

First digital issue of *Midwest Engineer*

SEE PAGE 2 FOR DETAILS

MIDWEST ENGINEER

NEWS MAGAZINE OF THE WESTERN SOCIETY OF ENGINEERS

WINTER 2011

Water for the Dry Season

BRINGING WATER
TO CUETZALA
DE LA REFORMA,
GUERRERO, MEXICO





DEAR READER,

Welcome to the new *Midwest Engineer*.

With this first issue of 2011, the Western Society of Engineers marks the biggest change in its award-winning publication since *Midwest Engineer* was introduced in 1948, sixty-three years ago.

We are switching to an electronic medium for distribution. By taking this step forward, WSE administration and staff have ensured that this magazine will continue to provide members and other interested readers with a publication that is lively, informative, and responsive to the needs of its current and expanding audience. This issue is being produced both electronically and in a printable version as a transition to online distribution.

Here's what an electronic format means for you:

- *Midwest Engineer*, originally printed in black-and-white and later enhanced with another single color in each issue, will now appear in full color in *every issue*.
- *Midwest Engineer* will expand its coverage of engineering news and trends beyond its customary fields of discipline to include a far broader range of engineering, technology, management, and scientific practice and study.
- *Midwest Engineer* will now feature clickable links within several articles that will lead to related audio and video content that will expand and improve your reading experience.
- *Midwest Engineer* will provide individual members with a user-friendly means of earning IACET-CEUs (International Association for Continuing Education and Training continuing education units) required for professional certification and career growth by contributing articles for publication. (Contact the WSE office or the editors for editorial guidelines.)
- *Midwest Engineer* will become a much needed medium through which engineering firms and departments can promote their services with illustrated press releases, public relations articles, and original narratives.
- *Midwest Engineer* will now carry full-color advertising with links to sponsors.
- *Midwest Engineer* will continue to feature a calendar of upcoming events, but now those reminders can include links to descriptive information and to reservation forms that will enable you to respond immediately to notices of meetings and social events.
- *Midwest Engineer* will be distributed to its subscribers automatically; you won't have to remember to log in to the WSE site for each issue.
- *Midwest Engineer* issues will be archived so that you can refer easily to previously published articles.
- *Midwest Engineer* will shortly include links to the WSE Web site, LinkedIn, Facebook page, and Twitter.
- *Midwest Engineer* will provide a mechanism for reader talk-backs via the WSE Web site.
- *Midwest Engineer* is acting responsibly and economically to provide you, the members of WSE, with even greater coverage of individual and corporate members while taking advantage of new technologies and options.

It's an exciting time for *Midwest Engineer* magazine and for Western Society of Engineers. We're moving forward to serve you, our readers, with better, faster, and a wider variety of content. If you have comments or suggestions, we'd like to hear from you.

—THE EDITORS

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WHO NEEDS WSE?

Is your membership going to ensure your place in history as part of the pantheon of engineers whose heroic accomplishments have changed the course of history? Will it speed your promotion to CEO or at least get you a raise? Will it make you an Engineer Among Engineers, the guru to whom others turn for insight and wisdom?

Most likely none of these honors awaits just because you belong to this Society. Why bother then? Why spend your time and money chasing glory that may never be?

It's simple, really.

**Western Society of Engineers
will make you a better engineer and help you grow
professionally and personally.**

It will happen. But there's a caveat. It will only happen when you make it happen.

To achieve the promise, you must contribute—your expertise, a bit of your time, your presence. You can't sit back and wait for benefits to rain down upon you; you have to become the rainmaker.

Be a mentor to others. More important, be open to mentoring from others—from those younger and older, from engineers working in fields radically dissimilar from your own, from women and from men, from those whose backgrounds are richly different from yours, from those whose success is known, and from those who are only now stepping onto the ladder.

Share your knowledge. Let others know what's going on in your company and within your engineering discipline. Remember that although your WSE companions may work in totally different applications from yours—or may have moved out of the field of engineering entirely—they remain interested in science and technology. Question and listen.

Lend a hand. Join with your colleagues to create occasions for growth, fellowship, and the advancement of your profession. Don't wait to be asked for your help.

Speak up. Congratulate those whose work enables you to learn and profit from your membership. And when you see missed opportunities for enriching and improving WSE, make your voice heard.

Western Society is not just about dinners and special events. It's a place for the expansion of knowledge, a place where experience is a commodity to be shared, where friendship is a treasured reward. JK

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When the Chicagoland professional chapter of [Engineers Without Borders](#) (EWB-USA) took on a water project in Mexico in 2006, they could not have imagined the twists and turns that the project would take. Now, more than four years later, they can look back at a sustained effort and collaboration with the village that produced a water tank and delivery system. So far, the completed project is being held up as a model for other projects by the Mexican state of Guerrero.

