



How 3D Printing Is Helping With Relief Efforts

From printing emergency shelters to lifejackets, the potential to provide onsite assistance in disaster zones is expected to rise.

By Emma Birchley, Sky News Correspondent

The use of 3D printing in disaster zones is transforming the way communities can be helped to rebuild after a crisis.

Replacement parts to mend leaking pipes, incubators and medical equipment are already being printed by the not-for-profit organisation Field Ready in Nepal, following last year's earthquakes.

And as the technology improves, the potential to provide onsite assistance is expected to increase significantly - from printing emergency shelters to lifejackets.

"There are quite significant problems with the supply chain after a major disaster - logistical problems of getting supplies into a country," said Field Ready innovation adviser Andrew Lamb.

"Being able to take the means of production to the place where supplies are needed gives you the versatility to make whatever is needed in the field."

Field Ready has been working with the children's charity World Vision in Kathmandu to set up an "innovation lab" to take on design challenges to help in the relief effort.

It includes putting together a digital catalogue of 3D printable parts for use in humanitarian aid available for all to access.

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"The main thing we want to be able to do in Nepal is deliver more training to the local people who have incredibly high skill sets so they would be able to use the machines we have been able to deploy," said Mr Lamb.

At the University of Hertfordshire, 3D printing is part of everyday life in the school of creative arts, from the student using the technology to print chain mail for his fashion designs to the research assistant who has designed a modular relief shelter that can be produced entirely on a 3D printer from plastic, bamboo and coconut fibre.

Student Huseyin Dervish created his outfits using computer-aided design software then 3D printing them in nylon.

"I could definitely see the use of 3D print in disaster zones as you can get the clothes straight away in the location you need it, as opposed to waiting for something to be manufactured overseas and sent out," he said.

"It can be done there and then and it can be done in a bulk way or on a singular scale."

Being able to print waterproof clothing or shoes, for example, on the scale that is needed is still a long way off, but the department's head of innovation Dr Shaun Borstrock said the options will grow as the printers inevitably improve.

"What we are looking at, as things are emerging, is faster print times, slightly cheaper materials and a wider variety of materials," he said.

"You can print nylons, metals, rubbers, ceramics, glass but as the technology improves you will see much wider applications of printing."

Dr Borstrock has created a material called Modeclix made from small nylon links that has been

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used to make dresses.

In the future he plans to impregnate it with Kevlar for easily repairable body armour and also with medical drugs to provide slow release pain relief to an injured part of the body.

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