




Sharing skills  
Changing lives

*Annual Review 2017 / 2018*



*Christian Engineers in Development  
Annual Review  
April 2017 to March 2018*

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*A grey day in Bugasera, Rwanda  
Front cover: discussing a simple pvc pump at RHEPI, Rwanda.*

# Letter from the Chair

As we look back and reflect upon another year we have much to give thanks for. **Through God's hand CED has been able to bring about positive change in the lives of many individuals overseas.**

CED has no paid members of staff and no full-time workers. Every one of our members is a volunteer. Many members are in full-time employment. Almost all of our members have many other commitments in their churches or elsewhere and fit in work for CED in their spare time. This sometimes brings frustration to us, as our project execution can often take much longer than we would wish; this is frequently exacerbated by the challenges we face in seeking project funding, particularly for **larger projects. On the other hand, CED's** voluntary status allows us to execute projects in a very cost-effective manner, with extremely low overheads. The amazing thing is that little by little, slowly, slowly, projects are conceived, then become approved, and are then executed and commissioned; and the benefits are realized, sometimes years after we had expected or hoped for. **Someone once said "God is not in a hurry"!** A typical example has been the Rwentamu project in Uganda. After some years of waiting for project funding, including an **unsuccessful bid through DFID's UK Aid Direct Community Partnership Fund**, we received multiple tranches of funding for the project and were able to commence construction just before the end of 2017. The project was then executed within a matter of months.

As Christian Engineers in Development, it is always amazing to see what God will do, often when we almost expect it least. The past financial year has seen the completion of the Kisya Kagaana project, making a

significant positive impact in the community that the project serves. At the end of the financial year we have a significant number of projects that are either in their inception, early development or just starting to commence project execution.

One of the challenges we have faced in the past year is moving our thoughts about **CED's strategic direction into concrete** action. We plan to increase our effectiveness in changing lives by:

- ◆ Enabling more members
- ◆ Developing partnerships (in UK and overseas)
- ◆ Applying technologies that are appropriate and self-replicating
- ◆ Improving the selection and execution of projects

We have set up small sub-teams to work on each of these key focus areas. But progress has been somewhat slower than we would have desired. Yet, some small steps have been taken (for example exhibiting at the Big Church Day Out in May 2018) and we are waiting to see what positive impact these steps may have. Please help with the **implementation of CED's vision; if you are unable to help practically, please pray.**

*Mike Beresford*



*CED at the Big Church Day Out*

# Membership

We had 72 members at the end of March including three new people since the last Annual Review was published. A fourth has joined very recently taking the membership to 73.

Collin Cole joined in 2017. He is a Computer Engineer living in London who started with a degree in Library Studies and now works for Microtechs Services Ltd.

Calum Watkins attended the CED Scotland group meeting in Inverness in November 2017 with his friend from Strathclyde University, Jonathan Truslove who joined in 2015. Calum joined CED in February 2018. He is completing a Masters in Mechanical and Electrical Engineering and is now going overseas for a few months.

Chris Seager also joined CED in February 2018. He is a Chartered Civil Engineer who has 40 years experience in rail engineering both with consulting engineers and client organisations such as Network Rail. He lives in Egham, Surrey and belongs to St John's



*CED at the Big Church Day Out*

Church, Egham which has links with Iringa in Tanzania.

Our most recent new member is Geraint Davies, a Chartered Mechanical Engineer with 12 years experience living in Southampton. He belongs to Locks Heath Free Church and has volunteered with Brass Tacks Organisation four times in Zambia and DR Congo.

*Rob Wakeling*

# General Data Protection Regulation

Most CED members and supporters will have been inundated with emails about GDPR. The regulation is complex and organizations have tackled it in different ways. CED is a network of professional engineers and allied professions that relies on matching the skills and experience of its members with the needs of our partners overseas. Members' personal data including name, postal address, email address, telephone number, professional skills and experience and current availability/ personal status are therefore retained for the purpose of discerning their appropriateness for work – both home-based and overseas. Prayer is an important part of CED's function.