Water for the Dry Season

BRINGING WATER
TO CUETZALA
DE LA REFORMA,
GUERRERO, MEXICO

ROBERT GEIGER,
ENGINEERS WITHOUT BORDERS

Initial assessment

The project was brought to the chapter's attention by an engineer, Dina Najera, who grew up in the village of Cuetzala de la Reforma and who has become that village's champion here in the United States. She led a team of four people down to Cuetzala in October 2006 to do an initial assessment of the situation and an assessment of the community's overall health issues. They reported back in Chicago about a village up in the central Mexican mountains that got their water from springs. During the wet season (June and July) there are many local springs from which people can get water; during the dry season, all the area springs dry up, except for one—La Pila. That spring gets low but never runs out of water. It gets low enough, however, that the village rations water to each family at the end of the dry season (April and May).

The village of Cuetzala de la Reforma is about halfway between Mexico City and Acapulco, up in the mountains of the Sierra Madre del Sur, not far from the Rio Balsas. Its 150 people live on the hillside, well off the paved road that goes to Cocula, the county seat. To get from Chicago to Mexico City is about a four-hour flight; to get from Mexico City to Iguala (100 miles) takes two hours by bus. To get from Iguala to Cocula (30 miles) takes about 40 minutes by bus. To then go the last 20 miles to Cuetzala takes another two hours by slow cab.

There were other issues in the village. The toilets at the school did not work, and villagers suggested that maybe we could help fix them. There was a problem with cattle drinking from a pond and then sometimes getting sick and dying—about 10 percent a year of the total in the village. I remember thinking, upon hearing the team's report, that there were no easy solutions to Cuetzala's water problem. Indeed, I learned later that about 300 years ago some people moved away from the village to found a new village, Cuetzala del Progreso, because it was near a steady and good water supply.

The team thought through various solutions but did not find a good fix immediately. Instead, they came up with a couple projects that could be implemented in June 2007 to show the village that we could get something done. This attitude would later cause problems. To fix the school's toilets, we suggested replacing them with dry composting latrines. We also installed a rainwater catchment system on the school roof and built a hand washing station, fed by that stored rainwater. The team taught the children (and their parents) how to use the dry composting latrines and why it is important to wash your hands. The team came back to Chicago thinking that we had a finished a very successful implementation trip.

Additional analysis of water problems

It soon became clear to everyone involved that more assessment and analysis would be needed to come to a sustainable





Dry composting latrines

and permanent solution to the water problem. After all, Cuetzala had had a seasonal water shortage for, probably, centuries; we told ourselves that if there were an easy solution, someone would have thought of it by now. Therefore, the next couple trips to the village, in fall 2007 and summer 2008, were devoted to testing water quality from La Pila and Acalman (a pond not too far from the village that had water all year), testing La Pila to see how fast it could recharge while being pumped, and conducting a geological analysis of the area to determine (as best we could) where the water in La Pila was coming from.

The team evaluated several possible solutions to the water issue. One involved repairing and expanding a dam—La Presa—that had been built by the government several years earlier. Because the dam had not been built correctly, it leaked and had silted up, and the water left in it—by our testing—was basically unfit for consumption, including by animals. We decided that trying to repair it would be cost-prohibitive. Another solution—drilling a new well—was dismissed because we could not rule out the possibility of drilling through the aquifer that fed La Pila, causing that spring to run dry.

The team and the village eventually came to the same conclusion:

the best option would be to build a large water tank that could fill during the wet season and store water until needed in the dry season. The village assured us that La Pila began overflowing during the wet season and continued overflowing continuously for about six weeks. That fact made a water tank the safest solution. We calculated that a 100,000 gallon tank could be filled up with excess water from La Pila in about 40 days; this was water that had been just running down the mountainside. We began designing a water tank, and we started thinking about the rest of the systemic solution.



Help in solving problems

All during this time, team members were forming meaningful relationships with village residents, and the team was getting to know more about how Cuetzala, and that region of Mexico, did their business. Early in the project we came to understand that there was a large expatriate population from Cuetzala who lived in the Chicago area, and they were very actively engaged with the community. While we were assessing and testing water, this group raised enough money to build a new church in the village (which was finished even before we broke ground on the water tank). We learned that the village polity is largely communal, with decisions being made basically by consensus, and the expatriate community has a large vote regarding village decisions.

We also learned about a grant program available for infrastructure projects such as we were proposing, and we applied for a 3 x 1 grant from the Mexican government, which we won late in 2008. This meant that if EWB put \$10,000 into the project, it would be matched by similar amounts from the state of Guerrero, the county of Cocula, and the Mexican federal government, for a total of \$40,000. This was a great help in starting (and finishing) the project,

as we did not have to worry too much about fundraising through the Chicagoland chapter of EWB for this project. It did, however, cause problems of a unique nature, because of the bureaucracy and rules surrounding these grants.

