

On August 15, 2009, I traveled to Sierra Leone as part of a team of four (Neal Yuan '10, Christopher Courtin '10, and Eric Kurtz, a professional engineer from Indiana) to assess the feasibility of implementing an alternative energy system at a rural health clinic and assessing the community for other future potential engineering projects, in the hopes of creating an official partnership between Princeton University's chapter of Engineers Without Borders and the clinic's supporting NGOs, the National Organization for Welbody (NOW, in Sierra Leone) and Global Action Foundation (GAF, NOW's US-based partner). In addition to our engineering assessment, we also planned to establish contacts with NGOs, materials suppliers, educational institutions, and others who have experience with implementing alternative energy systems and other engineering projects, as well as learn more about Sierra Leonean culture and the current social, political, and economic conditions in the country.

After an unexpected extended layover in Casablanca's airport (due to a pilot strike), we finally arrived in Freetown, Sierra Leone's capital city, on August 18. We spent our first night having dinner with Dr. Barrie, founder and head of NOW, and getting a crash course about life in Sierra Leone. Over a typical Sierra Leonean meal of rice with granut soup (a type of peanut sauce) or cassava sauce, Dr. Barrie provided us with an overview of the healthcare, education, and political systems and their interplay, and how his non-profit, National Organization for Welbody, hoped to promote development and eliminate extreme poverty. The following day we spent getting our bearings in Freetown and running errands such as exchanging currency, before meeting with Mr. Mohamed Kamara at the Government Technical Institute. He is in charge of the program focusing on renewable energy, soon to offer diplomas in this field to GTI's engineering students. Their most recent project is solar hot water heaters, which they hope to implement throughout the city to reduce demand on the overloaded grid. He put us in contact with another NGO, Environmental Fund for Africa (EFA), which has implemented small-scale solar projects in other areas of the country, which we met with later in the trip. It was very encouraging to meet other people who saw the potential in renewable energy systems and appropriate technology.

We set out on our 6-hour drive from Freetown to Koidu Town, Kono District on August 19, and did our work there until August 25, which was aimed toward gaining a better understanding of how NOW worked with the community and how we could help with their work. We toured the clinic, met with staff, and performed extensive data-collection sessions (survey of the land surrounding the clinic, the physical structure of the clinic, the current power load, solar intensity, wind speed, precipitation levels, well water quality, and community health). We spent time at the nearby Koidu Government Hospital, which partners with NOW for certain community health initiatives. I was invited to sit as an honorary guest during a ceremony for mothers and children who completed a breastfeeding education program. We were able to speak with the head nurse of KGH and Dr. Barrie about community health issues and hospital electrical power issues and the District Environmental Health Officer about Kono's groundwater wells, and view the solar refrigeration center at the hospital. One night we met a recent graduate from Harvard who was backpacking around Africa and discussed development and his experiences with the people of Sierra Leone.

NOW recently established a palm kernel farm, which will be used to generate revenue to support the clinic and provide employment opportunities for the amputee population. The first set of trees was just planted, and we took a tour of the fields before visiting the nearby amputee village.

Both the clinic and the amputee village had wells with inoperable hand pumps, which we attempted to repair (success at the clinic; diagnosis of problem at the village, but we did not have the necessary spare parts for complete repair). We were joined at the farm and village by a group of expats working in Sierra Leone who were donating the funds for a solar vaccine refrigerator for the NOW clinic, and participated in some engaging conversations with them about Sierra Leone's development over dinner.

On August 25 we returned to Freetown to meet with a few more NGOs and do some research into potential suppliers. We met again with Mr. Kamara, who brought us to the EFA office and RCD Solar, the solar supplier in Freetown. We discussed other options for acquiring materials and the establishment of a partnership between EWB-Princeton and GTI. We had a final meeting with Dr. Barrie to summarize our findings and present our intended plan moving forward. We will be applying to EWB-USA to turn this into an official program for our chapter. Using the information we collected on the ground, we will work with a larger group of students during the academic year to design a solar panel system and work out the logistics of installation, create a corresponding education campaign, apply for grants for additional funding, and make plans for an implementation trip, which we are hoping will take place in the summer of 2010.

We were actually far more efficient in our work that we initially believed, and were able to catch an earlier flight back to the US in the hopes of avoiding any other airline-related problems – flights only leave Freetown twice each week. My luggage was in limbo for about a week after landing before being returned to me, but we all made it back safe and intact, with an exciting project, new insight, and great enthusiasm for our work. I fell in love with the country of Sierra Leone, and learned more about international development and its effectiveness than I ever could have in a classroom. I am so grateful to the Class of 1995 Summer Service Fund for making this incredible opportunity possible. We are all looking forward to seeing this project through to completion and continuing to partner with NOW in Sierra Leone.

Attached photos (courtesy of Eric A. Kurtz and Neal Yuan)

SL03 – the NOW Amputee Health Clinic

SL06 – Meghan McNulty makes new friends in Freetown

SL08 – Meghan McNulty and Chris Courtin repairing a small solar panel that was donated to the clinic

