

Collaborate / Connect



engineers without borders uk

Annual Review

September 2009 - August 2010

Introduction

Engineers Without Borders started in the UK in 2001

Our first placements were in India in 2002

We registered as a charity in 2003

Our first five-year strategy was launched in 2007

Our Challenges

900,000,000 people lack safe drinking water

820,000,000 people are under-nourished

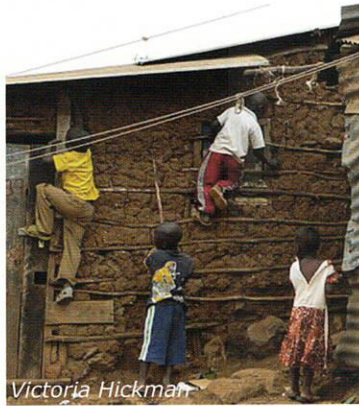
29,000 children die every day from poverty

1 engineer / 100,000 in sub-Saharan Africa compared to 1 / 500 in Europe

2,940,000 people die each year from respiratory diseases eg. from firewood

1,400,000,000 people living on less than \$1.25 a day

2,600,000,000 people do not have access to adequate sanitation



Victoria Hickman

Our Vision & Mission

A world where access to technology or infrastructure is not a barrier to poverty alleviation

To facilitate human development through engineering



Tom Bunn

Our Aims

Inspire and prepare the next generation

Strengthen the capacity of institutes overseas

Assist international development organisations

Support small enterprises and social entrepreneurship



Ruth Manning

Our Approach

Holistic engineering

Active partnerships

People participation

Small footprint

Appropriate technology



Roger Morton

Our Values

Committed to the role of engineering in society

Believe in the spirit of volunteering

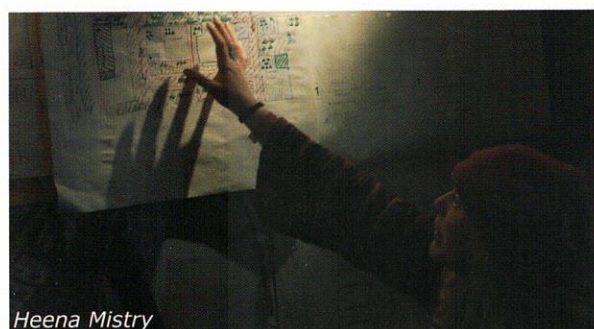
Endeavour towards professionalism and engineering rigour

Support transparency and an open environment

Committed to continuous learning and improvement

Preserve equality between race, religion and gender

Uphold the UN declaration of Human Rights



Heena Mistry



Welcome to our 2009/10 Annual Review.

I think we can be hugely proud of our achievements in the last twelve months. Our work has reached more people than ever before; our community has grown and strengthened; and our organisation has developed so that we focus more on the future.

We have continued to collaborate and to connect – perhaps more than ever. Since we began, our approach has always been to work in partnership and to facilitate. But this year our organisational model has come of age, with every aspect of what we do truly reflecting our collaborative / connected way of doing it. Indeed, our collaborative / connected approach has meant that we have weathered the challenging economic conditions that have hurt so many people around the world. It has also allowed us to involve many more people in activities that make a difference – creating positive, generational change (whilst bringing huge value for money). Each section of this review will give you examples.

But we are not complacent. I think what we need in the coming year is to find our next big step forward. EWB-UK is an organisation that cannot get smaller: it has to grow - if only in ideas - to keep everyone engaged. There are now only five years left to the deadline for the Millennium Development Goals, whose fulfilment is in jeopardy. So we must stay inspired. This is why we will be taking time in the coming year to review our strategy and to consider what we want to have achieved in five, ten or twenty years' time.

We owe huge thanks to everyone who has collaborated and connected with us over the last year. The enthusiasm you show for our organisation - and your willingness to collaborate and connect to make the world a better place - is our greatest strength. Thank you.

Andrew Lamb



People

First paid staff in 2008

Now 3 full time and 1 part time staff

250 volunteers on a day-to-day basis

First permanent paid Chief Executive in 2010

National Executive Team

Programme Areas



Placements
Co-ordinator

Katie Goode

placements
@ewb-uk.org



Placements
Administrator
(Staff)

Catherine Hill

placements
@ewb-uk.org



Training
Manager
(Staff)

Ray Gorman

training
@ewb-uk.org



Research
Manager
(Staff)

Katie Creswell-Maynard

research
@ewb-uk.org



Bursaries
Co-ordinator

Joanne Lambert

bursaries
@ewb-uk.org



Outreach
Co-ordinator

Miriam Hansen

outreach
@ewb-uk.org



Education
Co-ordinator

Hayley Howard

education
@ewb-uk.org

Support Areas



Chief Executive
(Staff)

Andrew Lamb

ceo
@ewb-uk.org



Operations
Co-ordinator

Dan Smith

operations
@ewb-uk.org



Fundraising
Co-ordinator

Sakthy Selvakumaran


fundraising
@ewb-uk.org



Finance
Co-ordinator

Sachi Findlater

finance
@ewb-uk.org



Finance
Bookkeeper
(Consultant)

Paul Jewitt

finance
@ewb-uk.org



Press &
Publications
Co-ordinator

Natalia Popova

press
@ewb-uk.org



Information Technology
Co-ordinator

Ben Kyriakou

webmaster
@ewb-uk.org

Community Areas



Professional Network
Co-ordinator

Mark Williams



professionalnetwork
@ewb-uk.org



Professional Network
Officer

Ilana Cohen

professionalnetwork
@ewb-uk.org



Branch Support
Co-ordinator

Sean Rivers

branchsupport
@ewb-uk.org



Communications
Co-ordinator

Stacey Clifford

Communications
@ewb-uk.org



Membership
Co-ordinator

Richard Cunliffe

membership
@ewb-uk.org



Communities of Practice
Co-ordinator

Samina Islam

communitiesofpractice
@ewb-uk.org



Communities of Practice
Manager
(Contract Staff)

Dr Barry Lovern

communitiesofpractice
@ewb-uk.org

Board of Trustees



Sacha Grodzinski
(Chair)

MPhil student in Engineering for Sustainable Development and former EWB-UK placement volunteer



Steven Hunt

Senior Energy Consultant, International Projects Manager at Practical Action Consulting and former EWB-UK placement volunteer



Dr Matt Little

Renewables engineer, trainer at the Centre for Alternative Technology and technician at CREST at Loughborough, former EWB-UK placement volunteer



Ian McChesney
(Secretary)

Expert in technology assessment and business development in energy systems, with substantial field experience worldwide



Ellie Griffiths

Mechanical Engineer at Arup, former EWB-UK placement volunteer and branch president; took part in Antarctica climate change expedition



Hayley Sharp

MPhil student in Engineering for Sustainable Development, intern at Save the Children and former Research Co-ordinator whilst at Bristol, EWB-UK bursary awardee



Professor Sally Heslop

Graduate Education Director for Engineering at the University of Bristol and worked on a national programme of design for sustainability



Evelyn Buchner-Santos

MSc student in Biomedical Engineering at Oxford University, student representative of the Engineering School when at Edinburgh



Stephen Jones

PhD student on governance in water and sanitation in Mali at Royal Holloway, with field experience with ACTED and a former EWB-UK Co-Chief Executive

Board of Advisers

Professor Paul Jowitt: President of the Institution of Civil Engineers 2009/10 and gave the Brunel Lectures in 2006 on engineering in international development after leading the Engineers without Frontiers commission. Director of SISTech.

