

Distributions

The Quarterly Newsletter of Engineers Without Borders - Northeastern University

www.ewb.neu.edu

Editor: Roxanne Meuse

Issue No. 4 - Winter 2010

Implementation of Phase I in Uganda...Check

EWB-NEU traveled to Bbanda, Uganda, this past August to implement our design of Phase I for the Uganda project line. Phase I involved two parts: hiring a contractor to drill two boreholes (deep wells) and supervising the drilling, and implementing a rainwater catchment system on the Anglican Primary School. Both parts of this project increased the availability of drinking water for the villagers, and they offer excellent opportunities for future expansion.

The wells were drilled by our contractor, WE Consult. Due to availability of the rig and the difficulty of the underground formations at the well sites, the drillers began their work before our team arrived and finished a few weeks after our departure. Through the processes of selecting and hiring a contractor and observing drilling, our students gained valuable engineering skills and experience.

The total yield of the two wells is 10,970 L/hr. This water is currently being pumped by hand, but in the future these wells will be pumped to a tank and distributed around the village.

The team also installed a rainwater catchment system on the east building of the Anglican Primary School and repaired the existing system on the north building. The combination of these two systems at the Anglican Primary School will greatly reduce the amount of time students spend fetching water from distant sources and will increase time spent in the classroom.

Repairing the old system required cleaning the roof, gutters, and tank, hiring a tank-

builder to repair existing leaks in the tank, installing new fittings and a tap, and constructing a tap-box for the security of those fittings.



EWB members and Bbandans work on the rainwater catchment system.

The new system at the east building consisted of installing new gutters, screened downspouts, a tank, and a brick and mortar pad and tap-box for the tank. We found that the most difficult aspects of these systems were finding high quality construction materials and installing the gutters. We arrived in Bbanda with a standard US slab design for the tank pad, but we ultimately decided to use the local design of brick and mortar. We have learned from the challenges presented in the construction at the Anglican school, and we will incorporate what we now know as we move forward with rainwater system installations at the other local schools.

Our team spent much time discussing maintenance practices and fee collection with the Water Board. The Water Board was also given a detailed maintenance manual for the systems that were constructed and checklists

that can be used to inspect the system regularly.

The team also took time collecting data to help design Phase II of the water project, which will be a pumped system to increase the number of distribution points around the central area of Bbanda. We performed water testing of all sources, new and old, and we also conducted a topographic survey of the area.

The travel team visited with the students at the Catholic school to give a lecture and perform a fun activity about the positive aspects of boiling water and washing with soap. We hope that promotion of simple water conservation and sanitation education will help the village get the most use out of their system and generally improve public health.



Pouring water from a jerrycan into the hands of a grateful Bbandan girl.

We were successful in our first implementation in the village. This trip continued to develop the relationship between EWB-NEU and the village of Bbanda. Materials procurement, organizing village labor, and working with the water board were all firsts for our group in Bbanda. And, while sometimes a challenge, many lessons have been learned that will continue to serve us in future, more complex implementations.

- Ann Polaneczky



Photo Courtesy of Mary Knox Merrill/Northeastern University

Students and EWB members participate in the second Jerrycan Challenge at NU

Jerrycan Challenge

This Fall, EWB-NEU held a second Jerrycan Challenge at Northeastern to promote water scarcity awareness and to let students experience first-hand the burden that many people in developing countries face daily to retrieve their water.

Participants walked a fourth-mile route around campus carrying jerrycans filled with water. The event was held on Sustainability Day at Northeastern.

Honduras Travel Update

The Honduras committee is preparing for an assessment trip in the Yoro District of Honduras this December. Over the course of two weeks, the travel team will be conducting a full

assessment of the village of El Carrizalito, which will include surveying, water quality testing, and distributing health surveys. Currently, El Carrizalito has a population of approximately 150 people, living in 33 homes. Completing a project in this village will be a new challenge for our committee because its future water system will need to be non-gravity fed, something EWB-NEU has yet to undertake in Honduras.

During the assessment trip, the travel team will also revisit EWB-NEU's past project sites, which include El Tecuan, Los Planes, and our most recently completed project in El Chaguite. In all of our projects, EWB-NEU works carefully to design water systems that will sustain a village for many years to come, and revisiting past sites ensures that the water systems we had implemented are continuing to

work and are being properly maintained.

- Megan Fritz, Honduras Design Lead



Flipping the Coin: Ugandan Culture

The non-technical, non-calculated, non-researched side of an EWB traveling team

Culture is not just a side note in EWB projects; from my experiences, it is an extremely prominent theme in our work. We are working in societies that are often very different from that of America, and while we spend months preparing designs for the water systems, there is no amount of time that could prepare us for the non-quantifiable aspects of the country. Therefore, we must learn the hard way. However, after traveling to Uganda with EWB-NEU, I can share some insight into the lifestyles of its most interesting culture.

