

Distributions

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Editor: Roxanne Meuse

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Assessment Trip to El Carrizalito, Honduras

By Megan Fritz, Honduras Design Lead



Photo: M. Walsh

EWB-NEU traveled to Honduras in December 2010 to assess the small village of El Carrizalito, located high in the mountains and only accessible by a narrow path about an hour's hike away from the main road. El Carrizalito currently has a population of 200 people and has limited access to water. This village is going to be a new challenge for EWB-NEU because the water system will require a pump at the source.

During the assessment trip, surveying was conducted throughout El Carrizalito at all possible tank locations, at existing houses and sites of future houses, around the source, and at all major elevated points throughout the village. Along with surveying, GPS points were taken at each surveyed elevation and at other important locations, such as along well-traveled paths.

Throughout the trip, a contour map of the village was drawn to later be used for the design process. The travel team also gathered flow data from the source box and determined the source flow to be 13.5 gallons per minute (gpm). Water quality tests were conducted at the source and four springs, and the results revealed that the source was safe to drink from.

A contract was developed, discussed and signed between the travel team members of EWB-NEU and the Patronados of El Carrizalito, the village elders who will govern the process of the entire project. Because the water system will require a pump at the source, various power sources were examined, including solar energy, diesel, and electricity. Solar power was determined to be too expensive and diesel was determined to be infeasible; therefore, electricity was the chosen solution to power the pump. While in country, the travel team met with an

electrical engineer from Empresa Nacional de Energia Electrica (ENEE), who had traveled from the main city of San Pedro Sula. The EWB-NEU travel team and the electrical engineer sited possible pole locations to bring electricity from the main road to the village of El Carrizalito. The EWB-NEU travel team also met with other ENEE representatives to discuss the design and receive material quotes.

On Christmas day, the travel team visited Los Oreros, one of the poorest villages EWB-NEU has seen yet. Los Oreros has a population of 59 people and consists of eleven houses, four of which have running water piped from the neighboring village of La Reynada. The water pressure at these houses ranges from 84 to 91 psi.

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El Carizzalito *Continued from previous page*

Because these pressures are significantly high, the travel team determined that it would be feasible to tap off the existing water line to bring water to the remaining seven houses. The travel team then asked a series of questions to the head of each household to determine who has water, where the families receive their water, and if they have a latrine.

Flow data and water quality tests were conducted at two springs, also known as pozos, where the majority of the village retrieves their water. The flow rates at the two pozos were 2.32 gpm and 1.12 gpm. The water quality test determined that the water was safe to drink from. Lastly, a rough contour map of the village was created using GPS data and topographic field observations to later use in the design process.

The team hopes to return to Honduras in August or December of 2011. This trip will include extending the grid and overseeing bringing electricity to the village of El Carrizalito. The travel team will also be extending the transmission main in Los Oteros to bring water to the remaining seven houses in the village.



Working in El Carizzalito / Photo: M. Walsh



Children in El Carizzalito / Photo: M. Walsh

Uganda Travel Update

The Uganda travel team is currently on ground in Bbanda, Uganda, continuing Phase I of implementation and conducting assessments for Phase II.

By Olivia Deterling

This Uganda group has had a lot of work on its plate for the past few months, preparing not only for this April trip but also with hopes of traveling again in August. Fortunately, the group has grown this semester with more students becoming interested and involved. Additionally, some great opportunities have come about during the hectic preparation for travel.

A veteran EWB member, Mike Sanders, has presented tutorials on WaterGems, a software that helps plan distribution systems, and Dan Saulnier, the Honduras team's mentor, has taught us about concepts we will need for Phase II of our design – implementing a distribution system. The travel team and other interested members have also been meeting outside of our regular weekly meetings to practice concrete mixing, surveying, water quality testing, and constructing PVC pipe and gutter systems.

On the ground in Uganda, the travel team will spend two weeks working on a total of three rainwater catchment systems, as well as conducting several assessments in preparation for Phase II.

The first remediation we will be performing is on the rainwater catchment system of the Bbanda Roman Catholic School's South building. Its gutter system is in disrepair, and its tap box was designed very poorly. (See below.) The tap box is not large enough for a jerrycan to fit inside, it doesn't have a proper drainage system to keep water from pooling up, and it has a bent lid, preventing any type of locking for security. We plan on installing a new, larger tap box with the design aspects the current box is lacking, as well as hanging an entirely new gutter system.



