



EWB-OC NEWSLETTER

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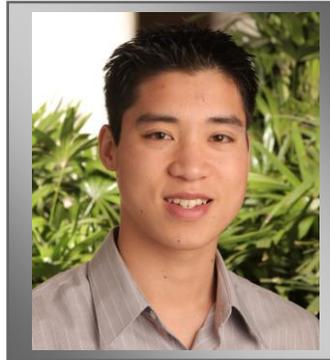
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In This Issue

- President's Column
- Project Updates:
 - Kenya
 - El Salvador
 - Honduras
- Corporate Challenge
- Local Projects
- Calender

PRESIDENT'S COLUMN



Dear EWB-OC members and supporters,

First off, I want to thank **Pearl Abarca** and **Nancy Oh** for developing our newsletter and enabling us to reach out to our members and community.

EWB-OC has been operating for only a year and a half, but I am always amazed at what we have achieved so far. In this relatively short amount of time, we have undertaken three projects, raised over \$50,000, and

partnered with over 10,000 community members on two continents. These monumental successes have been made possible by not only our incredibly talented volunteers and Board, but also by our generous donors.

EWB-OC thrives because of the dedication of our volunteers and leaders. Monday through Friday evenings, at least one of our groups is holding a meeting. At lunch, we work over conference calls. On weekends, teams put in overtime to conduct trainings or field tests. Individually, we spend countless hours planning, designing, and fundraising for our projects and organization. After all that, we use PTO to implement projects in our partner communities. Our members, however, gladly fill their calendars knowing that their contributions of time and talent, no matter how large or small, make life that much better for hundreds and even thousands of people.

The quality and enthusiasm of our volunteers is matched only by the philanthropy and charity of our donors. Even during this economic downturn, our donors continue to enable EWB-OC to change lives around the world. With contributions ranging from \$10 to \$25,000, the diversity of our supporters only strengthens the mission of EWB-OC.

On behalf of EWB-OC and those we have helped and will help in the future, I want to thank our volunteers and donors. More importantly, I want to congratulate you on a year and a half of hard work, generosity, and tremendous success!

Best regards,

Peter Do

Join our Mailing List by emailing Greg Hefter
(ghefter@ewb-oc.org)

Engineers and non-engineers
of all backgrounds. Find out how you can get involved today.
Check out our website at **www.ewb-oc.org**

FOOTBRIDGE PROJECT

By Clay Stevens

The Community of Endana is located on the eastern side of the Ewaso Ng'iro River approximately 8 km north of Highway C76 in the Laikipia West District, Rift Valley Province, Kenya. Endana occupies approximately 2 km of the eastern banks of the Ewaso Ng'iro River and extends to approximately 5 km east of the River.

The People of Endana get medical care, clean drinking water, and education from the Segera Mission facility, which is located directly west of the Endana Community on the western banks of the Ewaso Ng'iro River. To get to the Segera Mission Clinic, people from Endana must either wade across the Ewaso Ng'iro River, or cross over on makeshift bridges made from felled trees.

During the wet seasons from March to June and October to December, the Ewaso Ng'iro River swells and is impassible by wading and the makeshift bridges get washed away. The People of Endana must then walk 30 km round-trip to get medical care at the Segera Mission Clinic. This is over one full days travel for many members of the community, especially for people at the eastern edge of Endana. As a result, they do not seek medical care until their condition is life threatening. Several times in the past several years, this has been too late. The only other way to get medical care is to travel over 30 km across very rough, unpaved roads to the next nearest medical facility in Nanyuki.

In 2006, the community worked with the Segera Mission to identify potential solutions to this

problem. Thinking together, they all agreed that a footbridge was the best solution to the problem. Due to lack of funding, and technical knowledge, all previous efforts to build a footbridge across the river have failed. Requests to local government leaders have not been answered. In an attempt to reach out beyond their government, The Community of Endana together with Segera Mission posted the potential project to the web site of the Engineers Without Borders USA (EWB-USA).

The Orange County Chapter of the Engineers Without Borders (EWB-OC) took on the project in April, 2008. The overall project objective is to build a bridge that will allow year round access to the medical clinic. We will also educate the community members on how to maintain the bridge. Furthermore, we will help the clinic set up appropriate tracking mechanisms to measure impact of the bridge.

In early June, 2009, EWB-OC traveled to the site to assessment the needs of the community and the feasibility of the bridge. Prior to the site investigation, we determined a short list of appropriate bridge technologies for this project based on the from the designs by Helvetas that were obtained from Bridges to Prosperity. During the assessment trip, EWB-OC developed a relationship with the community, completed a Community Health Assessment, and a Site Investigation.

