

# 3D printing is the heartbeat of Symmons Industries' Design Studio Live virtual design studio

## Symmons Industries

- 70-year-old manufacturer of commercial and residential plumbing products. Symmons pioneered the anti-scald pressure-balancing technology for the shower.

## Challenge

- Rapidly producing concept prototypes for engineers and architects creating custom bathroom fixture designs.

## Solution

- Purchasing a Spectrum Z510 full-color 3D printer capable of printing 12 faucet models in three and a half hours.

## Results

- 3D printing is a critical element of Design Studio Live.
- 3D printing fosters customer designs that enable hoteliers and property owners to enhance their brands.
- With its 3D Systems printer, Symmons can produce 48 faucet models in the time it took its previous, Dimension brand printer to print one.
- 3D printing enables Symmons to deliver a custom physical model of a showerhead or faucet to any architect or designer within four days.
- Color printing lets Symmons experiment with concepts beyond stainless steel and employ new promotional concepts.
- 3D printing makes Symmons a popular destination at tradeshows.

Bathrooms matter in the design world. The room itself is a canvas for architects and interior designers to showcase their talents in a way that helps set a property apart from the pack. More fundamentally though, the bathroom “experience” is a critical factor in the discriminating consumer’s willingness to spend and select one property over another.



For these reasons, the humble bathroom fittings — the faucet, the showerhead, the towel rack and even the doorknob — are far too important to overlook when building or remodeling hotels, luxury condos and high-end homes. Property owners are increasingly demanding one-of-a-kind fittings to deliver a unique experience.

Symmons Industries, 70-year-old manufacturer of commercial and residential plumbing products, has long served this market with custom design and manufacturing services. The company broke new ground with the

launch of a first-of-its-kind virtual design studio for architects, designers and property owners, called Design Studio Live (<http://live.symmons.com>).

Design Studio Live is a Web-based program that allows users to create their own products and receive color 3D physical concepts of their designs within four days, metal prototypes in approximately 15 days, and delivered product for their property in as little as 16 weeks. With the help of this innovative new tool, architects and designers can create unique ideas that translate into exclusive fittings for their projects right from their desks. Users can begin by digitally paging through a virtual catalog of ready-made designs, dragging them to a virtual light box, and modifying them with Google SketchUp™, Adobe® Photoshop®, SolidWorks®, or any other 3D CAD program.

## CHALLENGE

### Fast-turnaround concept prototypes

Critical to the Design Studio Live formula is the ability to quickly and affordably churn out 3D physical models at high volumes. With this demand, handcrafting models was out of the question due to the time and labor involved. For Symmons, a 3D printer was the answer to creating a great custom service for its customers. A 3D printer is an output device for 3D data in the same way that a 2D printer is an output device for the words and pictures on a computer screen. The primary difference is that a 3D printer produces 3D models and prototypes in composite material.

Long before Design Studio Live was conceived, Symmons owned a Dimension® brand 3D printer. Design consultants used the printer, but only intermittently because the wait for a part to be ready was lengthy. A single faucet took 15 hours to print, says Spear.

## STRATEGY

### ZPrinting

A local 3D Systems reseller told Symmons it could fix the turnaround problem with a printer from 3D Systems, maker of the world’s fastest 3D printers and the only ones able to print objects in multiple colors. Symmons designers said, “Prove it.”

They did just that; instead of taking 15 hours to print a single faucet, 3D Systems Spectrum Z™510 full-color 3D printer printed 12 models in 3.5 hours at half the price of the single model produced by the Dimension machine. Put another way, the Spectrum Z510 could produce 48 “ZPrint” models in the time it took the Dimension machine to print one. Convinced, Symmons purchased the 3D printer to create 3D physical models on demand, giving Symmons the final piece of the puzzle it required to realize the vision of Design Studio Live.



## Case Study: Symmons Industries



### RESULTS

#### A thriving Design Studio Live

The Spectrum Z510 printer and its ZPrints are turning out to be the driving force behind Design Studio Live.

“The design process itself is exciting, but there comes a point when it’s really helpful to see a tangible, physical example of it,” says Spear. “By ZPrinting 3D models, designers can stop looking at their screens and see what the part really looks like in context and feels like in their hands.”

ZPrints also strengthen the relationship between an architect and a property owner. “Architects can slide a set of ZPrints across the table — perhaps faucets of different sizes and shapes — along with a red pencil,” says Spear. “The property owner gets a rare opportunity to handle the models and mark them up. The architect comes back with revised models a couple of days later, and the owner is blown away by the architect’s responsiveness.”

3D printing has helped enable Symmons, venerated for the superior workmanship of its internal plumbing parts, to show its design capabilities. For example, the Mandarin Oriental, New York wanted a distinctive look and feel for its bathrooms, and their design firm turned to Symmons to help create the details of the design. The bath design called for a shower system that incorporated fittings with a ceiling-mount drench showerhead and a Roman tub filler that was both stylish and simple to operate. Symmons developed custom concepts for its client with an elegantly simple, single control for on/off, hot/cold operation, a feature that helped to overcome the language barrier many international guests experience. ZPrints helped Symmons communicate a range of options to the client, which enabled the team to quickly close on a final solution. It was the same story at a Miami hotel where ZPrints helped Symmons refine the design of a vertical showerhead surrounded by chandeliers. Other satisfied Symmons clients include the Wynn Resorts, Four Seasons and The Ritz-Carlton, to name a few.

The Spectrum Z510 printer was ZPrinting at full tilt five days a week, 20 models a run, according to Spears. In the first four months of use, Symmons produced 4,000 ZPrints for a wide range of applications. Most were for client projects, but models also went to tradeshow, “lunch and learn” seminars with designers and architects, and to Symmons industrial designers. “You can push the print button during morning coffee break and be passing around prototypes at lunch. 3D Systems is enabling the kind of speed and part quality that is indispensable for Design Studio Live and all of our design work here,” commented Spear.

The Spectrum Z510 and its unique color capabilities have yielded other surprising benefits. They help Symmons stretch design concepts and prototypes beyond conventional stainless steel, using color to accurately represent the popular finish of Onyx. Color ZPrints also make great promotional handouts — for instance, a brightly colored faucet model with an architect’s name on it. Symmons even brings its Spectrum Z510 to tradeshow and ZPrints nonstop, making its booth a popular stop for designers and architects witnessing the possibilities of both Symmons designs and instant prototypes.



Whether at tradeshow or in Design Studio Live, 3D color printing enhances Symmons’ business and brand by helping the company focus as much on the aesthetic considerations as the internals. The company is now able to prove that it can make the most beautiful “facades” — or better yet, help customers make them.

“It’s a great experience to be the first in market to do this,” says Spear. “Our unique ability to host a full-service virtual design studio with 3D printing capabilities, and do it so painlessly, is a real differentiator and a powerful one that keeps us in top of mind to our clients. 3D Systems unique speed, color and affordability make this possible.”

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*– Eric Spear,  
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Issue Date January 2012