

PENN | EWB



ENGINEERS WITHOUT BORDERS

at the University of Pennsylvania

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It is with great pleasure that I welcome you to the inaugural issue of PennEWB's newsletter. Within these pages you will find updates on PennEWB activities and sustainable development related content of general interest. If you wish to contribute as well, we welcome your submissions—please feel free to write in with articles, ideas, comments, and questions.

When PennEWB was founded in the spring of 2004, we could not have anticipated the extent to which the Penn and Philadelphia community has since gratefully embraced our mission. There are active projects taking place both abroad and locally. We have been invited to speak at area water and development conferences. Greater interest from students, faculty, and professionals this year has increased our membership, mirrored by growing interest from the community and the press (PennEWB was most recently featured in the *The Philadelphia Inquirer*, on *NBC 10*, and in a written address by Penn President Amy Gutmann).

While browsing this issue, I hope that it becomes evident that an individual may have a tangible and positive impact on the world via development work.

By helping people become more involved in sustainable development, PennEWB has proven to be a rewarding and enriching experience for many. In closing, I want to thank our current and past members, advisors, and sponsors for their support and dedication. Enjoy reading this issue!

On behalf of the 2006-07 PennEWB membership,

Alex Mittal, President
PennEWB



PennEWB Board Members: (left to right)
Andrea Lo, DJ Wallman,
Alex Mittal, Steve Hershman, Matthew Owens

Mission Statement:

~ Mirroring EWB-USA's mission, PennEWB's mission is to partner with developing communities worldwide to improve their quality of life through implementation of environmentally, socially, and economically sustainable engineering projects, while also developing internationally responsible students and professionals. PennEWB seeks to collaborate with communities to find solutions that address the roots of challenges preventing residents from achieving a baseline standard of living. Additionally we aim to raise awareness of problems faced by developing communities by engaging in educational projects on campus and in the Philadelphia community.

October Honduras Trip : Summary of Assessments and Evaluations

Haresh Tilani

From October 20th to 25th, a group comprising of four Penn students and Professor Anthony Sauder went to Terreritos, Honduras. This was a follow-up visit to the implementation trip organized in May 2006, during which the foundation of a sustainable water distribution system was laid. The main motives of this trip were to evaluate the villagers' progress in finishing the water system and to assess the need for future projects.

The group found that the villagers had worked hard to lay the pipe bringing the spring water to an existing tank. There were even some cases where the villagers had found better transmission routes for the pipes compared thus saving them over 500 meters of pipe. Further, they had had the foresight to plant more than 800 trees around the spring source to help conserve water and protect the surrounding environment. "The effort that the community has put forward is astounding," claims team member Thomas Macrina, "and their work ethic and foresight are really amazing."



The effects of the water system were apparent from the significant water flow rate of 8.5 gal/min into the existing water tank. These vast improvements were clear to team member Hong Truong: "From our own observations and the community report, houses that are connected to the new water system now have water 24/7". Nonetheless, the assessments showed that there was still a need for a larger tank to take full advantage of the additional water and a number of homes were still without the required taps to utilize system. As such, measurements were obtained to estimate the piping required to bring water to those tap-less homes.



Assessment was also continued during a community meeting: the group conducted a participatory exercise to gather the villager's opinion of the water system, as well as general suggestions to help the community. "The most notable improvement was the decrease in instances of diarrhea among the children in the village," commented Nicolas Blanchet, another member of the team. "According to my host family, the increase in available water makes it much easier to separate the drinking water from water used for other purposes." Skin problems have also become less common since the villagers could now shower more frequently. The villagers also showed

an understanding of the importance of hygiene, and everyone expressed the need for pit latrines. This was echoed by further evaluation, which showed that only a few homes had sanitation facilities such as pit latrines.

On the last morning of their stay, they managed to meet the director of a private health clinic located nearby, and these issues were addressed. Topics discussed included measures to protect the spring from runoff, general concerns such as the procedure for a government engineer to supervise the construction of a new tank (to which chlorinating agents will be added to subdue bacteria growth), the possibility of continued support for health education in the community, and a standard pour-flush latrine design that would be ideal for the community. PennEWB will continue working with the villagers of Terreritos to help meet their needs and to help improve their living conditions.

The Local Committee: Sustainable Development within our Borders.

Julio Erdos

While the most visible and publicized aspect of Engineers Without Borders is the international project trips, another integral part of the club's activities takes place within Philadelphia. Educating the community about sustainable development and implementing such projects is a priority both overseas and within our own borders.

This year, EWB's Local Committee is working with Saul High School in Philadelphia to build a biogas digester on their site. The digester will be fueled by biomass – that is, the waste product of agriculture school's many animals. It will produce methane gas, which will be used to heat a greenhouse at the school allowing keratin crops to be grown during the winter. Once a week, EWB members work with Saul's newly formed Biomass club after school on Wednesdays to plan and build the biogas digester. According to Jay Parekh, an active member of the program, "The neat part is that none of these kids knew each other before. Now they're getting to know kids they probably wouldn't have met before." Ms. Naugle, a Penn alumnus, is the Saul teacher working with the Local Committee on this project. In addition to promoting the Biomass club, Ms. Naugle allows Penn EWB students to come in during one of her classes each week and teach the students about sustainable development.