Current tap box at Bbanda R/C / Photo: EWB-NEU

At the Bbanda Umea School, the foundation of the tank was never completed and has begun cracking, gutters have begun to fail, and the tap box does not have a sturdy foundation or a locking mechanism. Our fix for this school will be to demolish the existing tap box and build a new one, hang a new gutter system, and hire a mason to repair and finish the tank foundation.

One of the largest projects we are undertaking for this short two-week period

is the installation of a second rainwater catchment system at the Bbanda Roman Catholic School. This school already has a 10,000-liter tank on the South building, but we will be taking advantage of the larger, East building and implementing a 15,000-liter system. The combination of these two tanks will supply enough water for the students of this school, reducing the amount of time students will spend fetching water rather than being in class. Installing this new system will require constructing a foundation for the large tank, installing the tank, and hanging the gutter system.

While working in the village, we will also be collecting information to bring back to the rest of the team at Northeastern. The main goal of Phase II of implementation in Uganda is to implement a distribution system that will bring water to more parts of the village, and to accomplish this, we will be asking for the villagers' input regarding the future tap stands. We will ask where they think the tap stand locations would be the most effective, what kind of security they think the tap stands will need, who owns the land the tap stands would be located on, and other information necessary for both design and public approval.

As a member of the travel team, I can say for all of us that we are very excited to be having the opportunity to continue our contact in Bbanda. The group has been working extremely hard since our last trip to keep the ball rolling and to help the village become closer to water sustainability.

Spotlight on... Caitlin Candee

By Keith Nelson, Uganda Design Lead

Caitlin Candee is a sophomore Civil Engineering student at Northeastern on the travel team for the current trip to Bbanda, Uganda. She entered EWB this past Fall, but she has been interested in EWB even before entering college and cites that interest as a factor in choosing her major and this university.

While weighing her options for a course of study, Caitlin took some time during the summer to travel and volunteer by repairing group homes in Central Mexico. This experience increased her passion for both engineering and developing communities, leading her to learn about EWB and to settle on a major in Civil Engineering and a minor in Social Entrepreneurship. She aspires to use the science of engineering and the principals of social entrepreneurship to alleviate poverty in developing countries.

Caitlin discovered Northeastern University through the Engineers Without Borders website. Searching through the list of EWB

chapters, Northeastern's stood out as a well-developed, experienced chapter, with project lines in two countries. Caitlin credits the strength of the EWB-NEU program as her reason for ultimately choosing Northeastern.

For Caitlin, the upcoming trip is an opportunity to finally meet the people we have spent months working for. When asked about the trip, Caitlin said, "I'm excited to meet the people there. That's really why we do all this – we do it for people." After months of design work, she is ready to be on the ground, to meet someone she can help.

EWB-NEU Collaborates with Local High School

By **Christine Abichaker**,
Public Relations and Recruitment Coordinator



Fontbonne students testing for water quality / Photo: R. Meuse

In 2009, EWB-NEU first started working with Fontbonne Academy, an all-girls high school in Milton, Massachusetts. Being a Boston native as well as a Fontbonne Academy alum, I immediately got in contact with Fontbonne's Sister Maryann Enright. She was excited about the idea of getting young high school girls involved in a student organization at Northeastern, although at that time we were not quite sure how this relationship would be developed.

Sister Maryann connected me with Fontbonne's Director of Mission and Ministry, Maria Sarte, and that was when the initiative truly began to form. Fontbonne Academy has a fantastic social justice program through which the seniors spend most of the year focusing on research, awareness, advocacy, and report writing on a social justice issue of their choice. Additionally, this program involves a period of fundraising that the entire student body engages in during the Lenten Season in support of a selected charity. Maria Sarte made the connection between the work of EWB-NEU and Fontbonne's Lenten Giving season, and we began creating the building blocks for a partnership.

Shortly after communication about the program began, Northeastern EWB students began making trips to Fontbonne Academy to teach the students about EWB-NEU and our projects in Honduras and Uganda. The students spent their Lenten Giving season of Spring 2010 raising enough money to fund a pump that

we implemented in the village of Bbanda, Uganda, this past summer.

In January 2011, in an effort to engage the students even further and to create excitement for their second Lenten Giving season in support of EWB-NEU, we welcomed 26 Fontbonne students to Northeastern's campus for a day of engineering activities. The day began with a presentation by former EWB-NEU president Ann Polaneczky, Honduras Design Lead Megan Fritz, and myself about the history of the group and our personal involvement.