Tahani Youssef: Executive Director of the World Federation of Engineering Organisations, bringing together all national engineering institutions. Previously worked for World Bank and has organised key international engineering conferences.

Professor Sir David King: Director of Smith School of Enterprise and Environment at Oxford. Former Chief Scientific Adviser under Tony Blair and Gordon Brown with key role in government foresight, climate change and poverty reduction.

Edward Bickham: former Vice-President at Anglo American and board member of Anglo American Group Foundation. Previously Special Adviser to the Foreign Secretary, Home Secretary and the Secretary of State for Northern Ireland.

Professor Robert Chambers: research associate at the Institute of Development Studies at Sussex University and leader on participation methodologies. Prolific author of books and papers on approaches to international development.

Professor Peter Guthrie OBE: head of Centre for Sustainable Development at the University of Cambridge and founder of disaster relief agency RedR. Awarded Beacon Prize for charitable activity. Key advisor to governments and companies.

Collaborate / Connect

- Our National Executive team do not all work in the same office. They are spread across the country from Cambridge to Manchester and from Cardiff to Glasgow. We meet once a month in London - usually on a Friday night in an office we have borrowed from engineering firms Arup or Buro Happold.
- Katie Goode is a volunteer who by day works at Atkins as a civil engineer. Katie manages a budget of £115,000 and line manages Catherine Hill at our office in Cambridge. Ray Gorman is a full-time member of staff at EWB-UK who manages a budget of £53,000 and a team of volunteers. In short, we treat our volunteers as we treat our staff and both take on significant responsibilities - with great success.

Branches

18 affiliated branches

16 other EWB societies

4,500 student members

186 attended the National Conference

EWB-UK began as a student society - an idea that quickly spread to many other universities. Most of EWB-UK's members are at its branches and these groups are best placed to engage members in EWB-UK and their own local projects.

EWB-UK helps its branches through a regional branch support team, through the day-to-day work of its programmes and through our annual National Conference and other regional gatherings.

EWB-UK branches

Affiliation is an annual process. In 2009/10, our affiliated branches were as follows:

- Bath
- Bristol
- Cambridge
- Cardiff
- Coventry
- Durham
- Edinburgh
- Exeter
- Glasgow
- Manchester
- Newcastle
- Nottingham
- Oxford
- Plymouth
- Southampton
- Strathclyde
- UCL
- Warwick

EWB societies

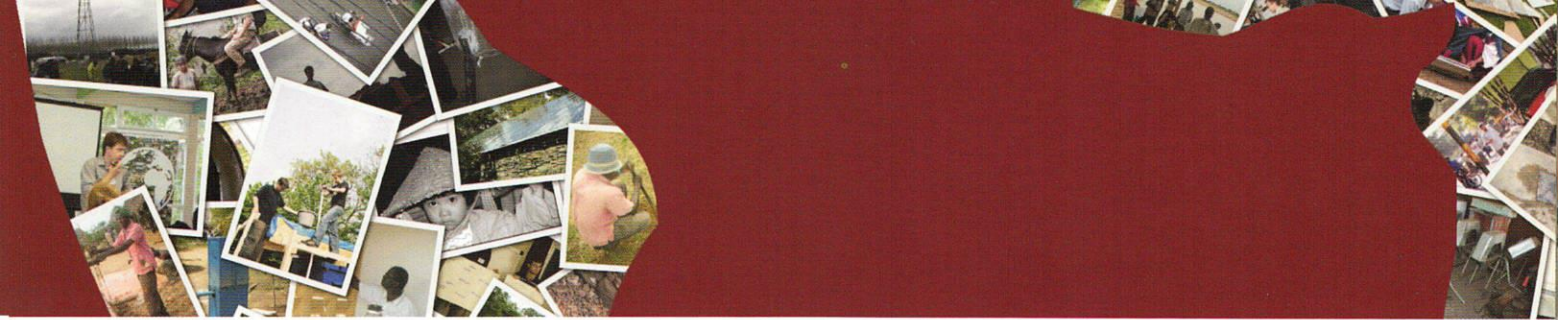
The below universities have active university EWB societies that are moving towards EWB-UK affiliation:

- Belfast
- Birmingham
- Brighton
- City
- Falmouth
- Heriot Watt
- Highlands & Islands
- Imperial College
- Kings College
- Leeds
- Liverpool
- Loughborough
- Portsmouth
- Sheffield
- Sussex
- Swansea



Collaborate / Connect

- Despite all our best efforts, our branches simply do too much for us to capture completely. Instead, we welcome surprises - new ideas or activities that emerge that we've not had before. Such as outreach.
- Our branches are how we get so much work done towards our mission and vision. But not because we command and control, but because we enable, facilitate and guide. We try to build an EWB-UK culture.
- Branch committees change every year. This is a huge opportunity to engage new volunteers with active participation in an international development organisation. They join a learning curve towards a better understanding poverty reduction and appropriate technology: they join our 'new generation of engineers'.
- Our student heritage means that our National Executive team also changes every year. Most of the National Executive team are former branch presidents who have volunteered for EWB-UK centrally.



Photographs from the field



A water purification workshop at EWB Imperial



EWB Cardiff's practical project: a pelton wheel

International student success

Eric Jin, 2009/10 president of EWB Southampton, is one of twelve British Council Shine Award finalists for work with EWB Southampton and STAR Southampton.

Maryam Lamere, who helped to set up the EWB City University society, won a Volunteering England Gold Award for Leadership.

8 Task Challenge

David Bush, Harry Newman, Tim Sid and Ian Mach from EWB Cardiff members took part in the 8 Task Challenge, were the fastest team, 15th overall, 4th best all male team and 4th best first year team and raised over £600 through sponsorship and cake-sales for EWB-UK and RedR.



Events are key

EWB Durham has had a great start with fortnightly workshops. It has linked up now with the Development Abroad society.

Award winning

EWB Bristol won a Student Engagement Award, which is the first time this award has gone to a student society. Meanwhile, the branch organised the largest Sha-La fundraising clubnight to date.



Branch committee members at the National Conference, Bristol

Professional Network

18 events run

855 PN members

20 PN team members

8 active regional networks

The EWB-UK Professional Network is a forum for practicing engineers, other professionals, researchers and academics to support and augment the work of EWB-UK. It is a UK-wide network that interacts with EWB-UK branches, companies, engineering institutions and development and relief organisations.

Those involved range from recent graduates with previous involvement in EWB-UK or an interest in development work, to retired professionals who wish to offer their experience and to learn themselves.

