

ANNUAL REPORT

2015



**ENGINEERS WITHOUT BORDERS USA
PHILADELPHIA PROFESSIONAL CHAPTER**

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A LETTER FROM THE CHAPTER PRESIDENT

Dear Friends and Colleagues,

The Engineers Without Borders-USA Philadelphia Professional Chapter (EWB-Philly) approaches its 10th official anniversary this year! Entering 2016, I'm filled with gratitude and excitement, both for what we have achieved and how we have achieved it. You'll see these phrases later on in this report, but we proudly adhere to the EWB-USA core values of "Engineering Change" and "Stronger Together." We believe that communities, both in our project areas and within our own network, are the most effective agents for positive, sustainable change. Sustainability isn't just a goal – it's a practice, a standard to which we hold ourselves. Engineering solutions create opportunities for communities to thrive. And in turn, from the volunteer work that EWB-Philly does, leadership is fostered through multi-disciplinary, cross-cultural, and hands-on interaction.

This past year, our passionate and diverse team of professional volunteers continued our impact at home and abroad. We progressed with implementation of water supply and electrical upgrades in Las Delicias, El Salvador, and the team is looking ahead to post-construction monitoring and evaluation, education, and training with the community. In Apatut, Philippines, a groundwater well was developed and sufficient water yield was confirmed. We also began a pilot public health program with residents and the elementary school. The project team and the residents gained a critical understanding of the importance of community-driven leadership, cooperatives, and social enterprise in making the proposed water supply system sustainable. We carry that with us into the new year as we look ahead to the next phase of implementation.

EWB-Philly's emphasis on local outreach and community service projects in the Greater Philadelphia region continued, empowering the community and fighting urban blight and poverty through gardening and greenspace preservation projects. The balance and value of the ability to make an impact in our own backyard is of vital importance. The chapter also maintained a strong relationship of technical mentoring with local EWB student chapters, including Temple University, University of Delaware, Rowan University, Drexel University, Princeton University, and University of Pennsylvania.

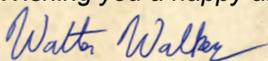
Through grant writing, innovative fundraising ideas, individual member contributions, generous donors, and the EWB-Philadelphia 3rd Annual Fall Fundraiser at the Fairmount Water Works, our chapter has succeeded in raising more than enough funds to achieve all planned project objectives to date. Thanks to these fundraising efforts, our chapter finished the year on a solid financial footing. It takes significant resources to complete infrastructure projects abroad, including both material and travel expenses, so we are thankful for the contributions and investments (money, time, and energy) of our many supporters. Fundraising is continually ongoing, and is a chapter-wide responsibility.

In recognition of the chapter's accomplishments, the EWB-Philadelphia Professional Chapter received the honor of being named the EWB-USA 2014-2015 Premier Chapter Award for the Northeast Region at the 2014 national conference in Reston, VA.

I am incredibly excited by the opportunities that lie ahead in the coming year. Progress with our international projects, continued mentoring of our local EWB student chapters, expanding our local outreach program through an official long-term EWB-USA domestic initiative (Community Engineering Corps), maintaining strong relationships among our members, stakeholders, and communities, and finally, the development (and promotion) of the next wave of chapter officers.

None of this happened in a vacuum. Everything we have accomplished is powered by you: our active chapter members, community partners, donors, and supporters. You have played a part in the mission of building a better world, one community at a time and, as such, you are all part of the EWB family and experience. I'm thankful to be a part of it. I hope you continue to join me.

Wishing you a happy and healthy new year!



Walt Walker



ABOUT EWB-USA

Despite increasing technological advances and awareness, we still face the reality that half the world's population lacks access to clean water, proper sanitation facilities, electricity, reliable roads to school and more. Engineers Without Borders USA (EWB-USA) is a nonprofit humanitarian organization established to support community-driven development programs worldwide through partnerships that design and implement sustainable engineering projects, while creating transformative experiences that enrich global perspectives and create responsible leaders. Since its incorporation in 2002, EWB-USA has grown from a handful of passionate individuals to an organization of more than 280 professional and student chapters, and 16,000 members, who have impacted more than 2.5 million lives across the world.

Our approach to development is based on more than blueprints and measurements; it's based on real relationships and five-year partnerships with communities. We do more than build latrines for communities –we equip them to build and maintain latrines themselves, as was done during EWB-Philly's first project in Rwanda. At the same time, the volunteers and community members learn valuable leadership skills by charting pathways through complex challenges and achieve a shared goal. The hands-on engineering work occurs at the project level. The scope of these projects is diverse, ranging from the construction of a road to gravity-fed water distribution to the implementation of water-efficient latrines. These six project types aim to holistically address the breadth of a community's needs:



WATER SUPPLY



CIVIL WORKS



SANITATION



AGRICULTURE



ENERGY



STRUCTURES

Our Mission

Engineers Without Borders USA builds a better world through engineering projects that empower communities to meet basic human needs and equip leaders to solve the world's most pressing challenges.

Our Vision

EWB-USA's vision is a world in which every community has the capacity to sustainably meet their basic human needs.

Our Approach

EWB-USA is founded on sustainable and community-driven program development. Partnerships with those developing communities last for a minimum of five years to promote sustainable solutions. All EWB-USA programs are initiated from the community level, and are contingent on the assessment of local needs prior to any design or implementation.

Communities contact EWB-USA with an application for support, and individual EWB-USA chapters then apply to adopt a program for which they match the technical and membership expertise to successfully execute the implementation of projects that fulfill the chosen community's needs. EWB-USA chapters assess, design, implement, and monitor appropriate technologies for the community's self-identified needs. EWB-USA builds the capacity of both our members and our partner communities through in-country and online training, and post-construction monitoring and evaluation.



