

SHARING SKILLS
CHANGING LIVES



CHRISTIAN ENGINEERS IN DEVELOPMENT
Annual Review 2021/2022

Christian Engineers in Development

Annual Review to March 2022

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CED is a Christian professional consultancy service dedicated to development work in partnership with overseas communities.

Executive Committee:

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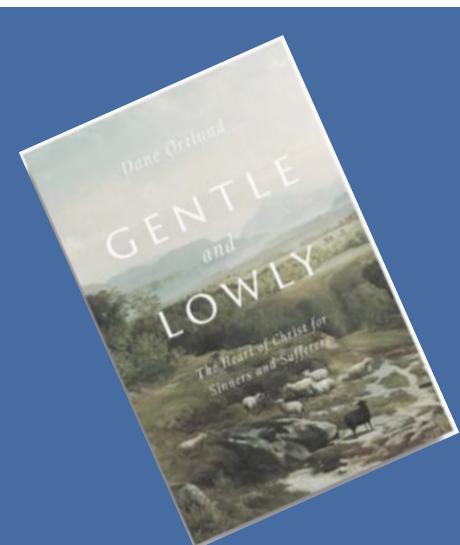
Above: Hydro weir after flood damage, Rwembya, Uganda

Front cover: Installing Clariwash plant, Kagando, Uganda

Welcome from the Chief Executive Officer

Welcome to the 2022 Annual Review! I'm reading a book just now which is entitled "Gentle and lowly: The Heart of Christ for Sinners and Sufferers". The author, Dane Ortlund, makes the point that there is only one place in the four Gospel accounts where Jesus tells us about his own heart – in Matthew 11:28-30. Now, in biblical terms, the heart is the centre of who we are, so our heart is what really defines us and directs our lives. And Jesus tells us that he is "*gentle and lowly in heart*". What does that mean? Well, Dane Ortlund explores that in the rest of his book (which I highly recommend) drawing on the writings of the Puritans of 17th century England. But without a doubt "*gentle and lowly in heart*" includes being open-armed, being welcoming, being accessible. "*Come to me, all you who weary and burdened, and I will give you rest*" says Jesus in Matthew 11:28.

As Christians we are called to be imitators of Christ, to have our hearts renewed – to become Christ-like and to become open-hearted. That is very much at odds with the world in which we live – as a glance at this morning's news will no



doubt confirm. Sadly, the UK is anything but open-armed and welcoming to those who seek refuge here. And our politicians are hardly role-models when it comes to humility.

But we are blessed to have a monarch who is a Christian and understands the heart of the Christian message. Here is what Queen Elizabeth said in her Christmas message in 2014: "*For me, the life of Jesus Christ, the Prince of Peace ... is an inspiration and an anchor in my life. A role model of reconciliation and forgiveness, he stretched out his hands in love, acceptance and healing. Christ's example has taught me to seek to respect and value all people of whatever faith or none.*"

Queen Elizabeth gets it. She understands something of Jesus' words in Matthew 11:28-30. As CED members and supporters, and followers of Christ, we join with her in exploring what Jesus' words mean for us in whatever situation God has placed us, whether serving Christ here in the UK, or abroad. As an organisation, and as individuals, let us strive to be open-armed, welcoming, and accessible to all who are weary and burdened.

May God bless you richly as you serve Him.

Jonathan Appleby, CEO

From the Chair of the Trustees

"Are not five sparrows sold for two pennies? Yet not one of them is forgotten by God, indeed, the very hairs of your head are all numbered. Don't be afraid; you are worth more than many sparrows." Luke 6:7-9.

In a very uncertain world, with many countries still living with, and reeling from the effects of, Covid; with war in Europe; and, many in the UK feeling the pressures of the escalating cost of living, it is good to be reminded that we worship an unchanging God who cares for each one of us, no matter where we find ourselves in the world and to know that we worship a God who acknowledges us before angels.

"I tell you, whoever publicly acknowledges me before others, the Son of Man will also acknowledge before the angels of God ." Luke 7:10.

It has been my privilege to serve, alongside Bill Harper, Jonathan Appleby, James Fallah-Williams, Richard Franceys, Colin Gibson and Barbara in my role as the Chair of the Trustees over the past year.

