in 1941, requires that Missouri engineers graduate from an accredited engineering college, pass a fundamentals exam, complete four years of training under a registered engineer and pass a second exam to acquire the PE designation. Missouri's law, Pessina said, is similar to those in most other states. While Wyoming was the first state to pass an engineering licensure law, in 1907, all 50 states now require that only those holding the PE designation can sign and seal engi-

neering plans.

The knowledge that comes from the requisite training, and the meaning of the PE designation, is important for engineers' clients, according to Jonathan Robison, PE, Springfield regional manager for SCI Engineering and MSPE Ozark Chapter liaison to the MSPE at the state level.

"Clients ... have to trust that we know what we're talking about," Robison said. "If anybody off the street could claim to do this, some clients would know the difference, but many clients wouldn't know if there were no licensing laws."

### Following the rules

Professional engineers in Missouri are bound by the state's Code of Professional Conduct, spelled out in the state statutes.

According to the code, professional engineers have an ethical responsibility to limit their work to their areas of expertise, even though the state doesn't license each of the 17 types of engineering individually, using the PE designation for all of them.

"My area is civil engineering, with emphasis on storm water and waste water, and I know better than to design an elec-



trical system," Pessina said.

"I'm ethically bound not to do that," he added.

Cheri Leigh, professional engineering division chair of the Missouri Board of Architects, Professional Engineers, Land Surveyors and Landscape Architects, said the code of conduct is crucial to ensuring the trustworthiness of the profession.

"The public is protected by knowing that an engineer is licensed, because it ensures that person has met certain minimum requirements in education, experience and examination," Leigh said.

"The public needs to know that they need to hire licensed people to perform the work."

Great River's Coltrin said the licensing process also holds the engineer to task.

"It provides a measure of accountability that the engineer has the knowledge and understanding to provide services that will protect the health, safety and welfare of the public," Coltrin said.

"Without that assurance, you're at risk," he added.

Engineers in Missouri are required to complete 30 hours of professional development every two years to renew their licenses.

"People shouldn't have to be continuously scared that every building they walk into is going to collapse, every bridge they cross is going to fail dramatically," Pessina said.

## A Varied List

Engineering degrees don't always lead to a career in engineering. Here are some

engineering school graduates who became famous for other reasons.

- Arthur Charles Nielsen, creator of the Nielsen TV ratings system
- Roger Staubach, Dallas Cowboys quarterback, 1969-79
- Jeff Bezos, founder and CEO of Amazon.com
- John F. "Jack" Welch Jr., chairman and CEO of General Electric Co.
- Buzz Aldrin, astronaut on Apollo 11
- Neil Armstrong, commander of the Apollo 11 mission
- Herbert Hoover, 31st president of the United States
- Gen. Douglas MacArthur, U.S. Army
- Andrew Card, White House chief of staff for President George W. Bush

Source: National Society of Professional Engineers

## History of the Professional Engineer Designation

**1907** - Wyoming passes the first engineering registration law.

**1922** - The American Association of Engineers, precursor to the National Society of Professional Engineers, creates a platform for engineering that includes the "passage of an engineers registration law in every state."

**1934** - The National Society of Professional Engineers is formed, requiring members to be professional licensed

engineers. At the time, only 28 states had engineering registration laws enacted.

**1940** - Between 1935 and 1940, 17 additional states adopted engineering registration laws.

**1941** - Missouri passes its engineering regulations.

**1947** - Montana is the last state to enact engineering licensure laws.

Source: National Society of Professional Engineers



Michael Pessina