OUR CHAPTER:

PHILADELPHIA PROFESSIONAL CHAPTER (EWB-PHILLY)

Our History

EWB-Philly spreads both the vision and the mission of EWB-USA by partnering with developing communities to improve their quality of life through environmentally and economically sustainable engineering projects. EWB-Philly engages those communities in resolving particular infrastructure needs that the community itself has identified. Projects include, but are not limited to, the design and construction of water supply, wastewater treatment, sanitation, energy, and structural needs. The overall objective of every project is to incorporate, and train, the community in all phases of the projects to ensure ownership, appropriateness, and long-term effectiveness. EWB-Philly currently has active international projects in two countries: El Salvador and Philippines. The chapter's first project was a potable water system in Rugerero, Rwanda. Work began in Rwanda in 2007 and culminated in 2013 with the ventilated-improved pit (VIP) latrines in Rugerero and several adjacent villages.

In 2009, EWB-Philly began a partnership with Project FIAT/Handmaids of the Sacred Heart and the community of Las Delicias, an area of 3,000 residents outside of San Salvador, El Salvador. The residents identified having a reliable and efficient water supply as their priority. With the leadership of the community's council ADESCO, implementation has been completed via retrofitted improvements to the distribution system. The project is entering the monitoring and evaluation phase, which is scheduled to commence in 2016.

EWB-Philly launched its most recent project in 2010 in collaboration with the Rotary Club of Suburban East Rizal and the "barangay" (community/village) of Apatut, in Balaoan, Philippines. The community's current source of water is shallow hand-pump wells, which often dry up and/or become contaminated. The project team identified a deep groundwater well as a proposed solution to service the 800+ residents and the 300 children in the barangay's elementary school. In partnership with Apatut's Water Cooperative and the nearby Saint Louis College of San Fernando, the project is currently in the implementation phase. Additional project tasks include sanitation programs, and ensuring leadership and social enterprise development of the Co-op to ensure sustainability of the proposed water system.

The chapter started a local outreach and community service initiative in 2011 as a balance to our international projects. We saw the opportunity to make an impact in the communities we live around, and have since participated in monthly volunteer events (usually on Saturdays) with local organizations such as Guild House West, Northeast Tree Tenders, Pennypack Park, Philabundance, The Ray of Hope Project, Uber Street, and Urban Tree Connection.

EWB-Philly Membership Profile

EWB-Philly is composed of 35-40 active volunteers from a diverse array of professional disciplines, including engineering, hydrogeology, environmental science, public/global health, humanitarian development, finance, business, education, and many others. Our members bring a wealth of practical skills and knowledge, but also an interest in continued personal and professional development, making the composition of our chapter team unique. Chapter members are at various stages of their careers, ranging from recent graduates to seasoned professionals. All have a desire for hands-on opportunities to exercise their skillset and develop experience in new areas and, with chapter support, they have the unified goal of improving the lives of people in multiple communities.



**OUR CHAPTER:
PHILADELPHIA PROFESSIONAL CHAPTER (EWB-PHILLY)**

Chapter Leadership

EXECUTIVE OFFICERS

Walt Walker, President
James Furman II, VP of Operations
Alexandra Shivers, VP of Finance
Octavio Casavantes, VP of Communications

PROJECT LEADS

PHILIPPINES

Bob DiFilippo (Lead)
Adam Erispaha (Design)
Genevieve Lampinen (Public Health)
Salvador Palalay (Responsible Engineer)

EL SALVADOR

Adam Brostow (Co-lead)
Jonathan Campos (Co-lead)
Ana Pichardo (Public Health)
Brian Hamill (Responsible Engineer)

LOCAL OUTREACH

Leslie Tuason, James Furman, Walt Walker

STUDENT CHAPTER PROFESSIONAL MENTORS

Samantha Battle, Paolo Belfiore, Bob DiFilippo, Tom Dwyer
Heather O'Shea, Hong Truong, Russ Turner, Walt Walker

WEBMASTER

Tracy McClure

Awards & Honors

AWARDS

2014-15 EWB-USA Northeast Regional Premier Chapter - 3rd Place Poster Winner

Each year, the *EWB-USA Premier Chapter Awards* recognizes outstanding EWB-USA student and professional chapters that meet the ideals of a successful EWB-USA chapter. These ideals include excellence in organization, fundraising and public relations, engagement in mentor/mentee relationship and chapter and regional participation.

2014-15 GRANTS

National Groundwater Association (Philippines) – \$14,000
Rotary Club of Hatboro (Philippines) – \$3,692
NCEES (El Salvador) – \$5,000

RECOGNITION

Philadelphia Daily News (April 28, 2014) – “Engineers Without Borders Seek Non-Engineer Volunteers”



MEMBER SPOTLIGHTS



ALEXANDRA SHIVERS: *Chapter VP of Finance, Fundraising member*

I became a member of EWB-Philadelphia in May 2014. I am currently a Sales/Application Engineer and studied Mechanical Engineering at Boston University. I was born in South Jersey and lived in DC for 3 years. I like to hike and spend as much time outdoors as possible.

What does “engineering change” mean to you?

It means taking all your skills (technical, social, administrative) and using them to make a positive impact in the community.

What have you enjoyed most about EWB-Philly?

I get to work on skills that I don't have a chance to use in my current role. Event planning/fundraising is an exciting change of pace but also very rewarding. Our Phillies' Tailgating event in June 2015 was my favorite because I saw members - young, old, new, senior - come together to raise money for the project.

Why do you love the Philadelphia area?