I would particularly like to acknowledge the amazing contribution of Bill Harper who has faithfully served CED through thick and thin as Treasurer over the last 20 years. Not only has Bill ensured that we have remained compliant with the rules of the Charities Commission, he has balanced the books, kept us solvent (which was not always an easy task – particularly during the delivery of the £1m Pawaga project), but has also provided wise counsel on many many issues over those years. Thank you Bill! And, of course, a big welcome to David Beak who is taking over from Bill as the CED Treasurer.

As we look ahead, we must give some thought to funding. Government has cut its Foreign Aid budget, our traditional donors are having to 'slice the pie' thinner and it is becoming increasingly challenging to fund the larger

projects. The rainwater harvesting schemes in Tanzania, led by Ian Rankin, could represent a future model where CED brings its expertise (which after all was, and remains, our stated mission) and possibly provides seed funding, but little more, for projects, whilst looking to local communities and local enterprise initiatives to raise funding for their works. Over the next 6–12 months we will, as a Board, be giving serious thought as how the work of CED should be delivered and financed to be fully sustainable and to maintain its aims and, as such, would very much welcome the views of all members and supporters on this important issue.

My thanks to all who have supported and contributed to the work of CED throughout the year.

Rob Brighouse



Membership

CED membership has grown to 86 members with six new members from a variety of backgrounds since the last AGM and three more shortly before the AGM last year. We introduce them briefly here and encourage you to find out much more by meeting them when you can.

Richard Franceys introduced himself in the April newsletter.

Malcom Anderson is a geologist who specialises in ground water as a Director of Earth Fluid Solutions. He has already made himself useful with CED in Sierra Leone carrying out geophysical surveys and advising on borehole locations. His overseas experience includes significant projects in Ethiopia and Qatar.

David Beak was introduced as the new Treasurer in the April Newsletter. Before he retired in 2016 he was Finance Director at Euro Car Parts Ltd, distributor of car parts. Before that he was Director of Finance at Beko Plc. He lives in a remote part of the Lake District.

Steve Prior works full-time for Tearfund as their Technical Advisor in the Global Logistics Team. Before that he worked for a Solar Power Installation Company and before that for Send the Light Trust. He is an Electronic Communications graduate and now brings these important skills to CED.

Victor Lira is a Brazilian Dam engineer now working for Stantec in High Wycombe. He lectured in hydraulics at a Brazilian university while designing urban drainage systems and carrying out dam break analyses in Brazil.

Jonny Burns is a Chemical Engineer working for Kingspan Insulation based in Henley-in-Arden in Warwickshire. He has been designing and commissioning chemical dosing systems worldwide. He is now helping Jonathan Appleby and will be visiting Uganda soon.

Lilla Szabo is a Hungarian Landscape Architect who lives and works in Switzerland, where she



has worked for nine years. Before that she worked briefly in Germany and Turkey. She has Swiss degrees in Architecture now to add to her previous Hungarian degrees in Landscape Architecture.

Iginations Takavada lives and works in Harare, Zimbabwe for Médecins Sans Frontières (MSF). He is the Regional Water and Sanitation Manager (Mozambique, Malawi, Zimbabwe and South Africa): He has recently been involved in water and sanitation emergency work in South Africa.

Sruthi Samuel is an Indian Architect currently studying for an MSc in Cardiff University. She is an Assistant Professor in the Indira Gandhi National Open University in India. Project co-coordinator for E-Learning programmes for capacity building and training in solar application technology for African countries.

We welcome these new members and pray that they will be encouraged and fulfilled in their membership involvement with CED, giving thanks for God's leading them to join us.

Rob Wakeling



Open Day, York again, 2019; who knew it would be our last for a long time!

Letter from the CEO

From the Chair of the Executive Committee:

What has been happening in CED in the last 12 months? Here are some highlights:

After the new organisational structure was approved at the 2021 AGM, we have gradually been getting used to the new way of organising ourselves. The Executive Committee meets four times per year, and the Board meets three weeks after each Exec. Committee meeting, allowing time for reports to be prepared for the Board to consider.

The Board is very ably chaired by Rob Brighouse, who took on the role of Non-Executive Director at the 2021 AGM, as also did James Fallah-Williams. Richard Franceys and Colin Gibson have since been co-opted onto the Board as Non-Executive Directors, with the hope that the membership will be pleased to vote them both onto the Board at the forthcoming AGM on 25th June. Both Richard and Colin bring a wealth of experience to the Board, both from within and outwith CED, and we are grateful for their willingness to serve in this capacity.

