

Engineers Without Borders

At the Rose-Hulman Institute of Technology



This issue

Preparations for Gomoa-Gyaman, **P.2**

Monitoring Batey Santa Rosa **P.4**

SAW-ing Away **P.3**

Upcoming Events **P.4**

Fundraising Goals **P.4**

What is Engineers Without Borders?

Engineers Without Borders (EWB) is an international student-driven organization that engineers sustainable solutions to health and infrastructure problems in third-world countries. We envision a world in which the communities we serve have the capacity and knowledge to meet their basic human needs. We make this happen by collaborating with local community partners to design and implement student-designed engineering projects. Lack of access to safe drinking water and reliable sanitation affects half of the world population. More disturbingly, unsafe drinking water and lack of hygiene causes the deaths of 1.6 million children under the age of five each year. Our work is making a direct impact on these sad statistics.



In this Issue

Welcome to the Fall 2013 issue of the Rose-Hulman EWB newsletter! We are excited to announce that we will be sending a group of students to the Dominican Republic to oversee the continuing work that is being done in the community and to ensure the sustainability of our latrines (see "Monitoring Batey Santa Rosa, D.R." on page 4). Our members continue to partner with Servants at Work, a terrific organization in Terre Haute that builds wheelchair ramps for individuals with disabilities (see "SAW-ing Away" on page 3).

We also have started our preparations for our new five year project overseas! We are going into Gomoa Gyaman, Ghana to implement latrines for the community. Our engineers are hard at work to find what would work best to improve the hygiene for Gomoa Gyaman with the least cost to the community. This is the most ambitious project we have undertaken as a club and we are excited for the challenge (see "Preparations for Gomoa Gyaman, Ghana, Latrine Implementation", page 2).

We can't do it without your help though. Ghana is the hardest to access of the communities we serve; flights alone cost over a thousand dollars per person. 75% of our funds come from private donors—we rely on generous individuals who believe that engineering has the potential to make the world a better place. Please see "Where Does My Donation Go?" on page 4, or visit our website at <http://www.rose-hulman.edu/ewb> if you would like to help make a difference.

The EWB-RHIT Team

President Ryan Oliver

Senior Electrical Engineering Major
from St. Paul, Minnesota

Co-President Marcel Snijder van Wissenkerke

Senior Mechanical Engineer
from Claremont, California

Fundraising Manager Nate Moore

Senior Computer Science Major
from Scottsdale, Arizona

Engineering Manager Ryann-Rebecca Montgomery

Senior Civil Engineer
from Lafayette, Louisiana

Marketing Manager Jung Fang

Junior Chemical Engineer
from Jinan, China

Treasurer Sanders Park

Sophomore Civil Engineer
from Alpharetta, Georgia

Building Latrines in Gomoa Gyaman, Ghana

In late summer 2013, Rose-Hulman Engineers without Borders representatives travelled to Gomoa Gyaman, Ghana to meet with village elders, discuss possible infrastructure additions, and conduct basic surveying. It was decided that installing latrines would provide the community with maximum immediate benefit. Currently, EWB-RHIT members are researching various types of latrines and beginning the design process.

The community of Gomoa Gyaman contains approximately 10,000 individuals. Therefore, each latrine will have to serve about 2500 people. Since all four latrines will not be built simultaneously, the latrine/member ratio will be higher at the beginning of

-diverting composting latrine. With this system, there is no longer a need to transfer still dangerous waste to an off-site location for decomposition, and when the waste is fully processed, it can be used as fertilizer.

Latrine design will continue throughout the academic year. Upon completion, the benefits will be twofold; engineering students will have received research and design experience and Gomoa Gyaman will be well on the way to gaining crucial sanitation infrastructure.



the project. Consequently, the latrines must be either be emptied easily or have the ability to process waste on-site.

The optimal latrine design will be sustainable and eco-friendly, as well as low-cost. Designs under consideration range from the complex, such as biofuel or septic tanks, to something as simple as a ventilated pit. One of the most favorable designs is a urine



Monitoring Batey Santa Rosa

Since 2009, Rose-Hulman Engineers without Borders has partnered with the Batey Relief Alliance and Batey Santa Rosa, Dominican Republic. Over the past four years, RHIT-EWB and has designed and implemented a hurricane proof roof and septic system for a health clinic, in addition to several latrines.





Batey Santa Rosa was primarily supported by the sugar cane industry prior to and throughout the 1960s. However, in the late 1970s and 80s, high oil and low sugar prices coupled with hurricanes and other economic factors, the sugar cane industry shrunk, and many men left Batey Santa Rosa for work in the cities. Consequently, the community has seen little economic growth in the last several years, is now impoverished, and subject to disease due to lack of proper sanitation.

This spring, RHIT-EWB will return to Batey Santa Rosa to inspect the septic system, latrines, and the hurricane-proof room. The team will ensure that all buildings and systems are in working order, and will suggest repairs as needed. If repairs are necessary, the team will explain to the community how to complete the repairs and possibly help them on-site.