(continued on page 3)



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The first task was to develop a relationship with the community leaders. We confirmed everyone involved was committed to the project and informed the community leaders that this will be the communities' bridge and they will be the ones responsible for the construction-labor and maintenance. Only when we were certain that the community was fully behind the project, the necessary permission was obtained, and any potential land ownership conflicts were resolved, did we continue to perform the technical evaluation.

With the data gathered for the Health Assessment, we now have a health and economic baseline that will be used to measure the impacts that the footbridge will have on the community. Data gathered for the Site Investigation included determining the best location, a site survey, a geotechnical evaluation

and investigation, obtaining climate & hydrologic data including the high water elevation, and determining the availability of construction materials available. These data will be used to determine the most appropriate bridge design for the project site.



EWB-OC Volunteering Opportunities

Activity	Type	Description	Contact
Fundraising Lead	Honduras Project	Become a member of the Honduras team with a focus on fundraising.	Honduras
Social Chair	Chapter	Organize social events for hard working volunteers and new members.	Peter Do
Fundraising Team Member	Kenya Project	Become a member of the Kenya team with a focus on fundraising.	Clay Stevens
Structural Engineer	Kenya Project	Design and help plan the construction of the footbridge.	Clay Stevens
Marketing Lead	Kenya Project	Manage and generate publicity. Create, edit, and update project copy.	Clay Stevens
Water Project Team Member	Kenya Project	Work with current bridge team and community to define and develop a future water project.	Clay Stevens
Community Health Team Member	Kenya Project	Develop plan to gather health data in our Kenyan community.	Clay Stevens
Public Relations Coordinator	Chapter	Take the lead on EWB-OC's marketing and public relations efforts.	Peter Do



PROJECT MILAGRO

By Michelle Garde

During the week of September 22-29, 2009, a team of volunteers from the Orange County Professional Chapter of Engineers Without Borders traveled to El Salvador. The trip was the first of two planned implementation trips to oversee construction of a water tank they designed for a community water supply system. The grass-roots water project will eventually serve as many as 6,200 people in the communities of Las Delicias, El Rosario and Las Animas. The system, when completed, will provide clean drinking water at a fraction of the cost that residents currently pay for water.

During EWB-OC's February assessment, water testing confirmed, through random sampling, that both truck-delivered and local spring-derived water sources, were contaminated with fecal coliforms. Diarrheal diseases and intestinal parasites are commonly reported health ailments in the three communities. Additionally, depending on the time of the year, residents can pay up to a third of their income for untreated water.

Construction

During the September Implementation, EWB-OC team members, coordinated efforts with community members and in-country partner ENLACE, a non-governmental organization to begin construction.



ENLACE has worked side by side with the participating communities from the start of the project in 2002. The team worked hard to prepare the site by removing compressible native soil, and replacing it with imported fill material that was then re-compacted to provide a solid base for the tank foundation.



The team learned about local methods and became familiarized with local materials. Although construction during the rainy season proved to be a daunting task, the hard work paid off and the in-country team was able to begin implementing the team's tank design in the days immediately following the trip.



Training

Often times, when water projects are implemented in rural settings, much time and money is spent building a system only to realize that the community is unable to sustain the system. For this reason, EWB-OC also provided ADSA, the community water board with a training seminar to help prepare them for system operation and maintenance (O&M).

Training topics included;

- Groundwater Hydrology (as it applies to their system);
- System Operation;
- Components - Purpose and Function (wells, pumps, tanks, etc.);
- Short- and Long-Term Maintenance Requirements and;
- Protection of Water Resources.

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More than 30 community members, including water board members, health professionals and educators attended the seminar.

Progress

Prior to the February assessment, the system consisted of three tanks, and a well compound with two service wells, one monitoring well and a cistern. Since February, the community dug trenches a mile long for the installation of mainline piping installation, two pumps were



purchased, electrical power was extended to the well compound and a small cistern and booster station compound was built.

Education

Following O&M training, the team visited teachers in the three communities to coordinate efforts for a water education program. This would help educators develop a curriculum and activities they could easily implement into their classes to educate youth regarding many important water-related issues including water-borne disease, methods of water purification, water conservation, rainwater harvesting, water recycling, and watershed protection topics.