Philadelphia is the most humble city I have ever lived in. It has so much history, diversity, pride, and spirit, but it goes unrecognized. It's the best kept secret on the East Coast.



JAMES FURMAN II: *Chapter VP of Operations, El Salvador Project member*

I originally joined EWB-USA in 2010 as a member of the EWB-Temple University Student Chapter. In 2012, I became President and helped launch EWB-Temple's first EWB-USA Domestic Project, the *Uber Street Organic Garden Project* in North Philadelphia. I joined EWB-Philly in 2015 and, since then, I have traveled twice as a member of the El Salvador Project Team, and currently serve as the chapter VP of Operations. I am originally from Morristown, NJ and graduated from Temple with a B.S. Degree in Mechanical Engineering.

Today, I work as a Compliance Engineer for the Southeastern Pennsylvania Transportation Authority (SEPTA) and love living and working in the city. The city has become my passion, playground and hobby. One day I would love to take on Urban Planning and lend my talents to improve and create transformative change within cities.

Why did you join EWB-Philly?

I joined EWB-Philly to continue my life within EWB-USA. I honestly don't know what my life, or even more so, my college career, would have been like if I had never been a part of this movement. EWB creates this community prospective where it challenges you to think beyond yourself and forces you to truly consider the impact you already have, or *could* have, on either your own community, or a community thousands of miles away. This world, and a city like Philadelphia, needs an organization like EWB, and I'm proud to engineer change through EWB-Philly.

What have you enjoyed most about EWB-Philly?

My greatest memory from EWB-Philly is traveling for the first time as a member of the El Salvador travel team back in January 2014. For the first time, I was able to experience "boots on the ground" and actually see the impact the chapter and myself were having on a community.

One of EWB-USA's mantras is “Stronger Together.” What does that mean to you?

“Stronger Together” means you can't do this alone. Without all of our members, chapters, volunteers and communities, we wouldn't be the incredible worldwide organization that we are today. Our members provide the needed expertise to get the job done, but our efforts would be nothing without the Humanitarian aspects our Community members provide.



MEMBER SPOTLIGHTS



ADAM BROSTOW: *El Salvador Project Co-Lead*

I joined EWB some 8-9 years ago. I traveled to Rwanda (EWB-Philly's first project) in 2008 as part of the sanitation project implementation team. For a few years now, I've been co-lead of the Las Delicias, El Salvador clean water project. I'm a chemical process engineer, and a Drexel graduate (undergrad); I went to Clemson for my Masters' Degree. I'm originally from Warsaw, Poland. My interests include art, science, nature, geography, history, linguistics, creativity and problem solving, invention and innovation, wilderness survival, energy efficiency, and technologies for developing nations. Three of my books are available on Amazon.

Why did you join EWB-Philly?

I went to college in Philly and, at the time when I joined, it was the closest chapter to where I live. I wanted to make a difference while combining my love of problem-solving and travel.

What have you enjoyed most about EWB-Philly?

I think I managed to improve my interpersonal skills (we engineers are not always good at that, and I may be on the low end of the spectrum), learn some "influence without authority," leadership qualities, and be involved in hands-on work (masonry, construction, plumbing, trenching; at work I do a lot of R&D).

Why do you love the Philadelphia area?

I have lived in the Greater Philly area on and off for a quarter of a century. Old City reminds me of Warsaw's Old Town where I grew up. Philly is incredibly diverse. It is also relatively close to the ocean, the mountains, and NYC.



JONATHAN CAMPOS: *El Salvador Project member*

I was a member of EWB-Oklahoma University from 2007-2010 as part of the La Pradera del Quetzal Guatemala Water Project, and fundraised for La Pradera del Quetzal School and the Potosi Bolivia Water Treatment Project. I joined the EWB Philadelphia Professionals in 2013, and am currently part of the Las Delicias, El Salvador Water Project team. I do engineering of processes which make high performance plastics for a variety of applications in process, electrical, aerospace, automotive and other industries. I enjoy reading, playing and watching futbol, watching NBA basketball, cycling, and travelling. I'm a Venezuelan-American, grew up in Edmond, Oklahoma, and attended the University of Oklahoma and Drexel University.

Why did you join EWB-Philly?

I joined because I get to make positive changes for developing communities in need of improved infrastructure at a grass roots level. EWB-Philly has given me experience doing things I would otherwise not have done, improved my communication skills, and educated me in developing technologies and approaches.

What have you enjoyed most about EWB-Philly?

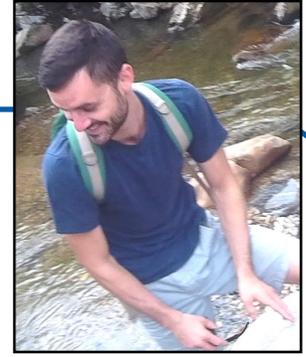
I like the people I work with and meet. I also liked working with local community leaders and learning about their way of life. I enjoyed the EWB fundraiser at the Philadelphia Water Works in September 2015—it was a casual event, good for unwinding and connecting with interesting people, while trying various foods and viewing photos taken on EWB trips.

Why do you love the Philadelphia area?

It's a big city, yet smaller than other large cities since it's condensed. Its events, diversity, food, transportation, parks, and proximity to NYC and DC are all great things about Philadelphia.



MEMBER SPOTLIGHTS



ADAM ERISPAHA: *Philippines Project member*

I was first part of EWB during my undergrad at Drexel, working on a project in El Salvador. I joined the Philadelphia Professional Chapter in September 2013. I'm originally from South Jersey, and now work and live in Philadelphia. By day, I'm a civil engineer working on flood risk management as a consultant to the Philadelphia Water Department. For fun, I like cooking/eating, surfing, traveling, and hanging in my hammock.

