After arriving in the Cusco airport I thought, “I’M FINALLY HERE!” Nearly a year full of hard work, fundraising, learning, building, and communicating with ECOAN, our NGO in Peru, we finally arrived. The group consisted of myself, Ross Mazur and Jess Straub (two of my fellow club members), Samuel Redfield (inventor of the pico-hydro generator), and Doug Hollinger (founder of an NGO in upstate NY). The five of us were extremely excited to hit the ground running and visited the community of Abra Malaga the day after arriving to kick start our efforts and partnership with the community. We joined in on a community meeting and all signed a Memorandum of Understanding, cementing the project and our relationship.

Once we returned to the city after our initial visit, we got straight to work. With the solar panels on the way, we worked hard scouring the streets for materials, going to countless Ferreterias (hardware stores) and at times had to pull out the engineering skills to conform the design to the available materials. After two weeks of diligently working, searching, and building, we were able to construct two 5 gallon pico-hydroelectric generators. These generators will be powered by pressurized water which is shot through the nozzles, spinning the turbine and creating electricity. In addition to the generator and pipeline installed to feed water into the generators, we were able to purchase and install three solar panels during our trip. Although the generators have the ability to produce up to four times the electricity of a solar panel, the installation of the panels is important in places where there is no water source. Even though we were hard at work for a majority of the trip, we were still able to have one of the most amazing and rewarding experiences of our lives. Being able to see the excitement and thrilling looks on the homeowners’ faces when they were about to receive electricity for the first time in their lives was a moment I will never forget. We played soccer, hiked through the mountains, visited ruins, ate guinea pig and alpaca, and even learned some Quechua, the native language. Cont. on page 3...

GUINEA PIGS, FERRETERIAS AND PRESSURIZED WATER

By: TJ Decker

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COMPOSTING TOILETS A GO

By: Kate John

A group of students involved in our local projects committee have been working closely with the owner of Amberations in Marietta, New York to design and implement a composting toilet for the park’s visitors. Amberations is a non-profit organization with over 50 acres of land, dedicated to the support of mental health for people of all ages through interaction with the natural environment.

This past fall, construction of a composting toilet began on the Cont. on page 3 …
NEW NAME, SAME GOALS
By: Ana Flores
Over the past year we have seen many changes—from a change in leadership to a change in name. Changes are always a challenge, but as a motivated student club, challenges are what we strive to overcome. Formerly known as Engineers Without Borders (EWB), we as a club have transformed to Engineering for a Sustainable Society (ESS). This is a change that we as a club have been awaiting anxiously so that we can become our own entity and return to our grassroots origins. Since our club began, we have learned the importance of being multi-disciplinary in the work we do and the way we think to come up with solutions. We wanted to attract more members to our club, other than just engineers to get outside views. Hence we adopted a new name to appeal to the majority of our campus while maintaining the importance of our engineering practices.

The first part of our new name “Engineering” is a form of action. We are not static but dynamic in our actions. Every year we are evolving, moving onto new projects and seeking members of different educational backgrounds. You do not have to be an engineer to “engineer” something. Engineering uses insights to conceive an idea, and all students at ESF have the capability to do this. Our insights may be on different topics but that is what we want, knowledge on different topics to create a holistic solution.

The second half of our new name is “Sustainable Society”. Now a days sustainable is a common word being thrown around, it’s a buzz word symbolizing the “green revolution”, but what does it actually mean? For us, sustainability is about designing a self-supporting system made of all local materials, a system that the locals will be able to maintain long after we leave the community.

Finally, all though we have changed our club name that does not mean we are no longer EWB. In fact, ESS is just a big umbrella under which we are a part of Engineers Without Borders. The idea behind adopting a different name is having the freedom to work on local projects and assist non profit organizations we know through professors and graduate students so that our organization can have a larger impact upon communities both locally and internationally.

A FUTURE IN HAITI
By: Lia Dombroski
Following the early 1800s, after Haiti became an independent republic, the country accumulated billions of dollars in debt owed to France and multilateral institutions such as the World Bank and the IMF. In order to repay this unjust debt, Haiti had been forced to utilize it’s natural resources to produce internationally marketable goods. During this process, the island’s rich soil and forest ecosystems were greatly degraded and they continue to suffer. However, the effects of debt go much further than deforestation, and ecosystem health is one of the country’s trivial problems. After two centuries of investing energy and recourses into repaying its debt, the country has been left impoverished and underdeveloped. In addition, Haiti’s environmental and economic struggles were amplified when the island fell victim to the earthquake of 2010. The effects of this natural disaster were catastrophic, causing thousands to lose their homes and take refuge in relief shelters. The recovery efforts following the earthquake were remarkable; the country received aid through countless volunteer groups, humanitarian organizations, and emergency funds. However, the concerns of unsafe infrastructure and poor sanitation are still very apparent. To this day, virtually all urban areas lack basic services related to food, water, energy and hygiene.