Members are asked by email to share prayer requests every month and no specific additional consent is sought for these purposes.

For recipients of CED's publications by post (twice yearly newsletter and annual review), CED relies upon the principle of 'legitimate interest'. We hold your name and address on a database and will not give this to third parties. We are happy to remove the details of anyone who requests this but otherwise will continue to mail you on the basis that:

- CED's publications provide updates on its work for information, for thanksgiving and for prayer.

- The regularity of the mailing is infrequent.
- CED verifies that recipients wish to receive the publications before their details are added to our mailing list. On that basis, there is a high level of confidence that recipients wish to receive the information.
- Recipients have the right to opt out, clearly displayed on all publications.

the data subjects whose personal data is stored for mailing purposes.

**For all recipients of CED's publications by email we consider verifiable consent a requirement. This includes the distribution by email of CED's monthly Prayer Points. Please confirm your "opt in" if you have not already done so, or apply to receive PrayerPoints.**

In summary, there is a good balance between CED's interests and the rights and interests of

*Mike Beresford*

## ***CED looking forward...***

At the CED directors' retreat in 2016 we sought God's will for the organisation's future. The first question was a very basic one. Should CED continue to exist? The Directors felt that CED makes a difference to the lives of some of the most vulnerable people in the world. We sometimes feel frustrated that CED isn't able to do more. Our time together helped us to clarify why we exist and what we should focus upon, as follows:

### ***CED's Purpose:***

*CED exists to demonstrate the love of Christ by enabling Christians with engineering and allied skills to help the poorest communities overseas.*

### ***CED's Vision for 2020:***

*We will increase our effectiveness in changing lives by:*

- Enabling more members
- Developing partnerships (in UK and overseas)
- Applying technologies that are appropriate and self-replicating.
- Improving the selection and execution of projects.

As part of the follow up to this we felt it necessary to develop a new logo and strapline that summarized our approach. "Sharing Skills; Changing Lives" was chosen, encapsulating our intention to use our God-given gifts to transform the lives of the world's most vulnerable people. The logo took some time to develop and the final version was designed by Paul Bell, the son of our newest director Ian Bell. The logo affirms our Christian identity; it also suggests both the water projects that constitute a sizeable proportion of our project portfolio, as well as Jesus, the 'living water' for whom we are ambassadors.

*Mike Beresford*



**Sharing skills  
Changing lives**

# East Africa Hydropower

The western part of the Great Lakes region has significant hydropower potential. The terrain is generally hilly and the mountains of the region influence the climate, resulting in high annual rainfall. There are many rivers and a lot of them have significant elevation drops as they leave the mountains.

The potential for hydropower has long been recognised and in recent years some new schemes have been constructed – encouraged by governments keen to improve access to energy for their people.

Large hydropower schemes are multi-million dollar projects and are well beyond the scope of an organisation such as CED. Smaller hydropower schemes (known as micro hydro power, or MHP schemes) are still substantial multi-disciplinary projects involving many stakeholders. CED is fortunate in that we have several members who have (between them) a wealth of experience in the assessment, design and construction of such schemes.

**Over the past 18 months we've made links** with two hospitals in rural western Uganda – Kisiizi Hospital and Kagando Hospital. Both are run by the Church of Uganda with some assistance from support groups here in the UK. Both of these hospitals are isolated, unconnected to the national grid.



## Rubabo Hydropower Project:

Kisiizi Hospital already has its own hydropower scheme but is now finding that its power requirements are greater than the scheme can provide. CED have provided some outline design input into a possible additional hydropower scheme and have carried out some surveying work in the river valley to identify intake and power house locations. At present we are overseeing the collection of **river level data so that in a few months' time** we will be able to prepare a hydrology study.

