

The first school built with 3D printing in Malawi, Africa

The revolution in architecture



Additive manufacturing is another term for 3D printing. It's a fast prototyping technique that employs high-temperature extrusion of plastic filaments. It 3D prints the physical thing layer by layer. 3D printers are used by professionals and makers all over the world for quick prototyping, engineering, product design, 3D printed art and jewelry, as well as in fashion, medical, and education.

The innovative use of 3D printing technology, apart from being an example of innovation in the 21st century, has made it possible to build a concrete school in Malawi, reducing costs, time and the use of materials traditionally used for the construction of schools and houses. In addition to this, the use of 3D printing for construction has brought with it a reduction in the environmental footprint of 50% less than traditional construction methods. In addition, 3D printers allow construction access to areas that are challenging to deploy equipment and personnel, or areas in conflict.

"I am very impressed with the new building: its durability and design provide the space and facilities that students did not have before. This school will attract more students, and those who had left

will return to education," says Juliana Kuphanga Chikandila, Primary Education Advisor, representing the Director of Education, Youth and Sports in Malawi..

Taking into account the Sustainable Development Goals developed by the representatives of the United Nations, which include tackling humanity, including poverty, inequality, climate change and environmental destruction, this project was launched to increase the supply of schools and housing on this continent.

According to UNICEF estimates, Malawi lacks a total of 36,000 classrooms to provide schooling for children, which would require 70 classrooms to be built using traditional methods. However, the authors of this new school in Malawi estimate that, with 3D printing, these numbers could be achieved in as little as 10 years. "Now that we have proven the concept in Malawi, we hope to expand this technology across the region, with projects already in the pipeline in Kenya and Zimbabwe," says Miljan Gutovic, Head of Region Europe, Middle East and Africa at Holcim Group.

Finally, this new school created thanks to 3D printing shows the relevance that the application of 3D printing can have for the creation of educational infrastructures all over the world. This type of innovative technology also allows the local population to be trained to become operators and specialists of 3D devices, in addition to the creation of highly skilled jobs.