What have you enjoyed most about EWB-Philly?

Traveling, and spending time in the community we're working to help, has always been what I look most forward to most. But day-to-day, I get a huge amount of value from working with such a multidisciplinary team. Being exposed to a team with a wide variety of technical skills (geology, civil engineering, chemical engineering, environmental science, aerospace) is great. I'm especially thankful for how much I've had to learn about communication and project management in my role as the design lead. When I first started, I stammered my way through meetings and conference calls that I was attempting to lead. Since then, working with EWB has made me a much more well-rounded engineer and leader in general.

Why do you love the Philadelphia area?

I love the food and drink Philly has to offer. The beer situation in this city is amazing.

What has EWB-Philly done for you, personally and/or professionally?

Aside from tremendously growing my technical and soft skills, EWB-Philly has connected me to a network of talented, ambitious people that I love to be around. We take on massive challenges together that make me more



TORIN JOHNSON: *El Salvador Project member, EWB-Temple University Chapter President*

I joined EWB in early 2013 as a part of the Uber Street Organic Garden Project (North Philadelphia), under the Temple University Chapter, and am currently the Chapter President of EWB-Temple University. I'm a civil engineering senior with interests in stormwater management, water treatment, and geotechnical engineering. I like to run Tough Mudders and practice martial arts. I am a black belt in Kenpo Karate and am working on obtaining my black belt in Shotokan.

How do you define "engineering change," a frequent EWB-Philly message?

"Engineering change" means to connect with the people in a given community and use our combined skills in various categories to improve that community and society. Anyone is capable of engineering change, no matter what the discipline, background or education. Anyone willing to get their hands dirty, and wanting to improve life for the better, can engineer change.

What have you enjoyed most about EWB-Philly?

My favorite parts of EWB-Philly have to be the social gatherings and any chances we get for our members to get to know each other more, and learn about each other's interests, background and skills.

Why do you love the Philadelphia area?

The City of Brotherly Love is also the City of Opportunity. Every day during my commute, I see all of the improvements our city has made in stormwater management and structural design. I also see where we can keep going in those advancements. This city is just one big project waiting for good people to take the initiative to work on them.



MEMBER SPOTLIGHTS



ANA PICHARDO: *El Salvador Project member*

I joined the EWB-Philly Chapter in January 2015. I was involved in the El Salvador Project and traveled to Las Delicias, El Salvador in May 2015. While I was there, I was able to walk around the community and speak with residents at their homes to conduct a Health Assessment Questionnaire. I assisted with communication and interpreted for the other EWB traveling team members. I was born in Santiago, Dominican Republic and was raised in Philadelphia. I graduated from Temple University in May 2013, with a B.S. in Public Health. After graduation, I worked for two years as a Medical Case Manager in non-profit organizations for people living with HIV/AIDS. I now work as a Professional Medical Interpreter at Temple University Hospital where I am able to facilitate communication between patients and medical personnel.

What have you enjoyed most about EWB-Philly?

My favorite part of being a member of EWB-Philly has been the opportunity to travel to El Salvador and being able to provide my skills/abilities to the group. I loved going to each community member's home and completing the Health Assessment Questionnaire while speaking to them in their native language, and learning more about their everyday lives. I enjoyed being able to help the team with communication and interpreting for the team while we were there.

Why do you love the Philadelphia area?

I love Philadelphia because of its cultures, diversity, languages, and opportunities for growth! Philadelphia is expanding and becoming better each day. It is my home, and it is also where I have grown so much educationally, personally and professionally. I have been offered many great opportunities in this wonderful city.

One of EWB-USA's mantras is "Stronger Together." What does that mean to you?

"Stronger together" means that, no matter where we come from, what language(s) we speak, what we look like, what we believe, etc.... once we unite as people, we can do so much more and overcome more obstacles together. All of the differences that make us unique are also the same things that make us stronger and more valuable together as a group!



KATHERINE SMITH: *El Salvador Project member*

I joined EWB in April 2014 after meeting members at a local outreach event (park cleanup). Within a month, I was in Las Delicias, El Salvador doing water quality testing, and I've been involved in the project ever since. I am an environmental research scientist; I graduated from Drexel University in 2014 and fell in love with Philadelphia while I was there. I'm from Rhode Island, so growing up on the coast taught me to care about water issues of all types. In my spare time, I love to read and do various creative hobbies, but what I enjoy most in life is traveling, seeing new places, and experiencing different cultures.

What does "engineering change" mean to you?

Engineering change means approaching problems with a toolbox. With the right arsenal of experience, ideas, and resources, we can create solutions to problems that affect quality of life, and lift up communities by sharing these tools.

Why do you love the Philadelphia area?

Philadelphia is a great city. It offers all the perks of a metropolis in terms of culture, opportunities, infrastructure, and nightlife, but the size is right. Neighborhoods feel distinct and it isn't unheard of to actually know your neighbors.

What has EWB-Philly done for you, personally and/or professionally?

EWB Philly has given me the opportunity to meet other professionals, to see my work having a real impact on a community, and to experience a country that I otherwise wouldn't most likely ever see. In EWB, I am constantly learning about my own discipline, related fields, the abilities and limitations of nonprofit organizations, and important issues people face around the globe.



MEMBER SPOTLIGHTS



KIM TEOLI: *Philippines Project member*

I first joined EWB in 2010 as a student member of the University of Delaware chapter. I've been a part of the EWB-Philadelphia chapter since 2013. I traveled to the Philippines in November 2014, and I have most recently been working with the Design/Engineering sub-team. I am from New London, PA and currently work as an Environmental Engineer at Delmarva Power in Newark, DE. I graduated from the University of Delaware in 2013.