## Rwembya Hydropower Project:

Kagando Hospital relies entirely on a diesel generator for its power – very expensive. A previous venture into hydropower did not go well and was never commissioned. CED have now signed a Memorandum of Understanding (MoU) with KARUDEC Hydro Power Ltd (KHPL – the company set up by the hospital to manage the procurement and operation of the scheme), and member Jonathan Cox has been working hard on the feasibility stage. A hydrology study is about to be issued and this will pave the way to the production of the energy study – a prerequisite to obtaining funding and all the necessary approvals. Jonathan visited Kagando in April and will make further visits for detailed discussions about the Environmental Impact Assessment.

At this early stage in the development of these projects, CED has made available some “seed funding” to allow progress to a stage where funding applications can be made to potential donors or lenders.

The Board wishes to thank the following members for their input into these projects: Jonathan Cox, Paul Darrall and Edward Rhodes. Other members who are keen to get involved should get in touch with Jonathan Appleby.

*Jonathan Appleby.*

## Rwentamu, Uganda

Following completion of the Rushere project in 2014, staff from the North Ankole Diocese of the Church of Uganda were tasked with identifying the most water-stressed places in their region. The diocese is in Kiruhura District where only 36% of the population have access to safe water, far below the average for rural Uganda (65%). They identified two locations which CED's part-time Ugandan engineer Philip Tibenderana assessed. CED then selected the village of Rwentamu where 2,000 people draw their water from open ponds. CED considered how best to provide a year-round improved water supply. Groundwater is not an option because of the local geology so a form of surface water reservoir is needed. CED has a proven design called a "charco-cum-valley" tank which captures rainwater flowing down through the valley. The design incorporates a settlement pond where larger particulates and sediment settle out from the surface water before it passes into a larger storage area. From here the water flows by gravity through a gravel filled channel into a shallow well. The community is able to pump water using a hand pump from the well into jerry cans for domestic purposes.

The concern for Rwentamu had been that it has a very large catchment area (c. 20km<sup>2</sup>), more than twice the size of any charco-cum-valley tank previously installed by CED. However, after visiting the site on a number of occasions, we satisfied ourselves that the risk of severe flooding in the valley was low.

Towards the end of 2017, after a number of



Charco-cum-valley tank excavation

funding setbacks, we received large donations for the project from Life Trust and Wilmslow Wells for Africa. Philip Tibenderana quickly organized the final drawings and paperwork for quotations with plans to start construction early in the new year. Shortly after Christmas we received the wonderful news about a substantial award from the Overseas Aid department of the States of Guernsey. This meant that the project was over-funded, allowing us (with the consent of the donors) to re-allocate funds from Life Trust and Wilmslow Wells for Africa to the Mayenge Project in Rwanda.

CED Director Ian Bell visited the project in February to assess progress. Soon after his visit we heard that construction had been completed and water had started filling the reservoir (see photos). The local Diocesan Health Officer has now completed health and hygiene training. Discussions are being held to consider how the sanitation promotion elements of the project can best be implemented.

Many thanks to Philip Tibenderana for all his hard work supervising the contractor; and to Ian Bell for travelling to Uganda to monitor project progress.

Mike Beresford



Charco-cum-valley tank part filled

## Rwanda

Just over two years ago CED set out to re-establish links in Rwanda. This last year has been one of progress and setbacks, highlights and disappointments, but one which has ended in what is hoped is the start of a new era for CED in Rwanda, through co-operation with Faith Center Ministries (FCM) and Rwanda Health Environment Project Initiative (RHEPI).

The main focus has been on the returnee/refugee community in Mayange in the District of Bugesera. Following discussions with the local authorities and the community, this developed into a project to serve the 50+ houses of the village by installing household rainwater harvesting systems, kitchen gardens and some minor home improvements. As always, one of the biggest challenges once a project need is established is to find the funds. Two approaches were made to separate DFID funds and one to the Scottish government, all without success.