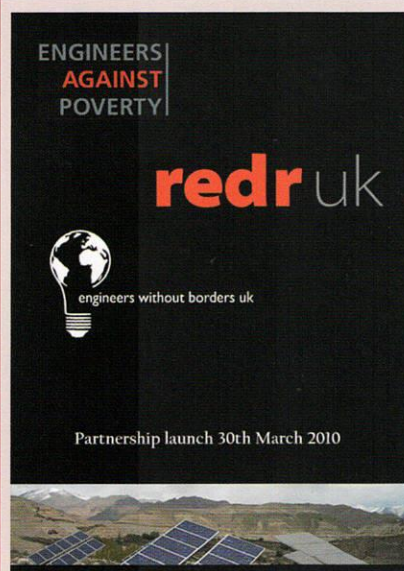
The Professional Network is organising itself to reflect EWB-UK's activity areas, so that help and advice can be called upon from professionals to provide timely and effective support. In this way, our Professional Network is able to harness the skills and commitments of members to make a difference.

Structure of the Professional Network

- National committee
- Committee roles to support EWB-UK areas
- Regional Committees
- Local memberships
- Project groups for particular activities

London Festival

The PN London group organised an impressive series of speaker events in March, including: Medical engineering; Disaster relief toolkits; Post-earthquake rescue and assessment; A business case for development.



EWB-UK/RedR/EAP MoU Launch Event

EWB-UK signed a Memorandum of Understanding with Engineers Against Poverty and RedR UK on 30th March 2010, at an event organised by PN London member Clare Huntington. This new partnership will reinforce existing ties and has three objectives:

- To mobilise engineering, technology and innovation competencies to respond to communities in need, to fight poverty, to promote sustainable development and to provide a better life for all people.
- To engage with government, industry and civil society to increase awareness of the positive and far-reaching impact of engineering, technology and innovation in the development of society.
- To promote good practice in terms of conduct, integrity, ethics, engineering standards and care for people and the environment.

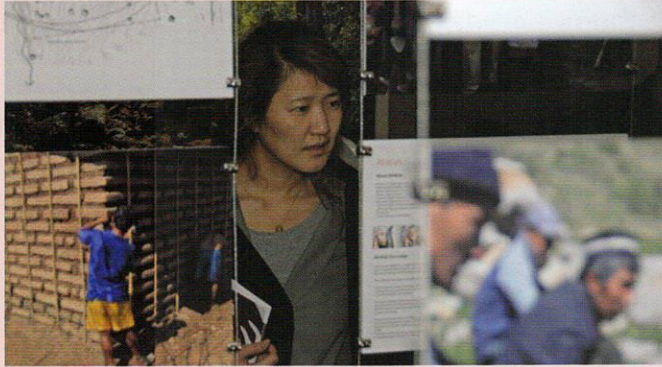
A similar MoU was also signed with the Institution of Civil Engineers.

Collaborate / Connect

- The members of our Professional Network are a huge asset and are able to mobilise to deliver an activity very quickly indeed. They took on delivering 'Know How Now' from an intern, with one month's notice.
- PN members work at engineering firms and at international development organisations, and they are our links and relationship managers... meaning that we can collaborate and connect with their organisations meaningfully. This is critical to fundraising and to engaging graduates and professionals in development.
- Prof. Paul Jowitt has done a huge amount for EWB-UK as President of the Institution of Civil Engineers. He has hosted events for us and established valuable relationships. Our connection with the ICE has led to regional collaborations with ICE groups, meaning that we reach a far wider audience with our work.



Buro Happold Photo Exhibition



Entitled 'Engineering... Making the Difference' and hosted and supported by Buro Happold, this photography exhibition launched the PN London Festival 2010 in style. Special prints of previous winners of our photography competition were on display. PN member Tom Newby spoke, alongside Happold Trust chairman Michael Dickson.



All Party Parliamentary Group on Engineering and Information Technology

At the invitation of Lord Broers, EWB-UK helped to organise an event at the Houses of Parliament in October 2009 to discuss engineering and poverty reduction. Panel members were Professional Network members Priti Parikh and Thalia Konaris, Engineers Against Poverty Chief Executive Petter Matthews and EWB-UK Chief Executive Andrew Lamb. The event was joined by MPs, senior representatives from industry and young engineers. The discussion was followed by a reception.



Know How Now

In November 2009, the Professional Network delivered the first ever fair and forum to bring together technical knowledge providers for the development and relief sectors. The event was a partnership with RedR and Engineers Against Poverty and hosted at the Institution of Civil Engineers. Know How Now attracted over 400 visitors and has led to a number of collaborations between the organisations that took part.

- Advocates 4 International Development
- Aidworkers Network
- Akvo
- Appropedia
- Appropriate Software Foundation
- Aptivate
- Ashden Awards
- Build Action / RICS Commission / DFDN
- Building Tomorrow
- CENDEP, Oxford Brookes
- Developing Technologies
- Development Gateway / Zunia
- ELDIS
- EngineerAid
- Engineers Against Poverty
- EWB-UK Professional Network
- Excellent Development
- Household Energy Network (HEDON)
- Institution of Civil Engineers Library
- Mango
- Practical Action
- Practical Action Publishing
- RedR
- Science for Humanity
- ShelterCentre
- Surrey University
- Tearfund
- TechTalk
- WaterAid
- WEDC, Loughborough



Placements

39 placement volunteers

22 partner organisations supported

100% positive feedback from partners

92 man-months of volunteer time on placements

We support partner organisations by placing carefully-selected, capable and talented engineers to work for them. In short, our Placements Programme is a work experience scheme that fights poverty.

We prioritise placements for UK students and people with less than four years technical experience.

The majority of our placements take place over summer and last for at least three months. We also run longer six- and twelve-month placements open to more experienced candidates.

Placements 2009/10

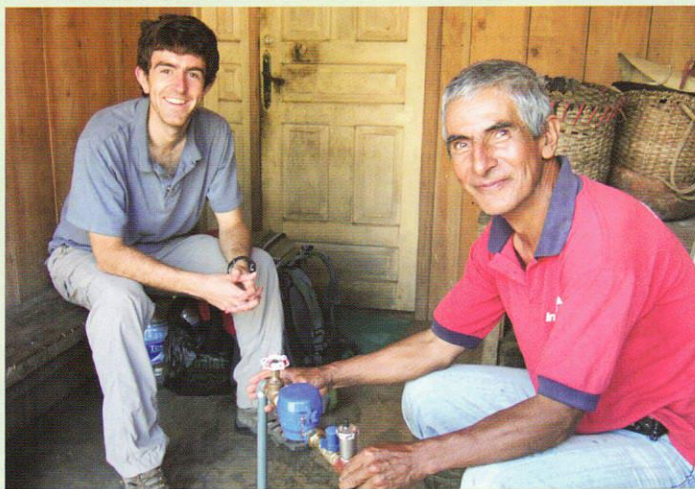
This year's placements have ranged from water supply projects in Ecuador and biogas digesters in Sri Lanka to developing soil stabilised blocks in Kenya. We are working with a number of new partner organisations as well as building on relationships with partners that we have worked in previous years. Along with 28 of our main summer placements, we have delivered more placements starting at other times of year. Also, our relationship with Practical Action and the Humanitarian Centre has developed into a series of placements.

