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**Engineers Without Borders mobilise engineering community to create massive small change to tackle global scale problems**

On June 25<sup>th</sup> 2013, Engineers Without Borders UK hosted over two hundred engineers of all domains at the Massive Small Change conference at Coin Street Neighbourhood Centre in London to inspire a move towards global engineering. The conference aimed at showcasing and emphasising engineers' potential to tackle global problems by applying understanding of social needs in creating the physical and virtual environments conducive of sustainable human development. The event sponsored by Bechtel and Mott MacDonald attracted over two hundred engineers from civil and structural, to chemical, electronic and software engineers, as well as architects and development workers. Engineers Without Borders UK work with their members and academic, corporate and international partners to inspire, inform and support the move of the entire engineering profession towards global engineering. Global engineering or engineering without borders means contextualised work in applying appropriate technologies to respond to people's needs effectively and compassionately.

The day offered a transformational learning experience to attendees beginning with a talk from Kelvin Campbell, author of "Massive Small", on ideas for systemic approaches to urban environments that enable and empower people – ideas which resonated with new approaches to international development engineering.

Conference provided the diverse audience with a number of excellent case studies from across the world and a range of disciplines, where engineers made small changes responding to social context that created massive impact for the people. Himanshu Parikh talked about his work on networking small scale improvements in slum infrastructure and housing, changing lives of half a million people in India to date.



**Mike Kang (EWB Canada)** presenting at the Massive Small Change Conference. He is discussing strategies for extending the positive social effects of physical developments in developing countries.

Mike Kang of EWB Canada and Sam Parker of Water and Sanitation for the Urban Poor, talked about the need for co-ordinated action across sectors where engineering is simply a part of the effective solution. The conference has also seen workshops showcasing importance of innovation in technologies as well as business models for delivering benefits of current science and engineering to developing communities, including that by Azuri Technologies, recent Ashden Awards laureate.

Bechtel and Ramboll, the corporate supporters of the EWB-UK, have given insights into appropriate technology use by the industry and connecting big infrastructure projects in developing

Mike de Silva, Sustainability Manager at Bechtel said: "Bechtel's master planning work in Gabon is creating national solutions to future infrastructure needs, but communities can benefit immediately through small changes. For example, the waste management strategy that we have developed - our team is designing the first purpose built landfill but staff volunteers are also working with EWB-UK to address local behaviours and minimize waste at source. By combining both approaches, we hope to help develop a cost-effective sustainable solution for the long-term".



*Peter Hansford (Chairman of EWB-UK)*

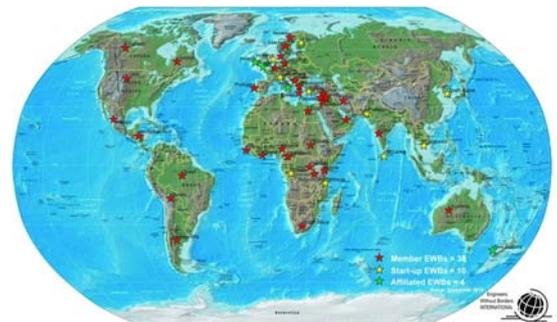
Sakthy Selvakumaran from Ramboll UK and Joe Mulligan from KDI in Nigeria, long term volunteers of EWB-UK, shared their insights and experiences working as engineers without borders between sectors and countries and how the motivation to drive positive change for communities they serve as engineers helps them to pursue their carriers for professional and personal fulfillment.

Peter Hansford, the Chairman of EWB-UK and the Government Chief Construction Adviser said:

"The construction industry has a lot to learn from Engineers Without Borders, as has the engineering profession as a whole. Ever since I have become involved with EWB-UK on its Board of Trustees, I was inspired by the concept of massive small change. I am now involved in setting a long term vision of programmatic change in the construction industry in this country, which I hope will be a small policy step for a massive effect in the way the profession is being practised.

"Engineers work for people and literally build communities. We have to take the realities of the users as well as sustainability of our solutions very seriously into account. I would like to encourage all engineers to reflect on their ability to work with people and to take to heart the great examples of massive small change we have been presented with today."

The Massive Small Change Conference was an open event organised by volunteers involved in the EWB-UK Professional Network. Engineers across the country can join the network and become part of the engineers without borders movement.



## Projects of the Quarter – EWB Australia

### Shipton's Flat Basic Infrastructure project, Queensland, Australia

This project involved the construction of the Bana Yarralji Bub Indigenous Ranger Base in remote far north Queensland in 2011. The site is now a place of cultural healing, learning and land management and the facilities allow ten Indigenous rangers to live on site. The planning and construction process involved a four year collaborative partnership across community, NGO and corporate sectors.