As we mentioned in the last Newsletter, we are delighted that David Beak has agreed to become our new Treasurer. David is a Chartered Accountant with many years experience in business, and we are delighted that he has taken on the challenge. Bill Harper steps down at the AGM, after 20 years dedicated service, and we are immensely grateful for his work and his wise counsel over the years.

We have been pleased to welcome several new members to CED in this last year, including some from outside the UK: Lilla Szabo (Switzerland), Malcolm Anderson, Richard Franceys, Iginations Takavada (Zimbabwe) and Sruthi Samuel. It is so encouraging to see people from different backgrounds and disciplines coming together to support the

work of CED and help bring about sustainable development in the name of Jesus Christ.

The following are just some headlines from the project work which has been happening in this last year:

Sierra Leone:

The Manowa project has finally reached the implementation stage, after a long gestation period involving technical feasibility assessments and much fundraising activity by Alan Michell. Malcolm Anderson was able to use his hydrogeological experience to good effect, allowing an engineering solution to be identified and costed.

DR Congo:

Jonathan Cox and Graham Miller have been working with Rob Wakeling to implement the refurbishment of a 5kW pico-hydro installation at Lwamba Hospital, and have reached the stage of testing the assembled equipment in the UK prior to shipping out to DRC for installation later in the year.

India:

Graham Miller and Steven Harris have prepared the documentation for the proposed borehole at Sathya Veda Seminary, Kerala, and we expect to be able carry out the drilling work in the next month or so.



Uganda:

Nigel Heeler and Edwin Wasingya have finished the assembly of the new Clariwash water treatment filter and chlorine dosing for Kagando Hospital.

Jonathan Cox and Jonathan Appleby have been advising Kagando Hospital on proposals for the new Rwembya hydropower scheme to supply the hospital with reliable electricity.

Jonathan Appleby, Paul Darrall and Jonathan Cox have been continuing their work to implement the refurbishment of a hydropower installation at Kuluva Hospital.

Nigel Heeler, Jonathan Appleby and Jonny Burns plan to visit Uganda in July, to carry out further work on all three of the above projects.

Tanzania:

Ian Rankin continues to develop rainwater harvesting training and this year CED funded a course in Musoma and encouraged tank building elsewhere among previously trained artisans.

Pakistan:

The Community Led Total Sanitation project with PVDP in Pakistan came to a successful conclusion in December. CED will send someone after 12 months to evaluate the effectiveness of the approach over the longer term.

Jonathan Appleby

Tech Talks

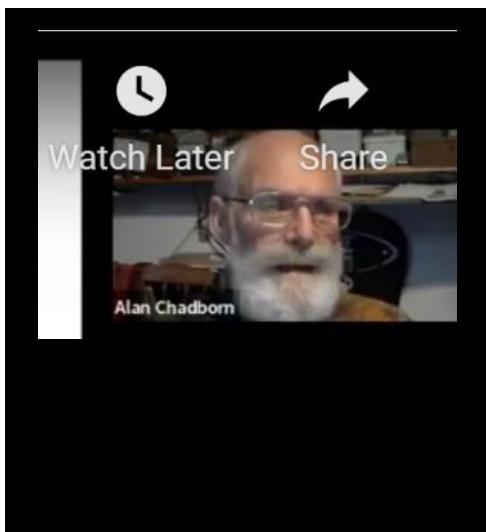
Following on from last year's series of online talks I was tasked with taking this forwards - this has been interesting, informative and fun! I have appreciated the good folks who have risen to the challenge and been prepared to present on their subject. It is not always an easy or natural thing for an engineer to undertake public speaking, but all our speakers did really well, so a big thank you from me. The second thank you goes to all the folks who joined us for our TechTalk

evenings. We regularly had 20 plus attendees from within the membership, our local churches and from wider afield. I was particularly excited when one of our talks, by Nigel Healer on his ClariWash filter system, spawned an enquiry from Indonesia that is now ongoing. For those who were unable to attend or who may want to review some content all of this seasons talks, and previous seasons, are available to watch on the CED website at <https://ced.org.uk/resources/talks/>.

