



Winter 2020
Newsletter

Engineers Without Borders (EWB) was founded in 2002 with a simple goal: to help small communities in the developing world meet basic infrastructure needs by connecting them with experienced engineers.

The Boston Professional chapter of EWB (EWB-BPC) was created in 2005 to further this mission. We are a group of people from many different professions (no, you do not have to be an engineer to get involved with EWB!). Together we strive to make the Greater Boston area and the world a better, more sustainable place.

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International Community Projects:

Mkutani Water Supply Phase III Project

We are continuing our work to provide a clean, accessible, and low-cost water supply for approximately 3000 people living in the rural village of Mkutani, Tanzania. Over the past few years, we have successfully drilled a 120-meter-deep borehole (well) and installed a solar-powered pump to lower the cost of the water and avoid breakdowns of the hand pump. This past year we commissioned a topographical study to determine the most suitable path for the 4-kilometer water main pipe which will reduce the distance community members need to travel to get water. A location on the Mkutani primary school grounds meets the criteria to have sufficient pressure to drive the distribution system and provides easy access. This will help ensure that more people utilize the clean water for drinking instead of continuing to get water from the nearby polluted river. This phase of the project is very costly, so we are in need of substantial support from local companies and friends of Boston Professional Chapter members. See page six for more information on what you can do to help!



Mkutani School Multipurpose Classroom Project

The village of Mkutani struggles to provide education facilities adequate for the necessary progression of the primary school students. The students in Mkutani are crowded into too few classrooms and there is no library or study space with lighting for the students to prepare for crucial exams once it becomes dark. Consequently, many students repeat 4th grade and do not pass national exams which allow them to continue their education at a nearby secondary school. Currently, EWB-BPC has partnered with the EWB-MIT student chapter to create additional capacity within the community's existing school grounds. This new building is currently being designed to provide seven new learning spaces, with one of these spaces being a technology room. These classrooms will have the capability to provide students with a better educational experience during the day, while also providing adults with trade education in the evenings. Break out study spaces are also being incorporated, as well as simple, natural aesthetic features to make the experience of going to school more exciting. As a project team, we are looking forward to the challenge of using local materials and building methods in creative ways to produce a functional educational facility. Look out for renderings of the proposed site in the near future!



International Community Projects:

Mkutani School Girls' Latrines Project

From our visits and meetings with students and members of the Mkutani School Committee, it is evident that the sanitary facilities at the primary school are unacceptably inadequate, particularly for the girls. The goal of this project is to provide a judgment-free and clean environment where the girls in the Mkutani primary school can safely go to the toilet and practice feminine hygiene. We plan to construct a new toilet block for the approximate 328 female students which will include 12 stalls and a private washroom. The proposed design includes two rows of 6 ventilated pit latrines with ceramic pans and locking stall doors. As the girls expressed in our focus groups in August 2019, there will be a separate, private space attached that will allow for the cleaning of sanitary products. We plan to begin implementation of this project in June 2020, subject to sufficient funds being raised.



Chamhawi Water Supply Project Phase I

EWB-BPC continues to make progress towards safe drinking water in the village of Chamhawi, Tanzania. The team is organizing a trip to commence Phase I of the project in June 2020; Phase I will include drilling of a well and outfitting it with a hand pump. The travel team will also meet with community leadership and gather field data necessary for progressing with Phase II of the project: installation of a solar pump, control panel, solar array, and interim storage tank. EWB-BPC is committed to making a difference in the lives of the community members of Chamhawi. The provision of safe drinking water will eliminate the need for the women of the community to fetch contaminated water from the nearby river, will reduce water-borne diseases and infant mortality rates, and will empower the women of the community to engage in other pursuits.



Profile Spotlight:

Mike Stover joined EWB-Boston Professional Chapter in March 2019 and currently leads the Chamhawi, Tanzania water project. He is not new to EWB – he was a member of the EWB-Washington DC Professional Chapter working on a project in Santa Clara, El Salvador as a design engineer and team mentor from 2008-2013. Originally from southeastern Pennsylvania, Mike graduated from the University of Delaware in 1989 with a Bachelor of Science degree in Civil Engineering, and from Cornell University in 1993 with a Master of Science degree in Environmental Engineering.

As a U.S. Public Health Service officer, Mike spent eighteen years with the Indian Health Service working with Native American tribes and managing construction of water and wastewater treatment facilities. Since 2011, Mike has been detailed to the Environmental Protection Agency in Boston to serve as the Indian Program Manager and continues to work with the ten federally-recognized tribes in New England on critical environmental issues. He is a registered professional engineer and sanitarian.



Mike is married to Eithne, who hails from County Cork, Ireland, which is why his three children have very Irish names: Liam, Maeve and Kieran. He loves to do outdoor activities with his family and friends, like kayaking, hiking, camping, cycling, gardening and beekeeping. Mike also loves to travel with his family– to Ireland, of course, but other places too. Since he can't yet count Africa among the continents he has visited, he is really looking forward to traveling with the Chamhawi water team on their first visit to the community this coming June!

