



CHEAPER & FASTER

1:1 PROTOTYPING

HOW THE BIGREP ONE HAS ENHANCED FURNITURE
DESIGN PROCESSES AT STEELCASE

FURNITURE DESIGN: STEELCASE

A key process in furniture design is the testing of new ideas through model-making. Accurate 3D models and prototypes give designers vital information through which to assess and improve their concepts.

Until now, the standard options for 3D model-making fell into two categories. Well specified full-scale models which were costly and often required several days' turnaround; and simpler, usually smaller scale models lacking many specifications. Industrial designers would tend to start with simpler models and then proceed to a full-scale prototype.

This traditional process works, but it follows a rigid path set by the available 3D model-making options. It can mean that industrial designers only see a fully specified model at a late phase in the design process, thereby delaying the go-to-market strategy and reducing design iteration possibilities.

Michael Held, Director of Design – EMEA and APA, describes a specific time and money-saving application for the technology as:

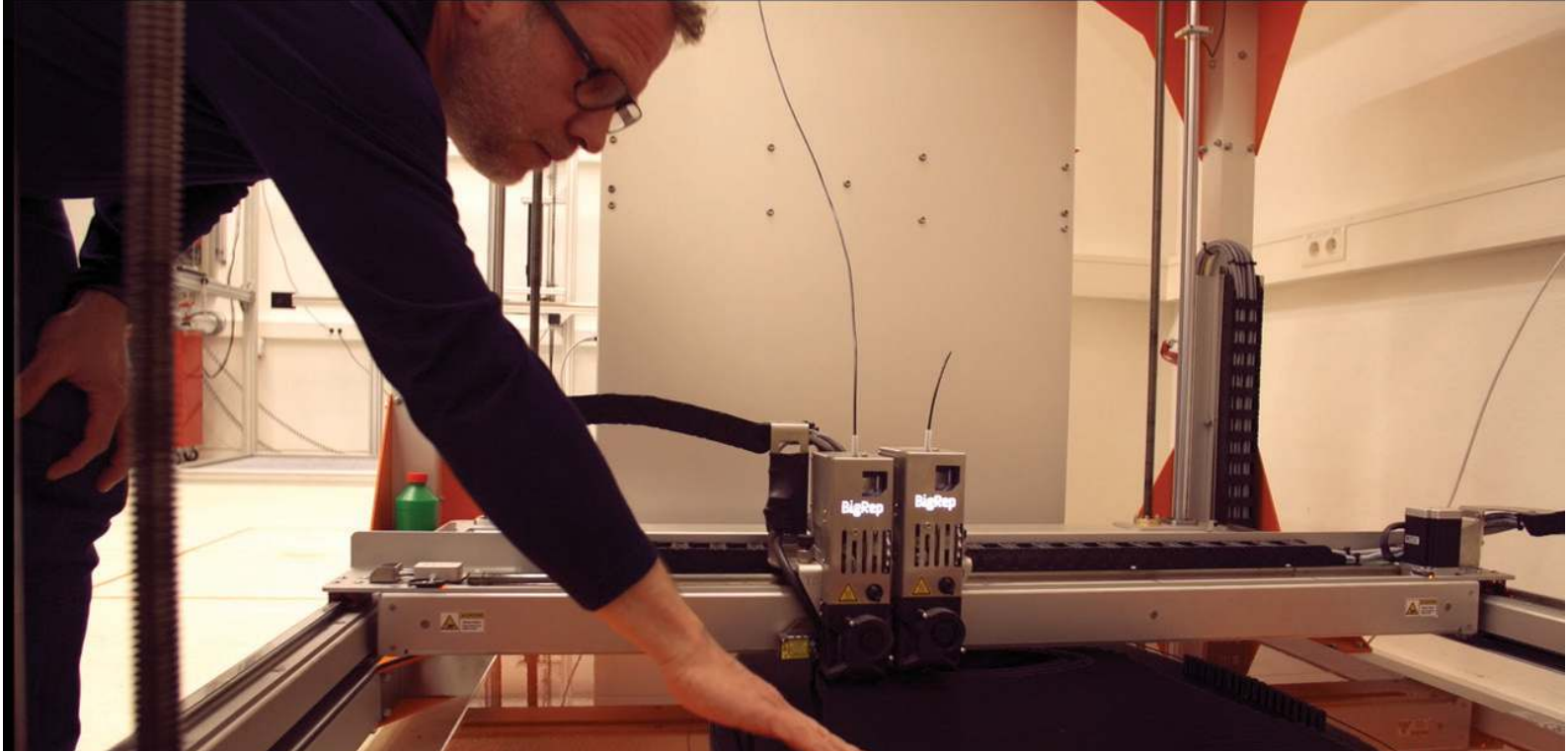


“ **MAKING** REMAINS FOR ME THE ESSENCE OF HOW WE WORK, BECAUSE YOU CAN REALLY SEE THE PRODUCT LIVE ... AND VALIDATE OR NOT A CONCEPT DIRECTION.”

Alban Moriniere
Senior Industrial Designer

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THE BIGREP ONE IN THE DESIGN PROCESS

“YOU CAN NOW TAKE A 3D-PRINTED SHELL AND GET IT UPHOLSTERED BY AN UPHOLSTERY SPECIALIST. SO SOMEBODY CAN ALREADY DEVELOP THE PATTERNS... THE KIND OF STITCHING, THE KIND OF PADDING THAT YOU WOULD NEED AROUND THE 3D SHELL, BEFORE WE EVEN HAVE A TOOL MADE.”

Michael Held
Director of Design – EMEA and APAC

Steelcase, founded in 1912, is the largest global B2B contract furniture company in the world. In a competitive, innovation-driven market, industrial designers at Steelcase have to work quickly and efficiently in order to develop winning products.

Since November 2016, Steelcase’s Munich Learning + Innovation Center has been equipped with the [BigRep ONE](#) large-scale industrial 3D printer, which can print complex geometric forms in scales of up to 1m cubed.