EWB hopes to create thriving partnerships with many communities through its aim of fostering sustainability –from Philadelphia to Honduras and the rest of the world.

International Committee

Daniel Wallman

The International Committee has been running a competition revolved around student groups who develop the structure of their own project. An advisory board has recently selected the project that best fits PennEWB's current situation. The club will now focus their efforts on this project, along with the Honduras Project. This year, the winning group is the Team Petri.



Team W/W/W/R/Y

Location : India
Project : Liaison with NGO to find a water related project in a local village in Central India. Funding efforts have also been initiated. As a second plan, liaison with Gawad Kalinga which builds sustainable villages in Phillipines.
Members: Amar Bains, Emily Wible, Kim Hsu, Ashwin Pushpala, Oscar Nunez, Joey Martinez

Team Petri

Location: Cameroon
Project : Construction of a gravity-fed water system in the village of Kob to provide water for a church, health center, nursery school and residents. There will be ample opportunity for sanitation improvement and education.
Members : Angelina Benson-Glanz, Nicolas Blanchet, Sarah Casey, Andrea Lo, Kate McArdle, Hong Truong.

Team Kenya

Location : Kippingi, Kenya
Project : Installation of a 100 meter deep well to pump water via solar energy into a storage tank. Five distribution sites and a filtration system are being proposed around the community.
Members : Kristi Chakrabarti, Galina Grigoriev, Adam Lafleur, Emily McGrath, Jay Parekh

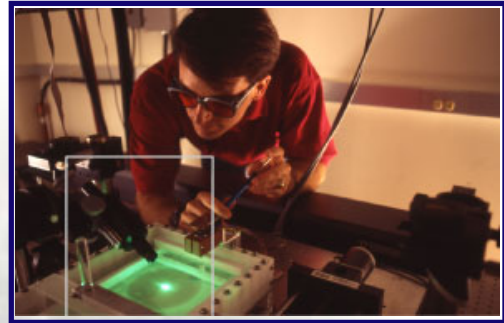
Team Carnaval

Location : Lesotho or Brazil
Project : Liaison with NGO's in working on the idea of use of solar/wind energy to solve heating, insulations and electricity problems in winter.
Members : Julio Erdos, Tom Macrina, Haresh Tilani, Ravi Patna, Jeff Spira

Appropriate Technology

Peter Will

As engineers, the subject of “technology” is one we are all well versed in: it is what we place our faith in and what we pledge our careers to. It is through technology, or to be more specific, the thoughtful application of technology that we hope to make possible a better quality of life. This notion is especially true within the context of the mission of Penn Engineers without Borders, for the principles of engineering lend themselves to the problems of poverty just as well as they do to any other. However, knowing that engineering principles can be applied to the problem of poverty, and knowing how to apply them are entirely different things. One philosophy that seeks to provide insight into the latter of these questions is that of “appropriate technology”.



However, knowing that engineering principles can be applied to the problem of poverty, and knowing how to apply them are entirely different things. One philosophy that seeks to provide insight into the latter of these questions is that of “appropriate technology”.

Appropriate technology is “technology that is most appropriate to the environment and the culture it is intended to support. It might be described as using the simplest and most benign level of technology that can effectively achieve the intended purpose in a particular location” (“Appropriate”, 2007). Plainly put, it is the recognition that there are fundamental differences in the way certain countries will modernize (Darrow and Saxenian). Thus the technological solutions of a developed society may not work in the context of a developing country. As an example, appropriate technology points to the failure of traditional modernization attempts, suggesting they have merely modernized the poverty of developing nations, not alleviated it. Instead appropriate technology stresses a method of aid more attuned to the village or individual level (Darrow and Saxenian).

The philosophy of appropriate technology emphasizes engineering solutions that require small amounts of capital, but include villagers in labor intensive practices. The components to a developmental project should be able to be primarily constructed in the village with local resources. The scale and complexity of the project should be such that most villagers without specialized training can operate and maintain it (Darrow and Saxenian). In most cases, the tenets of appropriate technology advocate a technologically simple engineering solution, one that give each villager a chance to make an important difference, and one that presents Penn Engineers without Borders a chance to do the same.

1. “Appropriate technology.” *Wikipedia, The Free Encyclopedia*. 2 Jan 2007, 13:09 UTC. Wikimedia Foundation, Inc. 9 Jan 2007
2. Darrow, Ken, and Mike Saxenian. *The Appropriate Technology Source Book*. Consortium for Sustainable Village Based Development (CSVBD), 1993

Contact Us

Have questions, interested in getting involved, serving as a technical mentor, or sponsoring an EWB project? Contact us at pennewb@seas.upenn.edu

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