

# NEWSLETTER KUMI HOSPITAL UGANDA

NEWSLETTER NO

# 05-'23

- The HEPA Air Renewal System
- EFOD LONDON
- International Prosthetics & Orthotics Day
- Dr Charles Viva RIP



## Article 1

# The HEPA Air Renewal System

The Kumi Ongino hospital has received a new air treatment system for the operating theater. Van Dorp Installations, together with its sister company Van Galen Projecten, replaced the installations for the operating rooms of the Flevo-Hospital in Almere. The Flevo-Hospital has made the old insufflation hoods of their operating rooms available. The Orange Climate Group has adapted these and made them suitable for the hospital in Kumi. The installation is complete with air handling units, cooling machine and ducts sent to Uganda. Unfortunately, the Corona virus has thrown a spanner in the works and has delayed transport. In 2023, a team of Van Dorp volunteers assembled and commissioned installations on site. A Solar power installation was also installed to compensate for the extra costs.



Van Dorp / OC Verhulst took care of the shipping and installation (including materials and technicians).

The air renewal system that our hospital now has in the operating rooms is equipped with HEPA filters and top cooling.

HEPA (High Efficiency Particulate Air) filter, also known as high-efficiency particulate-absorbing air filter and high-efficiency particulate-arrestance air filter.

This type of air filter can theoretically remove at least 99.97% of dust, pollen, mold, bacteria and all airborne particles with a size of 0.3 microns ( $\mu\text{m}$ ).

The air renewal system is double-acting, IN and OUT, with the air intake being 15% greater than the exhaust. This excess pressure is there to prevent untreated air from outside from entering. Two operating rooms are fully double-acting and an operating room with a single-acting air freshening system.

The temperature is set so that no condensation forms in the installation and is 22 degrees C. The air conditioning system requires periodic cleaning and filter replacement to function properly.



3 Sea containers full of materialequipment



Solar panels at the solar park

The air filtration and laminar supply plenums for operating rooms are the most suitable choice to minimize bio-contamination while maintaining adequate working conditions for the surgical team. These hang above the operating tables.

The air treatment system including the Solar panels were (partly) donated by the Flevo hospital in Almere, the Netherlands.



The HEPA Air Renewal System



Loek Verburg the KHAP manager supervises

The complete air handling units were built together at OC Verhulst, also part of the Van Dorp group. The necessary filters were donated by the Interfilter company. Van Dorp Company took care of the shipping and installation (including materials and technicians).

Discussions started in 2017, the installation was dismantled in the Flevo Hospital in 2018, and in 2019 the installation was shipped in containers via Rotterdam and Mombasa and by road to Kumi.

In 2020, the Covid period intervened and in 2022 and 2023 the technicians came to Uganda in 2 periods for assembly work, at the expense of the Van Dorp foundation. The air filter system went into operation in 2023.

