

Mexico builds world's first 3D-printed community houses

New Story, a non-profit organisation offering pioneering solutions to end global homelessness, has announced that the world's first 3D-printed community is officially being built and it has revealed the first set of homes in Mexico.



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The resilient, 46.45m² homes were each 3D printed in around 24 hours across several days by ICON, a construction technology company, and feature final construction build out by Échale, New Story's non-profit partner in Mexico.

The built-to-last homes located in Tabasco, Mexico will be granted to local families currently living in extreme poverty and makeshift, unsafe shelter. The community of 3D printed homes will contain 50 homes in total.

After 18 months in planning, New Story and ICON have completed the first two printed homes in a remote part of Mexico. The 3D printer for homes, called the Vulcan II, is designed to work under the constraints that are common in rural locations, but the journey has not been easy.

Journey not smooth

Power can be unpredictable and local rainfall has often flooded access roads to the construction site. This printer, designed to tackle housing shortages for vulnerable populations, is the first of its kind.

The 3D printed homes feature two bedrooms, a living room, kitchen and bath. Co-designed with feedback from the families who will live in them, the homes have been created to meet the specific needs of the community.

Resting within a seismic zone, the community and its homes were engineered above the standard safety requirements including robust foundations to ensure the homes will last for generations.



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Addressing global social housing issue

New Story is a non-profit serving families in need of shelter. Since their founding just five years ago, the team has built more than 2,700 homes, serving over 15,000 people, using traditional construction methods across Haiti, El Salvador, Bolivia, and Mexico.

In the last two years, they've spent thousands of hours and millions of dollars developing innovative solutions and R&D to help build homes better and faster for the global social housing sector.

The partnership with ICON and use of the 3D printing technology allows New Story to impact more families faster, while simultaneously improving quality and design flexibility.

Preselected for occupation

The families who will live in this community have been preselected and will move in upon community completion. Families are selected based on need; in this community, the median family income per month is \$76.50, some of the lowest-income families in Mexico as a whole. When surveyed, 74% of families stated they do not feel safe in their current living conditions and that this greatly affects their quality of life.

New Story has partnered with local government officials to survey over 500 families in the area. The families selected for this community are the 50 families with the greatest financial and physical need. The majority of the families in this area are from an indigenous population that has historically been left out of government programmes.

Through partnership with the local government, the 3D-printed community is to be part of a larger community plan for the overall municipal area.

The families will have access to green spaces, parks, community amenities, and basic utilities through this master plan

provided by the local government. Through New Story's partnership with the local government, families were invited to speak into the master plan for the area.



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Challenging traditional methods

"We feel it's our responsibility to challenge traditional methods. Linear methods will never reach the billion-plus people who need safe homes. Challenging our assumptions, iterating based on data, and taking calculated risks on innovative ideas will allow us to reach more families with the best possible solutions, exponentially faster," said Brett Hagler, CEO of New Story.

"We view this printer as a catalytic R&D project that has the opportunity to influence the sector as a whole. Our hope is to learn, iterate, and then share the technology with other non-profits and governments to help everyone improve and reach families faster," added Hagler.

"Our private group of donors, who we call The Builders, invest directly into our operational and R&D expenses. This allows us to take calculated risks, like a 3D printer, without diluting our promise to general donors," he continued.

"With 3D printing, you not only have a continuous thermal envelope, high thermal mass, and near zero-waste, but you also have speed, a much broader design palette, next-level resiliency, and the possibility of a quantum leap in affordability. This isn't 10% better, it's 10 times better," said Jason Ballard, cofounder of ICON.

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