**“Where do we go from here?”** we asked ourselves. However, several other sources, not previously part of our funding strategy, came up with funding contributions to this



L to R: Rob Hoy, Littlestone Charitable Trust, James Rubakisibo, RHEPI, Pastor Charles Semwaga, FCM, Alan Michell, CED, in Kigali.

project. We give thanks to The Littlestone Trust, Wilmslow Wells for Africa and Life Trust for their support. Other sources of funding are also in progress.

During the visit in March by Ian Rankin and Alan Michell, an MoU was signed by CED, FCM and RHEPI that would enable the project to **start during this summer’s dry season.**

However, another setback had to be faced. Just three weeks prior to the visit a violent storm had damaged 15 of the 50 house roofs and walls, leaving us with a separate challenge to manage these repairs before the main project work could start. In May the first of the house repairs was completed and a start on the Main Project is imminent.

Other contacts and potential projects continue to be developed. These include a training course in rainwater harvesting for participants from the Democratic Republic of the Congo, to be held in Kamembe under the jurisdiction of the Cyanguu Anglican Diocese of Rwanda and working with RHEPI and another local charity Life in Abundance, a drainage project for Star School in Kigali and links with the Anglican Diocese of Byumba in the north of Rwanda.

Alan Michell

## Sierra Leone

Since establishing a link with Practical Tools Initiative (PTI) in 2016, CED has visited Sierra Leone twice, most recently in February 2018



Typical water supply at Gbonka Village, Sierra Leone



when Steven Harris and Alan Michell made a follow up visit to the village of Manowa in the Eastern Region where a gravity feed water distribution project is under development.

Further discussions were held with the local community leaders and with the Sierra Leone branch of Engineers Without Borders (EWB) who are assisting us with the technical survey aspects of the project. When we receive a final report from EWB, CED will develop a full project specification, leading to funding applications. In the meantime, a detailed health survey has been undertaken by PTI volunteers from Havant including some local training of the villagers in good health and hygiene practice. PTI are also working at obtaining separate funding for the provision of



*The Christian and Muslim community leaders gathered to meet the CED Team*

community latrine facilities for Manowa.

Other contacts and projects under consideration are a borehole water supply for the village of Gbonka near the international airport at Lungi in conjunction with Pastor Esther Onwuma and we have a new enquiry from Pastor David Keifala for a water supply project to the village of Rotifunk, a community of 12,000 located south of Freetown in the Eastern Region.

*Alan Michell*

## ***Chato, Tanzania***

Last year we reported on proposals to work with the District Water Department in Chato, northwest Tanzania. As so often happens, between the visit of Rob and myself in January 2017 and Mike Yallop's visit later in the year, much had changed!

A new District Water Engineer, Maria, was in post, and several keen young graduates had been recruited by the Department. A list of water supplies that required repairs had been drawn up along with estimated costs. Having considered this list, Mike selected five as priorities and proposed that CED arrange purchase, through our partner Kwa Pamoja in Mwanza, of parts required plus other useful spares to the value of £5,000. The hope is that this gesture of **good-will on CED's part** shows the Department that we are serious in our offer to support them and that this will

lead to a good working relationship.

It has taken several months to get the MoU agreed and signed, but this is finally done (thank you to those who prayed!) and now Ian Rankin is busy trying to organise purchase of parts so that these can be formally handed over to the Department when he visits later in the summer.

We hope that this is just the start of our contribution to the development of water supplies in Chato.

*Barbara Brighthouse.*



*Existing water supply, Kasala, Chato.*

# Financial highlights April 17 - March 18

The bulk of project spending in the year was devoted to the Rwentamu project in Uganda. Also in Uganda work continued on the completion of Kisy-Kagaana and on flow measurement at Rubabo. There was preliminary survey expenditure at Manowa in Sierra Leone. Details of all project transaction are set out in the table below.

We were fortunate to receive £43,061 to be used for the funding of projects. Major grants were received from the States of Guernsey (£19,450), Wilmslow Wells for Africa (£5,000) for Rwentamu, and the charity Life Trust (£15,000) for Mayange.

CED contributed £9,030 from its own funds to support work in Sierra Leone and Uganda.