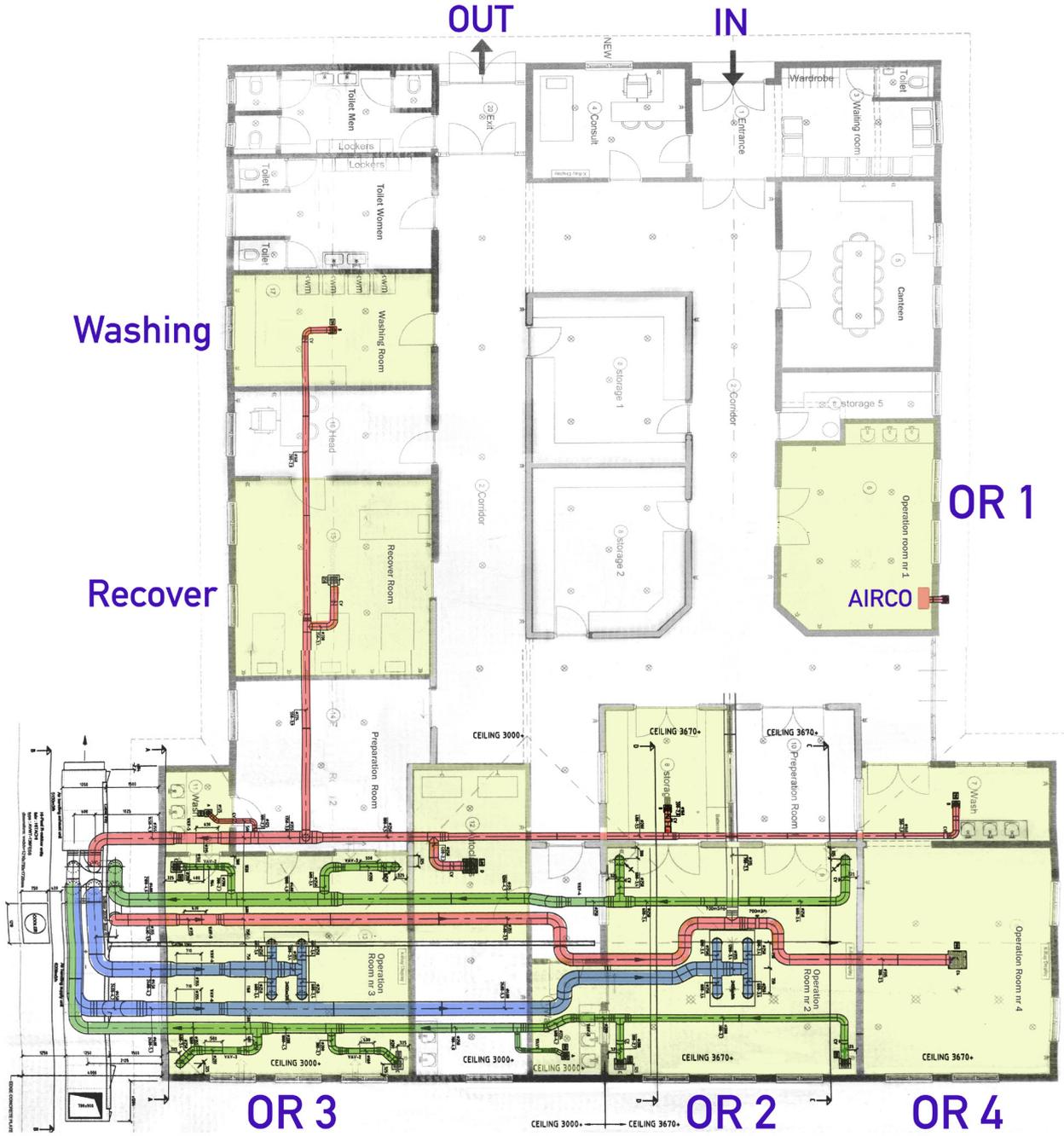
The Kumi Hospital would once again like to express its great thanks for sponsoring this air renewal system.

Big thanks to the Flevo Hospital and to the company Van Dorp/OC Verhulst.

And also a word of thanks to the Orange Climate Group and the Interfilter company.



Our operational team can now work in a clean and comfortable environment



- \* Operation Room 2 and OR 3 are getting 15% more **IN** (overpressure) (color blue) than **OUT** (color green).
- \* Operation Room 4 is getting only **IN** (color red).
- \* Operation Room 1 has separate **AIRCO**.
- \* OR 1 : eye theater
- \* OR 2 : general theater
- \* OR 3 : special surgical theater
- \* OR 4 : amputation theater

## Article 2

# EFOD LONDON



EFOD London is a group of young engineers and technicians expanding their experience by designing and overseeing the construction of buildings and facilities for some of the rural poor in Teso, North East Uganda. The team raises funds and also visits our Kumi Hospital at two-week intervals to hire labor, purchase materials and oversee the implementation of various projects to improve facilities at the hospital.

## Previous projects of EFOD



### PUMP HOUSE

Kumi Hospital pumps its own water from the nearby Lake Bisina and during rainy weather (seasonal) the existing pump house floods, flooding the pumps and cutting off the hospital's water supply.

In 2014, a plinth was built to raise one of the pumps above the water line, so that the hospital can guarantee a constant water supply.

However, the water level has continued to rise. It is crucial that more pumps are also installed as the hospital is dependent on this important water supply.

### HOSPITAL INCINERATOR

Before 2012, Kumi Hospital disposed of hazardous and infectious materials (such as needles and used bandages) by periodically burning them in pits, which were then covered with a thin layer of topsoil. This posed serious risks to the people on site. That is why EFOD completed the construction of an incineration plant for medical waste in August 2012.



