



ENGINEERS
WITHOUT
BORDERS
university of pennsylvania

General Body Meeting

9/8/11

Our Mission:

We are a non-profit **humanitarian** organization that supports community-driven development programs worldwide by **collaborating** with local partners to design and implement **sustainable** engineering projects, while creating **transformative** experiences and responsible leaders

We are a non-profit, humanitarian organization

- We are a student chapter of a 501(c)3 non-profit organization with **250** chapters across the United States
- We address humanitarian issues that exist globally¹
 - 1.2 billion lack clean **water**
 - 2.4 billion lack adequate **sanitation**
 - 1.4 billion live on less than **\$2.50 a day**
- We address them through:



...that supports **community-driven development** programs worldwide

1



2



3



4



...that supports community-driven development programs **worldwide**



PENN IN THE GULF

Pearlington, MS

- Tested water samples for fecal coliform and E. Coli.
- Recommendations helped secure a \$30M grant from the Mississippi Housing Authority to install a water and sewage system.

BIOGAS DIGSTER & BIODIESEL REACTOR

Saul High School, Philadelphia, PA

- Biogas digester harvests methane gas from animal waste, provides fuel for heating and cooking. Implemented in 2007
- Biodiesel reactor teaches students how to convert used vegetable oil into biodiesel. waste oil collected from restaurants around Penn's campus can be used as fuel to power farm equipment.

ALTERNATIVE ENERGY EDUCATION

Science Leadership Academy, Philadelphia, PA

- Members visit the school to teach alternative energy and mentor the students in an after school sustainable engineering group



SUMMER ABROAD PROGRAM

Ghana

- Establishment of a joint summer program with Kwame Nkrumah University Of Science and Technology for freshman and sophomores.

ARSENIC REMEDIATION

West Bengal, India

- Conducted research in arsenic remediation in a joint project with Bengal Engineering Science University.

GUATEMALA HEALTH INITIATIVE

Guatemala

- Collaboration with Penn Medicine to address development issues in a large town in Guatemala.



GRAVITY FED WATER SYSTEM & LATRINE PROJECT

Terreritos, Honduras (2005)

- Implemented a water system in May, 2006 to deliver water to a village of 500
- Taught community members to build pour-flush pit latrines in May, 2007, improving sanitation in the region
- Residents now have sufficient water throughout the year and are well on their way to their goal of universal latrine access at all households



GRAVITY FED WATER SYSTEM

Gundom, Cameroon (2008)

- Water system will be the first phase of a larger project that addresses water and sanitation needs for 9 villages in the Bome valley.
- Construction of sustainable water systems coupled with a long-term health and hygiene education and intervention program to augment the beneficial effects of a clean water supply.



Kob, Cameroon (2006)

- Collaborating with community leadership to deliver a safe and sustainable water supply that will serve nearly 500 residents.
- System will benefit the community's church, nursery school, and recently constructed health center.



FUTURE PROJECT



CURRENT PROJECT

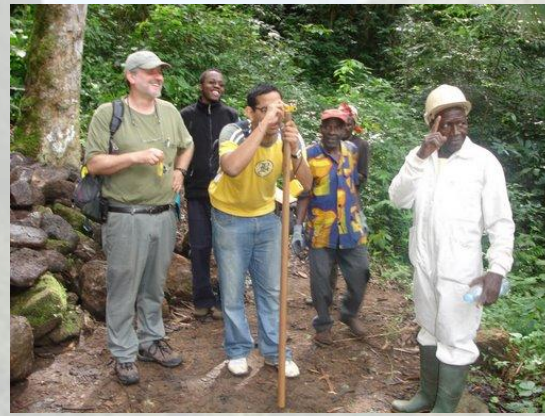


VISIT US AT
pennewb.org

...that supports community-driven development programs **worldwide**



2006-2007: Water distribution / sanitation in Terreritos (Honduras)