We first applied for the Mexican 3 x 1 grant in the fall of 2008. We were awarded the grant in November and then told that we had to spend the money by the end of the calendar year. There was no chance of getting a water tank built in six weeks, so then we were told to reapply in January of 2009, and we would get the money earlier in the spring and be able to finish the project by the end of the year.

With the expectation of money coming in the spring of 2009, the team began devising a construction schedule that would provide supervision of the crew from April through June. A small group went down to Cuetzala in April 2009 to help lay out the site and begin breaking ground. This traditional phrase, breaking ground, was totally accurate, because the ground in Cuetzala is virtually all rock. It has to be dug out with picks, and occasionally with explosives. A profes-

The Ram Pump

The ram pump that fills the main tank is worth some explanation. It uses gravity and a large amount of water to pump a small fraction of that water uphill. It has only two moving parts, two check valves that are designed to use the water hammer effect to create the pressure needed for the pumping action. It is an old idea and was patented more than 100 years ago. However, it is a subtle idea and needs some understanding to get it to work right. We tested the pump in Chicago before shipping it down to Mexico, and we could not make the first ram pump work, so we returned it and purchased a ram pump from Rife and tested it in Chicago. It worked well, and we shipped it to Mexico with the solar panels, immersion pump, and other fittings. When we installed it in Cuetzala, we originally could not get it working, and we started to panic. Finally, a team member partially closed the feed valve, and it started to work. We heaved a sigh of relief when the pump started working, since most of our design was based on that pump. We quickly figured out the difference between our test conditions and the real application: Cuetzala is at an elevation of about 5,300 feet. So the air pressure in the pump's bell chamber was not as great as in Chicago at 600 feet above sea level. That was the one variable we could not replicate in Chicago.



sional mason ("el maestro") was hired to head up construction; he had experience building water tanks in neighboring towns. At a capacity of 500,000 liters, this would be the biggest water tank he had built.

Although we got confirmation that the grant had been awarded, we did not see any money through the summer. We stopped work after our initial seed money had run out in May, with one wall up, and waited for the Mexican government to deliver some of their promised grant. We heard rumors that, since the county of Cocula was the primary administrator of the grant and since Cuetzala had not voted for the county president in the last election, she was holding up the grant.

The grant money finally came through in September with delivery of materials from Cocula that included cement, aggregate, and rebar; and construction resumed. We were overjoyed to see that by November all four walls were going up. We also heard that "el maestro" had gone on a three-week bender, and his apprentices were now running the project. Because they had trouble reading our drawings, they had not put in the pipes through the fourth wall to get water out of the tank. We hastily began planning a trip down to Cuetzala to see what was really going on.

The local crew had the tank well in hand. When we got there, they were mortaring the inside walls. Much to our relief, there were three pipes through the wall, although not where the drawings called for them. We busied ourselves upgrading the area around La Pila and getting ready to install the ram pump to pump water from a spring box adjacent to the spring into the tank, about 100 feet away. This included digging a trench from the spring box to the tank and a shorter trench for the drain pipe that would carry excess water away from the ram pump.

Bureaucratic snags

The trip in December 2009 ended up being much more about meetings than about construction. Dina and others from our team met twice with the Cocula county board president and once with the governor of Guerrero during our visit. All the meetings were aimed at getting the county and state to release the remainder of the 3 x 1 grant. We had to show that we had used up the money they had previously given us before they would release more, and they wanted original receipts in every case. In one instance, the county president stood us up at a scheduled meeting so that she could attend a political rally. It really was maddening.

To give readers a taste of the bureaucracy involved with this project, I will relate the story of the ThoroSeal. This is a material that coated the inside of the tank to make it waterproof. We got this donated by the ThoroSeal Company, who shipped it down to Mexico. During the December trip, we traced the shipment to the Cocula bus station, and we thought that we could easily get it shipped to Cuetzala during the eight days we were there. We could then help the

local crew to apply it. It did not get there while we were there; in fact, it took Dina two weeks to convince the bus station to release the shipment to us and allow it to be delivered to Cuetzala.

