

Science Focus

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COULD REWRITE PHYSICS AGAIN

How gene editing can
CREATE ACTUAL SUPERFOODS

Should we let
GADGETS READ OUR BRAINS?

THE MENTAL HEALTH ISSUE



A mental toolkit for conquering anxiety

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How your brain's fingerprint can predict disorders before they happen

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It's your boss, not the machines you should be worried about

SPACE

LIFE ON MARS: STEP INSIDE THE HABITAT THAT'LL BECOME NASA'S MARTIAN BASE

NASA has tried to make things as real as possible for the crew taking part in this simulated mission

This June, four volunteers will begin a year-long simulated Mars mission, and what you see here is the 3D-printed 'habitat' they'll call home. The 518m² Mars Dune Alpha habitat sits within a white warehouse at NASA's Johnson Space Center in Houston, Texas; a warehouse that's been redecorated to resemble the red planet, complete with red mountains on the 'horizon' and red sand underfoot.

The crew will go about their daily lives as though they're stationed on Mars, growing their own food, conducting experiments and completing mission-specific tasks, including using a large sandpit for spacewalks (or 'Marswalks').

The volunteer crew, made up of civilians with expertise in research science, engineering and medicine, will be locked in during the simulation so that NASA can test the effects of isolation on their health and performance. They'll also face challenges such as resource limitations, communication delays and equipment failures.

"Ultimately, this will help NASA make informed decisions to design and plan for a successful human mission to Mars," said Dr Grace Douglas, the mission's principal investigator. A real human mission could see people living on the red planet for as long as two and a half years.



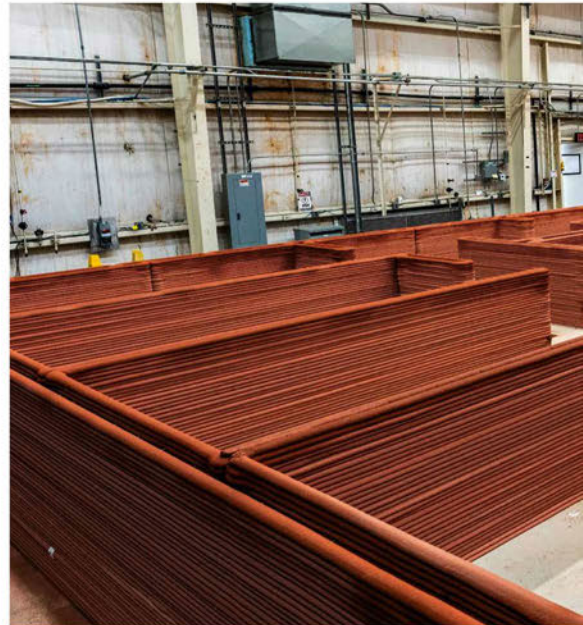
1. The 'landscape simulation area' contains instruments and equipment that will be used during actual missions on the Red Planet.

2. Mars Dune Alpha's lounge is complete with items to keep the crew entertained during downtime, including the board games *Catan: Starfarers* edition and *Monopoly*, as well as a PlayStation 3 and a Super Nintendo console.

3. The future of extra-terrestrial construction, 3D printing requires few building

materials that can't be found on Mars, thus eliminating the need for NASA to spend money and energy launching heavy construction materials into space.

4. A cement-based mix is used to form the simulated habitat, although a real one is likely to use ingredients found on the Martian surface. The simulated habitat has a layout that contains four private living quarters, work stations, a medical station, lounge, and food growing stations.



REUTERS X2, ICON X2

