



ENGINEERS WITHOUT BORDERS

- IOWA STATE UNIVERSITY -

SPRING 2019 NEWSLETTER



EWB - IOWA STATE UNIVERSITY

In 2013, the Iowa State Chapter of Engineers Without Borders was paired with Ullo, a community in Northern Ghana. Since then, EWB-ISU has sent travel teams to Ullo in the Summer of 2014 and Winter of 2016-'17 to assess the community's needs and decide the best water project to implement. Ultimately, we determined that a water distribution system was the community's best option. A team in the Winter of 2017-'18 determined the best source of water. Students have been working from the Iowa State campus to design and plan for future implementation trips since then. The Winter 2018-'19 travel team completed implementation of the system.



December 2018 Travel Team- Ullo, Ghana

MEET THE TRAVEL TEAM



Anna Bilek: Junior in Civil Engineering
Current VP of Fundraising



Max Fieg: Senior in Physics
Returning Traveler from 2016-17'



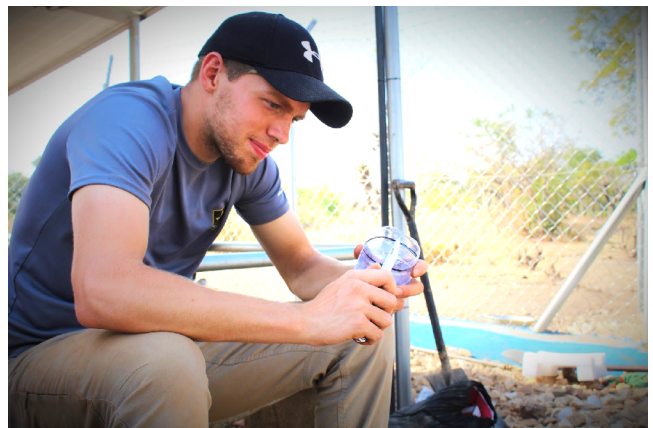
Emily Hou: Sophomore in Biosystems Engineering
Current Engineering Group Lead



Paige Jewell: Junior in Civil Engineering
Current Engineering Group Lead



Clare Lanaghan: Junior in Mechanical Engineering
Former VP of Engineering/Current Group Lead



Chris Nennig: Junior in Civil Engineering
Former and Current Engineering Group Lead