David Brownjohn, Harry Thompson - rural energy production from biogas - **ARTI** - Phaltan, India
Niels Campman - carbon trading and biomass programme - **CRT** - Kathmandu, Nepal
Emily Hounslow, Faye Tomson - digesters for biomass conversion - **Energy Forum** - Colombo, Sri Lanka
Laura Clough - research and documentation of renewable energy - **GVEP** - Nairobi, Kenya
Gavin Brown, Jennifer Durie - improvement of mass production of stabilised blocks - **KOBE** - Nairobi, Kenya
Tom Koskella - research into rural energy and water supply - **LIRE** - Vientiane, Lao PDR
Alison Hoyt, Cai Williams - survey and improvements to rope and washer pumps - **MSABI** - Ifakara, Tanzania
Thomas Russell, Eva Linnell - design and construction of clean water supply - **PRODECI** - Intag, Ecuador
Rebecca Sullivan, Louise Benson - improvement of coffee farmers' productivity - **RASD** - Mukono, Uganda
Carlos Gonzalez, Emmily Sjolander - housing construction and sanitation analysis - **REDES** - San Salvador, El Salvador
Catherine Owens, Natasha Kharbanda - sewage and sanitation plan for Baddi Sandholi - **RUCHI** - Bhogpur, India
Holly Edwards, John Heelham - Bhogpur Model Rainwater Village - **RUCHI** - Bhogpur, India
Sam Cocks, Lincoln Smith - improvement to the design of a paddy de-husker - **SELCO** - Bangalore, India
Jacob Ashdown, Martino Visintin - data analysis and GIS mapping of slums - **Shelter Associates** - Pune, India
Caroline Warwick-Evans - community-based renewable energy systems - **SIBAT** - Quezon City, Philippines
India Elsdon, Simon McKean - sustaining rope and washer pumps - **PID** - Maputaland, South Africa
Becky Chen Qin - working on networking and learning programmes - **Humanitarian Centre** - Cambridge, UK
Emma Jackson Stuart - working on communication and training - **Humanitarian Centre** - Cambridge, UK
Ciaran Malik, Federica Lisa - transitional shelter research and dissemination - **Shelter Centre** - Geneva, Switzerland
Richard Iliffe - working with the markets and livelihoods programme - **Practical Action** - Rugby, UK
Micheal Newhouse - organisation of the 'Small Is... Festival' - **Practical Action** - Rugby, UK
John Ndegwa - knowledge and communications, access to services - **Practical Action** - Rugby, UK
Mattia Vianello - working with the cooker hoods project - **Practical Action** - Rugby, UK
Miriam Hansen - managing publication of Boiling Point journal - **HEDON** - London, UK
James Brown - percussion drilling of water wells - **Developing Technologies** - Bo, Sierra Leone
Diana Rix - sustainable water supply and sanitation solutions - **AVS** - Kampala, Uganda

Collaborate / Connect

- A team of dedicated volunteers in the UK work with our partner organisations throughout the year to develop and manage our placements. The process of organising summer placements begins in autumn when Placement Managers work with partners to identify a need and write a proposal.
- Anyone can become a Placement Manager, and many previous placement volunteers become managers for the placements that follow their own. EWB-UK provides intensive training to ensure an effective team.

Photographs from the field



EWB-UK has worked PRODECI for many years. Early in their placements, Eva Linell presents her work to the villagers of Limones and Tom Russell learns more about the local water supply system.

Support from consultants

Newton Industrial Consultants supported four placements financially and with field visits by its consultants, and also gave training on project management to all volunteers before departure.

Future Relief Workers

Our link continues with the relief organisation RedR, through their Future Relief Workers scheme. One of RedR's patrons, MWH, has covered the cost of placements done by their staff.

Placement Volunteer Report

Carlos Gonzalez graduated as a Technical Architect from Barcelona and has an MSc in Construction Management from Edinburgh Napier. His placement was in the habitat research group at REDES.

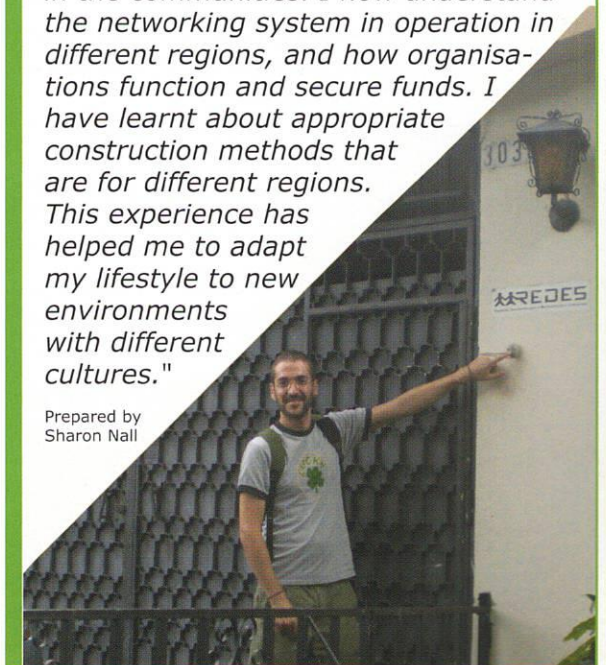
"I was interested in the project because REDES is involved in the construction of dwellings and basic sanitation systems. The placement focuses on assessment and evaluation of housing and sanitation by interviewing communities.

"Once we arrived in San Salvador we met with the engineers from the infrastructure department and we discussed the scope of the project. In order to evaluate the system, we interviewed families benefitting from new low cost housing and sanitation. The aim was to determine whether the new system adequately fitted the needs of the families. The project involved four housing typologies and a sanitation system set in four different regions.

"We spent one month doing almost 100 interviews. Currently we are working in the office, analysing all the data.

"I have found this project to be a very valuable experience. I have learned a lot from the engineers and the people in the communities. I now understand the networking system in operation in different regions, and how organisations function and secure funds. I have learnt about appropriate construction methods that are for different regions. This experience has helped me to adapt my lifestyle to new environments with different cultures."

Prepared by
Sharon Nall



Bursaries

40 bursaries awarded

6 review panels formed

113 bursary applications received

bursary awards reached 23 countries

Got an idea? Our Bursaries scheme awards small grants to EWB-UK members. They can go towards research, learning opportunities or volunteer development projects. Applications are made through our website and are peer-reviewed by trained-up volunteers every month.

In the last year we awarded a total of £13,354 to support a wide range of ideas - from eco-sanitation in Sierra Leone to rainwater harvesting in Mexico City, and from bridge building in Mozambique to disaster risk reduction in Bangladesh. The largest award was £750 and the average award was £312.

Bursaries 2009/10

Aisha Mukadam - water and sanitation, health

Chris White - energy

Thomas Redman - earthquake education

Caroline Warwick-Evans - renewable energy

Emily Nix - conference in Canada

Jon Dieguez - bridge building

Richard Outhwaite - slow sand filters

Richard Cunliffe - EWH summer institute

Hayley Weston - teaching engineering

Ralph Pelly - building earthbag domes

Andrew Jardine - earthquake resistant house

Alison Furber - water and sanitation research

Sarah Ernst & Andrew Edwards - green tech.