The second implementation is scheduled for November 2009. During the November trip, EWB-OC will oversee the end of construction phase for the tank in Los Marroquines, present a Water Education curriculum for educators, and provide the Community Water Board with an Operations and Maintenance Manual.

EWB-OC CALENDER

DATE	EVENT	TIME	LOCATION
Tues. 12/1	EWB-OC Board Meeting	6:30pm	CTG Energetics, 16 Technology Drive, Suite 109, Irvine
Sat. 12/5	Upper Newport Bay Habitat Restoration	9:00am	2652 Mesa Dr. ,Newport Beach
Mon. 12/14	Honduras Team Meeting	6:00pm	TBD
Mon. 12/14	Kenya Team Meeting	6:30pm	RBF, 14725 Alton Parkway, Irvine
Mon. 12/14	El Salvador Team Meeting	6:30pm	Kleinfelder, Irvine
Tues. 12/22	EWB-OC Board Meeting	6:30pm	CTG Energetics, 16 Technology Drive, Suite 109, Irvine
Mon. 12/28	Honduras Team Meeting	7:00pm	TBD
Mon. 1/11	Honduras Team Meeting	6:00pm	TBD
Mon. 1/11	Kenya Team Meeting	6:30pm	RBF, 14725 Alton Parkway, Irvine
Mon. 1/11	El Salvador Team Meeting	6:30pm	Kleinfelder, Irvine
Mon. 1/25	Honduras Team Meeting	7:00pm	TBD
Tues. 1/26	EWB-OC Board Meeting	6:30pm	CTG Energetics, 16 Technology Drive, Suite 109, Irvine
Mon. 2/8	Honduras Team Meeting	6:00pm	TBD
Mon. 2/8	Kenya Team Meeting	6:30pm	RBF, 14725 Alton Parkway, Irvine
Mon. 2/8	El Salvador Team Meeting	6:30pm	Kleinfelder, Irvine
Mon. 2/22	Honduras Team Meeting	7:00pm	TBD
Tues. 2/23	EWB-OC Board Meeting	6:30pm	CTG Energetics, 16 Technology Drive, Suite 109, Irvine



HONDURAS

IT AND EDUCATION

By James McBryan

EWB-OC is partnering with Olancho Aid in Honduras in order to improve their educational school curriculum through technology. Olancho Aid resides in one of the most rural provinces in Honduras and acquiring technology and experts with the ability to integrate the technology in the school curriculum is near impossible. Together, Olancho Aid and EWB-OC's Honduras Team are working together to give over 600 students a life-forging education. Connecting students and teachers to technology and to the internet gives them the tools and the imagination to participate in quality education but to also empower them with knowledge.



An assessment took place in April 2009 where a team of 4 (**Israel Lopez, Modesto Llanos, Chris Healy, and James McBryan**) examined Olancho Aid's computer network. Olancho Aid's 4 school buildings connect wirelessly, spanning a distance of almost 3 miles. However, this network is crippled because of the lack of wireless networking knowledge. Before arriving to Honduras, the EWB team sent telecommunication equipment to Honduras and



provided initial monitoring to understand the problem and prepare the onsite assessment before arriving. Through remote communication, the EWB members and Olancho Aid staff successfully set up the equipment to allow remote monitoring and an internal VOIP phone system. This VOIP system reduced costs by over \$200 USD a month in cell phone bills for the entire organization.