Ref/ce	Project Name	b/f	Income	Payments	Transfers	c/f
RW 08	Mayange rainwater harvesting		15125			15125
SL 01	Manowa gravity feed water supply		250	-1180	930	0
TZ 11	Kiwengwe water supply		1736			1736
UG 00	Uganda unallocated	179		-15		164
UG 35	Kisy Kagaana gravity water supply	709	1500	-6309	4100	0
UG 37	Rwentamu Charco-cum-valley tank	2195	24450	-34338		-7693
UG 39	Rubabo hydro scheme			-4159	4000	-159
		3083	4361	-46001	9030	9173



Pump at tank, Rwentamu, Uganda

## Potential Partnership in Bangladesh

We were contacted in March 2018 by representatives of LAMB Hospital, a 150-bed hospital located in Dinajpur District in North-West Bangladesh. Their focus is on serving the poor. (See <http://www.lambproject.org>). They have requested help and consultancy advice regarding their infrastructure and facilities. Subscribe to PrayerPoints for updates!



Lamb Hospital, Bangladesh.

# Financial Activities Year Ended 31 March 18

The finances of CED are very strong, thanks to the receipt of a major legacy from the late Mr William Beak, a supporter.

Unrestricted fund voluntary income was increased by comparison with 2016/17. Restricted fund voluntary income was down, reflecting the reduction in project activity, but grants were higher as funding was sought for the Rwentamu project.

The expenditure picture was also influenced by the lower level of project activity financed from restricted funds. Unrestricted fund expenditure on travel was higher as visits were made to develop future potential projects, but administrative and publicity spending was down. Generally the costs of managing the charity are kept low as most activity is undertaken on a voluntary basis.

*Bill Harper, Treasurer*

	Unrestr'd Funds £	Design'd Funds £	Restricted Funds £	<b>Total 2018 £</b>	Total 2017 £
<b>Incoming resources</b>					
<b>Incoming resources from generated funds</b>					
<b>Voluntary income</b>					
Donations and gifts	19,422	161,712	3,860	<b>184,994</b>	30,647
<b>Incoming resources from charitable activities</b>					
Grants			39,450	<b>39,450</b>	15,000
<b>Other income</b>	29	535	20	<b>584</b>	313
	<b>19,451</b>	<b>162,247</b>	<b>43,330</b>	<b>225,028</b>	<b>45,960</b>
<b>Resources expended</b>					
<b>Costs of generating funds</b>					
Costs of generating voluntary income	697			<b>697</b>	1,742
<b>Charitable activities</b>					
Costs associated with engineering activities	9,510		47,381	<b>56,891</b>	100,540
<b>Governance costs</b>	3,426			<b>3,426</b>	2,412
<b>Total Resources Expended</b>	<b>13,633</b>		<b>47,381</b>	<b>61,014</b>	<b>104,694</b>
Net Incoming/(Outgoing) Resource before Tr'sfers	5,818	162,247	(4,051)	<b>164,014</b>	(58,734)
Transfers between funds	(4,930)	(4,100)	9,030	-	-
Net Incoming/(Outgoing) Resources	888	158,147	4,979	<b>164,014</b>	(58,734)
Balance brought forward at 1st April 2017	9,308	39,969	11,932	<b>61,209</b>	119,943
Balance carried forward at 31st March 2018	10,196	198,116	16,911	<b>225,223</b>	61,209

*CED exists to demonstrate the love of Christ by enabling Christians with engineering and allied skills to help the poorest communities overseas.*

*We invite supporters to become involved through:*

- *Praying regularly for CED*
- *Raising the profile of CED*
- *Making donations*
- *Fundraising for specific projects.*

**Enquiries to CED Secretary:**

*Mrs B. Brighthouse,  
Lydia Mill,  
South Brent, Devon, TQ10 9JL  
Email: [admin@ced.org.uk](mailto:admin@ced.org.uk)*

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*Survey at Rwentamu, Uganda*

