

Engineers Without Borders



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What is Engineers Without Borders?

Engineers Without Borders (EWB) envisions a world in which the communities we serve have the capacity to sustainably meet their basic human needs through collabora-



tion with local partners to design and implement sustainable 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. These challeng-



Engineers Without Borders is the only student organization at Rose-Hulman that enables its members to practice hands-on engineering design, gain international experience, and learn how to manage large-scale engineer-



ing projects all at once. Students work extensively with the community to assess their needs, collect technical data on site, learn design concepts from research and professional engineers, and apply our engineering knowledge to reach and implement sustainable solutions.



Since our founding in 2004, we have successfully completed projects in Obodan, Ghana and two communities in the Dominican Republic, improving the health and

President **Alex Morelli**

Senior Electrical Engineer
from Ozark, Missouri

Communications Manager **Ryan Oliver**

Junior Electrical Engineer
from St. Paul, Minnesota

Engineering Manager **Ryann-Rebecca Montgomery**

Junior Civil Engineer
from Lafayette, Louisiana

Marketing Manager **Marcel Snijder van Wissenkerke**

Junior Mechanical Engineer
from Claremont, California

Treasurer **Jung Fang**

Sophomore Chemical Engineer
from Jinan, China

Latrine Implementation

During the latrine implementation in August 2012, the travel team spent two weeks in Batey Santa Rosa. Our project's goal is to construct twelve latrines, which will help limit the spread of fecal-born



parasites and disease. During construction, we taught the community the knowledge and skills needed to build sustainable latrines on their own.



Three latrines were completed, so we now plan to continue working with the community to help them construct the nine remaining latrines. The community will fundraise and construct three latrines on their own during this school year, and we will return in August 2013 to help them construct the rest. Even with three latrines completed, the community is still desperate for us to return to reduce the spread of disease, so any donations to help fund our return will be deeply appreciated by both the community members and EWB students.

Improving Community Health



Our project will dramatically reduce the risk of disease for children like Jeffrey (above). In spite of medical help from the nearby clinic renovated by EWB-RHIT, a lack of latrines in Batey Santa Rosa has made them one of the least healthy communities in the province of Monte Plata. Parasites such as roundworm and parasitic amoeba are common in untreated adults and children, and this problem will only worsen as fewer latrines remain functional. Children are especially vulnerable because they have a tendency to put their fingers in their mouths. Sadly, these sick children are a common site in developing communities, easily identified by a bloated belly resulting from a large infestation of intestinal worms. These parasites absorb the calories and nutrients of the host, leading to stunted growth and sometimes death. Our three latrines have improved the situation, but we are still working to attain the funding to construct all twelve latrines and eliminate the problem altogether.



Benefits to Rose Students



As part of EWB, students are improving the lives of others while gaining valuable experiences and skills. Students become better engineers by learning to manage large-scale projects and put themselves in the shoes of a client. After members have a solid understanding of EWB, they are given the opportunity to lead and manage teams in charge of engineering projects, fundraising events, and overseas trips, improving their leadership capabilities. By collaborating with a community which has a completely different worldview, students gain a unique understanding of how to approach global projects. These skills are valued in industry, and companies recognize that students in EWB possess these talents, leading them to specifically recruit our members.



Student Spotlight - Jung Fang

Q: How did the implementation trip impact you as an engineer?

A: As an international student, I look for experiences that I can learn from. Traveling to a third-world country as a group of engineers was one of those unique experiences that taught me skills I can't get in a classroom. Important lessons I learned include: repeat measurements to check yourself, how to organize details, and how to communicate effectively with people from different cultures. This trip has also provided me with insight into what it means to be a humanitarian engineer. Helping a developing community gain the knowledge to construct sustainable latrines, one of the most basic human needs, was a realization of my dreams. It was rewarding to see our latrine design, which we had put so much effort into, transform from paper into reality, having a direct impact on the community.



What's next?



Capitalizing on the recent growth of our group, we plan to begin working on two projects at once. For a second international project, we plan to work in Rwanda, Tanzania, Uganda, or Nicaragua. In Tanzania, we would build latrines for an elementary school, while in Rwanda or Uganda, we would provide villages with access to clean water. In Nicaragua, we would construct a bridge to keep children in school during the rainy season. We are also partnering with our local community to work on local projects like wheelchair ramps for the underprivileged or a bridge in a nearby park.

Fundraising Goals

For the August 2013 Implementation Trip, the EWB-RHIT team anticipates a cost of \$9,700, which includes airfare (\$4,500), food and lodging (\$1,200), travel and logistics (\$1,000), and materials (\$3,000). We receive funding through grants, company donations, and fundraisers, though the majority of our funds come from private donors. We depend heavily on the generous individuals like yourself who believe in our work and our cause.

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

Fundraising

Fundraising is vital to our ability to continue using our Rose-Hulman education to impact developing communities worldwide. Thus, our members' dedication shines through in both our engineering and fundraising efforts.

EWB-RHIT members strive year-round to raise funds with our primary source from companies and donors who support our vision of an improved quality of life in developing countries.

through grants and organized campus events, many of which are sponsored by the Diversity Initiative, the Humanities and Social Sciences Department, the Residence Hall Association, and the International Student Association. However, this only covers a fraction of our costs.

Donating to EWB

Contributions can be made to Rose-Hulman, 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 me at morellaj@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

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Making an Impact: Before and After

EWB-RHIT is excited to continue making an impact with the BRA in the Dominican Republic. Over the past three years, we have worked to renovate a structure near a small existing clinic into an in-patient healthcare facility. This structure once bore walls with faded turquoise paint and an interior that was damaged by rain and abandonment. Now, with our added hurricane-proof roof, fresh yellow paint, and septic system, the in-patient healthcare facility is used by the clinic for x-ray screenings, cholera treatment, and community education of HIV-AIDS and agricultural programs.



After the completion of the roof and septic system, the health clinic was able to expand its services.



The clinic now has an septic tank with a piping network supporting the in-patient facility.

Growth of EWB-RHIT

The members of Engineers Without Borders at Rose-Hulman envision a grander club - one in a better position to change lives and offer students unique opportunities. To accomplish this, EWB-RHIT is revving up this year with an organizational restructuring. In addition, we have committed to maintaining a habit of constant improvement and organizational innovation, ensuring that we never stop expanding. Coupled together, these changes have increased our membership retention and improved our funding, design, and publicity capabilities. With this extra support, we hope to be able to take on more projects and travel on more assessment and implementation trips, which in turn will allow more lives to be changed and more members to contribute to projects that will really make an impact.

We Need Your Help

While we are doing everything we can to secure the resources we need to accomplish these goals, it won't happen without the help of people like you. If you support our goals and would like to help, please don't hesitate. Whether you offer funding, expertise, or networking opportunities you have the opportunity to make a big difference to us and the people we serve.

Thank you,

Alex Morelli, EWB-RHIT President