How do you define “engineering change,” a frequent EWB-Philly message?

“Engineering change” means applying technical skills to provide solutions for communities in need. The actual design is the straightforward part. Engineering change on a daily basis means constantly problem-solving and troubleshooting issues, from simple to complex. You might design a water tank to match the demand of a growing community, but how will you get the materials up a hill that is too steep for a road? Could you have the materials hauled by water buffalo? How many trips could a water buffalo safely make up the hill per day, before tiring out? The goal is to make a positive difference in the world, one community at a time.

What have you enjoyed most about EWB-Philly?

My favorite part of EWB-Philly is being onsite, in the community. I enjoy building relationships with people on the other side of the world and realizing how much we all have in common. My favorite memories include watching the village's basketball team compete in a tournament, playing hopscotch with kids while walking the proposed distribution route, and confirming that there's water in the well!

What does “stronger together” mean to you?

“Stronger together” means that we can accomplish more as a team than we ever could do alone. I think this is especially true for EWB projects. It takes a diverse skill set to plan, design, and implement development projects. The projects would never be successful without the effort of the team in Philly, the communities we work with, and our many NGO partners.



ROB RYAN: *El Salvador Project member, EWB-Temple faculty advisor*

I am an Associate Professor in the Department of Civil & Environmental Engineering at Temple University. My degrees are from Penn State (BS), Widener (ME), and Drexel (PhD). My hobbies include cycling, hiking and music. I'm originally from Massachusetts; I grew up in Harrisburg, then came to Philadelphia after graduating college.

Why did you join EWB-Philly?

I joined to make a stronger connection between EWB-Philly and EWB-Temple. I participate because I believe we have an obligation to share our time, talent, and treasure with those who have less. Our time, talent, and treasure are not additive, but multiplicative.

What have you enjoyed most about EWB-Philly?

I cannot speak highly enough of Sister Gloria and the work Project FIAT has done. The work accomplished in Las Delicias is amazing, but so is what she does with the volunteers. I don't think anyone can participate without coming away changed. Working with the residents of Las Delicias, and visiting the UCA, the Cathedral, and other places of importance to El Salvador history and culture, re-awakened my sense of place in the world as a citizen of the USA.

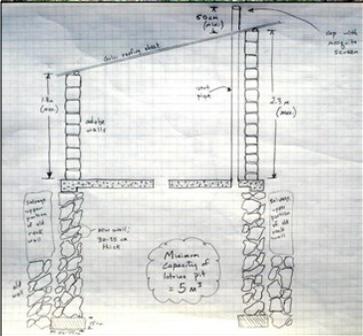
One of EWB-USA's mantras is “Stronger Together.” What does that mean to you?

Personally, my sense of purpose is greatly enhanced. It is easy to get bogged down in the day to day tasks of living and working. EWB reminds me of the bigger picture and how I can make it better. Professionally, I have incorporated ideas and material from EWB in my coursework. Students have an opportunity to examine real problems faced by real people.



PAST PROJECTS / PROGRAMS

Rwanda Health & Healing Program (2007—2013)



Beginning in 2007 and ending in late 2013, the EWB-USA Philadelphia Professional Chapter completed three sanitation projects in the Rugerero District of Gisenyi, Rwanda. The team worked in partnership with other Philadelphia-based NGOs to create balance and synergy on the overall program approach. EWB-Philly, students of medicine at Jefferson University, and artists worked side by side with Rugerero residents in a unique dynamic, for a successful implementation.

Since the program was completed, communities have recognized that instances of diarrhea over the last few years have gone down significantly. Awareness of proper sanitation benefits and practices have increased. Communities now have maintenance teams in place, which ensures all latrines in the community are kept clean and well-maintained.

Lessons Learned

- The quality of available materials and tools were much lower than we anticipated. Wheelbarrows had to be rebuilt, adequate gravel was difficult to find, poor quality tools reduced work efficiency, etc. This must be taken into consideration when finalizing designs and schedules going forward.
- One needs to be clear about intentions and be wary of “mission creep.” Our contacts in Rwanda are quite charismatic, but when speaking to the community, the hope of our potential impact sometimes led to attempts to commit us to tasks outside the scope of our project.
- The human element can be unpredictable. We were not prepared to deal with some community politics. For example, during the course of the project, we experienced the president of the community destroying his latrine to ensure his was among the “replace” set rather than the “repair” set.
- Manual Labor vs. Machines – We learned that manual labor is used more than machines for applications. For example, breaking gravel into smaller pieces happened one stone at a time, broken by workers with hammers.
- Reinforcement of the principles and concepts of our in-country NGO partner that govern our implementation design and operations are critical for the sustainability of our projects. If the NGO does not grasp the fundamentals, the team will need to spend more time in the villages working on reiterating the principles.

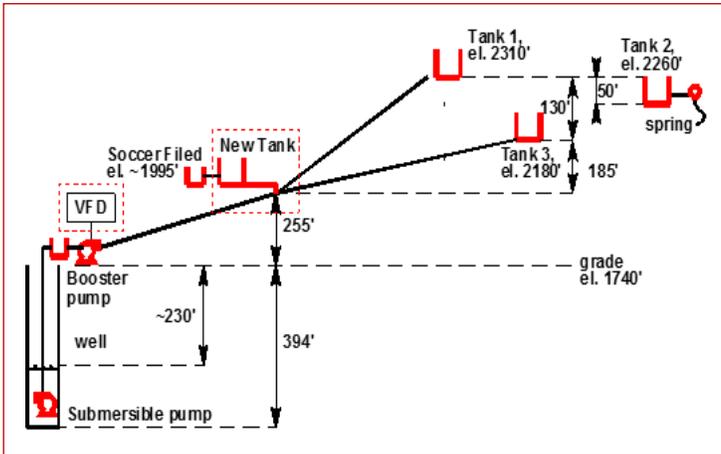
Conclusion

Through our partnerships with both in-country and Philadelphia-based NGOs, the EWB-USA Philadelphia Professional Chapter completed three successful projects in the Gisenyi area of Rwanda. These projects improved the lives and well-being of the communities’ members and, through education and working beside us, a successful model was developed for the residents to continue working on their own – the ultimate measurement of a successful EWB project.

