



TWO CENTURIES OF DESIGN

MEETS 3D PRINTING

ACCURATE, FULL-SIZE, RAPID PROTOTYPING  
MADE EASY FOR VILLEROY & BOCH

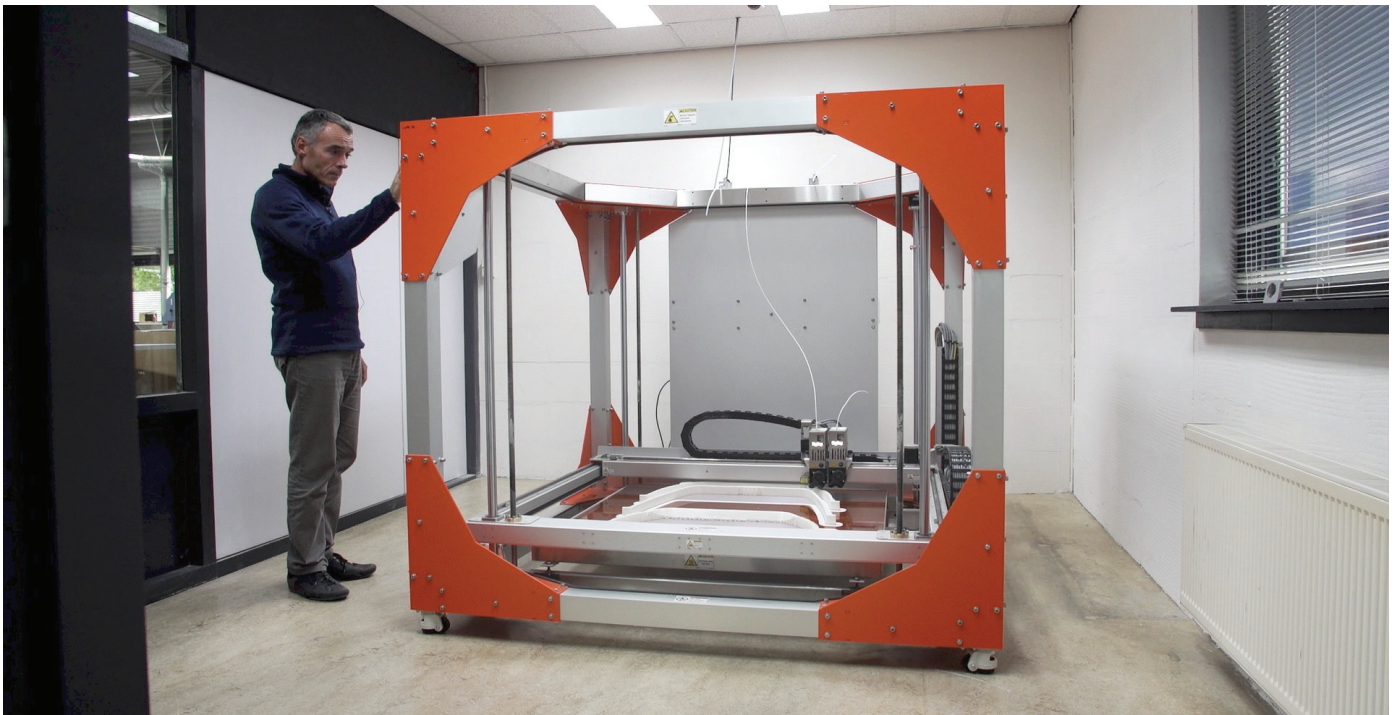
 bigrep

# INDUSTRIAL DESIGN: VILLEROY & BOCH

Villeroy & Boch is a large international ceramics boutique and premium lifestyle brand, which first opened its doors in 1748. With headquarters in Mettlach, Germany, one of the company's core product areas is innovative, stylish ceramics for bathrooms.

Company product designers working on new concepts start with initial sketches, but quite early in the process they move onto 3D models. Once happy with a design, they need to present a polished, full-scale model to decision-makers at the company. Johan de Groot, Product Designer at Villeroy & Boch, said, "Before we had the 3D printer, we needed to explain to our model makers what they needed to make with wood and foam and polyester – they needed to make the product."

Both commissioning and waiting for 3D models of ceramic product designs was time consuming. The hand production process also meant scale models often did not exactly match the designer's specifications. This would have an impact on the direction industrial design ideas took.



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Johan de Groot  
Product Designer at Villeroy and Boch.





## A LARGE-SCALE 3D PRINTER IN THE INDUSTRIAL DESIGN PROCESS

“THE FINAL PRODUCT LOOKS TERRIFIC! WE HAVE A ‘ONE-TO-ONE’ IN THREE WEEKS AND ON A HIGH LEVEL. THAT WAS UNTHINKABLE WITHOUT THIS LARGE-SCALE 3D PRINTER.”