Completion of the project

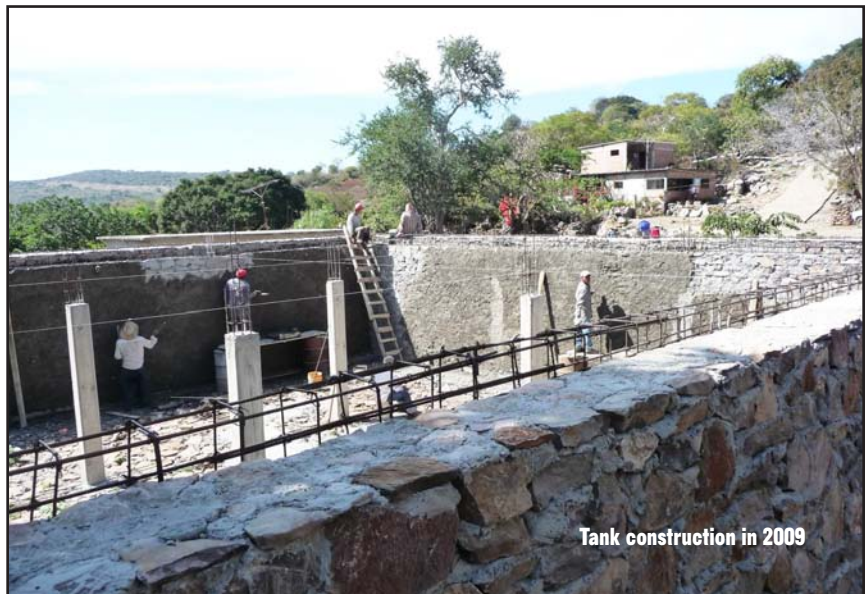
By the end of the year, we heard that the tank walls were finished, and the final major part of construction—the roof—was under way. This would be a concrete roof, with two steel access doors. By the end of January 2010 we saw pictures of the completed tank, and we also saw that the village workers had graded and poured concrete around the filling area to channel spilled water away and keep the area clean. It looked quite nice. We finished our reporting tasks and began planning the completion of the entire project, including installation of the ram pump that would fill the tank, and the “daily use tanks.” These smaller tanks (~5000 liters) would be filled with a well pump powered by three solar photovoltaic panels, and they were designed to hold enough water for one day’s use by the entire village. These tanks would make daily water collection easier for everyone who carried water back to their houses and keep La Pila clean, since the water carriers would no longer have to dip directly into the spring.

We planned two more trips to finish all the remaining work. The trip in May would see the installation of both pumps before the rainy season started, along with other peripherals like the improved spring box, supply line to the spring box, aerator for the main tank, the plumbing around the daily use tanks, and the immersion pump to fill the daily use tanks. The trip in July would be to make sure that the tank was filling as designed and to arrange a dedication and celebration of the end of the project.

The last major task would be finished by the village. This was to build a partial shelter around the daily use




Pouring the tank roof



Tank construction in 2009

tanks, including a roof over the tanks. The team went back down in July to install the solar panels to power the immersion pump and to be the guests of honor at a party to celebrate the end of the project. Everyone had a great time, and as far as we know, the village of Cuetzala is very happy with the project. According to the last report we got from Dina Najera, the tank was about two thirds full at the end of the rainy season, and the village was going to finish filling the tank manually from La Pila.

We will be able to tell in a few years if this project has been a real success. Right now, we have some ear-

ly signs that the village and the government of Guerrero consider it a success. The expatriates in the Chicago area want to give us a plaque with the names of all the travelers who worked on the project. Also, the Mexican state of Guerrero would like us to enter into a partnership with them for more water projects. Maybe this is because we were the only 3 x 1 grant, out of 22 in the state, to finish our project this year. By one measure, this project was a resounding success: we made great friendships during the course of the project. In fact, one of our team members, Todd Doweidt, is considering buying land in Cuetzala. 

Greg put down the phone.

It was a strange call. Mega Package had called to ask him to bid on a training program for the first line supervisors. Greg's training company had done this work before but not a multi-year project training as many as 2,500 front line supervisors in 40 plants across the USA. There were seven other international training companies bidding. With a \$10 million dollar a year training company, he was the only little guy being asked to bid. This was a mandate worth millions of dollars, and he had never done an assignment larger than a few hundred thousand dollars at a time.

This is a situation many mid-sized companies find themselves in when they take on their first mega contract. Growing the reach and expertise of your company is the goal of many organizations, but under-pricing the first mega project is one of the biggest mistakes to avoid. A large multi-year project is often more complex and, hence, more expensive to manage because of the many variables. The more people involved, the more planning and re-planning is needed. This means the mid-sized company often has to add more overheads to manage the process.

The peaks and valleys of staffing that comes with larger contracts also create havoc with the billing and cash flow for the mid-sized company. Larger companies want more choice, and unless the mid-sized company can offer a wider range of modules at dif-

ferent price points to cover the different levels of work and value provided, the whole process can quickly become unprofitable as well as unmanageable.