2009-2011: Water distribution in Kob and Gundom (Cameroon)

...that supports community-driven development programs **worldwide**

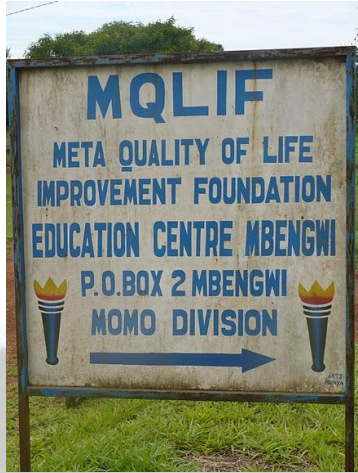


2010-2011: Latrine construction in Bome Valley (Cameroon)

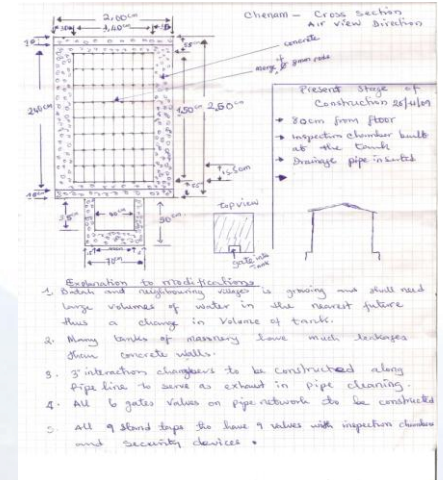


2011: Sustainable irrigation in Pajomel (Guatemala)

...collaborating with local partners

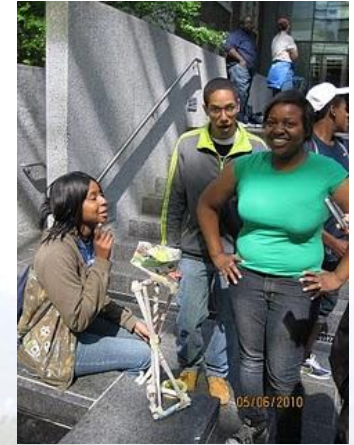
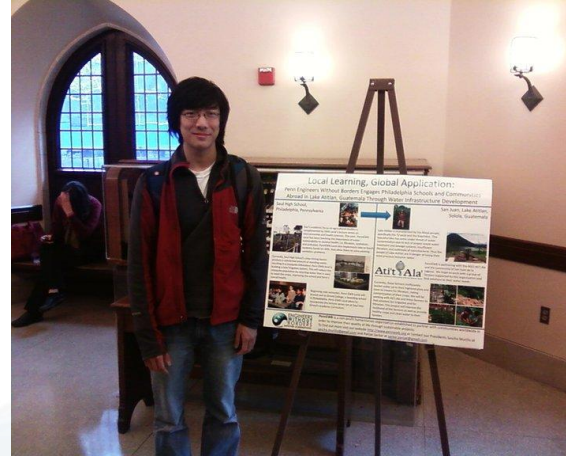


Project sustainability



...creating **transformative** experiences and responsible **leaders**.

Local
education
initiatives



Professional
experience



...creating **transformative** experiences and responsible **leaders**.

Our Alumni

Development
Work

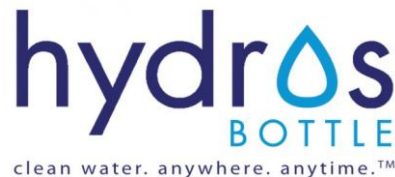


EWB alumni have gone to **Mali** and the **Dominican Republic** as peace core volunteers.

Social
Enterprises



Innova Dynamics is an advanced materials technology company spun out of the University of Pennsylvania and headquartered in Philadelphia, PA.



Hydros Bottle increases global access to potable water by supporting sustainable development programs that are socially, economically, and environmentally viable, meeting the needs of today without compromising those of tomorrow.