The incinerator design was based on the De Montford Mk 9, a masonry incinerator. This design is well proven, but due to the nature of using high temperature changes, the design/lifespan is approximately five years. In July 2018, the EFOD team traveled to Kumi to refurbish the existing incinerator and restore it to its former glory. This involved re-fabricating the steel top plate, repairing cracked masonry and replacing roof plates and braces. Together with hospital staff, they developed a waste management strategy.



## WALKWAYS

It became clear that new and renovated walkways were a requirement for the hospital. The existing walkways are in poor condition, are not suitable for wheelchairs or moving equipment and are not covered, meaning they do not provide protection from heavy rainfall.

In December 2018, the EFOD team traveled to Kumi to carry out a number of surveys for the project teams, as well as the construction of walkways. They successfully oversaw the construction of a new section of walkway on an existing latrine block, and also completed a test walkway using masonry as a wearing surface.



## HOSPITAL MAPPING

During the construction tour in December 2018, the same EFOD team conducted numerous surveys and processed the data with GIS (Geographical Information Systems) technology to generate maps of the Kumi Hospital and its surroundings, such as Lake Bisina and the pump house.



## RENOVATION OJIKAN WARD

The Ojikan Ward has recently been renovated (2021) with a new ceiling and new floors. The ward is located opposite the operating rooms and now offers better facilities.



## PROJECT LATRINES 2023

Since 2014, EFOD has been working on a project to provide Eco-San latrines at the Kumi Hospital. These latrines provide a sustainable way to dispose of human waste compared to the traditional latrines used in the region. This is a water-free, cheap and sustainable alternative to conventional toilets. Construction started in March 2019 with the installation of the foundations. Corona also caused delays here. Construction of the lower room was in 2020 and construction of the upper room and roof in 2023.



Ecological sanitation is safe and a hygienic alternative that saves water, prevents water pollution and allows for nutrient-rich waste products that can be reused as fertilizer.



## MATERIAL SELECTION ISSB.

Interlocking stabilized blocks are an affordable alternative with a low environmental impact to conventional clay-fired bricks, which are typically made according to the kiln principle using large amounts of wood. ISSBs are formed by compression of a mixture of local marum soil, cement and dry curing. The interlocking formation increases the structural stability of the wall, reducing the amount of cement and mortar required for fabrication. Structural timber is purchased locally and used as an alternative to structural steel where possible.



EFOD team 1 - october 2023



EFOD team 2 - november 2023



### Ecological Sanitation 2023

Kumi Hospital is very grateful to EFOD London for the enormous efforts and loving donations made in recent years.

With their experience in engineering, construction and fundraising, the projects are invaluable to our hospital.

(Photos and part text reference from the EFOD website : <https://www.efod.org.uk/london>)



International  
Prosthetics and  
Orthotics Day

Enabling and Empowering

Article 3

**How lives of people living  
with disabilities have been  
transformed through  
prosthesis & orthotics.**



**Kumi Hospital**

ISSUE 05-2023

# About the International Prosthetics & Orthotics Day

The International Society of Prosthetics and Orthotics (ISPO) have launched the second International Prosthetics and Orthotics Day on 5th November 2023. This date corresponds to the date ISPO was established in 5th November 1970. International Prosthetics and Orthotics Day is aimed at highlighting and raising awareness of the importance for those needing prostheses and orthoses and the need to provide further resources to ensure equitable and appropriate access to Prosthetic and Orthotic services.



P.O.P. casting (measurements for a foot orthosis)



Ankle foot orthosis positive cast modification



On going gait training of above knee prosthesis



Assesment of a below knee prosthesis that needs a major repair

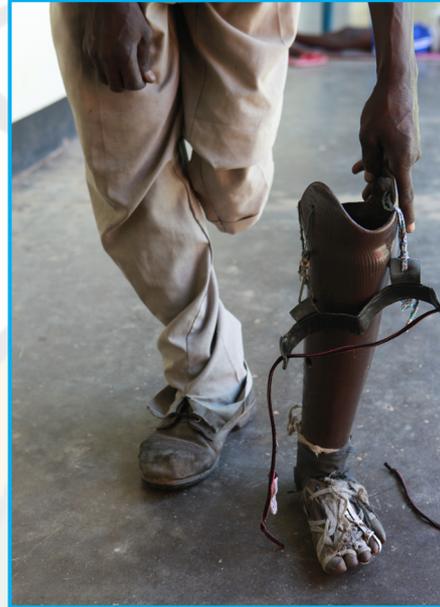


Fitting and preparing a below knee client for gait training



Fitting of SFABS and giving instructions for use

There are many people living with a variety of disabilities that affect them in different ways. Sadly others are not aware often where to access. Rehabilitation Services (PO) and end up either hiding or not seeking these services at an early stage. This makes them face inequality and bias due to their perceived limitations..



