



Acting Outside the Box :

ENGINEERS WITHOUT BORDERS-USA



ENGINEERS WITHOUT BORDERS-USA
CHESAPEAKE PROFESSIONAL CHAPTER

By Paul Hlavinka, EIT, PMP, Member of CSAWWA Government Affairs Committee and EWB-USA, Chesapeake Professional Chapter

In the United States, thanks to our well-developed water treatment and distribution systems, we take access to clean water for granted. Shockingly, many other nations are not so fortunate. According to UNICEF and the World Health Organization, the majority of the world's population struggles for access to clean water. Worldwide, four people die every minute due to waterborne

or water-related diseases! This article will highlight the efforts of a local chapter of Engineers Without Borders-USA (EWB-USA), a group of professionals reaching out to communities throughout the world to provide basic engineering services. EWB-USA aims to improve the lives of people worldwide through the implementation of sustainable, community-based

water, sanitation, energy, infrastructure, and health-based projects.

EWB-USA is a non-profit humanitarian organization that was founded in 2002. Since its inception, the organization has grown to include more than 250 chapters comprised of over 12,000 members working on more than 350 projects worldwide. The national organization includes student chapters, typically associated with university engineering or public health programs, and professional chapters, which are usually based in and around a city or geographic area. EWB-USA membership is not limited to engineers; in addition to the traditional engineering disciplines, projects typically require members with backgrounds in project management, logistics, health, education, language, and finance.

EWB-USA projects help to forge partnerships between project teams and local communities, providing valuable learning opportunities for both parties. Sarah Ness is a former President of the University of Maryland, College Park (UMCP) student chapter, now a Project Engineer at Gannett Fleming, Inc. and President of the EWB-USA, Southeast Region. According to Ness, "Just as we train the community in the engineering and maintenance aspects



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of a design, the community members offer advice to our members on local construction practices and practical solutions for design adaptations required in the field. The learning experience and the sense of accomplishment when a project is completed by EWB-USA team members working alongside local community members create a mutual partnership that fosters sustainable solutions.”


The EWB-USA, Chesapeake Professional Chapter (CPC) is one of our local area’s professional chapters. Active members of CPC include both seasoned engineers and young professionals gaining valuable project experience as they progress in their careers. Al McCullough is a Principal Ecological Engineer at Sustainable Science LLC, and a member of Chesapeake Professional Chapter who has served as Professional Mentor for the UMCP student chapter’s Ilha Das Pecas, Brazil project. The Ilha das Pecas project took place between 2005 and 2007 and involved two separate project components, a cast-in-place concrete water tank with booster pump and constructed wetlands for sanitary treatment. McCullough worked

with the students on both design and implementation logistics for each component and traveled to the country for the assessment trip and later for the water tank implementation. “Volunteer work is energizing,” said McCullough, “The students possess an overwhelming optimism which is contagious to those who work with them!” McCullough is proof of this contagious optimism; he is currently engaged with a new UMCP project in Ethiopia that is in the early planning stages.



PERU TRIP AS MENTOR

John E. Sankey, a Vice President at the Reinforced Earth Company, is a member of the CPC who has mentored student chapter projects at both UMCP and Johns Hopkins University (JHU). John has been actively involved in a UMCP water treatment project located in Compone, Peru, about ninety minutes drive from Cuzco. The Compone project involves the design and construction of individual chlorination treatment systems for five water districts serving about 1500 people in the Andes Mountains. In addition to the treatment systems, a large ferrocement water holding tank was designed and constructed by the group for one water district. Sankey has served as the Professional Mentor to the Compone student project for more than a year. As Professional Mentor he has traveled with the team on multi-week implementation trips in May 2009 and in January 2010. The Compone project is ongoing, with a wrap-up implementation trip scheduled for August 2010 and an irrigation project that will continue into the following year. “We found that multiple visits to the community was important,” said Sankey. “There was concern that we would



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just drop stuff off and not return. Not only by returning did we get great response from the community leaders but we found through local gatherings that the community was greatly appreciative of our efforts.”

The role of professional chapters is continuing to develop within the national organization. Initially, a number of professional chapters including CPC germinated around student chapters, facilitating the involvement of engineering professionals with student projects. Today, many professional chapters are expanding focus to working on their own professional projects while still maintaining a strong, supportive relationship with student chapters. Teresa DiGenova, an Environmental Engineer with Black & Veatch, was recently elected CPC

President. “We are continuing our work with the many strong and dynamic student chapters in our region, while at the same time working to develop our own chapter project,” said DiGenova. “We would like to engage even more of our members in project roles that utilize their wide range of talents and interests.”

Guillermo Warley, Vice President of Product Development at Schonstedt Instruments Company, is a CPC member who is currently working to develop a potential CPC project in Argentina. Warley has a particular interest in Argentina, since he is originally from Buenos Aires. “As we look into a number of potential partner communities and organizations in Argentina, we have learned that it is critical

to have regular communication between our project team, the community, and our on-the-ground contacts. Additionally, there must be clear agreement among all of the potential stakeholders about the project’s aims and its ultimate beneficiaries. Once we know we are in agreement on these points, we should be able to move forward with a sustainable project that will be truly beneficial to a community.” With a strong project team already assembled under Warley’s leadership and some promising project leads, the CPC is looking forward to beginning work on a project of their own in the near future.



ARGENTINA PROJECT TEAM

The CPC also provides training and learning opportunities for its members and other interested participants. Kleinfelder Project Engineer Kevin Yue, and a member of the national EWB-USA Health and Safety Committee, led a Concrete Workshop and a Health and Safety Seminar for area student and professional chapters. In his work as a Professional Mentor for the JHU Chapter’s Ecuador project, Yue has been providing guidance on the construction of a community center. The team just recently went on their first implementation trip. “I am happy to report they did well on their scope as well as stayed safe throughout their trip,” Yue said. “The project teams need to have sound health and safety plans (HASPs) prior to travel. The training

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we provide aids them in developing their HASPs so they stay safe while executing their project scope effectively.”

Communication and language skills are very important when working with the project communities. Katherine Strass, a Graduate Student Environmental Science & Technology at University of Maryland, has developed a language class to provide basic Spanish Language skills for the CPC project team and any interested community members. Strass has traveled and worked in Honduras for two years and is currently working part-time at a language school in Wheaton teaching English to non-native speakers. She has also been through an intensive Peace Corps Spanish language program directed specifically to engineers and technicians who would be using their Spanish to communicate in a professional setting regarding water systems, surveys, and related subjects. “I can definitely speak to the incredible disadvantage of being a technical advisor/designer and not knowing the local language,” said Strass. With her aid, project team members should be able to improve communications and strengthen their relationships within project communities.

In light of the lack of robust public infrastructure in so many parts of the world, it is heartening to hear about organizations reaching out to share knowledge and resources. The volunteers of EWB-USA continue to work towards their goal of helping one community at a time. For more information on the organization or how to get involved, you may visit the national organization’s website at www.ewb-usa.org and find the chapter in your area. For more information on the Chesapeake Professional Chapter, visit their website at chesapeakeewb.org. 



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