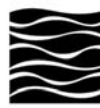
As Greg brainstormed the approach with his team he realized he needed some help. He knew this move would be dangerous for his company unless he developed a better understanding of what was involved in undertaking larger projects. He called his buddy Tom, a master strategist in helping mid-sized companies, especially with pricing strategy difficulties. After discussing the opportunity, Tom gave him the following advice:

- 1. Put together a list of the services your company is offering now, and in a parallel column list the price you charge for each of these services.** Greg spent some time listing his ser-

SHOULD YOU INCREASE YOUR PRICES

TENFOLD?

STUART MORLEY



VICES. He had half-day, full-day and multi-day packages that could be delivered in small or large groups. He also had modules on leadership self-awareness, the leadership phases, how to conduct effective meetings, diagnosing and managing performance gaps and communication effectiveness, as well as a number of add on services.

2. **Create a second column to list the bare-bones price for each service.** Greg then went through his list of services to calculate the bare bones service and price he could offer for a client in each case. This exercise was not easy; it took a few iterations until he came up with bare bones prices for each service.
3. **Create a third column that lists prices that are at least 10 times the bare-bones price.** Tom had warned Greg that large mandates are more expensive to provide than smaller mandates. You need to build in ways to cater to greater variability in audiences, needs, and demands that add to your costs to deliver these services. The way to accommodate this variability is by matching the different value needs to different pricing. For Greg, his first module was now listed as \$70 for bare bones and on Tom's advice of using ten times as his multiplier he listed the deluxe version at \$700.
4. **In a fourth column list the extra value you can provide, so that as people pay more, they get more value.** Greg now looked at the \$70 and the \$700 versions of module one and challenged his team to think what they could add to the \$70 module to make it worth \$700. Tom used the example of airplanes: there were some folks who had paid \$300 and some who had paid \$3,000 for the same flight, but they were not all getting the same level of service.
5. **Take these new service offerings and wrap them into different ways to make it easy for clients to select.** Greg and his team realized they could offer the services per person, per group, or with different delivery channels (Webinars, onsite training, etc.).
6. **Do not quote a total price.** Greg provided a schedule of modules (from basic price to 10 times that price for

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deluxe versions) for Mega Package to select. This approach would be very profitable for Greg's company, and he hoped Mega Package would like the idea as they could secure customized training for staff in a way that was very flexible. Mega Package would also not need to get their legal department involved, as they were not signing a multi-million dollar contract. They were purchasing modules that would be customized for their needs at price points per module that were well below the levels that required senior management or board approval. Greg was hoping this approach would mean Mega Package could give the go ahead for the first few modules without delay and pay for each module in advance.

7. **Finally, get the first line supervisors to apply the training to performance measures in the company.** Greg included an offer to present a few Supervisor Recognition Certificates to supervisors who applied the training in ways that resulted in better performance at Mega Package. He hoped the supervisors valued the opportunity for recognition and that management would see how this was the link to get alignment to their performance measures. Greg also hoped this would link to his bottom line!

It is not unusual for the senior management of a large public company to be replaced within a few years, and

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Many mid-sized companies think they have a pricing problem—especially when tackling a larger contract. Most times the real problem is surfacing the value the client is looking for, dividing it into modules or other bite sized chunks, and pricing each chunk so it can be delivered in a range of ways from bare bones to deluxe.

therefore it is important that mid-sized companies make sure that if a large multi-year contract is suddenly cancelled they are not out of pocket or do not have to face years of legal battles with a large company to get paid. Finding ways to get paid as you go, and providing incentives to get your services accepted and supported at all levels in the company reduces the risk it will be cancelled.

A few weeks later Greg got the call: he had won the contract! Greg quickly shared the good news with his team and

sent a quick text message to Tom: “Just got the magic phone call saying that I have won the contract! Thanks for your coaching. I expect the eventual value will be between \$1M and \$3M.”

Many mid-sized companies think they have a pricing problem—especially when tackling a larger contract. Most times the real problem is surfacing the value the client is looking for, dividing it into modules or other bite sized chunks, and pricing each chunk so it can be delivered in a range of ways from bare bones to deluxe. Using these steps can help your company make the jump to the big leagues.

Stuart Morley is a master strategist and author of “Weather the Storm. A Survival Guide For Mid Market Organizations.” He is the founder of BRS Jump, a division of Morley & Associates, Inc. With 30 years experience, Morley has worked with more than 300 mid market clients in many different industries, including manufacturers, financial and professional service firms, and distributors transitioning companies for growth and profitability. For more information email him at stuart@brsjump.com, visit his website at www.brsjump.com or call (705) 646-7722. 



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TOPICS, TRENDS, AND TRANSITIONS

NEWS FOR THE WESTERN SOCIETY OF ENGINEERS

Washington Award

Created in 1916 by John W. Alvord, a past president of the Western Society of Engineers, the honorary Washington Award recognizes the “devoted, unselfish, and preeminent service in advancing human progress.” It was named the Washington Award as a reminder that the nation’s first president was an engineer. It is conferred annually upon an engineer whose professional attainments have advanced the welfare of all peoples. The elected commission of the award is made up of representatives from Western Society and six other engineering societies.