Through a new partnership with SOIL, a Haitian based NGO, our club will attempt to help areas in Haiti overcome socioeconomic issues related to poverty and guide them toward a more sustainable future. Our ideas for future projects involve working with SOIL to improve hygiene and sanitation systems by constructing ECOSAN and composting toilets, designing efficient structures to facilitate the transportation of local waste, training SOIL workers how to use AUTO-CADD and create CADD drawings, and increase forest restoration efforts.

By: Hayley Canham
On October 16th Engineers for a Sustainable Society held its second annual Burritos without Borders fundraiser. Our goal was to fundraise money to help with our three projects in Buena Vista, Honduras; Abra Málaga, Peru; and at Amberations here in Marietta, NY. Alto Cinco, Moes, and Price Chopper generously donated corn bread, chicken, and chips in addition to all the other necessities for a burrito. Both ESF students and faculty enthusiastically participated in the event, held in Nifkin Lounge. The event’s success was far greater than expected. Food ran out multiple times before three o’clock and the club made almost twice the profit of the previous year. Burritos Without Borders was a huge success and will be continued in the future. In addition be sure to watch for other ESS fundraisers!
**HONDURAS DRAWING CLOSE TO COMPLETION**

By: Katie Mott

Buena Vista, Honduras is home to nearly 300 community members and has been an official SUNY-ESF Engineers Without Borders project since 2006. Throughout the past seven years, our club has focused on the establishment of a gravity-fed water filtration system and has made incredible strides toward improving the lives of hundreds of Hondurans. These strides include the construction of a series of pipelines and settlement tanks that connect Buena Vista to a continuous water supply in a remote section of forested mountains and securing access to potable water to the many homes in the community.

Under seemingly common issues in developing countries such as change in management, political uprisings, and weather conditions, our amazing group of students and mentors has been able to move forward in Buena Vista and continue our valuable work in the community.

From recent communication with ALFALIT, our on the ground partner NGO, a minor flaw in the original design has arisen. A solution has been designed, thanks to our mentor Mark Fabian, and the earnings from Engineers Without Borders will now assist in finishing the project.

Currently, representatives of ESS are scheduling to present to rotaries around Central New York and are seeking any funding opportunity that can help promote the success and improvement of life in Buena Vista, Honduras in relation to this water distribution project. The club is continually working on the project and will be looking to close out our participation in Buena Vista and turn over all responsibility to the community in the coming year.

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**GUINEA PIGS, FERRETERIAS AND PRESSURIZED WATER CONT.**

This first phase has been an enormous success and we are currently fundraising for a trip back to Peru in December 2013 to follow up on the three solar panels and generator install. In the second phase we are planning on installing four more solar panels and three more pico-hydro generators and are extremely excited to continue touching the lives of the people in Abra Malaga. All of this would not have been possible without the help from all the donors and volunteers and for that I am eternally grateful. Thank you not only from me, but from all the people in Abra Malaga.

**Contact:** tjdeck01@syr.edu

**Top:** Group photo with Abra Malaga community.

**Middle:** Two generators each at ~$600 compared to ~$900 for one solar panel install (built during our stay).

**Bottom:** Receiving pressurized water for the first time.

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**COMPOSTING TOILETS A GO CONT.**

property that follows ADA specifications in order to be handicap accessible. The waste from the composting toilet will be composted and used in various gardens around the property. The outside structure is complete, and students will resume work next semester to finish the composting aspects of the structure and ensure all specifications are met. We would specifically like to thank Tony Russo for his help and guidance during the construction thus far.
SAVE THE DATE

APRIL 1st 2014

SUNY-ESF’s Engineering for a Sustainable Society (formerly EWB) invites you to the 3rd annual...

Engineers With Appetites

SUNY-ESF’s Gateway Center

Invitation to follow. For more information please contact ESS’s President Ana Flores, agflores@suny.edu

SPECIAL THANKS:

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TJ Decker
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