### Dili Institute of Technology (DIT), Timor Leste

EWB Australia is working with DIT to help build the curriculum and standards for their civil engineering course. The partnership aims to contribute to Timor Leste developing its own engineering capability and providing a locally trained workforce for the country to lead its own future development.

### Dialogues on Development:

EWB Australia's Dialogues on Development program includes tours to visit EWB community partners. Participants learn about community development, appropriate technology and humanitarian engineering. EWB Australia delivers programs in Cambodia, India and Aboriginal Australia.

### EWB Challenge:

The EWB Challenge is a first year university design program for Australian and New Zealand students that provides them with the opportunity to develop innovative and appropriate solutions to real world problems. Each year over 8,000 students participate in the program.

### Local Partnerships:

EWB Australia chapter volunteers work with local partners across Australia to provide access to engineering resources. One example of this is the Spokes In The Wheel program where volunteers are repairing donated old bikes and giving them to members of the Sudanese community in Melbourne. This provides a sustainable and affordable form of transport and promotes healthy living.

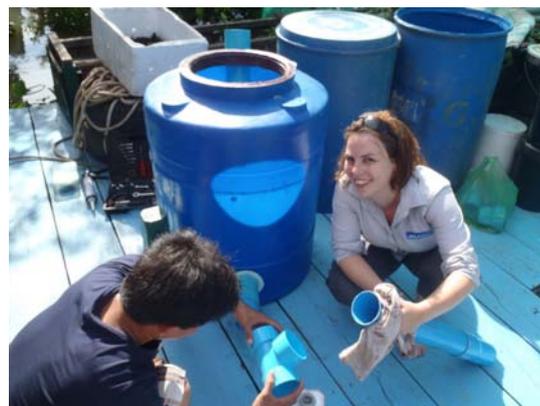


**Link Festival** is a forum bringing together Australia's leading and emerging social innovators to explore how design and technology can create change in our backyard and the world. With inspiring speakers and a focus on genuine connections - this forum is about creativity, big ideas and working together to make the world a better place. Link Festival is organised by leading not-for-profits and social enterprises: Engineers Without Borders Australia, Architects Without Frontiers, Indigenous Architects Victoria, CoDesign Studio, and ArtBox. The event will bring together amazing and inspiring speakers and participants at Federation Square - one of Melbourne's most iconic locations. The Festival will attract 400+ leading and emerging social innovators to explore how technology and design can lead to sustainability and social innovation into the future. This is the perfect event for designers, social entrepreneurs, engineers, architects, makers, coders, hackers and anyone wanting to apply their skills make an impact in world. Much of the focus is on facilitating meaningful connections, so also included on the program are interactive workshops with titles such as: The Pitch, Co-Creating Change, Learning from Failure, Stories from the Field, Career How To, and Local Social Change.

Tickets start at \$249 at an early bird rate, and further discounts apply with promotional codes. To register or find out more visit [www.linkfestival.com.au](http://www.linkfestival.com.au)



*Shipton's Flat Basic Infrastructure project*



*Gabrielle McGill, Tonle Sap*

## Meet EWB Australia

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Web site (if any):

[www.ewb.org.au](http://www.ewb.org.au)

Chairman:

**Phil Clark**

Contact Person:

**Lizzie Brown, CEO**

Date founded:

**14<sup>th</sup> April 2003**

Office address:

**99 Howard St, North Melbourne**

Membership: (numbers)

**>1,200 TOTAL**

*Personnel members*

**>400**

*Student members*

**>800**

*Corporate partners*

**14**

Annual income and Budget:

**AUD 2,160,984.00**

Member's fees (if any):

**Professional members:**

**AUD 100 annual**

**Student members:**

**AUD 20 annual**

Donations, grants and the like:

**AUD 747,216.00**

Staffing (if any):

**12 full time, 4 part time**

Key activities or program approach:

**Engineers Without Borders Australia (EWB) is a not-for-profit organisation with 10 years experience in creating systemic change through humanitarian engineering. We do this by:**

- Working in partnership with community development organisations to address a lack of access to basic human needs such as clean water, sanitation and hygiene, energy, basic infrastructure, waste systems, information communication technology and engineering education. This is done by facilitating volunteer placements for professional engineers in countries including Australia, India, Sri Lanka, Nepal, Timor Leste, Cambodia and Vietnam.
- Educating and training Australian students, engineers and the wider community on issues including sustainable development, appropriate technology, poverty and the power of humanitarian engineering. This is done through programs including the EWB Challenge, Research Program and High School Outreach Program.
- Leading a movement of like-minded people with strong values and a passion for humanitarian engineering within Australia and overseas. Our movement is made up of members, who get involved and volunteer through chapters, and supporters including donors and engineering companies.

