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Tuesday, September 25, 2007

Engineers build dreams

Some see field needing more practitioners

By **Craig Wolf**

Poughkeepsie Journal

If you're looking for a candidate for unsung hero of the workaday world, you might consider the engineer.

Not the one who drives the train — the one who designs the tracks. And the roads. And the bridges. And the dams. And the water plant and sewage plant, and the storm drains, and the whole site plan for all the buildings you use, and often, the buildings, too.

Engineers have their hands in just about everything, yet few people notice them laboring behind the scenes.

William Reim, P.E., is an engineer. The letters stand for "professional engineer," a licensed profession with numerous subcategories. Reim's specialty is the most common one: □civil engineering. He works for Chazen Cos., a firm whose main office is in the City of Poughkeepsie, and mostly does site plans for housing subdivisions and commercial developments.

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Kathy McLaughlin/Poughkeepsie Journal
William Reim, in his office with Chazen Cos., says an engineer's job is to make sure buildings and site developments take public safety into account.

What makes an engineer tick, Reim said, is a problem-solving mentality.

"It's trying to define a problem and find a solution," he said.

"Our job is to make sure that buildings and site development get built in a safe manner that's beneficial to the public," he said.

In his work, it literally starts from the ground up. "You start with soils investigation," he said, and then you move on to foundation design and then the superstructure.

Some engineering is spectacular, such as bridges and skyscrapers. But civil engineers also design the unseen utility work below ground, without which civilization would be pretty much a mess.

Reim often works with several other specialists on a given project.

"Generally, it's a team effort," he said. "A lot of people can get involved." That includes surveyors, environmental experts, architects and other specialties.

"We have a whole group that does planning and regulatory," Reim said.

He has a specialty, too, which is structural engineering, and has also done work on a number of dams.

One of his favorite projects was working on the Vassar College Center for Drama and Film in Poughkeepsie, handling survey, site plan approval, site-work design and utilities, as well as construction administration. The architect was the famed Cesar Pelli.

What he liked about that job was not only working with Pelli, but with project owners who had enough money to enable something special to be produced, "where it's a joy to build," Reim said.

Often, the engineer's challenge is to bring the cost down, and sometimes with lamentable results.

"I hate it when a developer doesn't want to pay for a pavement thickness that we would recommend," Reim said.

The predictable outcome is the road or sidewalk breaks down prematurely.

Another function of engineers is often the administration of the construction contract on behalf of the owner. An engineer or architect, or both, is keeping tabs on the job, while it is the contractors who are visible to the public.

Profile

Name: William Reim.

Job: Professional engineer (civil engineer).

Years in field: More than 33.

Background: Worked for New York state Office of General Services as building construction engineer; for IBM Corp. in Poughkeepsie as staff civil engineer; and for Chazen Cos. since 1993, now serving as director of specialty engineering services.

Education: B.S., civil engineering, Rensselaer Polytechnic Institute. Registered professional engineer. Also, continuing education and training courses.

Job facts

Civil engineer

The work: Designing wide range of public works, private construction projects.

Training: College education in engineering curriculum deemed essential. Rules vary by state, but generally, a combination of training and practice is required to progress through two stages, each with an exam, to become a registered professional engineer. The usual path is to become an intern engineer at a company that has licensed engineers to serve as mentors and supervisors.

In New York, six years of education and experience credit are required to take the Fundamentals of Engineering exam. A total of 12 years of such credits are required to take the Principles and Practice test and, if passed, to get licensed.

Prospects: Seen about average by labor officials, but insiders say there's a talent shortage looming.

Pay: Engineers earn some of the highest average starting salaries among graduates with bachelor's degrees.

There are about 1,330 civil engineers in the Hudson

"What they (the public) don't realize is that they're following a sealed plan," one drawn up and certified, or sealed, by the licensed design professional, Reim said.

Site design is getting tougher in the mid-Hudson.

"Development now is definitely slower and more expensive for a developer," he said. There are more laws and rules. And, "All the easy lots are gone," Reim said.

He recommends the field to people looking for a career, provided they're willing to learn the math and science background that's needed.

"I think it's a terrific career for anybody if they have the interest in seeing things built," Reim said.

Joseph Lanaro, vice president of engineering for Chazen, recruits engineers.


"We like to look for intern engineers to integrate them into our office environment early on while they're still in school," Lanaro said. He recommends even freshman year internships. "It helps them sometimes refine the direction of their academic programs."

While federal statisticians believe job growth in engineering will be about average, Lanaro says the situation is better than that for career-seekers.

"I see there being a significant need for more civil engineers in the future," he said. "There has been a decline in engineering students graduating in the U.S. and an increasing demand because of the need to manage our nation's declining infrastructure."

Says Reim, "Without the profession, I think we'd be in bad shape."

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Valley, with average entry-level earnings around \$56,940 and experienced workers averaging \$93,150. Overall average, \$81,080.

Sources: □ New York state Department of Labor; federal Bureau of Labor Statistics, New York state Education Department; Chazen Cos.

On the Web

- U.S. Bureau of Labor Statistics: www.bls.gov/oco/ocos027.htm
- National Council of Examiners for Engineering and Surveying: www.ncees.org
- On the Job stories are archived at: www.poughkeepsiejournal.com/on_the_job



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