I am now looking forward to pulling together a series of talks for the 22/23 season which should kick off around mid October. If you think you could contribute to the breadth of talks we put on I would be very pleased to hear from you at ruchillrover@hotmail.co.uk. Otherwise we'll be delighted to see you join us then and details of the upcoming programme will be published in the next News Letter and online.

Meantime, enjoy the summer!

Angus Armstrong



Building tanks in Tanzania

Since the initial course in Kavumu Rwanda in February 2019, we have held workshops in Kamembe Rwanda that included people from DR Congo, in Kibaha Tanzania which is now my home, in Kagera with the Church Community Mobilization Programme, in Pande and in Musoma at Tanzanian schools. We now have a mixture of individual technicians able to build tanks and groups working under the church. The Kagera group is well organized and has built tanks for schools locally and also for some elderly widows who really needed help. All the groups are keen to build more tanks, though are limited by lack of finances. We continue to present courses. The local partner provides construction materials for the tanks and a classroom and CED pays for the course itself. The courses are currently run by Leonard Safari who trained at Kagera, assisted by one or two of the previously trained Kagera masons. The hope is that the number of competent trainers will grow and eventually the tanks will become a common sight in parts of Tanzania and local demand will lead to orders.

We continue to grapple with the question of how to make tank building sustainable. The



need is there but poorer people simply do not have the funds to invest. We are looking for ways to reduce cost and have simplified the tap outlet on the small tank and omitted guttering as the recipients are often able to source second hand roof sheeting.

CED is also raising funds to allow the local people to build tanks for the poorest. If you wish to explore that option please see the article in the News section of the CED website.

Tank building continues to develop organically. We do not yet have firm goals beyond spreading the technology and looking for strategies to build continuity in a way that puts responsibility firmly in the hands of the tank builders.

Ian Rankin



Graham Johnson

One of CED's past Chairs, Graham Johnson, passed away this year. He was one of several Christian engineers with overseas careers who contributed to CED in its early days.

Graham was born in 1933 in Lancashire. His childhood hobbies, which he pursued with real intensity, included chess, photography and woodwork. His interest in maths and mechanics led him to study engineering and he achieved 1st Class Honours in Civil Engineering at Queen Mary College, London in 1954. His first job was with the UK Atomic Energy Authority but he left that in 1956. He later studied for a Diploma in Hydropower Engineering at Imperial College, graduating in 1960.

After service as a 2nd lieutenant with the Royal Engineers he joined Sir William Halcrow and Partners in 1958. He was soon working on the Strathfarrar hydro-electric project which included the Monar Dam, the largest arch dam in Britain. In 1962, with Balfour Beatty, he was responsible for hard rock tunnels in Tanzania and an earth/rock dam in Nigeria. In 1964, with the Water Development Department in Uganda, he was responsible for water conservation works, swamp reclamation and a pilot irrigation scheme. It was in Uganda that he met his wife, Jennifer. The story goes that he 'recruited' her as his crew to help sail and race his Albacore dinghy on Lake Victoria.

Immediately after the wedding in 1966 Graham re-joined Halcrow and the couple went off to Tehran where he was assigned to a British Advisory Team to the Iranian Ministry of Water & Power. Between 1971 and 1973 he was engaged on a study of a reservoir to regulate the River Dart; he also provided the engineering direction for a major irrigation project in Brazil.

In 1973 he was responsible in Thailand for an irrigation rehabilitation study and later for the contract design of flood control works on the River Wampu, North Sumatra. In 1974 he was



appointed Project Engineer for the Craig Goch Project in Wales and in 1975 Project Manager for flood protection works in Honduras. He became responsible for Halcrow's water engineering section in Latin America.

He joined the Halcrow board as an Associate in 1977. When he retired in 1994 Graham continued to contribute to church and wider community life. He was treasurer and church warden at his church in Abingdon and involved in the Berks and Wiltshire Canal Trust as well as with CED which he chaired ably for 3 years.

"Graham led a long and very full life. He was a faithful Christian; his faith was a core part of who he was and guided his thoughts and actions. He was a kind, patient and generous man, and will be missed."

Eddie Thomas with Adrian Johnson



Project Highlights April 21 - March 22

Democratic Republic of Congo:

- Advice and assistance with the refurbishment of a pico-hydro scheme at Lwamba Hospital (£1,913).