Johan de Groot  
Product Designer at Villeroy and Boch

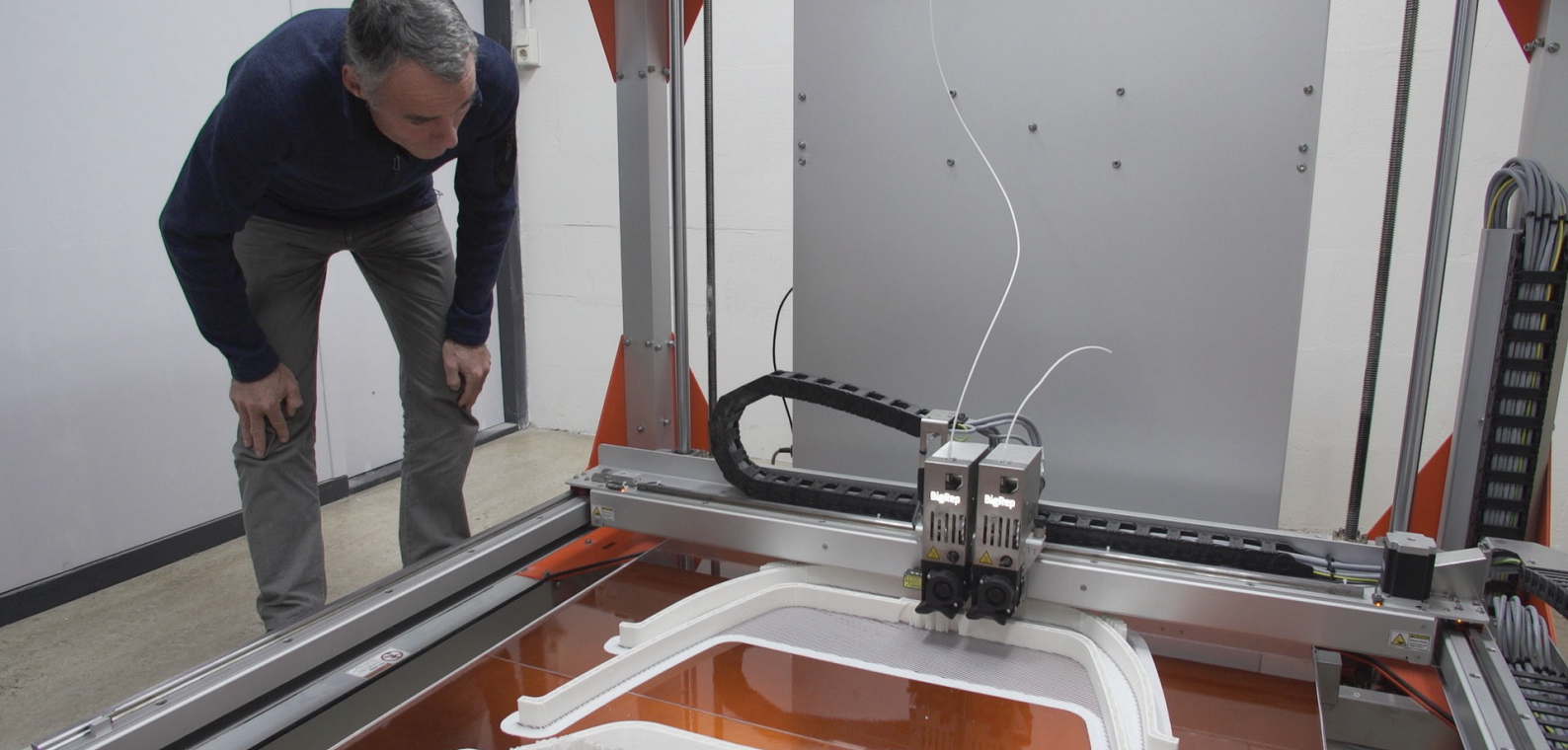
In January 2015, Villeroy & Boch purchased a [BigRep ONE](#) large-scale industrial 3D printer. The ONE can print complex geometric shapes of up to one cubic metre in size. De Groot still starts designs with sketches, but uses their industrial 3D printer for rapid prototyping and working out product designs. “Nowadays, it’s just bringing your product on a flash drive and the machine is making our product exactly in the way we wanted it to be,” said de Groot.

Production of CAD files was already a routine part of the product design process, so preparing the file requires minimal extra time. From that file, the BigRep ONE prints a precise 3D model of the design.

Villeroy & Boch scale models need a high-quality surface finish like that of the beautiful baths the company produces. To achieve this, 3D prints are subjected to several stages of post-processing. Plaster is applied to the surface and then sanded back. After three rounds of this the piece is then spray painted.

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## 3D PRINTED BENEFITS

The industrial design of baths and other ceramic products at Villeroy & Boch has been transformed with the introduction of the [BigRep ONE](#), giving the company a competitive advantage and reducing time to market for new designs.

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**There is a significant direct cost saving in 3D-printed rapid prototyping. De Groot estimates that the full cost of a large 3D model made with earlier methods was around 5x that of the major variable cost element of a printed scale model, the 3D printer filament. De Groot says that rapid prototyping a free-standing bath now takes three weeks to complete, whereas it would have taken 6-7 weeks to create using the earlier techniques.**

**When it comes to producing earlier stage 3D models – on a 1:2.5 scale – they take just 1/3 of the time they used to. Designer time is also significantly reduced with the new method. Previously they had to extract drawings from a CAD file and bring them to model-makers, but the process of converting files for the BigRep ONE is much simpler.**

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However, the qualitative change 3D printed rapid prototyping has brought to Villeroy & Boch is just as important. The accuracy of prints means that designers can better test out their different ideas, seeing exactly how they would manifest. This applies to the final prototype too. Since it is produced from the same CAD files as the final product, de Groot and his team can show decision-makers what the finished product will be like. As well as precision, their precision, large-scale industrial 3D printer empowers designers to experiment with ideas and think outside the square. “With the BigRep ONE you can try out more, you have more possibilities to go in more directions,” said de Groot.

*Discover 3D print solutions that reduce resource needs for your unique use case or project.*

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“ WITH THE BIGREP ONE, YOU SEARCH WIDER  
AND YOU WILL ALWAYS FIND SOMETHING NEW. ”

Johan de Groot

Product Designer at Villeroy and Boch

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THE USE CASE VIDEO

