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Germany's first 3D-printed home

Heated, cooled and ventilated with high-efficiency energy solutions from Viessmann

- Innovative 3D concrete printing saves time and resources in the building of new houses
- Process will gain in importance in the next few years
- Heating and cooling with high-efficiency Vitocal 200-S air/water heat pump
- Controlled home ventilation for constantly fresh ambient air

Allendorf (Eder), Weißenhorn (Bavaria), Beckum (North Rhine-Westphalia), 12.10.2020 –

A milestone in construction technology is currently being reached in the North Rhine-Westphalian town of Beckum: PERI GmbH, based in Weißenhorn, is building Germany's first 3D-printed house. When completed, it will be heated, cooled and ventilated by a high-efficiency Vitocal 200-S air/water heat pump and the automatic Vitovent 300-W home ventilation system.

Innovative 3D concrete printing saves time and resources

The first walls of the two-story single-family home are just being raised. A nozzle applies special concrete layer by layer. The print head moves over three axes on a fixed frame. The printer is controlled by only two people. The device requires only five minutes to print one square meter of a double-shelled wall. This innovative technology doesn't just save time compared to conventional construction methods; it also significantly reduces the resources required. It also opens up greater freedom in building design.

PERI GmbH expects 3D printing to gain in importance in the next few years, and additional residential projects are already in preparation.

Highly efficient, space-saving solution for heating, cooling and fresh air

Once completed, the 160-sqm house will be heated (and cooled on hot summer days) by a Vitocal 200-S split air/water heat pump. The temperature will be perfectly regulated all year round. The heat pump is highly efficient with a COP (coefficient of performance) of up to 5.0 (EN 14511 at A7/W35°C) and has an energy efficiency rating of A++.

The new Vitoset heat pump-hybrid cylinder WPU 300/100L will be installed as a heating buffer and DHW cylinder. The hybrid cylinder solution saves a lot of space since it consists of one 300-liter enamel DHW cylinder and a 100-liter buffer cylinder. The cylinder is delivered in one piece and is completely insulated.

Fresh, clean, and especially germ-free ambient air is more important than ever in times of the coronavirus. For this reason, the Vitovent 300-W central home ventilation system is being installed in Germany's first 3D-printed house. This new ventilation system is particularly quiet, very compact and recovers up to 92 percent of the heat contained in the extract air during the cold season, saving heating costs. In combination with the Vitocal 200-S heat pump, the ventilation can be conveniently controlled using the free ViCare app on a smartphone. A further

Presse

advantage for builders: The combination of the Vitocal 200-S and the Vitovent 300-S meets the requirements for BAFA new-build funding.

About PERI

With a turnover of EUR 1,685 million in 2019, PERI is one of the largest global manufacturers and suppliers of shuttering and scaffolding systems. With more than 9,500 employees, over 60 subsidiaries and more than 160 warehouses, the family business with its headquarters in Weißenhorn, Germany serves its customers with innovative system equipment and comprehensive services for shuttering and scaffolding technology.

About Viessmann

Viessmann is continuously evolving from a heating manufacturer into a solutions provider for the complete living space. The company develops seamless climate solutions that fill people's surroundings with the optimal room temperature, warm water, energy and good air quality. With its Integrated Solution Offering, Viessmann seamlessly unites products and systems through platforms and digital services on the foundation of the right energy source. On top of that, it also offers a variety of additional services. The focus here is on finding the right balance between renewable energy sources and obtaining the maximum energy efficiency from fossil fuel sources. The family-run company has acted sustainably and has been guided by values since its founding in 1917. This is reflected in the company's philosophy and main guiding principle: "We create living spaces for generations to come." Creating living spaces for the generations to come is the responsibility of the 12,300 members of the Viessmann family around the world.

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Images/Captions



Image 1: Germany's first 3D-printed house is being built in the North Rhine-Westphalian town of Beckum. Upon completion, it will be heated, cooled and ventilated with high-efficiency solutions from Viessmann. (Image: PERI GmbH)



Image 2: In the depths of winter or on a hot summer day, the high-efficiency Viessmann air/water heat pump Vitocal 200-S with its integrated cooling function ensures perfect room temperatures in the 3D-printed house at any time of the year. (Image: Viessmann)

Presse



Image 3: The Vitovent 300-W central home ventilation system makes sure the ambient air is always fresh and clean. It is particularly quiet, very compact and recovers up to 92 percent of the heat contained in the extract air, saving heating costs. (Image: Viessmann)