

Dutch couple become Europe's first inhabitants of a 3D-printed house

Level: Intermediate

1 Warmer

- What are these types of houses called?
- Put these types of accommodation in order from 1 (the one that you would most like to live in) to 6 (the one that you would least like to live in). Give reasons for your choice.
- Can you think of any other types of houses? What would your dream house be?



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2 Key words

a. Find the following words in the text. The paragraph numbers are given to help you.

1. A noun meaning *someone who rents a flat or house from the person who owns it*. (1)
2. A noun meaning *a piece of land used for a particular purpose*. (1)
3. An adjective meaning *possible to be lived in*. (2)
4. A noun meaning *a narrow part at the end of a tube through which a liquid flows*. (3)
5. A verb meaning *to make a liquid move with a lot of force*. (3)
6. A noun meaning *someone whose job is to build walls using bricks*. (4)
7. A noun meaning *the part of a building that is below the ground and supports the rest of it*. (5)
8. A noun phrase meaning *something that you add to make something complete* (two words). (5)
9. An adjective meaning *extremely beautiful*. (8)
10. An adjective meaning *cheap enough for ordinary people to buy*. (11)

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Daniel Boffey

- 1 A Dutch couple have become Europe's first tenants of a fully 3D-printed house in a development that could lead to more choice in the shape and style of the homes of the future. Elize Lutz and Harrie Dekkers from Amsterdam, recently received their digital key allowing them to open the front door of their two-bedroom bungalow. "It is beautiful," said Lutz. "It feels safe," added Dekkers. The house is the first of five homes planned for a plot of land in the Dutch city of Eindhoven.
- 2 In the last two years properties partly constructed by 3D printing have been built in France and the US, and there are many other projects around the world. But the designers of the Dutch house have built the first legally habitable and commercially rented property where the main walls have been made using a 3D-printer nozzle. The home was due to be put on the rental market in 2019, but the challenges of the architect's design, which involved overhanging external walls, caused delays.
- 3 The 3D-printing method involves a huge robotic arm with a nozzle that squirts out a specially formulated cement. The cement is "printed" according to an architect's design, adding layer upon layer to create a wall to increase its strength.
- 4 While it is still early days, the 3D-printing method is seen by many within the construction industry as a way to cut costs and environmental damage by reducing the amount of cement that is used. In the Netherlands, it also provides an alternative at a time when there is a shortage of skilled bricklayers.
- 5 The new house consists of 24 concrete elements that were printed at a plant in Eindhoven before being transported by lorry to the building site and placed on a foundation. A roof and window frames were then fitted and finishing touches applied.
- 6 By the time the fifth of the homes is built – with three floors and three bedrooms – it is hoped that all the construction will be done on-site, and that various other installations will also be made using the printer, further reducing costs.
- 7 "If you look at what time we actually needed to print this house, it was only 120 hours," said construction company manager Bas Huysmans. "So if we had printed all the elements in one go, it would have taken us less than five days because the big benefit is that the printer does not need to eat, does not need to sleep, it doesn't need to rest. So if we started tomorrow, and learned how to do it, we could print the next house five days from now."
- 8 Lutz and Dekkers are paying €800 (£695) a month to live in the property for six months from 1 August, after answering a call for applicants on the internet. "I saw the drawing of this house, and it was exactly like a fairytale garden," said Lutz.
- 9 The market rent would normally be twice the rent the couple are paying. "Did we earn money with this first house? No," said Huysmans. "Do we expect to lose money on house number two, three, four and five? No."
- 10 "With 3D printing, you generate a huge creativity and a huge flexibility in design," he added. "Why did we make so much of an effort to print this 'rock'? Because this shows perfectly that you can make any shape you want to make."
- 11 Yasin Torunoglu, who is responsible for housing in Eindhoven, said: "With the 3D-printed home, we're now setting the tone for the future: the rapid realisation of affordable homes with control over the shape of your own house."

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3 Comprehension check

a. Are these statements true (T) or false (F) according to the article? Correct any that are false.

1. The Dutch couple have moved into a 3D house with three bedrooms.
2. The Dutch 3D house is the first 3D property in the world.
3. The house was made with a specially formulated cement.
4. There aren't enough skilled bricklayers in the Netherlands.
5. The 24 concrete elements were printed at the building site.
6. A total of five 3D homes will be built.
7. It took ten days to build the first 3D house.
8. The Dutch couple are paying twice the market rent for the house.
9. Huysmans expects to lose money on the other four 3D houses.
10. Future buyers of 3D homes will be able to decide what shape they want their house to be.

4 Key language

a. Complete the phrases from the text using these prepositions.

by for over on of (x2) upon in

1. put _____ the market
2. layer _____ layer
3. a shortage _____ skilled workers
4. consists _____
5. transported _____ lorry
6. _____ one go
7. responsible _____ housing
8. control _____ the shape

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5 Discussion

a. Discuss these questions and statements.

- “Who would want to live in a house made by a 3D printer?”
- “3D printers are the future of technology”.
- “Old houses are better than new houses”.

6 In your own words

a. Use an Internet search engine to find out more about 3D printing. Find a product that can be made by 3D printing (not a building) and find at least five facts about it. Write a short report (150 – 200 words) summarising your findings. Include some or all of the following:

- what the product is
- when it was first made by 3D printing
- where it was first made
- how much it costs to produce
- how long it takes to make the product
- how much it costs to buy the product