Western Society members who are serving on the Washington Award Commission are

- Allen G. Behring
- John L. Breitsameter
- Christopher Burke
- Dennis Demoss
- W. Robert Ivarson
- Margaret Vignocchi
- Don Wittmer

2011 WASHINGTON AWARD RECIPIENT

The Washington Award Commission has selected Martin C. Jischke, Ph.D., President Emeritus of Purdue University, as the honoree for the 2011 Washington Award. Dr. Martin has been chosen for his dedication



Martin C. Jischke, Ph.D.

and leadership at Purdue University and other academic institutions in promoting engineering research, institutional development, and the pursuit of excellence in education.

Dr. Jischke retired as Purdue University’s tenth president in July 2007. A Chicago native, he received his bachelor’s degree with honors in physics from the Illinois Institute of Technology and earned his master’s and doctoral degrees in aeronautics and astronautics from the Massachusetts Institute of Technology.

A prominent higher-education administrator and advocate, he formerly was president of Iowa State University; chancellor of the University of Missouri-Rolla; and faculty member,

director, dean, and interim president of the University of Oklahoma.

In 2006 President George W. Bush appointed Dr. Jischke to the President’s Council of Advisors on Science and Technology. He has held numerous national leadership roles in service to colleges and universities and has served as president of the Global Consortium of Higher Education and Research for Agriculture. Dr. Jischke is a Fellow of the American Association for the Advancement of Science and American Institute of Aeronautics and Astronautics. He is recipient of the Centennial Medallion of the American Society for Engineering Education. The Illinois Institute of Technology, the National Agricultural University of Ukraine, Anderson University, and the University of Evansville have awarded honorary doctoral degrees to him. He has also received the Illinois Institute of Technology’s Professional Achievement Award and the Ukraine Medal of Merit from that nation’s president for outstanding service by a foreign national. He received the U.S. Department of Agriculture’s 2004 Justin Smith Morrill Award. In 2006 he was elected to the Indiana Academy and received both the C. Peter Magrath Institute/WK Kellogg Foundation Engagement and Outreach Award and the Commission on Human Resources and Social Change Distinguished Service Award

from the National Association of State Universities and Land Grant Colleges.

Dr. Jischke has served on numerous civic, state, and corporate boards during his academic career. Additionally, he has been a science advisor and consultant to a range of state and federal agencies, government officials, and corporations, including a term as a White House Fellow and Special Assistant to the Secretary of Transportation. He serves on the Board of Directors of Vectren Corporation, Wabash National Corporation, and Duke Realty. He is a trustee of the Illinois Institute of Technology.

National Engineers Week

February 20 to 26, 2011, has been designated National Engineers Week for 2011. In addition to the Chicagoland Engineers Resources list appearing in the Fall 2010 issue of *Midwest Engineer*, below are some local events that celebrate Chicagoland Engineers Week:

- Argonne National Laboratory's tenth annual "Introduce a Girl to Engineering Day" on Thursday, February 24, 2011. Participants interested in math, science, or engineering fields will spend the day with Argonne mentors who will discuss possible careers, participate in hands-on activities and experiments, and tour some of Argonne's engineering and research facilities. Contact www.dep.anl.gov/p_k-12/iged
- EWEEK Expo at IIT-Rice Campus will feature programs sponsored by the DuPage Area Engineer's Week Committee at an Open house on February 26 from 11:00 am to 3:30 pm. Highlights include an exhibit of an earthquake shake table from LEGO™ that allows students to build and test their designs during an earthquake simulation. At the conclusion of this hands-on demonstration, some participants will receive a LEGO™ Skyscraper gift.

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For more information about these activities, visit www.seaoi.org or www.dupageeweek.iit.edu

WSE committees and special interest groups

Each year WSE committees and subcommittees are organized to focus on objectives that will benefit our members. All Society members are welcome to become involved in committees. Consider serving on a committee that meets your interests or goals. Below are the many opportunities in which to serve.

SPECIAL INTEREST GROUPS

- Environment
- Infrastructure/Construction
- Power
- Regional Planning
- Telecommunications/IT
- Transportation

SIGs ARE RESPONSIBLE FOR:

1. Meeting on an ad hoc basis
2. Finding speakers
3. Submitting articles for publication in *Midwest Engineer*
4. Recommending other groups and coalitions for involvement by WSE
5. Submitting reports to the WSE Board of their activities
6. Serving as media spokespersons and university outreach speakers
7. Developing position papers subject to approval by WSE's Board of Direction

MEMBERSHIP COMMITTEE

The Membership Committee oversees the membership recruitment and retention initiatives of the Society.