This trip will mark the final visit to Batey Santa Rosa. The transition to Ghana is well-underway!

SAW-ing Away

Rose-Hulman Engineers without Borders often partners with Servants at Work, an organization dedicated to building wheelchair ramps throughout Indiana. RHIT-EWB primarily assists with builds in Vigo and Clay counties, and has currently completed four ramps this fall.

The builds took place at residences of the ramp recipients and began early on Saturday mornings and continued into the early afternoon. Materials for the ramps and ramp blueprints were provided by SAWs and the construction labor was provided by EWB and SAW volunteers.

These were a great opportunity for RHIT-EWB members to gain construction experience, get to know fellow aspiring engineers, and help people in the Terre Haute Community. This truly encompasses the “without borders” part of the organization name— often the best place of service is directly outside one’s front door.



EWB-RHIT Mentors

Technical Mentor Wil Painter

Professional Civil Engineer
from EWB-Indianapolis

Technical Mentor Mike Cline

Professional Civil Engineer
from EWB-Indianapolis

Cultural Mentor & Translator John Gardner

Associate Spanish Professor
from Rose-Hulman

Faculty Mentor John Aidoo

Assistant Civil Engineering Professor
from Rose-Hulman

Q & A

Q: Where does my donation go?

A: EWB is a nonprofit humanitarian organization that gives students an opportunity to use their engineering education to help people around the world. Our chapter of EWB is currently involved in two projects. The first is monitoring the latrines we have implemented in Batey Santa Rosa in the Dominican Republic over the past five years, ensuring that they are still functioning as planned and overlooking the construction of new latrines by engineers within the community. Our new project is the construction of latrines in Gomoa Gyaman, Ghana in Africa. This is the most difficult to access project we have been involved in and we need your help to reach out to this community. Your generous donations go directly to transporting our students and faculty advisors to Ghana so that we can implement these latrines that can improve the overall health of the community. Without your help, there is no way that we could bring the designs that we are working on here on campus into reality where they are needed most. For donation information, please see “Donating to EWB” on page 4.

Fundraising

Fundraising is vital to our ability to continue using our Rose-Hulman education to impact developing communities worldwide. The cost of travel and construction materials is extremely high, but both are necessary for our chapter.

Through school organizations (such as the Student Government Association and the Humanities and Social Science Department) we are able to raise some funds for our projects.

But, this only covers a fraction of the total amount needed to complete our projects—especially for international air travel. We rely on private donors like you to support our projects and make a difference in third-world communities.

Donating to EWB

Contributions can be made to
"Rose-Hulman Institute
of Technology",
directed to
"Engineers Without Borders"
in the memo.

For more information about donating, contact Ryan Oliver at:
oliverr@rose-hulman.edu.

Contact Us

Please contact us at
oliverr@rose-hulman.edu if you have any questions or would like to become more involved.

More information can also be found on our website at:
www.rose-hulman.edu/ewb

Or on Facebook at:
<https://facebook.com/ewbrhit>

Rose-Hulman Institute of Technology
5500 Wabash Ave
Terre Haute, IN 47803

Benefits to Students

As part of EWB, Rose students develop an awareness of global conditions along with many transferrable skills that will help them succeed. Students learn to communicate and collaborate effectively both with other students and community members from around the world.



Students develop hands-on and critical thinking skills solving real problems with a lasting impact by working on a range of projects. The Rose-Hulman chapter of EWB is broken up into three project teams – Marketing, Fundraising, and Engineering. These teams enable students to experience different aspects of collaborative projects, from fundraising and advertising to project design and implementation.

Members learn to approach projects confidently and systematically, and gain responsibility as they contribute more to each project. Participating in EWB opens up leadership opportunities to students in an environment that values professionalism, service, and accountability.

Furthermore, EWB offers students the ability to travel to foreign countries. If selected for a travel team, students gain global experience implementing our chapter's designs. The communities in which we work offer students exposure to unfamiliar cultures, which gives them a more global perspective.

Our organization drives students to use their engineering judgment and solve unique problems, giving them a competitive edge in future endeavors. Companies recognize that students in EWB have unique experiences and skill sets, leading them to specifically recruit our members.



Future Travel

Our chapter will be traveling a great deal in 2014! We will first be sending a team to the Dominican Republic this August to perform a monitoring trip (see "Monitoring Batey Santa Rosa" on page 2). This summer, our chapter will send a team to Ghana to perform our first implementation trip in Gomoa Gyaman (see "Building Latrines in Gomoa Gyaman, Ghana" on page 2). Both of these trips will be a fantastic opportunity for our members to not only improve their engineering skills, but to also learn about two very different cultures!

However, traveling internationally is not cheap. Airline tickets to the Dominican Republic cost approximately \$500 per person; tickets to Ghana cost approximately \$2,000 per person. We rely heavily on private donations to go on our international trips and make a difference in the impoverished communities we partner with. If you would like to contribute to our chapter's efforts, please refer to "Donating to EWB" in the sidebar to the left.