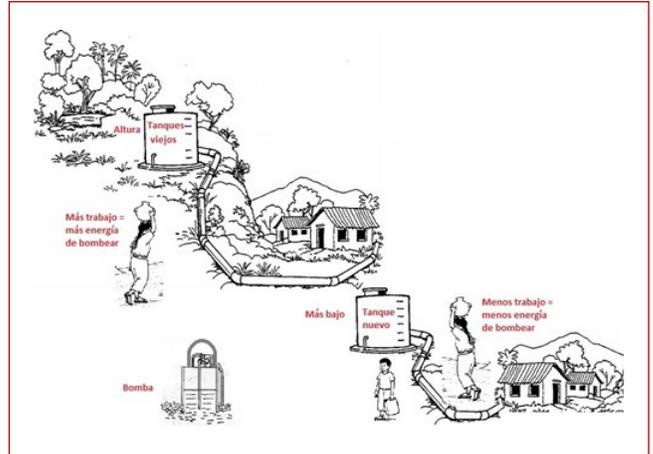


CURRENT PROJECTS / PROGRAMS

Las Delicias, El Salvador—Water Project (2009—present)



Our project is a retrofit of an existing system. Above is the critical elevation diagram.



EWB-Philly added a new tank at an intermediate elevation to reduce power consumed by water pumps. This allows us to pump about 25% more water for the same electricity cost. An educational poster above illustrates the principle.

Between 2012-2014, with collaboration from Las Delicias residents, the storage tank was constructed and the team also added a variable frequency drive (VFD) to be able to pump at different discharge heads and to eliminate the power factor penalty. In 2014, the team ran into a problem where the VFD was overheating. Utilizing our available resources, we were able to solve this issue by installing a water cooling system in May of 2015.



Trenching for the cooling system's water pipes.



EWB and Community Teamwork!

The technical part of our project has concluded. The team is planning the first of a series of monitoring and evaluation trips, beginning in 2016. The post-construction phase will focus on public health impact assessment, community feedback on water system improvements, education on household water treatment and storage, and O&M training.

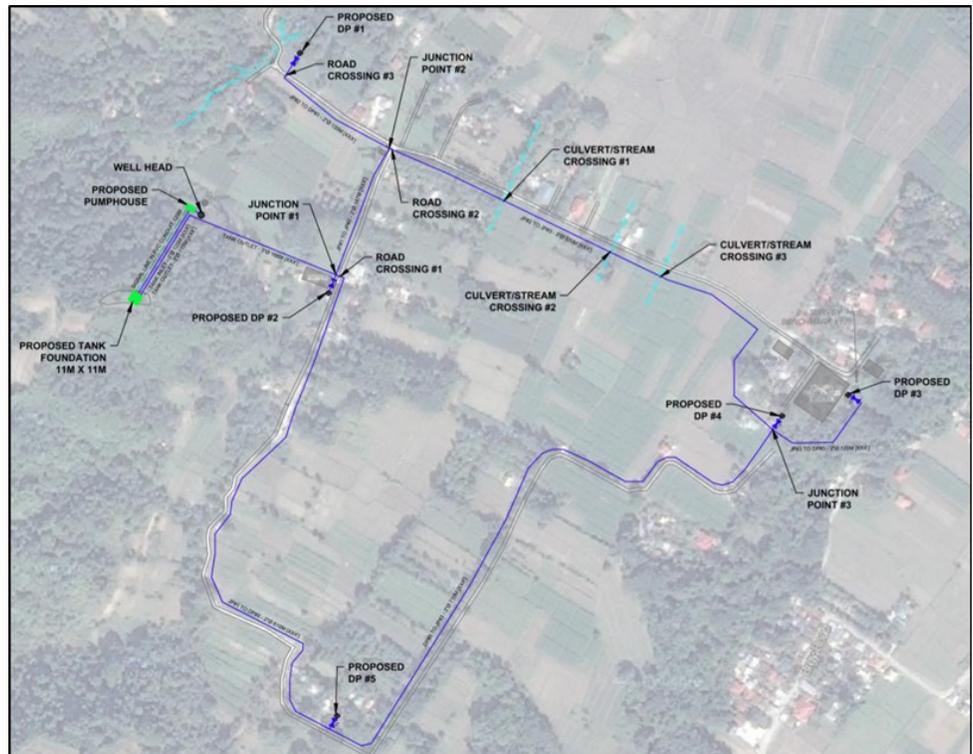


CURRENT PROJECTS / PROGRAMS

Apatut, Philippines *Water for Life* Project (2010—present)

The community to be served by the *Water for Life* project is a farming village of approximately 800 people, settled in a rural area approximately 300 kilometers north of Metro Manila and 5 miles west of the South China Sea. Apatut comprises 7 sectors dispersed throughout the barangay, between which a significant disparity of wealth and living conditions exists. The village is led by a Barangay Captain and leaders assigned within each sector.