GOLF COMMITTEE

The Golf Committee is responsible for planning the annual WSE Invitational Golf Outing.

WEBSITE COMMITTEE

The Website Committee is responsible for determining the overall look and content of WSE's website. The committee provides a free education on internet software, graphics, and other advanced functions.

YOUNG ENGINEERS FORUM

The YEF Committee plans the Young Engineers Forum, a series of dinner meetings held throughout the year, that helps younger professionals gain a greater understanding of the business of engineering.

Calendar of Events

FEBRUARY 20–26, 2011 • National Engineers Week. See News of the Western Society of Engineers for information about additional Engineers Week activities in the Chicago area.

FEBRUARY 25, 2011 • Chicagoland Engineering Awards Banquet, University Club of Chicago. To make reservations and learn about sponsorships, contact the Western Society of Engineers at wse@wsechicago.org or at 630/724-9770 or 630/241-0142 fax.

The Western Society of Engineers holds its monthly dinner meetings on the second Tuesday of each month at Parthenon Restaurant, 314 S. Halsted Street, Chicago. There will be no dinner meeting in February because of Engineers Week activities. For more information about the monthly dinner meetings, contact WSE office at wse@wsechicago.org, 630/724-9770, or 630/241-0142 fax.

Plan ahead

SUMMER 2011: ASM MATERIALS CAMP® 2011 for high school general science, chemistry, physics, math, and technology teachers and middle school science teachers. A one-week workshop to show how to use low-cost or no-cost simple labs and experiments using everyday materials that can be integrated into existing lesson plans. Camps are scheduled throughout the summer at various locations in the United States and Canada. View the schedule at www.asmfoundation.org. Program is free and includes lunch and supplies. Two graduate credits are available for an additional cost of about \$200. Housing is provided for non-local participants at residential camps only. Schedule is 8 am to 5 pm for five days. Late afternoon or evening field trips may be scheduled. Primary faculty are two experienced high school Master Teachers who have taught materials science courses for many years and helped develop this innovative approach to hands-on learning of applied science principles. Apply online at <http://www.zoomerang.com/Survey/WEB22BHQFA6KXB/>. www.asmfoundation.org

EDITORIAL BOARD

The Editorial Board sets the editorial policies and determines the content of *Midwest Engineer*.

INVESTMENT OVERSIGHT COMMITTEE

This committee monitors WSE's investment funds to ensure the continuing financial health of the organization.

SUBURBAN COMMITTEE

The Suburban Committee plans tours, meetings, and recreational events outside of the downtown Chicago area.

For more information about a committee or special interest group, please contact Tim Seeden, WSE Executive Director, tim@wsechicago.org or 630/724-9770

Stephen H. Palac retiring

WSE Member Stephen H. Palac, P.E. has announced his retirement at the end of 2010 after 38 years at **Greeley and Hansen**. He retired as Principal and Managing Director of the MEP/IC Operating Group at the firm.

Packer Engineering introduces new Chief Executive Officer

The Packer Group, Inc. announces that Michael Koehler is the new Chief Executive Officer of Packer Engineering, Inc. As a new member of the Packer Engineering Senior Management Team, he will assist with the constructive growth and profitability of the entire organization. Before joining Packer, Koehler spent 21 years at Honeywell International, most recently as Director of Advanced Materials and Processes at Honeywell Aerospace where his responsibilities included strategic planning, global operational planning, budgeting, staffing, operations, research, and design portfolio management.

MILESTONES

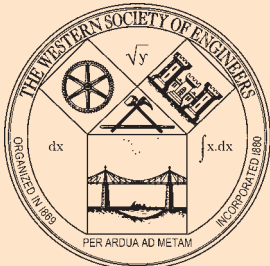
WSE Member Robert Camillone died on November 16, 2010.

Ken Olsen, founder of Digital Equipment Corp. and former Washington Award recipient, died at age 84.

THE WESTERN SOCIETY OF ENGINEERS

The objects of this Society shall be the advancement of the theory and practice of engineering, the improvement of the status of engineering practice as a profession, and the maintenance of high professional standards.

—FROM THE WSE CONSTITUTION
ADOPTED MAY 31, 1922



THE WSE SEAL

The suspension bridge; sounding party; Polaris, the guiding star for those who seek the true meridian; and its assistant, the Dipper, are emblematical of Civil Engineers. Mining Engineers are represented by some of their working tools: the sledge, pick, and drill; while the castle and cogwheel are the universally adopted emblems of Military and Mechanical Engineers, respectively.

These several designs are enclosed in four fields produced by the construction of the famous 47th problem of Euclid, probably the most prominent and useful problem in geometry, wherefore this has been deemed the most appropriate representative of that important branch of science.

Algebra and higher mathematics, the calculus, are also represented by well known signs pertaining to these branches.

