

Czech sculptor creates 3D-printed floating house

June 16 2020, by Jan Flemr



Workers check over the 3D construction, which is being printed from special concrete and is due to float down the river Vltava in August

A Czech sculptor has teamed up with a group of architects to create a 3D-printed house prototype that could become a holiday home for the

future.

The house is being printed from special concrete in the southern Czech city of Ceske Budejovice and is planned to float on the Vltava river in Prague in August.

"I dare say it's the first-ever floating 3D-printed building in the world," sculptor Michal Trpak, the mastermind behind the project, told AFP.

The design of the house, which can be printed in two days, was inspired by a single-celled creature known as a protozoa, he says.

As an added attraction, Trpak plans to turn the abode into a floating garden, with plants covering its roof and outside walls.

The simple 43-square metre (51.4 square yards) floor plan includes a living room with kitchen, a bedroom and bathroom.

"3D houses will adapt to the people or the countryside. The robot doesn't care about the shape of the curve," Trpak said to the hum of a mechanic hand with a nozzle patiently piling up layer after layer of concrete strips.

"The house is intended as a leisure-time house to stand in the countryside, ideally for a couple or a small family," added Trpak, who drew inspiration from 3D-printed housing projects in the Netherlands.



Sculptor Michal Trpak checks over the 3D machinery after teaming up with a group of architects to create the prototype

'Trial and error'

To finance the project, dubbed the "Protozoan", its creators have teamed up with a Czech building society.

"This one is pretty expensive because it's a prototype and we needed many tests.... But the second generation should cost around three million (Czech) crowns (112,600 euros; \$127,500) and the third generation may cost about half of that amount," Trpak said.

When the robot is done, the concrete bedroom and bathroom modules

will be attached to a wooden core with large windows and completed with a wooden roof.

The [house](#) will then be transported to Prague, installed on a pontoon and displayed on the Vltava river in Prague's broader centre for two months.

"We didn't have a plot of land to place it on, and anyway, to do that, you need a building permit and that takes up to two years" to secure, said Trpak.



A computer visualisation of the house, intended as a holiday home and which can be made in just two days

"But if you float it on a river, you only need consent from the navigation body, which is much faster."

Trpak said the construction had not been trouble-free as the concrete is sensitive to temperature changes.

"When it's very warm it hardens faster, when it's cold it hardens more slowly so now we're adding [warm water](#) from a boiler," he added as the weather changed for the worse.

"We keep researching and developing. It's a process of trial and error."

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