Domestic Community Projects

Blue Hills Project

Last spring, EWB-BPC approached the Blue Hill Weather Observatory and Science Center in Milton, MA to learn how we could form a partnership with this long-standing member of our local community. The original conversations focused on brainstorming ways to build our fundraising base in the Boston area, but we soon learned of a more impactful way we could work with the Observatory. The director, Donald McCasland, had the excellent idea of leveraging our own skills and experience as engineers while offering us the chance to connect with the Blue Hills network of donors. After meeting with Don and learning of his different project ideas, we committed to forming a team and getting started.

The two projects we settled on were improving the rain water collection system and rebuilding a storage unit where visiting school groups keep backpacks and lunchboxes during their visits. Beginning on a cold, overcast day in May, we started by pouring a new concrete pad and taking measurements for the future storage unit. With help from 84 Lumber who donated over half of the building materials, the storage unit slowly took shape, first in a team members back-yard and later in-place at the Observatory after carefully driving it up to the site.

Throughout the building and design process, we made several adjustments to ensure the final product would best serve the Observatory's needs, and I hope that the finished unit will serve visitors for years to come. Although the majority of EWB's projects have an international focus, the experience of working with the Observatory offered all of us the chance to learn about a member of our own community here in the states, and I hope to have many similar opportunities in the future.

-William Keddy-Hector



“Act as if what you do makes a difference. It does.”

- William James



Habitat for Humanity

Merrimack Valley Habitat for Humanity (MVHH) shares a global vision where everyone has a decent place to live. The organization brings people together to build homes, communities and hope and were successful serving 22 communities of the Merrimack Valley.

The EWB-BPC members volunteered a hard day of work to help the MVHH build four new structures – duplex and single homes that will be homeownership opportunities for seven families at 22 Old County Road, Salisbury. In the traditional MVHH format, the organization builds and selects families as the construction is taking place, and families contribute to the build process of their homes with upwards of 240-360 hours of sweat equity, which serves as their down-payment. EWB-BPC was happy to help support.



Member Experience: Jumping Rope

By Diana Estrada

Forget the engineering books, learn how to jump rope.

EWB- BPC has had a relationship with the community of Mkutani, Tanzania since 2012. Alongside the community, EWB-BPC has worked on different projects with the goal of addressing their most fundamental needs including clean water access, school classrooms, teacher's housing, female sanitation, and clean latrine infrastructure.

I had the great opportunity to travel to Mkutani the past two summers. In August 2018, as a joint project with EWB-Boston Professional and EWB-MIT, we replaced the hand pump at the existing well with a submersible electric pump powered by solar energy! With help from community members and local subcontractors, we also built and installed a complete water system with a 10,000 liter (L) storage tank. With this new setup, anyone can collect water at an affordable cost of about \$0.05 cents per 20 L “jerry can” and the money collected is used to provide maintenance to the system.

In August 2019, I had the opportunity to go back for an Assessment Trip. This trip looked to evaluate the potential construction of a new multipurpose classroom for the school in Mkutani. The current infrastructure in the school is not only in very poor condition, but there are not enough classrooms for the number of students, with approximately 605 students and only six classrooms. Because of this, many teachers give their classes outside, under the shade of trees or between buildings. Providing additional classrooms would a better learning environment for the students.

When I arrived back in Mkutani on the second trip, I felt very welcomed by the community. Even though a year had passed, and we speak completely different languages, people from the village remembered my name and welcomed me with kind, sincere hugs, almost as if I was part of the family. The town and the community felt familiar, and due to the built relationship, it was much easier to conduct meetings, talk to group leaders, and even shop for materials locally. My favorite memory of the trip was playing with the children during their breaks from class, attempting to read to them in Swahili, and even jumping rope with all the kids! (Pictured top right)



Upcoming Events:

On Tap For Tanzania

EWB-BPC will be hosting an event in celebration of World Water Day on March 25th from 6-9pm at the Roslindale Substation & Turtle Swamp Beer Garden.

We will have a raffle supported by many local businesses and food from a local West African restaurant!

To buy tickets and to support our projects in Tanzania please visit:

<https://support.ewb-usa.org/OnTapForTanzania>



STRONGER TOGETHER

2020 ENGINEERS WITHOUT BORDERS USA CONFERENCE SERIES

HARVARD FAILURE FORUM



ON TAP FOR TANZANIA

Engineers Without Borders
Boston Professional
Chapter invites you to
celebrate **World Water Day**
on:

**Wednesday,
March 25th
6pm - 9pm**

Join us for food, drinks, and a raffle at Roslindale
Substation & Turtle Swamp Beer Garden
4228 Washington St, Roslindale, MA 02131

To purchase tickets please visit:
<https://support.ewb-usa.org/OnTapForTanzania>

All proceeds support EWB-BPC's water, sanitation, and
education projects in Tanzania

Failure Forum

The Harvard and Boston Professional Chapters of EWB believe that the best way to foster successful projects is to encourage honest dialogue and create spaces in which everyone feels comfortable admitting to failures small and large, and takes the time to learn from those mistakes. Failure Forum 2020: Stronger Together is organized around that theme, and we invite you to spend April 25th talking about challenges at home and abroad.



Your company could be featured here! Email fundraising@ewbboston.org for more information.