EWB Australia's work is organised into three units: Development Partnerships, Institute and Tribe.

## Projects of other EWB MAs

### Ingenieure ohne Grenzen Germany – Challenge “Back to school!”

Many students fear their entrance into the business world because they don't feel like they have gained enough hands-on experience during their time at university.

One attempt to integrate more practice-based courses into the universities' lesson plans is the "Ingenieure ohne Grenzen Challenge". This concept, first developed in Australia where it has become an integral part of a number of courses, is now about to be launched in Germany in a cooperation between the RWTH Aachen University's Institute of Information Management in Mechanical Engineering and Center for Learning and Knowledge Management (IMA/ZLW) and Ingenieure ohne Grenzen e.V. (Engineers Without Borders - Germany) within the Project ELLI (Excellence in Teaching and Learning in Engineering, [www.elli-online.net](http://www.elli-online.net)).

The idea behind the Challenge is to have students work on existing problems from the field of development cooperation and devise their own solutions to these. To this end, each year, technical development areas and structural problems of a specific region are identified and presented to the students. It is then their task to research their topic and work out a sustainable and feasible solution. The results and concepts are submitted to a jury; promising approaches might then be implemented by Ingenieure ohne Grenzen in cooperation with the local population.

The focus of the upcoming winter semester's Challenge named "Back to school!" will be the set-up of a self-supporting girls' boarding school in Tanzania.

Following last year's successful test run, the Challenge will be integrated into programs of the Ruhr Universität Bochum and TU Dortmund University along with more courses at RWTH Aachen University.

Link: [http://www.elli-online.net/kernbereiche/professionelle\\_handlungskompetenz/kreativitaetinterdisziplinaritaet.html](http://www.elli-online.net/kernbereiche/professionelle_handlungskompetenz/kreativitaetinterdisziplinaritaet.html)



*IOG Challenge 28-crops*

### Engineers Without Borders EWB Norway on Mission in Afghanistan

It is now two years in a row, that Engineers Without Borders EWB Norway in cooperation with Norwegian Afghanistan Committee, NAC, sends engineers to Badakhshan province in Northern Afghanistan.

In May 2012 EWB Norway member, geologist PhD Andrea Taurisano, traveled to Faizabad, Badakhshan in order to make geotechnical investigations and evaluate the probability of a feared landslide in the village Turgani.

Andrea's visit started an important process of facilitating elementary knowledge to the locals in order to reduce the risks of landslides.

In May 2013 Andrea traveled back to Faizabad, this time with another EWB Norway member geologist Jaran Wasrud. Their mission this year was to train the local staff and local engineers in reducing the risks and consequences of natural disasters, such as landslides and floods.

Andrea and Jaran work as senior engineers in the Norwegian Water Resources and Energy Directorate.



*Engineers Without Borders EWB Norway on Mission in Afghanistan*

### EWB-USA Awards Projects in Kenya, Honduras and Ghana for Accomplishments

Engineers Without Borders USA (EWB-USA) recently recognized three projects in the 2013 Premier Project Awards. The award highlights projects that deliver high quality, sustainable solutions to help meet the basic needs of partnering communities. The following projects received this prestigious award:

#### Lafayette College Chapter | El Convento, Honduras

The EWB-USA Lafayette College Chapter's water supply project in El Convento, Honduras incorporates best practices in sustainability through community involvement. Prior to the implementation of this water supply project, the community of El Convento in rural Honduras collected water from a polluted stream that ran through the community. The chapter and the community built a water treatment and distribution system that reached all members of the El Convento community to improve the health and welfare of the village.

#### Princeton University Chapter | Ashaiman, Ghana

The EWB-USA Princeton University Chapter's Ghana School Library Project in Ashaiman, Ghana is an example of a well-designed, community-implemented and sustainable project. The chapter and the community constructed a library using sustainable landcrete block. Today, the library is stocked with more than 7,000 books and 37 One Laptop Per Child (OLPC) computers. In addition, a variety of training programs were conducted in order to educate members of the community on how to best use and maintain the resources provided.



*Ghana Library EWB-USA Princeton*



*Lela, Kenya Project EWB-USA Oregon*

#### Oregon State University Chapter | Lela, Kenya

The EWB-USA Oregon State University Chapter recently completed the successful implementation of a community well and rainwater catchment system in Lela, Kenya. After three years of preparation which included a health survey, technical water source assessment, GPS mapping, and an alternatives analysis, the chapter and the community drilled a water well and built a rainwater catchment system at the Lela Primary School. The project was a success, and Lela now has improved access to potable water.