Early in the design process, Steelcase can quickly print a detailed, full-sized scale model based on a CAD file for testing and development. As a design progresses, Senior Industrial Designer Albin Moriniere and his colleagues use the 3D printer to produce different variants of their idea and compare these,

gaining the information required to make detailed decisions. Albin said, “the 3D print allows you all of a sudden to see the concept live, to see the light go through, see the assembly of the product and allows you to validate or not a concept direction.”



“ ONE OF THINGS THAT’S REALLY AMAZING ABOUT THE BIGREP 3D PRINTER IS THAT YOU CAN CREATE FULL SCALE SAMPLES. IT’S IMPORTANT BECAUSE YOU DON’T REALLY UNDERSTAND WHAT A PIECE OF FURNITURE MEANS IN THE REAL WORLD UNTIL YOU HAVE IT IN FULL SIZE.”

Michael Held
Director of Design – EMEA and APAC

FASTER, LOWER-COST DESIGNS: BIG VALUE

With the BigRep ONE large-scale 3D printer, Steelcase can produce functional, full-size 3D models much faster than before. An example was a seat shell able to bear a user’s weight, which was printed in just four days. Producing this using traditional methods would have taken around two months. While the same form could be produced using smaller glued-together 3D models from a competitor’s 3D printer, the material would not allow the item to be sat on, the design not able to be tested in use.

The ONE also brings financial savings. Steelcase routinely uses it to produce 3D models which would previously have required 2-3 weeks of subcontracted production. When choosing between industrial 3D printers, the company makes huge savings, as BigRep’s per-weight materials cost +80% less than those of the major comparable competitor on the market.

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These benefits can be added to the most obvious advantage the BigRep ONE brings to designers: its size. Underlining the value this represents is Michael Held, Director of Design, who says down-scaled outputs from smaller 3D printers are not sufficient to understand the proportions and to interact with it in reality.



“THE BIGREP IS IDEAL FOR 3D PRINTING LARGER SCALE OBJECTS WHEN WE NEED REAL SCALE, ONE TO ONE.”

Michael Held
Director of Design – EMEA and APAC

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THE USE CASE VIDEO

