Humanitarian Challenges in Developing Countries

The Work of Engineers for Overseas Development in sub-Saharan Africa
• **Ian Flower** - EFOD Managing Director

• **Dan Flower** - HKS Architects – Design Director
  - EFOD Architectural Consultant
So Who are EFOD?

- We are a small Charitable Company
- We exist to Enhance the training of young members of the Construction Industry
- We have no staff, all are volunteers
- We have 6 Branches in the UK managed by 2 Directors
- **We challenge Teams to undertake Humanitarian Aid projects** for some of the poorest in sub-Saharan Africa
- So People Development is what we do
So What do our Volunteers do?

- They **work as a team** to deliver a solution to a problem
- They research the problem in sub-Saharan Africa
- They design and cost a solution
- They raise funds and plan construction
- They make around 8 site visits in pairs for just 2 weeks
- They hire labour & supervise construction & commission
17 year - 29 Humanitarian Aid projects delivered
Continuity & Growth

- We now have 6 Branches across the UK
- We now deliver around 2 projects each year
- We’ve had over 300 overseas visits lasting 2 weeks
- We’ve spent over £900,000 on 29 schemes in Africa
- We’ve worked in The Gambia, Uganda, Ghana & Zambia
- Over 800 people in the UK have been involved in schemes or fundraising
So how did EFOD start?

• 17 years ago in Cardiff the Institution of Civil Engineers Wales were challenged to build latrines in Banjul in The Gambia during a lecture on Simple Sustainable Sanitation in the 3\textsuperscript{rd} World
• 6 Civil Engineering graduates volunteered to help
• We raised £6000 for construction & the volunteers raised funds for their own flights & accommodation
• They researched appropriate Sanitary provision
Downtown Banjul, The Gambia 2000

Over 10 weeks engineers visited site in pairs for 2 weeks at a time…
Downtown Banjul, The Gambia 2000

… they hired labour, bought materials and supervised construction….
We learned how to cast our own concrete blocks…

Downtown Banjul, The Gambia 2000
Downtown Banjul, The Gambia 2000

… and commissioned two 4-cubicle latrine blocks in a deprived area
Downtown Banjul, The Gambia 2000

... and we celebrated!!
So Why Found EFOD?

February 2000

EFOD
ENGINEERS FOR OVERSEAS DEVELOPMENT

redr uk
people and skills for disaster relief

1980

2001

ENGINEERS WITHOUT BORDERS
UK
Benefits for EFOD Volunteers

- They have to take responsibility for scheme delivery
- They have to think on their feet
- They have to go back to engineering first principles
- They learn to plan & design
- They learn to hire labour and to buy materials
- They have to pay the men every day & balance the books
- All develop, some end up as leaders
- And so do some of our local workers
An Established Format

People Development of all those involved through Humanitarian Aid
Latrines near Mbale, Uganda 2001

Latrine & sanitary block
Mbale festival Ground
Hospital Incinerator, Masaka, Uganda, 2003

Hospital Incinerator
£10,000
Research-led Design
Hospital Incinerators
Uganda 2005-07

Hospital Incinerators
£10,000 each
Innovative Design

Soroti 2005

Atatur 2007
£110,000
300sqm
Poly-Clinic
Consulting Rooms
Dental Suite
Laboratory
Malarial Wards
Minor Op’s Theatre
£75,000
6 buildings
Housing 82 orphans
EFOD Growth
EFOD WM - Koutulai Mill 2012

£10,000
Grain Mill
Office & Store
Koutulai Village Hall, Latrines & Grain Store 2012-16

Mill & Store
Composting Toilets
Borehole
Community Hall
Grain Store
EFOD North West
Grain Store 2014

Mam Riang
Women’s Charity Group
£27,250
£11,500 Travel
420 Sack Store
130 sqm
c. £300/sqm
EFOD Apprentice Group
Grain Store 2013-14

Kachumbala Charity Farmers’ Group
£38,000
Sack store & Mill
900 bag capacity
EFOD Cardiff 2013-14
Malera Borehole

£28,000
Potable water:
• 4,000 people
• 5,000 animals
Solar Pumped water
EFOD North West
Kathy’s Centre, Jinja, Uganda, 2016

£68,000
Creche/Playschool Laboratory Welfare Unit
Kachumbala HC3 Maternity Unit
Uganda 2014 - ongoing

£100,000 Unit
2 delivery suites
12 bed ward
Mararia Separation
KABWALI grain mill
APPROPRIATE TECHNOLOGIES
**Step 4**
Place red hollow concrete block over rebar and set into position with mortar.

**Step 5**
Place two more blocks over the rebar and add concrete into the block holes up to half way of top block and ensure compaction with use of a compaction rod.

**Step 6**
Attach 1.2 m length main rebar to each kicker rebar with wire.
SOROTI medical centre

SOROTI medical centre
KACHUMBALA grain store
Arrival & Labour
FIONA’S story
What will their story be?
So what comes next?

- EFOD Cardiff adopted Faith School for 500 village primary pupils as their next project.
So what comes next?

EFOD NW are considering adopting Jenga Coffee Warehouse & Roastery as their next project.
EFOD Structure & Insurances

- EFOD is a Limited Liability Charitable Company
- Annual turnover is £100,000-150,000pa
- Insurances are our major overhead after travel
- In the eyes of the law we are all employees
- We carry PI Insurance as a D&B contractor together with:
  - Group Travel
  - Public Liability
  - Employers Liability
  - Trustee Liability
- And we work to manage risk
Lessons learned
Health & Safety

2000
Lessons learned
Health & Safety

2015
Lessons learned
Volunteer Safety
Lessons learned
Fundraising
Lessons learned
Sustainability – ISSB’s Interlocking soil stabilised blocks
Lessons learned
Sustainability-Water
Lessons learned
Sustainability-Solar
Lessons learned
Project Selection

- Care needed - we need to ensure continued project use
- We have to comply with our registration with Charities Commission & Companies House
- There are restrictions on who we can work for. So Charities, NGO’s and sometimes Government Departments
- In Uganda we have a support system for transport, accommodation & assistance around Mbale & Soroti
- Board Members have responsibilities for what EFOD do
Over 4 years, all 4 Groups interviewed confirmed housing, education, lighting and clothing had improved significantly.
So what did we achieve in 2016 & 17?

We had 36 visits to Uganda during last year, 6 so far this year and saw some interesting sights.
So what did we achieve in 2016 & 17?

We saved lives repairing the Mbale Neonatal Ward electrical backup system
The Welsh Government First Minister visited Kachumbala Mill & Grain Store in 2014
Significant visitors

Minister of Health visited and Kachumbala Maternity Unit in 2016
Volunteer Teams
So have we made a difference?
Both our volunteers and our partners confirm an improvement to their lives through the work of EFOD, demonstrating the success of using Humanitarian Development & Aid to enhance the training of staff from the Construction Industry.

Thank you for listening
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Any Questions?
EFOD has had a big impact on the Midlands Buildings group, with many of our young graduates participating. They gain highly valuable and enriching experience through early exposure to real responsibility in an engineering construction context. On top of this, they get to experience the challenge of working with people of completely different cultures. This broadens their perspective and they return as better engineers and people.

David Storer  Director  Arup