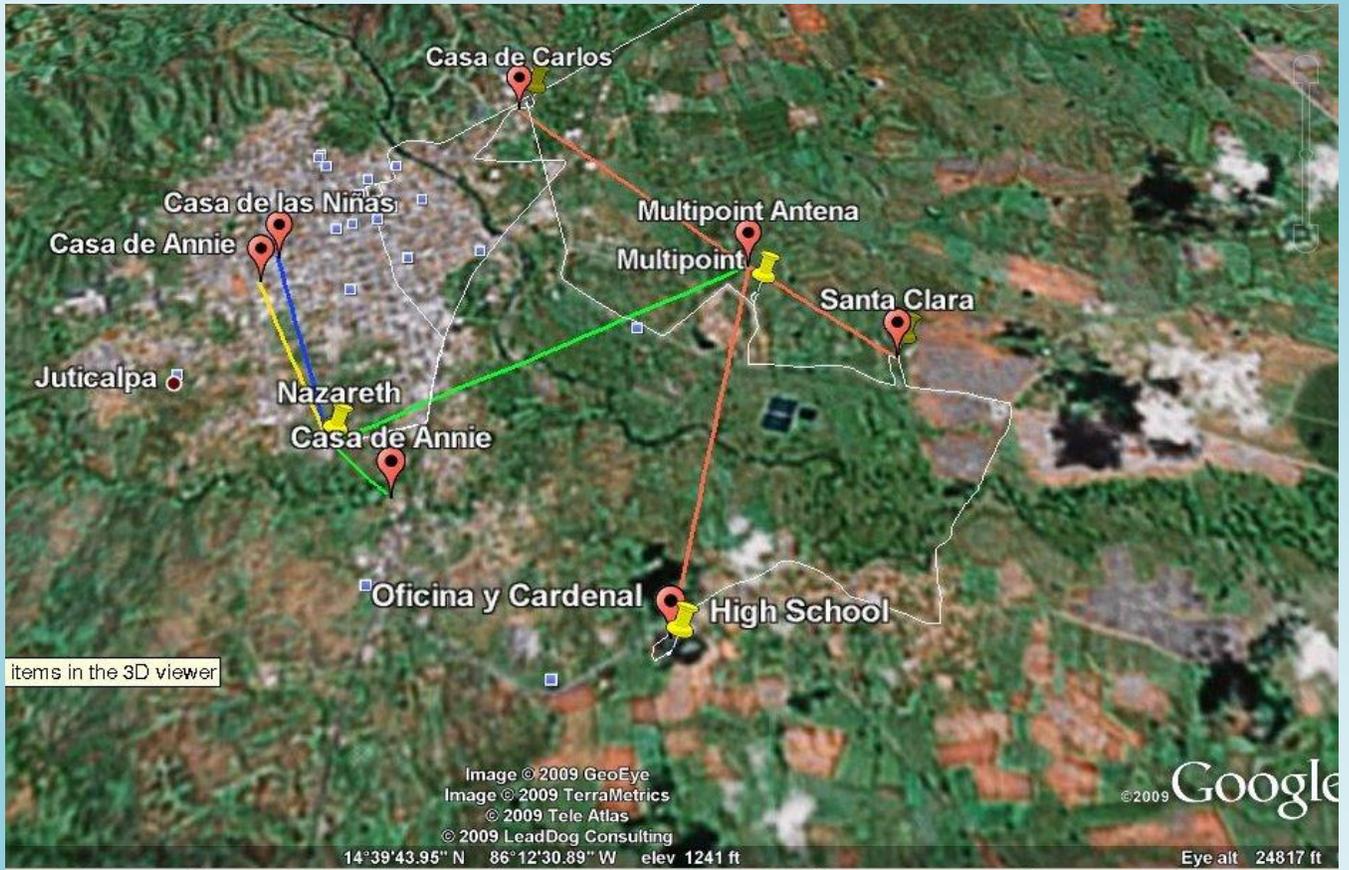
During the assessment trip, the team found that extreme heat, housing developments, and other wireless antennas impacted the current network, thus severely limiting the growth of the Olancho Aid network. After determining the problem with the network at the assessment trip, the EWB members optimized the existing network to handle the highest priority problems. Unnecessary computers were disconnected from the network and the network configured to view only operation critical information (no games or social networking).

They also gave a seminar on open-source computing to the local university in an effort to share knowledge and technologies they were using.



After the assessment trip, the EWB team has been in constant contact with Olancho Aid staff to create a solution to help battle the problems of heat, traffic, and obstructions. A plan is currently in design to replace the equipment with higher heat tolerance and frequency diversity to mitigate traffic jams on the wireless airspace.

(continued on page 7)



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The team plans on returning to with a team of educators from San Francisco who will help evaluate how technology can properly be integrated within the educational curriculum.

To complete the wireless project, the team plans on returning in February of 2010 with the group of technologist and educators. Currently \$2000 out of \$10000 has been raised for the equipment and travel for the group. Before returning, lots of fundraising and logistical coordination will need to happen and any help in this area can help bring the kids in Olancho a quality education that much faster.



By Darren Cormack and Gayla Fecher

Beautiful weather, a trio of fun and competitive physical challenges, and scores of eager teammates hungry for victory. This was the stage set for the first annual EWB Orange County Professionals Chapter (EWB-OC) Corporate Challenge that took place on October 31, 2009.