I then gave a presentation about water quality testing and how it is accomplished in the field. Each of the students had been instructed to bring a water sample for testing, and the EWB members administered supplies for each of the Fontbonne students to test her sample with. The EWB members collected their samples for incubation and provided the results of the tests later in the week. It was exciting to involve the girls by training them in water quality testing the same way that we would have done for our members in preparation to travel.

After this exercise, we brought the girls outdoors to complete a Jerrycan Challenge, the same water scarcity demonstration that EWB has held twice before for Northeastern students – once during Human Rights Week and once during Sustainability Week. To recreate this event, the girls carried jerrycans filled with water on a fourth mile route around campus to symbolize the average two miles that people in developing countries must walk

to transport their water. The girls were enthusiastic, to say the least, to partake in such a powerful representation of the burden felt by those living in the developing world. After the girls completed the challenge, we had a discussion about what thoughts the activity had inspired. They all agreed that the challenge was difficult and that they certainly felt privileged to have clean, running water at their homes.

The girls were also given a private tour of Northeastern University, led by EWB member Ryan Gordon. Seeing the campus was a great step forward for sophomores and juniors who are just beginning the college search process.

We finished the day with a panel by Northeastern University's Society of Women Engineers (SWE). The panelists shared their individual experiences as women in the field of engineering and helped the Fontbonne students understand what the different types of engineering are. The girls were able to ask questions about the different types of engineering, and we finished the day by taking pictures before the girls headed back to Fontbonne.

The event was very successful in getting the girls involved in EWB-NEU and providing them insight into the field of engineering. It served as a great way to say thank you for the partnership of the students and their dedication to raising funds for our projects. We hope to not only extend this partnership to other local high schools in the future but to label the day of engineering activities as the first of many to come.

Building a Global Partnership *with the* Millennium Campus Network

By Charlotte Alger, VP of Administration

If I was to crystallize what I love most about being in EWB, it is the opportunity to meet so many interesting people. Fortunately, I get to do a lot of this, as networking is a crucial part of our work and how we learn as an organization. Some of the most thought-provoking discussions I've had with other people have come from the Millennium Campus Network (MCN).

The MCN is a network of student groups devoted to addressing the Millennium Development Goals, a list of goals set by the United Nations in order to alleviate

extreme poverty (see below for the goals). The MCN was founded several years ago by Sam Vaghar, a student at Brandeis University who was frustrated that the student groups on his campus did not coordinate with each other. However, he saw an opportunity for student groups to collaborate and help each other become more effective, not just on campus but around the globe. The MCN has grown beyond Boston to New York, Washington DC, and Chicago, and it now includes some very impressive advisers, such as the legendary Paul Farmer, founder of Partners in Health. EWB-NEU is proud to have been a very early member of the original Boston district.

The MCN offers EWB-NEU a chance to share our skills, learn about other projects and parts of the world, collaborate with students, apply for grants, and participate in workshops. This spring, I attended an

excellent workshop about monitoring and evaluating development projects, a crucial aspect of our work. From participating in this workshop, I learned that monitoring and evaluation (M&E) cannot be afterthoughts; rather, they are elements that need to be integrated into every stage of a project.

The MCN also holds a yearly conference. This past September, several of our members attended the conference in New York City, which coincided with the UN Summit on the Millennium Development Goals. We were given the opportunity to not only learn from and network with MCN members from across the nation, but also to show the world that students are serious about making change. Being part of the MCN strengthens our organization and greatly increases the impact we can have as students.



Logo: mcc2011.com

MILLENNIUM DEVELOPMENT GOALS

- 1: Eradicate extreme poverty and hunger
- 2: Achieve universal primary education
- 3: Promote gender equality and empower women
- 4: Reduce child mortality
- 5: Improve maternal health
- 6: Combat HIV/AIDS, malaria, and other diseases
- 7: Ensure environmental sustainability
- 8: Develop a Global Partnership for Development



Fontbonne Engineering Day / Photo: R. Meuse



Bbanda, Uganda / Photo: EWB-NEU



El Carizalito, Honduras / Photo: M. Walsh

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EWB-NEU is a growing fast and we have ambitious goals for the future. This summer we are looking to implement two of our largest projects ever in Uganda and Honduras, bringing water to a combined population of 1500 people. These projects can only go forward with your support. Please find information below on how to donate. All donations are tax deductible.

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Congratulations to **Christine Abichaker**, the newly elected president for 2011-2012! / Photo: D. Saulnier

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