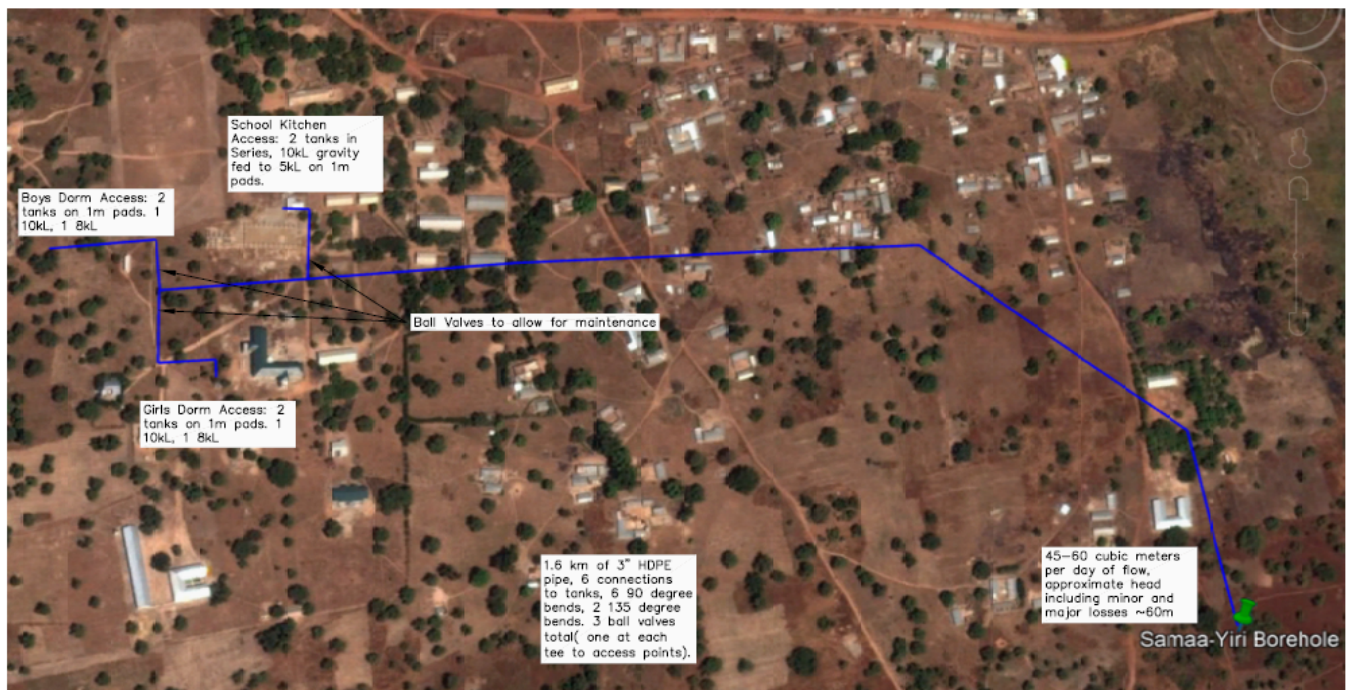


Jack Schwickerath: Senior in Biosystems Engineering
Former VP of Membership



Dr. Maier: Professor in Agricultural and
Biosystems Engineering

PROJECT OVERVIEW



Map of Distribution System Piping Network

The system begins at the Samaa Yiri borehole, where a solar powered pump is used. There is a chlorination system located at the beginning of the system to ensure safe drinking water. Approximately 1500m of piping transports the water from the borehole to Ullo Senior High School. There are plastic storage tanks and distribution points at three locations by the school: the girl's dorm, the boy's dorm, and the kitchen.

IMPLEMENTATION

Before the travel team arrived, implementation of the system had already begun. Members of the Ullo community had volunteered during last year's trip to dig the 1500m of trenches required for laying the piping. When PumpTech, our contractor, arrived in Ullo a few days ahead of the travel team, they were able to lay most of the piping. PumpTech had also begun other work, including constructing a chain link fence surrounding the solar panel area and preparing the borehole for the installation of the pump.



Community members and travel team members digging trenches for piping

Over the course of about two weeks in Ullo, the travel team worked hard to ensure they could leave the school and community with a new water distribution system. Much of their work was done either near the borehole site or at the three distribution locations at the school. The solar powered pump for the borehole and the solar panels to power it were wired and connected. Near the distribution points, concrete holding pads for the storage tanks were constructed along with several tap stands for the students to access the water. A chlorination system was implemented at the beginning of the system to treat it for *pseudomonas aeruginosa* bacteria that had previously been found in the Samaa Yiri borehole.



Setting up distribution point mold



Water flowing from pump



Solar panel and pump area



Community members laying piping



Ribbon cutting ceremony

The team and the community overcame all the obstacles along the way, and on New Year's Day, there was a ribbon cutting ceremony at the borehole to celebrate the new water system. After forming a strong partnership and with many years of hard work, the water distribution system is fully operational!

LIFE AND PEOPLE IN ULLO

On their first full day in Ullo, the travel team visited the Chief's Palace, and presented him and his wife, Madame Rebecca, with a flag as a gift to symbolize the partnership between ISU-EWB and Ullo. Madame Rebecca is the Queen Mother of the Ullo community, and is also a member of the water committee. The Water Committee of Ullo was established on the previous trip as a group of elders, community members, and school representatives to make important decisions related to water access in the community. They meet monthly, serve as EWB-ISU's contact in the community, select people to be trained on monitoring the system, and manage any funds needed for repairs to the system. Zack is a son of the Chief of Ullo. He served as the travel team's guide throughout their entire time in Ghana and is also a main point of contact between ISU-EWB and the Ullo community.