Simon Rawlins - solar disinfection

Victoria Hickman - urban development

Yonatan Ofek - bridge building

Temilade Abaje - improved cookstoves

Salman Mahmood Bham - EWH conference

Jon Dieguez - bridge building

Charles Bennett - water and sanitation

Arthur Serbert - energy

Adam Jones - water safety

Jon Leary - renewable energy

Kristina Ostman - electricity supply

Lisa Bunclark - rainwater harvesting

Ralph Thompson - rainwater harvesting

Barry Lovern - development design summit

Caroline Warwick-Evans - micro-hydro power

Hayley Sharp - flooding risk reduction

Nathaniel Sharpe - sanitation pumps

William Smith - stabilised blocks

Sean Rivers - ecological sanitation

Emma MacLeod - ecological sanitation

Stephanie Powell - hygiene promotion

Heena Mistry - food production

Samuel Woollard - wind power

Vikun Shah - cheap power

Annabel Yadoo - rural electricity supply

Sébastien Aguilar - rural electricity supply

Anna Blake - road and building materials



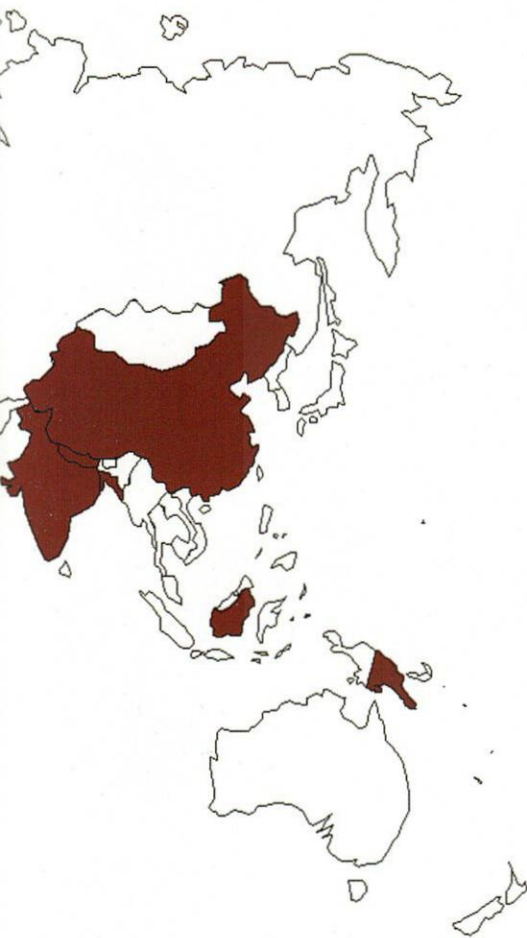
Collaborate / Connect

- EWB-UK does not decide who gets a bursary. Our members decide. We give them the chance to be development donors, asking critical questions and deepening their understanding of best practice.
- In 2009/10 we had 5 dedicated bursary panels based in London, Cambridge, Birmingham, Bristol and Glasgow. Students and professionals join in.
- We run training for bursary panels twice a year so that anyone can be volunteer and get ready to assess applications that now come in monthly.



Types of bursary awards

- 4 bursaries for learning opportunities
- 8 bursaries for individual projects
- 7 bursaries for group projects
- 17 bursaries for research projects



Bursary Volunteer Report

Simon Rawlins is studying at Newcastle University and was awarded a project bursary to support a field trip.

"I travelled to Ndhiwa, Kenya, to undertake tests of three prototype solar water disinfection devices that I had designed. In addition to testing my prototypes, I conducted microbiological tests on the local water supply and interviewed the local people about the daily problems they face in find safe drinking water. As a result, I gained a deeper understanding of how to tackle the problem."

"Working in Kenya and talking with the people was a great experience. I was able to discuss with them issues as they saw them. I developed a far greater insight than I ever would have done without this opportunity."



Bursary Volunteer Report

Nathaniel Sharpe was awarded a research bursary for his work on the construction of a bicycle-powered vacuum pump for desludging pit latrines in urban slums.

"The design consists exclusively of off-the-shelf items, mostly bike parts, to ensure repairs can be done in developing countries. Without this bursary I would not have been able to build the prototype."

Also - without this funding, I would not have been able to do any hands-on engineering in my dissertation. I learned a lot about the construction and mechanics of bicycles, vacuum pumps and power transmissions as a result."

Photographs from the field

William Smith: Improvement to production of stabilised blocks in Kenya. Bursary award of £400.

Jon Dieguez: Bridge building project in the Dominican Republic. Bursary award of £300.



Research

17 research grants awarded

58 research projects in progress

15 partner organisations supported

23 institutions and partner organisations involved

Alongside our Placements and Bursaries programmes, the EWB-UK Research Programme is one of our most direct contributions to poverty alleviation across the globe.

We create links between academic institutions and partner organisations working in development.

By working with our partners to identify technical problems and turn them into research briefs, we can offer university projects to undergraduates, graduates and other researchers that are needed, exciting and real. The students can then use the facilities of UK universities to help find solutions.

Rapid Research Response Secondment Scheme

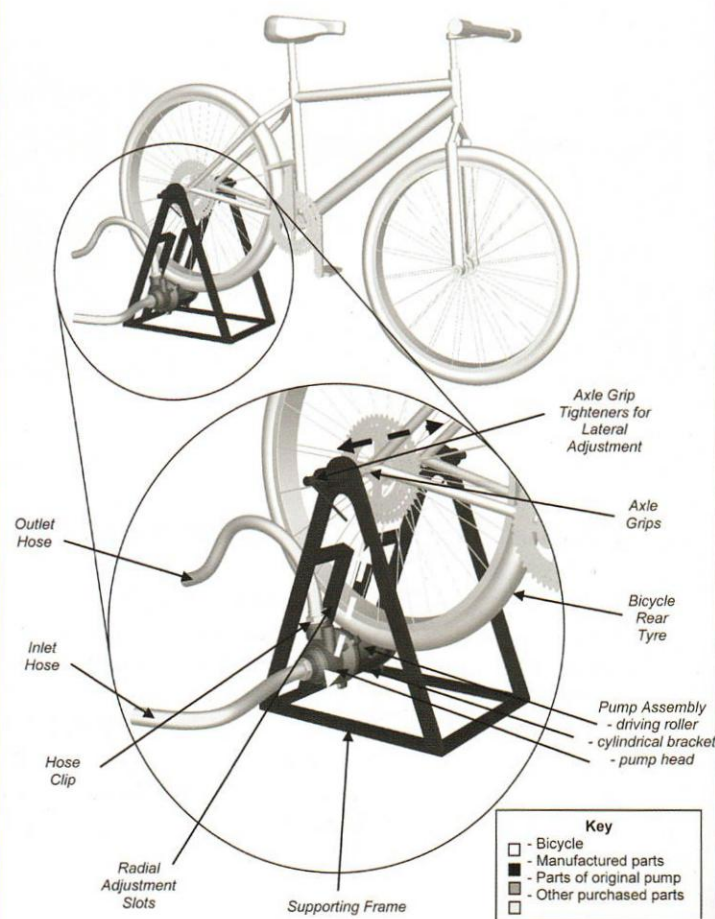
Our pilot scheme funded by Enhanced Learning and Research for Humanitarian Assistance (ELRHA) aimed to find ways for higher education institutions to assist humanitarian organisations. EWB-UK's role was to facilitate secondments for PhD students to research technical challenges faced in the field.

