

"WE DO IT ALL"

AG ENGINEERS HAVE THE BACKGROUND TO DO ANYTHING

When the Twin Towers in New York collapsed on Sept. 11, 2001, structural engineers were called in to assess the damage. Jerry Wille, president of Curry-Wille and Associates, says agricultural and biological engineers might have been a better choice to check the damage.

"Did anyone think of the electrical systems that were alive and shocking, or the sewer, or the gases that were leaking? It wasn't the structural damage that was a major concern, but that's what everyone thought. There were also the mechanical and electrical concerns," says Wille. "Ag and biological engineers have all of those elements in their backgrounds. One individual understands not only structural aspects, but also heating, water flow, sewers, the biological contamination, — all that is in one individual and someone like that becomes a very valuable resource for catastrophic occurrences.

"The ag and bio engineering profession is very broad," says Wille, "and that gives us a general sense of engineering principles in a lot of different areas. "We don't think we do anything spectacular, but when you talk to other professional societies, people in foreign countries, and the general public on behalf of ASABE, you start to realize that they are in awe of our profession ... our breadth is surprising to them," adds Wille.

Wille, who was president of ASABE in 2004-05, says that respect from both the general public and other professions in terms of an ag and biological engineer's qualifications and ability stood out in his mind during his term.

"Agricultural and biological engineering is so broad based, and there are so many opportunities to do so many things and get into so many areas," says Wille. "When students graduate from college, they don't really realize what kind of tools they have in their tool chest. The engineering background is so strong that they can do anything. They just don't know it."

Wille received both his bachelor's and master's degree in agricultural engineering from Iowa State. He focused on structures and environment in his undergraduate work and the major emphasis in his master's degree was on waste management.

After graduation, Wille took a job with Norval Curry, who was a consulting engineer. Upon receiving his professional licensure, Curry and Wille formed Curry-Wille and Associates.

The firm, located in downtown Ames, Iowa, employs 14 people and specializes in agricultural research facilities, livestock facilities, commercial facilities, master planning, and grain, seed, fertilizer, and chemical facilities. The firm also provides design services for building layout, structural, mechanical, electrical, site development, manure management, and failure investigation.

"What's neat," says Wille, "is being able to help a client create what they need, have a vision of what they want to get done, and collectively see that facility in your mind even before it's built, even before it's drawn on paper. You have a vision of what it all looks like, and then you help the contractor build that vision. Developing that vision gives a feeling of pride," he adds.

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"The first project I ever worked on was a bull stud facility in Wisconsin. I had an opportunity to visit it for the first time long after it was built," Wille says. "When I walked into that facility, I felt I had been there before. I knew which way to turn, which door knob to turn, which way the door would swing. I knew it ... that's the kind of vision you create in your mind and put on paper when you design a project."

Another important aspect of Wille's work is evaluation of concrete facilities and structural grain elevators.

"The facility life of many earlier built grain elevators is wearing out," says Wille. "Grain elevators, if properly constructed, would last 80 to 100 years. Unfortunately, initial ones were built when people didn't have a sense of dynamic pressure in the grain, and grain was handled at 2,000 to 5,000 bushels an hour. Since then, there is more than 50,000 to 75,000 bushels an hour being handled, and the dynamic



ASABE member Jerry Wille stands inside the future dairy farm his firm designed for Iowa State.

pressures are much larger than in the slower rate, thus causing the elevators to be stressed to the point where the structure fails. The bin will burst open, frequently in a very explosive nature, ripping from the top to the bottom,” Wille explains.

Wille has been called in several times to secure an area that has resulted from a dust explosion in a grain elevator. “Grain dust explosions,” Wille says, “involve initially securing the site. It’s an interesting challenge. You try to save portions and pieces but not have anyone get hurt.

“I remember one dust explosion where there was concrete hanging all over the place and ready to collapse on someone. My job was to go out there and crawl around in the debris, use a crane, and/or inspect the facility by helicopter. I evaluated the damage and orchestrated the removal of those portions that were dangerous and unsecured. It involved engineering with a wrecking ball,” explains Wille. “It’s a lot of responsibility and power and a bit scary. But it is also a tremendous rush!” he says excitedly.

Safety is always an issue when it comes to projects his firm designs. Wille admits he is intolerant of mistakes.

“Mistakes mean litigation or that someone might get hurt. It’s just a bad deal for everyone. I have zero tolerance for mistakes,” Wille says emphatically.

With the safety aspect in mind, Wille says that the uniqueness of the facility and its public nature are always considerations when designing a project.

“We not only care about the animals we are designing a facility for but also the people who will be using the facilities. We envision what it would be like to go through the facility in a wheelchair with no hearing or speech; all of those things have an influence as we go through the planning process,” explains Wille.

Whether designing a livestock facility, a grain storage, or any other type of facility a client may request, Wille says the best part of his job is being the project manager.

“You have the ability to create,” he says. “A project manager has the fun of putting together a program based on needs.”

From designing the type of housing facility and including areas such as ventilation, lighting, manure handling systems, and utilities to the selection of door knobs and hinges, Curry-Wille and Associates has the experience and educational background as agricultural engineers to “do it all.”

“I do the work I do, like other humble agricultural and biological engineers, because it’s fun to do, not because of the recognition,” says Wille. “I enjoy it!”

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