## NEWS

**EWB Sri Lanka**

**4<sup>th</sup> International Conference on Structural Engineering and Construction Management 2013**

**"Capacity Building for Development" – Kandy, Sri Lanka 13-15 December 2013 - <http://www.icsecm.org/2013/>**

Engineers Without Borders, Sri Lanka works with disadvantaged communities in the country to uplift their living standards, through education and implementation of sustainable engineering projects, by proactively helping people in need. We become more socially aware and responsible, developing ourselves, and inspiring others in similar endeavors. In addition, EWB-Sri Lanka extends its co-operation to other similar humanitarian organizations in the country, and works in partnership with global partners in sharing resources and knowledge.

**EWB South Africa**

**Waste to Energy –Something's cooking in EWB-Wits**

Months of planning and hard work have paid off for EWB -Wits's Biodiesel team: the first batch of biodiesel fuel has been produced. The project, lead by Robert Louw, has been constructed to convert waste cooking oil from the dining halls and various vehicles that operate on Wits campus to a useable fuel. The plant is situated on West Campus and operates as a 200l batch process based on

the Appelseed design.

As renewable energy, waste reduction and carbon emissions are carrying increasing weight in local conversations; the visionary team pioneered this plant to show what is possible. No doubt, it is time that projects of this nature are adopted in South Africa on a larger scale. Plans are being hatched to extend the project to other campuses across the country.

Congratulations to the project team – this is really quite an achievement.

The project is done in partnership with Oricol Environmental Services.



*EWB SA Wits - biodiesel fuel plant*

**Membership Fee**

*Copenhagen, host for the EWB-International Conference*

The EWB-I Board has decided that Member Associations have to pay a fee to be members of EWB-I. The fee will contribute to the cost of running EWB-I covering among others conferences, annual general meeting (AGM), web-site, newsletters etc. The Board also has the intention to subsidize less well-to-do MA's participation in conferences and AGMs.

The fee will be collected on a yearly basis. First payment will cover 01.01 2013 to 31.12 2013.

Members pay 1.500 USD per year (developed countries) or 500 USD per year (developing countries). Cut off point is the World Bank criteria of GNI 12,275 USD/year – ATLAS methodology (refer:

<http://siteresources.worldbank.org/DATASTATISTICS/Resources/GNIPC.pdf>)

Only members having paid their fee have the right to vote at the AGM.

Start-ups pay similarly a fee of 200 USD respectively 100 USD. Start-ups have no voting right at the AGM. In any case the fee cannot exceed 2 % of total turnover and fee amounts of less than 100 USD are not payable.

**Donor's corner**

**EWB-I partners with Alcoa Foundation to promote best practices in engineering for the developing world**



As you may know, Engineers Without Borders International (EWB-I) was selected by Alcoa Foundation to receive a two-year \$400,000 grant to support the *Creation of a Global Engineer* Program. Earlier this year, EWB-I solicited program proposals from individual Engineers Without Borders associations worldwide and in September selected organizations in Australia, Brazil, Canada, Norway, the United Kingdom, and the United States to receive the Alcoa Foundation funding. Nearly a thousand students and 70 faculty members at 36 colleges and universities in these six countries are estimated to benefit from Alcoa Foundation funding and will actively participate in the program.

The program is designed to create and replicate the best practices of "learning through service programs" that develop skills in leadership, project management, communication, systems thinking and community and personal engagement.

"The Alcoa Foundation is proud to invest in the development of a future generation of humanitarian engineering leaders," said Scott Hudson, director of global education initiatives and program development for the Alcoa Foundation. "We're excited to see the positive impacts of the *Creation of a Global Engineer* Program on how international development is taught in universities around the globe."

Look for more information regarding grant outcomes in future newsletters.

**Photo competition**

Thank you for the photos of the projects you are implementing in your country. We encourage you to show off your photography skills by sending us more your shots of your activities in action. The best photos will be published in the EWB-International Newsletter and presented on the EWB-International Conference and General Assembly Photo Exhibition. Image should be submitted as jpgs. Each jpg should be a maximum of 300dpi and 5MB in file size, with your name and the subject in the title.

Maximum 5 entries per person per contest. Send your photos on following email:

[oliver@ewb-mk.org.mk](mailto:oliver@ewb-mk.org.mk)

Good luck!



*Vredfort Footbridge Project (EWB SA-Wits)*