Pakistan:

- Working in partnership with PVDP a scheme was completed to improve sanitation, strengthen water security and promote good hygiene practice (£33,475).

Rwanda:

- Work was successfully completed on the project in Mayange to strengthen water supplies, introduce rainwater harvesting, promote the cultivation of kitchen gardens and undertake house repairs (£4,423).

Sierra Leone:

- Arrangements were made to drill exploratory boreholes in the village of Manowa prior to the development of a water supply scheme (£18,230).

Tanzania:

- Rainwater harvesting workshops continued using a team of previously trained workers - Kagera Diocese (£387) and Musoma (£4,493).

Uganda:

- Engineering advice and start-up funding was provided for a small hydro-electric scheme at Kuluva Hospital (£425) and further design work was carried out at Rwembya for a hydro scheme aimed at serving Kagando Hospital (£3,325).
- Work was undertaken to install the first phase of a Clariwash water filtration system at Kagando Hospital (£25,173).

The Board was grateful to receive grants from UK Aid for the project in Pakistan and from the Friends of Kagando Hospital for the work on the Rwembya scheme.

		B/F	Income	Payments	Transfers	C/F
CN 02	Lwamba hospital electrical systems advice			-1913	1913	
PA 08	Tharparkar health and sanitation - UK Aid funded	5,364	28,581	-33,475		470
RW 08	Myange water supply and rainwater harvesting	1,120		-4,423	3,303	
SL 01	Manowa water supply		1,712	-18,229	16,517	
TZ 16	Kagera rainwater harvesting tank building			-387	387	
TZ 19	Musoma rainwater harvesting training			-4,493	4,493	
UG 00	Uganda general costs	136	116	-7,188	7,000	64
UG 40	Rwenbaya hydro scheme		6,713		-3,325	3,388
UG 42	Kagando Hospital water treatment installation	2,784	4,200	-25,173	18,189	
UG 43	Kuluva hydro scheme			-425	425	
		16,117	34,609	-99,031	52,227	3,922

Overall Financial Situation

The finances of CED have been in a strong position since receipt of a legacy in 2017.

Transactions in 2020/21 were inevitably affected by the coronavirus restrictions and it is pleasing to report that activity returned to more normal levels in 2021/22 despite continuing limitations on international travel.

The level of donations from supporters and other individual donors remained at a high level. The generosity of many individuals, churches and charities who regularly support us is greatly valued.

There was minimal spending on overseas travel, which would normally cost several thousands of pounds as members visited active and developing project sites. Running costs remained low as costs for meeting accommodation and travel were not incurred. The Board meetings and the AGM were held online.

Spending on Fundraising and Publicity reduced as exceptional costs in 2020/21 were not repeated.

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 £	Total 2022 £	Total 2021 £
Incoming Resources					
Incoming resources from generated funds					
Voluntary income					
Donations and gifts	21,242	-	5,912	27,154	29,616
Incoming resources from charitable activities					
Grants	-	-	28,581	28,581	30,364
Other income	1	51	116	168	677
Total Incoming Resources	21,243	51	34,609	55,903	60,657
Resources expended					
Costs of generating funds					
Costs of generating voluntary income	533	-	-	533	1,365
Charitable activities					
Costs associated with engineering activities	2,112	-	99,031	101,143	52,480
Governance costs	1,680	-	-	1,680	1,680
Total Resources Expended	4,325	-	99,031	103,356	55,525
Net Incoming / (Outgoing) Resources before transfers	16,918	51	(64,422)	(47,453)	5,132
Transfers between funds	(17,000)	(35,227)	52,227		
Net Incoming / (Outgoing) Resources	(82)	(35,176)	(12,195)	(47,453)	5,132
Balance brought forward at 1st April 2021	10,126	149,950	16,117	176,193	171,061
Balance carried forward at 31st March 2022	10,044	114,774	3,922	128,740	176,193

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:

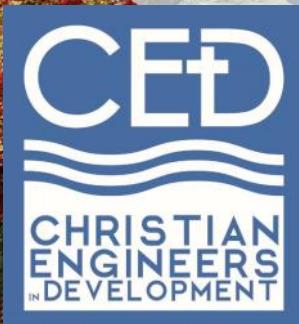
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Christian Engineers in Development

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**SHARING SKILLS
CHANGING LIVES**

Rainwater harvesting training course, Musoma, Tanzania.