89 corporate gladiators convened at UCI's Anteater Recreation Center in teams of 8 to 15 people representing AECOM, ASCE YMF, CH2MHill, Diaz Yourman & Associates, Fluor, Panasonic, and RBF. While some teams were competing head to head in tug of war and dodgeball, others were keeping a cool head and demonstrating their teamwork in a race against the clock on the *Odyssey* obstacle course. Breakfast, snacks and a hearty lunch were provided to fuel the competitors, and tee shirts were provided to keep everyone stylish. Lunch was accompanied by a gorgeous arrangement of Peruvian Folk Music and dancing, courtesy of the local group Ayres de los Andes.

When the dust had settled, the sweat had been wiped from brows, and sunscreen had been re-applied, six hours of competition had resulted in a winner. One of the two teams fielded by Fluor took the gold medal, with the other Fluor team winning the silver and AECOM receiving the bronze. Moreover, the first prize Fluor team received a trophy to be engraved with their name as the first ever Corporate Challenge Champions. As reigning champions, they keep the trophy for the year but must defend their title at the second annual EWB-OC Corporate Challenge scheduled for Fall 2010. (continued on page 9)



SPECIAL THANKS TO OUR SPONSORS AND DONORS



BLACK & VEATCH



FLUOR

Panasonic

AECOM



DIAZ-YOURMAN & ASSOCIATES
Geotechnical Services



(continued from page 8)

The event was such a success that the event survey, completed by over half the participants, proclaimed a unanimous "Absolutely!" to participants returning next year with their friends. Your firm could be the next Corporate Challenge Champions, so mark your calendars now!

We would like to thank our gracious sponsors: Black & Veatch as the presenting sponsor with additional sponsorship provided by CH2MHill and HDR; the UCI Urban Water Management Research Center for hosting the event; and the UCI Team Up! Organization for all their support and voluntary efforts. Most of all we would like to thank all the volunteers that made the day possible and all the enthusiastic participants that made the event such a success. See you next year!

2009 CORPORATE CHALLENGE TROPHY CUP WINNER



FLUOR TEAM # 2

STAY CONNECTED TO EWB-OC

<http://www.ewb-oc>

<http://twitter.com/ewboc>

<http://www.meetup.com/EWB-OC-Happy-Hours/>

<http://www.volunteermatch.org/search/org182502.jsp>

<http://vimeo.com/channels/ewboc/>



EWB-OC members attended a "Wine to Water" fundraising event hosted by the EWB-San Diego Chapter

ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES

California

Orange County Chapter and



Charity Luncheon Program Presents: Engineers Without Borders - USA (EWB-USA)

Date: Thursday, December 17, 2009

Time: Registration – 11:30 am
Lunch – 12:00 pm
Program – 12:45 pm
Adjournment – 1:30 pm

Place: The Mezzanine at the Towers
19800 MacArthur Blvd
Irvine, CA 92612
(949) 724-1066

Cost: \$45.00 Pre-Paid Members
\$50.00 Members, pay at the Door
\$55.00 Non-Members
\$35.00 Students

PLEASE CONFIRM YOUR REGISTRATION BY Dec. 11, 2009 to assure adequate seating. Please email acecoc@seabreezgmt.com or phone the office at (949) 672-9030, or fax to (949) 855-6678.

We look forward to your attendance.



UPPER BAY HABITAT RESTORATION

By Bill De Jong

Along with the international outreach, EWB-OC also performs volunteer work in local communities around Orange County. Past events have included a food drive benefiting the [OC Rescue Mission](#) in Tustin, restoration at Santiago Park in Santa Ana, mobile home repair with [Rebuilding Together](#) OC in Orange, Coastal Clean-up day at Mason Park in Irvine, and even building a house near Tecate, Mexico with [Corazon](#). These events range in length from a few hours to an entire day and are a great way for new members to get involved and seasoned members to stay connected.

Our current local project is a 4-part series of habitat restoration events that will finish on December 5th. Through the course of the first three days of the project (Aug. 15, Oct. 3, Nov. 7) volunteers from EWB-OC along with the [American Society of Engineers Younger Member Forum](#) and [Rockwell Collins](#) have successfully removed the invasive plant species from a dedicated site in the Upper Newport Bay watershed, propagated native plants, and begun the planting that will be completed on December 5th. So far this project has been an overwhelming success due to the hard work of many volunteers and a generous grant provided by Rockwell Collins. The grant directly covered the cost of 250 plants that will fill the restoration site.



EWB-OC Board

Executive Board:

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Welcome to our first issue of the EWB-OC newsletter. If you would like to help out with the publication, please e-mail Pearl Abarca at pabarca@ewb-oc.org.

Engineers without Borders
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Santa Ana, CA 92705-8509

Happy
Holidays!