Future initiatives

What can you do?

Current / future projects

Committee

Project

International

- Water distribution in Cameroon
- Sustainable irrigation in Guatemala
- New project, location TBD (Thailand?)

Local

- Educational initiatives (Saul High School)
- Green Roof (Girard College)
- Garden project (Walnut Hill Comm. Assoc)

Design

- Water filtration system
- Vegetable oil to biodiesel
- Irrigation project (Saul High School)

Events

- Fundraising events
- Awareness events (documentary screenings, speaker events)

Marketing

- Newsletters
- Informational posters / flyers
- Solicitation of corporations for funding



Current Projects – International



Pajomel, Guatemala:
Continuation of sustainable
irrigation project

Bome Valley, Cameroon: New
water project



Location TBD: New project

Current Projects – Local



Saul Agricultural High School:
Local education – raising
awareness and interest about
sustainability

Saul Agricultural High School:
Irrigation project – conserving
water and reducing mosquito
infestation of crop fields

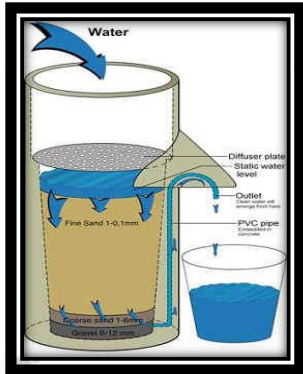


Girard College: Green Roof –
minimizing impermeable surface
runoff

Walnut Hill Community
Association: Garden project –
greening the community



Current Projects – Design



Biosand Filter: creating a working demonstration of a biosand water filtration system

Saul Agricultural High School: Irrigation project – conserving water and reducing mosquito infestation of crop fields



Biodiesel batch processor: creating renewable fuels from restaurant vegetable oil

Current Projects – Events



Speaker events – bring in nonprofit leaders, startup founders, alumni, etc.

Fundraising events – silent auction, dance benefit, etc.



Social Events – BBQs, dinners, etc.

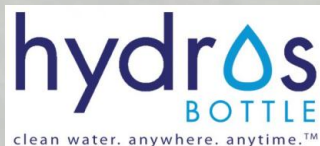


Current Projects – Marketing



Semi-annual Newsletters – updates to benefactors, alumni, and other stakeholders

Informational posters / flyers – marketing materials intended to raise awareness about global issues



External solicitation – acquiring support and funding from corporations and foundations of all sizes



Current / future projects

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What will you actually do?

Sample Projects

Roles

Water
distribution in
Cameroon

- Write grants to philanthropic foundations, corporations, etc
 - Write project proposals and workplan
 - Build a working relationship with local NGO
 - Design system to implement along with project mentors
 - Plan logistics of the trip
 - Travel and implement project!
-

Education
initiative at
Saul HS

- Research on topics of environmental sustainability
 - Design curriculum / lesson plans to teach kids
 - Travel to the schools to give lessons
-

Speaker
events

- Acquire sponsorship for events
- Research potential speakers to contact
- Plan logistics of the event
- Market the event (e.g., create physical marketing materials, post on facebook, etc.)

Myths and facts

You have to be an engineer. We have members from all disciplines

We only do international projects. We have tons of local, design, and PR initiatives

Its hard to get involved. You can get involved in multiple committees and even as a freshmen, you can start your own initiatives

Contact information

Committee Chais:

International: Elizabeth Warren (ewarren@seas.upenn.edu)

Cameroon: Michael Magaraci (magaraci@seas.upenn.edu)

Guatamela: Haoyu Deng (haodeng@seas.upenn.edu)

Local: Kevin Wang (kewa@seas.upenn.edu)

Design: Casey Gelber (cgelber@seas.upenn.edu)

Events: Michelle Sherrott (mshe@seas.upenn.edu)

Marketing: Joan Liu (joanliu@seas.upenn.edu)

Visit us at <http://www.pennewb.org>

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