The *Water for Life* project, the first EWB-USA project in the Philippines, was initiated by former members of the Apatut Barangay in response to the persistent water-related health issues suffered by the community. EWB-Philly first visited the community in March 2010 for an assessment trip. The EWB-Philly team subsequently laid out an ambitious multi-phase implementation plan featuring deep groundwater as the supply source. The project involves well development, a pumping system, storage tank and foundation construction, treatment, and distribution to five centrally-located community tap stands. A Water Cooperative has been established to raise capital, operate, and maintain the water system, once it is complete.

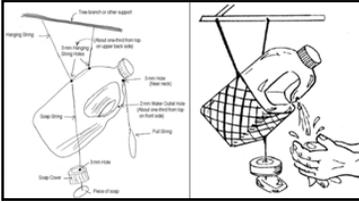


Following the initial assessment trip, the chapter put efforts into fundraising and a proposed overall design. In 2012, at the direction of EWB-Philly, a borehole was drilled by a local drilling contractor to begin construction of the well. However, at installation, the drilling contractor reported to EWB-Philly that borehole was dry (i.e. not a suitable source of water).



EWB-Philly subsequently made two more assessment trips in 2013 to obtain more information and identify a reliable source of water for the project. While investigating the feasibility of a spring water source, a municipal water tie-in, and other water sources, EWB-Philly determined that the original borehole had been improperly installed and tested by the original drilling contractor. After completing borehole redevelopment and aquifer stabilization in November 2014, the team confirmed a





viable source of water, sustainably yielding the required 20 gallons per minute. In April of 2015, EWB-Philly traveled to the community on a final assessment trip to perform well yield, water quality testing, and a topographic survey of the critical parts of the village to complete the storage tank and distribution design. The team also organized “tippy-tap” handwashing demonstrations and installations at the community elementary school to educate the students on effective sanitation practices.



In 2016, the EWB-Philadelphia Professional Chapter plans to finalize the revised design of the water system and begin the next implementation phase consisting of the water storage tanks and foundation construction. The proposed foundation is an integral part of the overall proposed project as it will provide a safe and structurally sound footing for four future water storage tanks. This phase represents one of the more extensive construction phases of the overall project, as it requires earthwork, erosion control, and stormwater management. Project work also includes water treatment, public health analysis, water use and sanitation education.



It also includes the Apatut Water Cooperative developing a financial enterprise and resident engagement plan to operate and maintain the infrastructure that would ensure the long-term sustainability of the water system. Cooperatives in the Philippines must be registered with the government annually and meet training and administrative standards. EWB-Philadelphia has learned the importance of community cooperatives in this country, because the co-op and barangay leaders will run the system after the project is completed. Strong leadership, resident investment, and social enterprise (developing revenue for the water system) are vital components of an effective cooperative structure. They reinforce EWB-USA’s required framework of “community-driven” development programs—the community participating alongside the Chapter in the project, lending a voice, and investing administratively, economically, and physically.



CHAPTER EVENTS & SOCIAL NETWORKING



Local Outreach & Community Service

EWB-Philly's events in 2015 have been a great assortment of activities and outings for the purpose of socializing, networking, team building, and fundraising. They have ranged from Happy Hours at our favorite local pubs to a cultural dinner and fundraising auctions at the historic Fairmount Water Works.

EWB-Philly's social events serve as an opportunity to get to know fellow teammates in a relaxed and non-project setting, but also to network and learn about other's technical and professional experiences. These meetings allow EWB-Philly's members to build trusting relationships that nurture collaboration for a project's success.

The Phillies-Giants Game at Citizen Bank Park in June brought more than 30 members and their families together for a day of tailgating and baseball on a warm, sunny Saturday. Hot dogs, chips, homemade potato salad, and an exciting game between Philadelphia and San Francisco gave rise to lots of fun, conversation and team bonding.

In September, over 100+ EWB-Philly members and their friends and families came together at the historical Fairmount Water Works for an evening featuring cultural foods, project summaries, networking, and a silent auction. This event was a great display of unity, reflection, and fun.

Partnered together with the Filipino Executive Council of Greater Philadelphia, EWB-Philly had a casual evening of socializing, networking, camaraderie, dining and dancing to raise money for the Apatut *Water For Life* project. A turnout of over 90 of EWB-Philadelphia and FECGP's network gathered at the Fraternal Order of Police in Northeast Philadelphia in support of the Apatut *Water for Life* Project, which was inspiring!

Although it is a given that most of our volunteers are engineers by trade or have an engineering background, we also highly encourage and welcome involvement from non-engineers; their holistic approach and input is vital to our impact. Professionals in the fields of education, business, public health, science, construction, anthropology, and sociology have been among the various volunteers that have worked with us. Family and friends are also more than welcome to contribute.



EWB-Philly's local mission strives to build a better world within our home city of Philadelphia and region. Local outreach events provide a great way to give back to our own community, and to promote civic pride, resident empowerment, and a greener, cleaner environment.

Our chapter works with Philadelphia-based nonprofits to organize monthly community service projects. These partnerships include the *Friends of Pennypack Park*, *Ray of Hope*, *Urban Tree Connection*, and *Northeast Treetenders*.



Our events primarily involve park and neighborhood cleanups and urban gardening projects. We are also actively searching for more ideas on outreach events and are open to specialized local outreach projects that are more engineering focused, through EWB-USA's new domestic program, Community Engineering Corps (CEC).

With our Las Delicias, El Salvador Water Distribution Project winding down, and EWB-USA's development of the CE Corps, EWB-Philly envisions an additional opportunity to expand our impact to under-served communities in Philadelphia. Philly is yearning for enthusiastic change-makers with the right set of skills and expertise to help improve quality of life and address some of its neighborhoods most basic needs. In 2016, we will dedicate 3-4 members to serve as our CEC Project Steering Committee. They will be tasked with the responsibility of identifying our very own CEC-approved domestic project.