Giftng flag to the Chief and Madame Rebecca



Paige with Zack



Anna and Emily with Memuna

Throughout their time in Ullo, Memuna, who is the Chief's daughter, along with other kitchen staff, graciously cooked for the travel team and other visitors. Most food in Ullo is grown by local farmers and purchased in local markets. The travel team also got to experience some of the important parts of life in Ullo. They participated in the local market day, which happens every Saturday, where they got to do some shopping. Items sold included food grown by local farmers, fabric, clothes, soap, and other trinkets. The team experienced Christmas in Ullo, which is very different than Christmas in America. Time is spent in church celebrating with the community. Religion is a huge part of the culture in Ullo. The two dominant religions are Christianity and Islam, and they coexist peacefully. The Christmas service began at 11 on Christmas Eve night and went until early morning Christmas day. It involved live music, singing, dancing, and a Christmas program from the children. Throughout the trip, the children of Ullo were very interested in the travel team and enjoyed watching the construction process. The team would often play soccer with the children in the evenings. Dr. Maier brought Juicy Fruit gum, and the children loved asking him for pieces.



Market day in Ullo



Church decorated for Christmas



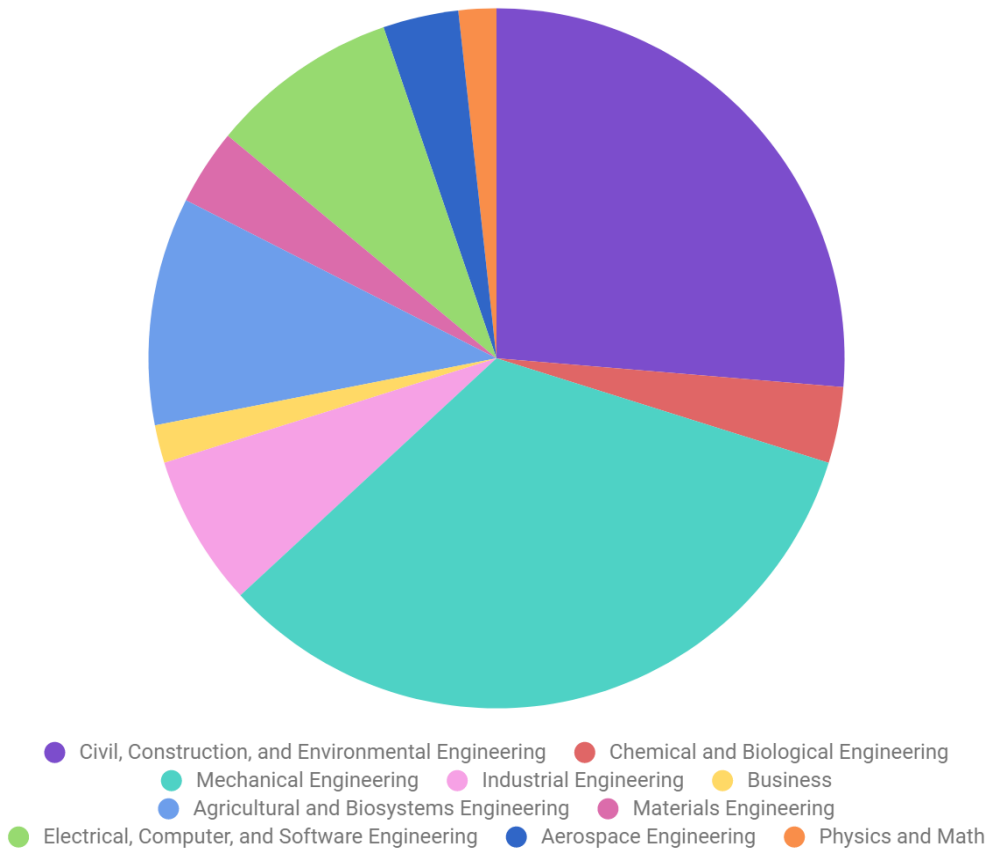
Dr. Maier handing out gum



Chris playing soccer with Ullo children

DEMOGRAPHICS OF EWB

Types of Majors in EWB



MOVING FORWARD

Currently the club is developing project charters and choosing which to work on in the coming semester. These charters include the options of Clinic Expansion, Sanitation, Irrigation, Kitchen Improvement, and a Domestic Project. EWB is also hosting Gathering for Ghana, an annual fundraiser, to raise money for future engineering work in Ullo.



SPECIAL THANKS TO OUR SUPPORTING DONORS



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