JENGU
HANDWASHING UNIT

A safer world in clean hands

An open source blueprint for safe and appealing handwashing, designed and tested to be built and well-used anywhere in the world.

ARUP

BritishRedCross

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

A critical moment for action

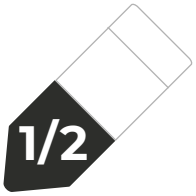
Handwashing with soap is one of the most critical actions we can take to stop the spread of the novel coronavirus (COVID-19) and gastrointestinal illness such as diarrhoea.

Diarrhoea kills more than **1.5 million** people every year

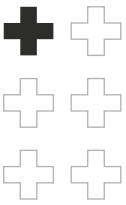
It is the cause of **1 in 9** child deaths

Yet, in many parts of the world, people don't have access to basic handwashing facilities at home or in busy public spaces such as toilets, healthcare facilities, schools and transport stations. This is due to a lack of a durable and rapidly deployable, communal handwashing facility that is appealing to use.

The lack of robust and effective ways to enable and encourage millions more people to wash their hands risks health systems in developing countries being overrun and a significant increase in sickness and death due to COVID-19.

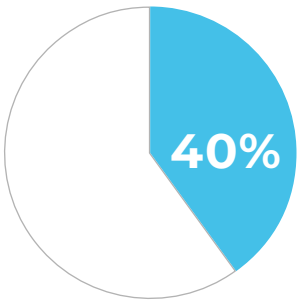


of schools in the least developed countries have no place for children to wash their hands



1 in 6 healthcare facilities had no functional toilets or handwashing facilities

During the acute stages of a humanitarian emergency, diarrhoeal disease can cause



all deaths

deaths among children

A safer world in clean hands

Arup, British Red Cross and the London School of Hygiene and Tropical Medicine have designed and tested a new handwashing unit to save lives by increasing safe handwashing behaviour among the world's poorest and most vulnerable communities.

A 2-year redesign of handwashing in a humanitarian setting

Two years ago, this unique partnership was formed to improve handwashing in humanitarian contexts and the world's poorest communities. A team of designers, engineers, development specialists and behavioural psychologists went back to the drawing board. For 14 months they investigated the problem through literature, a survey of humanitarian specialists and the careful analysis of the strengths and weaknesses of existing facilities. This culminated in field research in a refugee camp in Uganda, including watching and talking to residents about their needs and preferences.

This intensive investigation informed the brief for the design and initial prototypes, which have been refined into the first open source blueprint, following testing in refugee camps and with the British Army.

Jengu handwashing unit

Jengu is an open source blueprint for a desirable and durable handwashing unit for humanitarian and development settings that has been designed and tested by engineers, humanitarians, behavioural psychologists and people living in refugee camps.

Rather than focusing solely on keeping initial production costs low, Jengu has been designed to be long-lasting, desirable to use by adults and children and built locally with affordable materials available anywhere in the world.

Jengu looks like an attractive handwashing basin, with a familiar and comfortable set-up, built with a robust, long-lasting steel design that requires minimal maintenance. However, the unit contains a number of innovative design features that increase the frequency and length of time people will spend washing their hands :

- A large mirror that testing showed encouraged people to use the facility and for a longer time.
- A faucet curved to be suitable only for handwashing, not other purposes (filling containers, etc), and designed to provide the perfect flow of water without waste.
- Stable 'feet' for varying surfaces and anti-theft assembly throughout.
- Liquid and bar soap options and foot-controlled water supply to reduce risk of hand contamination.
- A flexible design that can accommodate different water sources and drainage and be adapted for use by children and people with reduced mobility.

Key Features

Water flow
Provides enough water flow for effective handwashing without wasting water.

The faucet
Shaped for handwashing and difficult to use for other purposes (e.g. filling up water containers).

Optional Bar soap
Can be drilled and secured with a wire cable so soap is always available (metal cable and clamp provided)

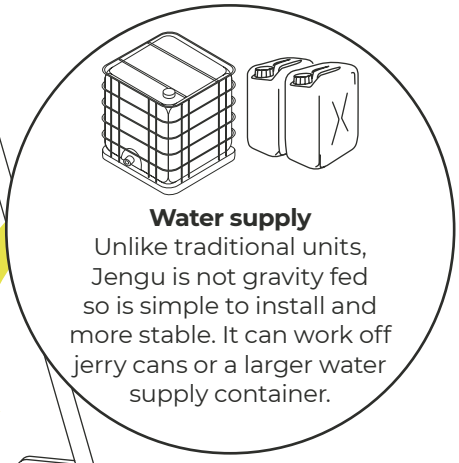
Liquid soap
Liquid soap is easy to produce and buy locally and is likely to make handwashing more desirable. Two liquid soap options are provided to reduce the risk of theft:
- Bottle dispenser with wire cable.
- Pump dispenser

The Mirror
A large and robust mirror that won't peel, flake off or crack. It increases face and eye hygiene and makes people want to spend more time at washing their hands.

The basin
The basin can be plastic or stainless-steel to suit local preferences and availability.

Compact and stackable
Jengu is a compact unit (just 72x77cm) and is stackable for easy transportation and storage

Anti-theft assembly
Unit parts are pop riveted together, to deter theft of parts.



Water supply
Unlike traditional units, Jengu is not gravity fed so is simple to install and more stable. It can work off jerry cans or a larger water supply container.

Robust, sustainable and reusable
Most of the unit parts are made from stainless or galvanised steel, making it long lasting and rust-proof. The design reduces the use of plastic and promotes the use of local materials. It could also be reused in households.

Unit height
The basin height can be adapted for adults, children and people of reduced mobility.

Drainage
A drain in the basin takes wastewater to a hose so it can be connected into the nearest gully or into a soak pit. (Or re-used as "grey-water" if appropriate)

Security
To reduce the risk of theft, a series of holes enables the units to be anchored to the ground or connected together.

Stability
Disc feet give the facility stability on any surface and prevent it from sinking into soft ground.

The foot-pump
Reduces the likelihood of hand re-contamination and the soft rubber texture is usable with or without shoes and by all ages.

Help make the world safer in clean hands

In order to urgently boost the use of Jengu and save the maximum amount of lives possible, **we want to work with partners that can contribute to the purchase, distribution and installation of Jengu in some of the most vulnerable parts of the world.**

Your investment will focus on directly reducing the transmission of COVID-19 and gastrointestinal illness as well as raising public awareness of the importance of handwashing with soap and water.

To achieve this critical impact, the Jengu team will be keen to support you with:

- **Supply chain logistics including sourcing** local manufacturers, adapting the design to local capabilities if necessary and distribution
- **Remote support** for installation, and operation & maintenance.
- **Demonstrating impact** through **assessment and feedback** that will also support the continuous development of Jengu's design.

The purchase and management of the production and logistics of providing Jengu can either be done directly through recommended manufacturers, using the open source blueprint, or placed through the Jengu team, who will manage the process.

The return on this investment will be a measurable impact on the health and wellbeing of some of the people in the world most vulnerable to COVID-19 and gastrointestinal illness. This will be demonstrated through both quantitative data and the personal stories of those using the units to stay safe.

If you are interested in acquiring Jengu or you are keen in partnering with us, please contact us at:

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