Enabling access to prosthetics and orthotics services allows people to live healthy, productive, independent, and dignified lives and to learn, work and take part in society and the development of their countries. Empowering access to prosthetics and orthotics services provides the opportunity to determine their own future and fully participate in community life.



P.O.P. negative cast measurements of a spine orthosis

# OUR ORTHOPEDIC WORKSHOP DONORS

We would like to thank all our donors; without their continuous support we would not be able to achieve our mission and goals to ensure that people with physical disabilities develop their full potential in an inclusive society. Our main donors for the past years are listed below, but we would also like to thank all of the individuals and institutions in the field that are not mentioned on this page.



Christian Blind Mission



Rotary Jaipur Limb UK



Child Care Africa



Swiss Limb



Kumi Child Development Center



Wheels for the World



Joint Medical Stores



Uganda Protestant Medical Bureau



Kumi Community Foundation UK



Ugandan Institute of Allied Health and Management Sciences - Mulago



German Leprosy and Tuberculosis Relief Association



Club of Godalming



St Joseph Rehabilitation Centre - Soroti



Kumi Foundation NL



## *Dr Charles Viva*



Peacefully at home (Middlesbrough, UK) surrounded by his loving family, Dr Charles Viva (MBE) passed away on April 12, 2023.

He was a great teacher and mentor to us and a fantastic surgeon.

We will never forget his kindness and reassurance.

He spent much of his time repairing cleft palates for young people abroad to give them a chance in life.

Emmanuel Edono (photo), a boy Charles operated on to heal contractures from his burns and whom he sponsored during his secondary and vocational education. Emmanuel can now earn a living that would not have been possible without Charles' support. Thank you, Charles, for changing so many lives for the better. You were so generous in so many ways and may you now rest in peace! God bless!

The Interplast UK teams (total 5-10 members (surgeons, anaesthetists and nurses) often came to Kumi Hospital for 1 week. Each time they assessed approximately 100 patients and performed dozens of operations/procedures. There were truly fantastic and full days of work with the staff and patients at Kumi Hospital, and it has been a continued pleasure for our hospital to share these journeys with so many new team members.

Charles Viva will be missed by so many friends at Kumi Hospital, where he operated on so many children with cleft palates and burns.

One of the messages I received there reads: "Just received the sad news of the death of Dr. Viva. Death has robbed us of one of the most generous and selfless individuals I have ever met. MHSRIP

" How true! May he rest in peace! (Elspeth Robinson).



The Kumi Hospital logo is a leaf branch and fruit of the *Hydnocarpus Wightianus* or chaulmoogra tree. Chaulmoogra Marotti seed oil has been widely used in traditional Indian medicine (Ayurveda) and Chinese medicine. It entered early Western medicine in the nineteenth century before the era of sulfonamides and other antibiotics for the treatment of several skin diseases and leprosy. Chaulmoogra is given intravenously and might have calming- and fever-reducing properties and activity against skin disorders.

### Kumi Hospital Ongino

Telephone: +256 (0)393 194 274 (MD's Office)  
(0)393 194 107 (OPD)

Email: info@kumihospital.org  
kumihospital@gmail.com

Bank : Stanbic Bank Soroti Branch

Bankaccount: 9030 0056 72588

Title: Kumi Hospital Global Fund

Note: "with additional mention of your specific wish"

Address: PO Box 9, Kumi - Ongino (Post Office)  
East Uganda - East Africa

This Summer Publication of Kumi Hospital with contributions /citation from:

- \* Benjamin Twngeirwe, Orthopaedic Technologist, KH
- \* Elspeth Robinson, Kumi Community Foundation, UK
- \* Albert Esveldt - Van Dorp Rotterdam
- \* Marco Lijnberg - Van Dorp Almere

This publication is also to download on [kumihospital.org/information](http://kumihospital.org/information)  
Read also newsletter 1, 2, 3 and 4 (about the history of Kumi Hospital).  
If you no longer wish to receive this newsletter, please let us know and send us an email.

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