

World's first 3D-printed school opens in Malawi

- **Holcim-CDC joint venture 14Trees builds world's first 3D-printed school**
- **Built with minimal material use and carbon footprint at record speed**
- **Potential to bridge world's infrastructure gap at scale**

Holcim announces the world's first school built with 3D printing (3DP), developed with CDC Group, the UK's development finance institution. The school was built in Malawi's Salima district (pop. 38,000), and its walls were printed in just 18 hours, compared to several days with conventional building materials. The school has this week been officially transferred to the Kalonga village community in the Yambe zone of Salima district. Children began learning in their new school on June 21. The school is proof that 3D printing can play a key role in bridging our world's education infrastructure gap by building high-quality classrooms for children in a sustainable, affordable and fast-paced way at scale.

Miljan Gutovic, Region Head of Europe, Middle East and Africa at Holcim Group: "I am very proud of how our colleagues at 14Trees have deployed cutting-edge 3D printing technology to solve such an essential infrastructure need. Now that we've proven the concept in Malawi, we look forward to scaling up this technology across the broader region, with projects already in the pipeline in Kenya and Zimbabwe."

Tenbite Ermias, Managing Director, Africa, at CDC, said: "The rollout of 14Trees' world-class, cutting-edge technology is going to have a tremendous developmental impact on Malawi and the wider region. It is a wonderful example of how we are investing in businesses that can support the UN's Sustainable Development Goals."

Juliana Kuphanga Chikandila, Primary Education Advisor, representing the Director of Education, Youth and Sports in Malawi: "Before, we had 12 schools in the Yambe zone; we now have 13 – with this new 3D printed school. To increase our supply of education to children, we need a total of four more primary schools in the Yambe zone, but as a district, we need approximately 50 more schools to serve those in need. I am very impressed by the new building – its durability and design provide the space and facilities that students did not have before; teaching and learning can now happen inside and outside the classroom. It is notably different from the schools being built in the Yambe zone and Salima district. This school will attract more students, and those learners that had left will return to education."

Using proprietary Holcim ink, this innovative 3D printing process significantly reduces the time, cost and materials used for building housing and schools, while reducing their environmental footprint by more than 50% compared to conventional methods. In Malawi alone, UNICEF estimates a shortage of 36,000 classrooms which would take 70 years to build using conventional methods. According to 14Trees, this infrastructure gap could be bridged in just ten years with 3D printing. Partnering with a range of NGOs, 14Trees is committed to solving this chronic shortage at scale and sustainably, starting with families and communities most in need."

These projects will sustain skilled job creation by hiring and upskilling local experts in dynamic roles such as 3D machine operators to material specialists working in partnership with local builders for carpentry, roofing, painting, and beyond. In addition to the school in Salima district, 14Trees also built its first 3DP prototype house in Lilongwe, Malawi, in just 12 hours, compared to almost four days using conventional methods.

Media Release

About Holcim

A global leader in innovative and sustainable building solutions, Holcim is at the forefront of green building solutions, from ECOPact concrete, enabling carbon-neutral construction to Firestone Building products, improving energy efficiency in buildings. Driving the circular economy to build more with less, it launched the world's first green cement ECOPlanet with recycled construction and demolition waste inside and is pushing the boundaries of digitalization to make its business smarter end-to-end. With sustainability at the core of its strategy Holcim is becoming a net zero company, accelerating our world's green transformation. Holcim's 70,000 people are passionate about building progress across its 70 markets and four business segments: Cement, Ready-Mix Concrete, Aggregates and Solutions & Products.

More information is available on www.lafargeholcim.com

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About CDC

CDC Group is the world's first impact investor with over 70 years of experience of successfully supporting the sustainable, long-term growth of businesses in Africa and South Asia. CDC is a UK champion of the UN's Sustainable Development Goals – the global blueprint to achieve a better and more sustainable future for us all. The company has investments in over 1,200 businesses in emerging economies and a total portfolio value of \$6.2bn.

This year CDC aims to invest up to \$1.75bn in companies in Africa and Asia with a focus on fighting climate change, empowering women and creating new jobs and opportunities for millions of people. CDC is funded by the UK government and all proceeds from its investments are reinvested to improve the lives of millions of people in Africa and South Asia. CDC's expertise makes it the perfect partner for private investors looking to devote capital to making a measurable environmental and social impact in countries most in need of investment. It can invest across all sectors, but prioritises those that help further development, such as infrastructure, financial institutions, manufacturing, and construction.

Find out more at www.cdcgroup.com

About 14Trees

14Trees is a joint venture between Holcim and CDC Group which is focused on building affordable houses, schools and social infrastructures in Africa. It was set up with the aim to accelerate the production and commercialization of environmentally-friendly, affordable construction solutions in Africa. 14Trees benefits from the expertise of Holcim's R&D centre, the world's leading building materials research centre, to accelerate the use of environmentally friendly solutions such as Holcim earth brick Durabrick® and 3D printing.

For more information go to <https://www.14trees.com/>