The first thing to talk about is, of course, matooke (mah-TOE-kay). Matooke is the staple food in Uganda, and a visitor will smell the fires on which it is cooked soon after he gets off the plane. Matooke is a starchy banana not unlike a plantain, but less sweet. It is mashed and steamed and served with a protein sauce such as fish, goat, or beans. Of course, there are other common foods, including fried cassava, fried sweet potatoes, fried Irish potatoes, fried dough, and mushroom soup.



A Bbandan woman wearing the Gomez

Fashion is another aspect of Ugandan culture that I noticed soon after arriving. It may come as a surprise, but Ugandans are very stylish; most of the time, men wear button down shirts and dress pants, and women wear dresses and skirts. What I found most interesting about Ugandan fashion, however, were the colors in women's outfits. Here in Massachusetts, neutral tones are more typical, but in Uganda, vivid colors are the standard, and the more contrast in an outfit, the fancier

the outfit becomes. Apart from the colors, one will notice the traditional dress, the Gomez. The Gomez is as brightly colored as any other woman's outfit, but it can be distinguished by its puffy sleeves, a square neckline, and a wide sash at the waist. Ann, Kelsey, and I had the opportunity to try them on one day. It was exhilarating to wear traditional Ugandan attire, but there were a many layers and it was quite hot!

A broader characteristic of Ugandan culture, and perhaps the most important, is the clan system. Most people in Bbanda belong to the Baganda ethnic group, and the Baganda divide their society into about 50 groups, or clans. Clan members are supposed to treat each other as if they are all members of one big extended family. Clans are passed down from parents to their children, although it is not known how this system first began. Since we are foreigners who have been to Uganda more than once, we were assigned clans by our friends. We joined the Nte (cow), Nkima (monkey), and Mmammba (lungfish) clans.

Ugandans treasure their relationships with people, more so than I notice in the US, and I hope that that is one of many aspects of Ugandan culture that will inspire you to travel to such a beautiful and fascinating country, one that I believe EWB-NEU will be working in for years to come.

- Charlotte Alger, VP of Events & Education

Spotlight on... Keith Nelson



Keith during PVC training in New Hampshire

It's been about three years since I first met Keith Nelson, yet just four months since he joined EWB-NEU, and a busy four months it's been! Joining our team as interim treasurer this past summer, Keith reorganized our entire financial documentation system, and he continued to help EWB-NEU in this role as we transitioned to a new treasurer. This certainly hasn't meant less work for Keith, as he was recently appointed Design Lead for our Uganda project line.

Towering over most at 6 foot 4, I like to refer to Keith as the "gentle giant." He's compassionate, both about his friends and his work. If ever there is something I need done, and quickly, Keith is there. Furthermore, he's constantly volunteering for side projects, including co-chairing our Executive

Committee, tasked with researching potential new projects as EWB looks to expand.

On top of his EWB commitments, Keith finds time to put in sixty-plus hour work weeks at Simpson, Gumpertz, & Heger. Or maybe that should read the other way around? Nevertheless, Keith's unwavering commitment to the task at hand has proved a priceless asset to EWB-NEU as we quickly grow and look to the future. Wherever life takes him, I know EWB will have left its mark, and he on our organization. I am grateful that Keith has joined our ranks, I wish him success in his endeavors, and I look forward to future opportunities to work with him.

- Matthew Walsh, President

Thank you to our sponsors!

OFFICIAL SPONSORS:



National Grid: Powering EWB into Action

EWB-NEU is proud to announce a newly formed relationship with National Grid. In addition to committing \$20,000 over the next two years, National Grid is facilitating the mentoring and assistance from staff engineers. National Grid is a major utility provider in the northeastern United States, as well as England. In the US, National Grid provides more than 3.3 million people with electrical power and 3.4 million people with natural gas. The donation is part of National Grid's continued commitment to the education of the STEM fields (Science, Technology, Engineering, and Mathematics), from primary school through college. As EWB-NEU continues into new projects, we are expecting that their expertise in electrical distribution and production will be valuable in the future.

- Gabe Woolf-Sullivan, VP of Development



Trimble Donates Two GPS Units

Trimble has donated two GEO XT GPS units and software for the use on our trips. The utilization of GPS systems on our projects has been a critical component of proper assessment and implementation since our first trip in 2005. The donation, valued at over \$15,000, will help us in our mission to help people in our work, and it will help us to become better engineers. Having access to the units both saves donor money and allows us to train our students in surveying with GPS. Northeastern's Civil Engineering Department is now considering how to incorporate the GPS into the current surveying curriculum.

PLATINUM SPONSORS:



Working in Honduras



PVC training in New Hampshire



Schoolchildren in Uganda