Paul Byars, Lindsay Todman, Temilade Sesan, Annalisa De Munari and Joel Chaney were selected from Nottingham, Edinburgh and Imperial College. They had humanitarian and security training as part of their preparations for secondment.

The pilot excited interest from the humanitarian community though ultimately no secondments were made this year. A report outlining the learning and experiences of this pilot has been fed back to the humanitarian and academic communities.



Invention: a mobile bicycle pump



Jon Leary from Sheffield University worked with Maya Pedal in Guatemala to research and develop a mobile version of their popular bicycle water pump.

Collaborate / Connect

- We don't do any in-house research. We distribute research briefs to academics, departmental teaching offices and students themselves. When a brief is chosen by a student, their research project becomes part of their degree course.
- In early 2010, we recruited a team of volunteers to better support our researchers. Each has particular interests and expertise that fall within EWB-UK Communities of Practice. Like Placement Managers, they will guide our partners in preparing appropriate research briefs and will support researchers throughout.
- We work hard with universities to ensure research findings can be shared publicly.



Research Volunteer Report

Sam Williamson's PhD is on 'Modular and Scalable Low Head Pico-Hydro Generation for Off-Grid Networks'. Based at Bristol University, the research is in collaboration with EWB-UK and manufacturing firm Renishaw.

"During the first year of the PhD I've produced a specification for the system, developed a selection process for choosing a turbine and applied it to our specification. I have reviewed different technologies and control regimes that are used in off-grid networks. I also spent two weeks in Nepal at a micro-hydro installation looking at practical problems in implementation."

"The work has been hard - and I know it will get much harder - but it is good fun. I find it really motivating that this project has the potential to have a real impact on rural electrification and in promoting a more sustainable future."



EWB-UK members win awards for research

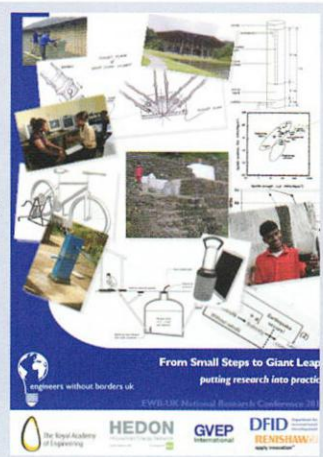
Douglas Aitken, a PhD student, and Miriam Hansen, a MEng student, both at Edinburgh University, presented their research as platform presentations at the 11th International Water Association UK National Young Water Professionals Conference. Doug was the winner of the Best Platform Presentation and Miriam was joint runner-up for Best Presentation.

Desktop Development Research Projects

These are research projects that can be done remotely and so are suitable for the Professional Network. Practical Action was our first partner on these projects and we helped with producing and translating some of their technical briefs.

'From Small Steps to Giant Leaps... putting research into practice'

Our 2010 Research Conference focused on scaling up solutions for real impact. The conference brought together 100 people with keynotes from Sarah Adams of GVEP International and Victoria Hickman from the University of Cambridge. This unique event again allowed researchers from different disciplines to discuss their research and its dissemination with peers, academics and practitioners. The event was complemented by an e-conference courtesy of HEDON. Twenty-one papers were presented.



Education

97 students in EWB-UK initiated courses

12 academic institutions linked into programme

27 attendees for the first summer school at CSE in Delhi

3 workshops delivered at the Royal Academy of Engineering

EWB-UK's Education Programme increases the coverage of global issues in engineering education. It focuses particularly on the teaching of international development, poverty reduction and appropriate technology in undergraduate engineering degrees, so that a new generation of engineers can understand the global problems that they will have to face in their careers - and how to respond.

The programme works with students, academics, engineering institutions and professional organisations to find opportunities and to turn them into long-term change in engineering education.

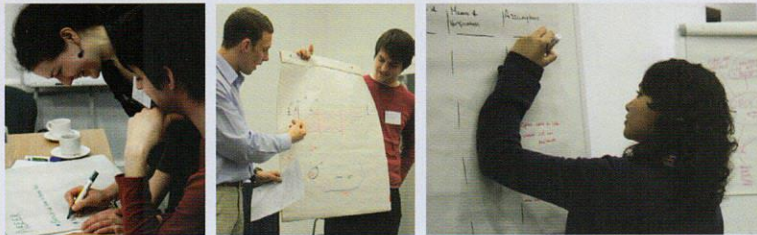
In addition, the Education Programme provides learning opportunities for young engineers to deepen their own understanding - such as through workshops, summer schools and libraries.

Royal Academy of Engineering Workshops

Our relationship with the Royal Academy of Engineering continued to grow, and we delivered three workshops for their Engineering Leadership Award Scheme:

- Engineering for International Development
- Engineering for International Development Part 2
- Energy for International Development

The Education Programme is also developing new workshops on water and sanitation, information and communication technologies and urban development. We are also designing a collaborative workshop with RedR.



Library Grants

Our successful new Library Grant Scheme has supported several branches with £200 matched funding to set up an EWB-UK library at their university.

Because of this scheme, EWB Cardiff branch have secured £1,200 from their university, so they now have £1,400 to spend on books and learning resources about engineering, poverty reduction and appropriate technology.

EWB-UK members and volunteers can borrow books, DVDs, journals and reports free of charge from all EWB-UK libraries, with requests made through the website and postage paid.

Engineers Against Poverty collaboration

EWB-UK is supporting an engineering education project by Engineers Against Poverty. The project is working with lecturers to help them to address global issues in their teaching.

Collaborate / Connect

- Opportunities for change in engineering education are rare, so our programme works hard to identify and make the most of opportunities that become available. We select team members who have a strong background in engineering education issues, so that they can jump at any chance we get.
- Our library is not contained in one place at the EWB-UK office. Its contents are listed in one place on our website, but the book itself might be in Cardiff, Bristol, London or Cambridge.
- The Education Programme collaborates with our Research Programme very closely. If an academic supervises a research project, we see it as 'a foot in the door'. There are academics at most engineering departments that have an interest in development and appropriate technologies, even if their teaching cannot reflect this. We try to grow our relationships with these academics and we seek senior support in engineering departments to help create an environment where opportunities for change emerge.



Education Volunteer Report

In July, the Education Programme collaborated with the Centre for Science and the Environment in New Delhi on a five-week summer school called 'The Challenge of Balance'. Ilana Cohen from the USA took part.

"Our investigation came from every angle as we grappled with the development and environmental issues that pose the biggest threats to India's prosperity and sustainability. I wanted to know why a country with such high GDP has 70% of its population living in poverty?"

