

Engineers Without Borders – Las Vegas Professional Chapter
Kickoff meeting, June 26, 2008

Location: Black and Veatch Offices, 4040 S Eastern Ave., Las Vegas

Meeting minutes (draft)
taken by Barbara Luke

Welcome and introductions – David Levine, Chapter President

- A student chapter startup was mentioned, as was the need for a fundraising committee.

Discussion of bylaws – Kristina Swallow, Chapter Treasurer

- **Action item:** David will post the draft bylaws on the chapter website: www.ewb-lv.org
- Comments to be submitted to Kristina at kswallow@cox.net.
- Volunteers willing to serve as officers are asked to inform Kristine.

First presentation: Peter Persoff made an invited presentation with slides. Peter visited a remote Jewish community, home of about 600 people, in Uganda in 2005, and will return in September, 2008. His trips are self-funded. Peter's main interest and goal is to address fresh water supply and sanitation. In 2005 he joined a team that was addressing various issues relating to public health. He visited one small village which had a single spring for its main water source. Peter brought along some coliform testing tubes. Although he found the laboratory conditions to be "challenging," he determined that the spring water was indeed contaminated.

Some other communities use a "borehole" (well) for water. The wells tend to be associated with a church or mosque, but everyone can use them.

The more substantial houses were constructed of locally made brick, with a corrugated metal roof which allows for rainwater collection. One opportunity for improvement on the simple catchment systems is a technique to divert the dirty "first flush" from entering the holding tank. Other homes are of wattle and daub, with thatched roof. Peter says, "Getting your foothold into the cash economy is the hard part."

When Peter returns in September, he will be tutoring kids in math. He is also looking into solar water disinfection. Individual-sized water bottles are plentiful in the area. He plans to bring 100 coliform testing tubes (about \$1 each), and encourage the kids to use them to experiment with solar disinfection.

One community has water delivered three miles from town, for about 2 cents per gallon. They have two flush toilets, a source of pride. However, the plumbing is not up to par, so water is wasted. Peter finds it curious that with water such a valuable commodity, it is being used to flush waste.

The more common bathroom is an unimproved pit privy, consisting of a brick structure over a trench, 8 ft deep and 15 ft long. Peter saw only one privy with water available outside for hand-washing. Peter showed a schematic of the United Nations recommendation for bathrooms. Key features include proper ventilation and airflow direction, and screening to keep flies out.

Only two houses in the community have power. The local musicians have been recorded and even nominated for a Grammy award.

Peter visited an elementary school. Because Uganda was a British colony, English is still widely spoken today. Only English is spoken in school. Peter emphasized that education is a key. Rather than having visitors from developed countries design and build systems for the local people, it might be better to send local people to college so that they can do their own engineering design.

Another need that Peter observed was for more wheels: bikes, and stable carts to tow with bikes. Also more roads.

Peter enjoyed interacting with children. The kids loved to have their photos taken with a digital camera and then see themselves on the screen. Flash drives are a popular gift: people might not have their own computer but they can use others' machines and have a place to store their own data.

As for clean water supply, the local people would ideally like to have a pipeline and distribution network, so that every family has a water tap. Recently they put in a new well that cost \$23,000. Peter's vision is for a well and solar-powered submersible pump, with standpipes within walking distance of every house, to serve about 2,000 people.

Discussion:

- Perhaps the well could use a hand pump so that external power is not needed. Peter thinks the local people know what to do to obtain and distribute clean water, and just need money to do it. They might need some help with maintenance.
- Another item that Peter noted a need for: maps.
- A reference for finding demographic data, for planning purposes: Penn World Tables (available on internet)
- Consider "future-proofing." What happens when parts wear out?
- People in the community will need education about keeping water clean.
- David and Kristina noted that the policy with EWB is for a long-term commitment. The chapter would follow up with its project communities for multiple years.