What Is CE Corps?

Community Engineering Corps (CEC) is a groundbreaking alliance between three premier engineering organizations: The American Society of Civil Engineers (ASCE), the American Water Works Association (AWWA) and Engineers Without Borders USA (EWB-USA).

What Does a CE Corps Project Do?

CEC harnesses the expertise of volunteer engineers to help under-served communities in the United States meet their infrastructure needs and improve each community member's quality of life.

For Communities

CEC partners with communities to design sustainable solutions to infrastructure problems that will help your community thrive.

For Volunteers

Members of ASCE, AWWA and EWB-USA groups can volunteer their time and expertise to help communities that have requested the assistance of CEC.



STUDENT CHAPTER MENTORING

EWB-USA Professional members have the unique opportunity to mentor the next generation of engineers and make a lasting difference in the lives of others. Therefore, part of our mission as a Professional Chapter, is to use our collective pool of members and utilize them as EWB-USA Student Chapter Mentors. Our professional mentors have helped oversee the technical aspects of international community development programs in-country, and have shared their experience by providing overall guidance to the EWB student chapters in the Greater Philadelphia area.

“As a mentor, you will have the opportunity to travel to the project site and see, firsthand, the difference your work—and the work of your students—makes in the lives of others. EWB-USA student chapters are in need of mentors with expertise in the areas of engineering, construction and international development to ensure the high quality of our programs.” - EWB-USA

The EWB-Philadelphia Professional Chapter has collaborated with EWB Student Chapters in our region on various levels: Temple University (El Salvador and Local Outreach), Drexel University (El Salvador and Local Outreach), University of Delaware (Malawi), Villanova (Local Outreach), Rowan University (professional mentoring), Princeton University (Peru), and University of Pennsylvania (Guatemala). We encourage all EWB-USA Student Chapters in the Greater Philadelphia area to connect with EWB-Philly should they need assistance in finding a mentor. From a development standpoint, it is also an opportunity to inform graduates about the opportunity to continue EWB-USA work with a Professional Chapter.

For more information on becoming a Professional Mentor to a Student Chapter, please visit <http://www.ewb-usa.org/myewb/international-community-programs/mentor-teams/>

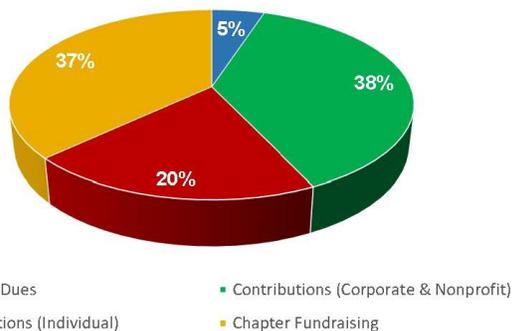


FINANCIALS

Much time and effort goes into each project a chapter takes on. There is assessment, research, planning, surveying, designing, and many other steps before construction can actually begin. In addition to the time that each member volunteers, there are numerous expenses that need to be funded for the success of the project. Beyond the cost of the actual construction materials, there are local contractors that need to be hired, and member airfare that needs to be planned for.

As evidenced in the graphs below, EWB-Philly is fortunate to receive support from a diverse array of sources, and in particular, many individual donors that have been dedicated to supporting its projects. In an effort to balance its funding sources, the chapter is always seeking new funding opportunities, and strives to increase the number of fundraisers and grants applied for in the coming year. While much of the chapter's expenses are allocated to travel—both Philippines and El Salvador are in the implementation phase—project material and labor expenses are expected to increase while administrative expenses will be kept to a minimum.

2015 Chapter Revenue



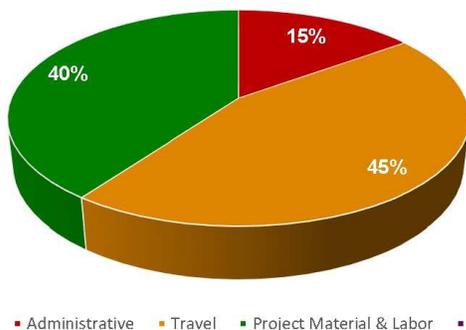
Member Dues = 5%

Contributions (corporate and non-profit) = 38%

Contributions (individual) = 20%

Chapter Fundraising = 37%

2015 Chapter Expenditures



Administrative = 15%

Travel = 45%

Project Material and Labor = 40%



PARTNERSHIP & DONOR ACKNOWLEDGEMENT

EWB-Philadelphia's corporate partners are investing in the growth and sustainability of EWB-USA programs and community partnerships. EWB-USA partner organizations include:

NGO PROJECT PARTNERS

El Salvador

Handmaids of the Sacred Heart / Project FIAT

Philippines

Rotary Club of Suburban East Rizal, Philippines

Rotary Club of Hatboro, PA

LOCAL SUPPORTERS & OUTREACH PARTNERS

Filipino Executive Council of Greater Philadelphia

American Water Works Association

Ilocano Cultural Association of Greater Philadelphia

Philadelphia Phillies

AGC Chemicals Americas

Honeywell International

Aquaterra Technologies, Inc.

Pilipino-American Association of Delaware

Urban Tree Connection

Philadelphia Water Department

Be1More

Northeast Tree Tenders

Guild House West

The Ray of Hope Project, Inc.

Web Work International

CORPORATE SPONSORS

National Groundwater Research
& Education Foundation

National Council of Examiners
for Engineering & Surveying

Knovel

Rotary International

Bentley Systems

The Boeing Company

Last, but not least, thank you to our many individual donors! **Every** investment, no matter the amount, has helped play a part in the movement to build a better world. You are each an engineer of change!