"After the success of the 1970s Green Revolution, how could the country face continued food insecurity? If there are so many floods from the monsoons and 34 river basins, how could there also be such severe drought? How will India adapt to the uncertainties of impending climate change? How could pollution be allowed to turn culturally important rivers, many with religious significance, into open sewers? With so many hydroelectric dams churning in Himachal Pradesh, why does the power go out so often? And how do these dams cause such deep environmental injustice despite all the social and environmental protections? Everyone's heads were buzzing with these questions. Through discussions with government officials, environmental experts and local stakeholders at contentious project sites, the course set out to help us find answers and to debate the potential solutions. We worked together to make a magazine to capture it all. It was pretty amazing, and intense."



The course attracted 27 participants from 9 countries, with backgrounds ranging from electrical engineering to history and development studies. It combined field trips and group work with academic teaching from highly regarded environmental development leaders.

BE THE CHANGE

AUGUST 2010

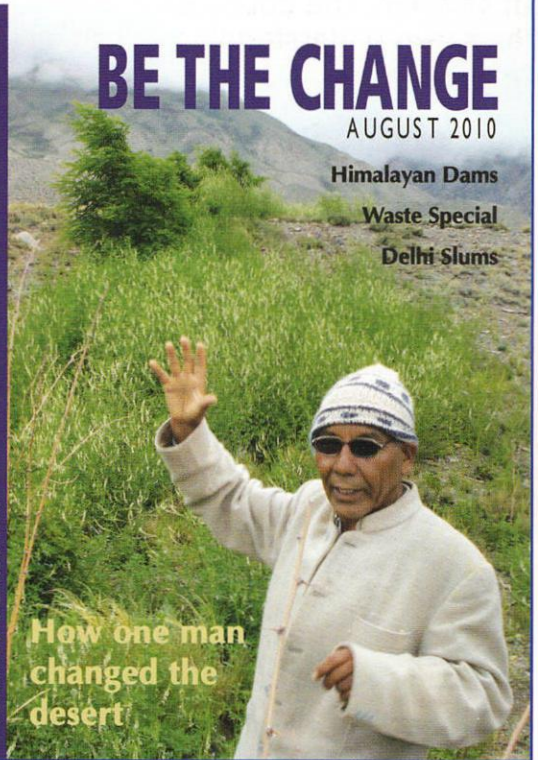
Himalayan Dams

Waste Special

Delhi Slums

CHALLENGE OF BALANCE SPECIAL

How one man changed the desert



Feasibility Study: Teaching Engineering as a Common Language

Last year, EWB-UK began a feasibility study into whether it might be able to support a new, dedicated programme to support engineering education in developing countries. The new programme would build on past experience from placements, from our outreach activities (such as 'Project DIEM') and our training courses. The feasibility study is being delivered by the Education Programme, and a key part of it was an EWB Bath branch project with Vigyan Ashram in India.

Eleven volunteers from EWB Bath worked for three months at five of Vigyan Ashram's education centres across the state of Maharashtra.

The current syllabus provides students from predominantly rural backgrounds with practical and technical skills. The aim of the branch project was for the EWB Bath volunteers to share some of their own learning with the school children, with an emphasis on providing practical workshops to supplement the curriculum.

Despite the volunteers' best efforts, the project faltered from the start due to issues of communication, teaching culture and differing expectations. The education centres were each quite different to Vigyan Ashram's own education centre. The volunteers worked hard and found new ways to support the centres.

The feasibility study is drawing lessons from this trial and is looking at other models for the new programme.



Training

5,538 participants at training events
550 visitors to the Small Is... Festival
170 talks, workshops and courses run
Highest residential course fee £24 per day

The Training Programme runs events that raise awareness of international development and develop essential skills in the development sector. Training courses are designed to be hands-on, practical and fun. They cover all types of appropriate technology and various aspects of development theory by bringing participants together enthusiasts with experienced practitioners. The past year has been the biggest and best yet for EWB-UK training, and lots of plans are already in place for the coming year.

Scottish International Development Conference

Our Scottish branches collaborated to put on Scotland's first International Development Conference, attracting 200 participants. The weekend event was a mixture of practical workshops, role plays and talks from inspiring speakers, including Dr. Yusaf Samiullah OBE (Head of Infrastructure at the UK Government's Department for International Development).

Post-Cyclone Reconstruction Simulation

EWB-UK ran its first course themed on a scenario: one year on from a cyclone, a community is still without sufficient water, sanitation and shelter.

Over three days, participants heard real accounts from the 2004 Asian tsunami, participated in role plays as aid agencies, built a cyclone-proof shelter and designed water and sanitation systems.

Pre-departure Course

EWB-UK's Training Programme arranged the week-long residential training course that prepares our placements volunteers for their time overseas. Excellent speakers presented on health and safety, security, travel health, participatory techniques, cultural awareness, project management and personal experiences - including Professor Robert Chambers. Training intern Stacey Clifford organised the week.



Participation in Development

This important course was run in partnership with Architecture Sans Frontières UK. Sessions from this course are included in Know Before You Go and our Pre-departure Course.

Engineering for a Better World

EWB Birmingham's course had record attendance and exciting workshops on solar power and other renewables.

Collaborate / Connect

- The Training Programme supports hundreds of events and activities every year. And it only has one member of staff. The only way this is possible is for our volunteers to develop events themselves.
- After each major training course, a course handover pack captures how it was done for future volunteers.
- We maintain interest by encouraging variety, keeping courses fun and saving money wherever we can.
- We have never paid a trainer; because our courses are so exciting they do it for free (often thanking us for the opportunity before we can thank them!). Venues are free university premises or even supporter's back gardens, so costs are massively reduced. It is cheap and cheerful, and we deliver great content.



Training Volunteer Report

Aimi Elias graduated from Imperial College in June, and soon came to EWB-UK to take up an internship to organise the Small Is... Festival.

"I had organised training courses in London which had been very successful, and as a member of the training team I had been to a few of EWB-UK's Training Ideas Days that help branches to plan courses. But I'd never organised anything as big and as busy as the Small Is... Festival before.

I worked in the EWB-UK offices, taking regular trips to Practical Action's office in Rugby - which was the site of the festival - to work with Michael Newhouse [EWB-UK placement volunteer at Practical Action working their side of the festival].

Though it was a great deal of work with a tight deadline, I had a great time. Building the latrines from scratch - through the medium of another training course! - was a particular highlight. I got to know lots of incredible people who have up their time to deliver workshops, give talks and generally help out. I am definitely going to stay involved in EWB-UK and their Professional Network, and will support their branches in the South East region. I'm also going to apply to do a placement at Practical Action myself."



Small Is... Festival

Inspired by E. F. Schumacher's book 'Small Is.. Beautiful' and the theories that it discusses, EWB-UK helps to organise this weekend event in collaboration with hosts Practical Action.