Second presentation: David Levine presented on a self-funded trip that he made earlier this month to Ho, a Christian village in Ghana. His trip had two purposes: to build a "washroom" (urinal) and a school with a roof; and also to identify an appropriate project for the new EWB-Las Vegas chapter. He traveled with a company called GlobeAware, which worked with an African non-government organization (NGO), Disaster Volunteers

of Ghana (DIVOG). The region is in the vicinity of a very large reservoir, which is a reliable source of hydropower. The local people speak English. It is a farming village; it has sandy soils.

The first step is to meet with the village Chief and Elders, to get permission to complete the project. The school should be finished this week. It is a government approved bldg, costing about \$15,000.

David showed many photos as well as short videos, which brought the presentation to life. David helped to make “mud bricks” in wooden forms. For the school building, concrete blocks were made, using metal molds. Rock is very scarce there; the only aggregate available for the concrete was sand.

The local people’s tap water tested positive for coliform. Water bottles are not plentiful in Ho. The visitors drank purified water out of liter-sized plastic bags, which cost 5 cents apiece.

David helped to build the “washroom” for the school. The foreign volunteers constructed foundations in a day, and by the next morning, the local people had put the walls up. David noted that the local people clearly felt their ownership in the project. The two groups worked together on plastering and painting. They mixed cement by hand, on the ground. David wondered if a mixer might be made from a 55-gallon drum. There did not seem to be much concern for the waste that would drain from the urinal. David believed that a PVC pipe would be installed to carry the waste to a pit, nearby.

David also enjoyed interacting with the kids, who were “very happy to see us.” They love to see themselves on camera. David played many games with them: soccer, Frisbee, jump-rope, limbo, baseball. Some other interesting stories: visiting the market, teaching the kids in school, fitting nineteen people into a minivan for a two-hour ride. For fun, the foreign visitors visited a monkey sanctuary, and a waterfall which provided the first shower for some.

Next, David visited an orphanage in a town of about 10,000 people. Understandably, the kids in the orphanage were not as happy as the ones in the village. A physician runs the orphanage out of a rented building. She supports 30 orphans on the property, plus 60 more in the community at large. The children do not go to school. She has purchased land to build a permanent orphanage. David would like for the LV-EWB chapter to take on the construction of the orphanage, a well, a latrine and a washroom, on the new land, in partnership with DIVOG.

David showed a photo of the latrine that is currently being used by the orphans. It is an open pit with boards to stand on – it does not look very safe. David suggests instead to use self-composting latrines. The waste material might eventually be used for fertilizer.

Water is trucked in to the orphanage daily. David suggests a rainwater collection system for the new building. He observed that the road conditions are poor.

Discussion

- An American traveling to Ghana would need a visa and should get a yellow fever vaccination.
- There is a large city two hours away: materials and supplies can be purchased there. However, it might also be possible to get American companies to donate materials and supplies.
- DIVOG is ready to go with the project. They can provide data needed for design and planning.
- At the July meeting, David will present a proposal for the EWB-LV chapter to adopt this project. The proposal includes a budget, timeline and labor estimate. Once the chapter approves it, the national EWB office must review and approve.
- Rough estimate of cost: \$22,000 for materials, \$6,000 for foreign travel. Travel usually incorporates trips for assessment, design, and implementation, but in this case the groundwork is already being laid.
- David has ideas for fundraising. Funds are also available directly through EWB, and through other grants.
- The EWB National website lists many projects which are pre-approved.

Joining EWB: Any interested individual can join directly, online, through www.ewb-usa.org. When signing up, please indicate affiliation with LV chapter. Civil engineers can also join through ASCE. **Action item:** Kristine to send out information on how to join. The plan is to advocate for a student chapter at UNLV in the fall.

Next meeting: Tentatively, Thursday, July 31, location as yet undetermined. David Levine to send out announcement by email. Agenda items: Discuss and vote on Chapter bylaws. Discuss and vote on proposal for Chapter project in Ghana.

Present:

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