Finally, the motto *Per ardua ad metam* translated means *Through Difficulties to the Aim*, intended to indicate the universal purpose of all the different branches of the engineering profession.

—G.A.M. LILJENCRANTZ
WSE SEAL DESIGNER
MARCH 7, 1882

Western Society of Engineers

STATEMENT OF PURPOSE

The Western Society of Engineers is a multidiscipline engineering society whose purpose is to actively encourage the development of engineering leaders and to promote engineering excellence and innovation; to educate the general public about the practice of engineering; to recognize the achievements of its member engineers; and to promote high professional and ethical standards.

The Society serves its constituencies and accomplishes its mission and vision in several ways:

Western Society of Engineers provides a forum for exchange of ideas between individual and corporate members, allowing them to maximize their impact within the Chicago region and to effectively and efficiently use their resources.

Western Society of Engineers influences the practice of engineering within the Chicago region to accommodate changes in society and technology.

Western Society of Engineers offers high quality educational products and services for members pursuing leadership and management goals.

Western Society of Engineers enhances the image of engineering professionals as leaders in business and society.

Western Society of Engineers is recognized as a preeminent engineering and engineering management organization within the Chicago region.

Officers

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Vic Smith..... First Vice President
Kent Novatny Second Vice President
Chris Tapas Treasurer
Alan G. Behring..... Secretary
Christopher B. Burke..... Past President

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Weldy-Lamont

Associates

Pat Hennelly



IT ALL STARTS HERE.



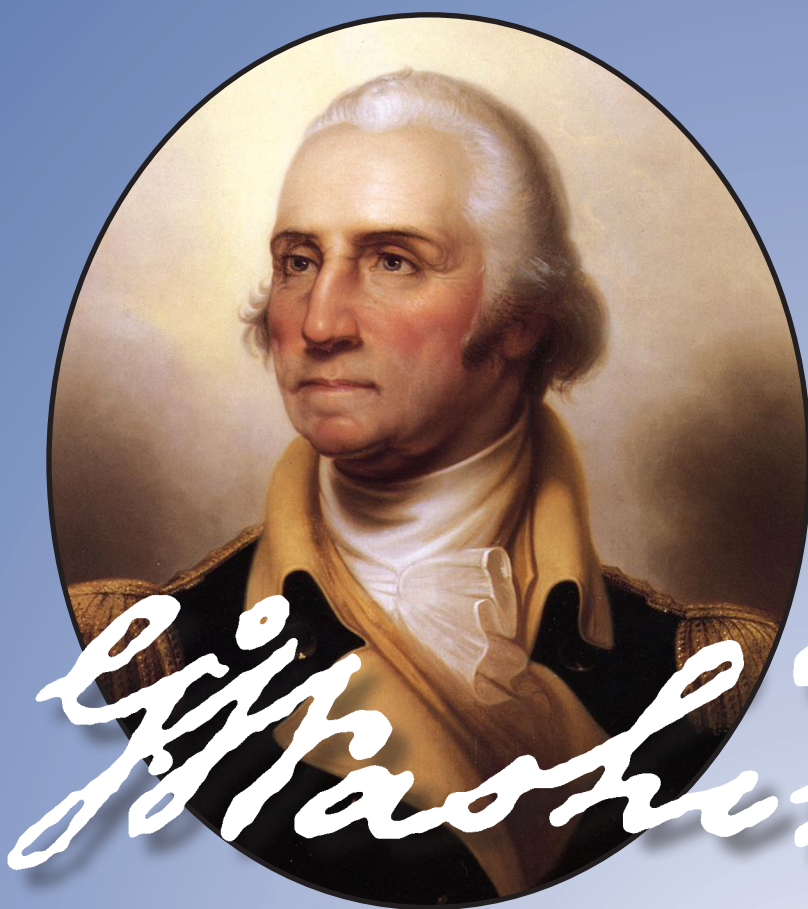
With the right systems—and technology partner—everything is possible. Every aspect of manufacturing is getting faster. But what happens to your business if you aren't? We can help make sure that never happens by enabling your innovation with technology that works hard—and smart. From rapid prototyping to lightning-fast design revisions, we provide optimal solutions that empower your productivity, enhance your sustainability strategies, and better your bottom line. Let us show you how.

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FEBRUARY 25, 2011

CHICAGOLAND ENGINEERING
AWARDS BANQUET

Reception and student exhibitions
Dinner and award presentations

The Awards Benefit will honor leaders in the fields of engineering and salute student winners of Engineers Week competitions.

The Washington Award Commission will present the 2011 Washington Award.

To make reservations and to learn about sponsorships, contact the Western Society of Engineers at wse@wsechicago.org or at 630/724-9770 or 630/241-0142 fax.