The festival drew experts and enthusiasts, young and old for a weekend of talks, workshops and fun. Workshops included:

- Bamboo construction
- Make your own mud bricks
- Build a geodome
- Solar photovoltaic systems
- Low bandwidth internet for the field
- Build a hexayurt
- Rope and washer pumps
- Make your own rocket stove
- Poo-opoly - a sanitation game
- Pedal powered machines
- Pedal powered smoothie maker
- Making ropeways
- Solar fridges
- Water for the World
- Small Is... Practical
- Traditional wood tools
- Model delivery games
- Protecting social democracy
- Making corn shellers
- Build your own wind turbine
- Solar powered cinema
- Make a bees wax candle



What makes our Outreach Programme different is its positive focus on practical poverty reduction. Our workshops for schools are designed to not only promote interest in engineering and science, but also to demonstrate the dramatic difference that 'people-sized' technology can make. EWB-UK helps volunteers to run these outreach initiatives in their local community groups, schools and colleges.

EWB-UK Outreach has had an exciting year inspiring many thousands of children, from Scotland to Southampton. Support for the programme from teachers, academics and members continues to grow.

Science Festivals

EWB-UK had stalls at events such as the Glasgow Science Festival. We reached 2,233 school children at events like this.

Quantity & Quality

Our 6 most active outreach groups ran 39 workshops. Feedback from the schools was positive every time.

See where they can take you

A government campaign called 'Science & Maths: see where they can take you' featured a short film about our Chief Executive, Andrew Lamb, and EWB-UK. It is being used in schools and promoted on-line. It is a useful resource for our volunteers for school assemblies.

www.ewb-outreach.org.uk

We now have a dedicated outreach website where teachers and volunteers can preview our workshops and feedback with ideas.

Training

The Outreach Programme trains its volunteers every year. Hosted by EWB Cambridge, this year's event was joined by 13 EWB-UK branches. Key activities were sharing ideas and a session by Joy Warde, outreach officer at Cambridge's Engineering Department.

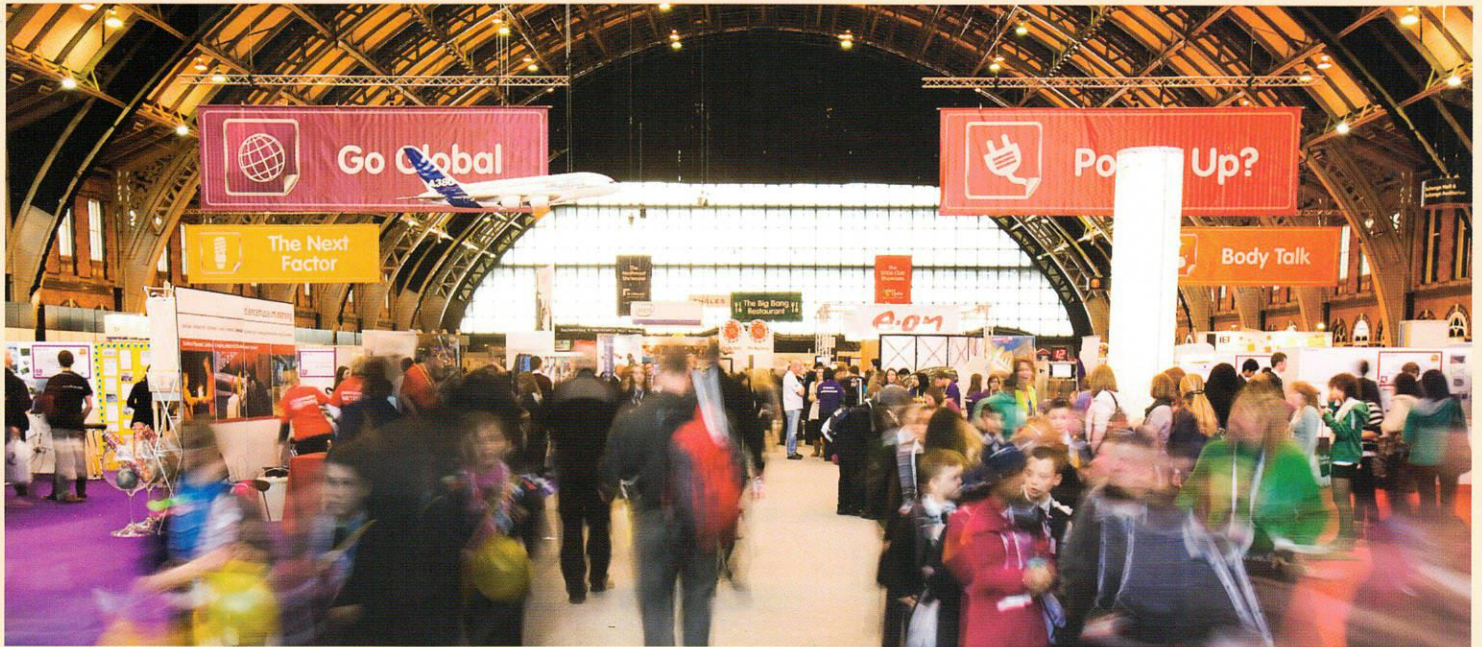
Photographs from the field

Discover weekend in Bristol was supported by EWB Bristol and its Solar car workshop



Collaborate / Connect

- The origins of the Outreach Programme were in our university branches. As more and more branches began delivering school outreach, we began to support this area of activity in our programming.
- Each workshop is delivered by volunteers who maintain their own contacts in schools. They are branch members working with their local STEMnet contact, university volunteering scheme or departmental outreach officer. And they are engineers who want to promote careers at their children's school or who work at engineering companies that give their staff time to volunteer in the local community.
- Workshops themselves are developed in a similar way to, say, a Wikipedia page: someone begins with a concept and starts sharing it with others, who collaborate and refine the workshop until it is more or less complete. Each time a new workshop is delivered, the experience is fed back into the workshop materials.



Big Bang Fair

Volunteers from EWB Manchester delivered hands-on outreach workshops back to back at the UK's largest event for future engineers - the Big Bang Fair.

The Outreach Programme was alongside many big names in STEM outreach, situated in the 'Go Global' section, and shared the platform with the outreach team from Bloodhound SSC - the fastest ever car.



Photographs from the field

All outreach workshops are tested by our volunteers before they are delivered in schools.



EWB Canada's 'Water for the World' was our first outreach workshop and is still popular, with water filters made from bottles and sand.



Developing Intermediate Education Materials

EWB Edinburgh have been developing teaching materials using local resources to enable science and engineering principles to be taught in developing countries. Rather than depending on access to science laboratories or computers, Project DIEM teaching materials use tin cans, wood and string to demonstrate the principles behind a micro-hydro turbine, a suspension bridge or a ceramic water purifier.

Teams have been working throughout the year and gave a weekend training course attended by other branches. They have developed some inventive teaching experiments.

Engineers Without Borders UK is an international development organisation that removes barriers to development through engineering.

Our programmes provide opportunities for young people in the UK to learn about technology's role in tackling poverty.

We support partner organisations by providing them with young engineers to help them with their projects.

We have a vital network of branches at universities across the UK, where volunteers run events and activities for their members and communities.

Professional engineers get involved to lend their expertise to our work.

By taking part in our activities our members are making a difference to people's lives around the world.



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