Case Study

At a Glance

Company: Coleman Associates
URL: www.coleman-associates.com
Location: Houston, TX
Industry: Model makers

Challenges

- To meet the scale-model design criteria of a diverse client base quickly and accurately

Solution

Integrating the Objet Alaris30™ Desktop 3D Printing System into the firm's model-making practices

Results

- Coleman & Associates can now easily customize and quickly produce models that meet the exact specifications of each client

Alaris30 produces more accurate models in less time

Objet 3D Printing System Helps Model Maker Coleman & Associates Win and Keep More Clients

Founded in 1984, Coleman & Associates is a team of model-making professionals who are experts in 3D development, mold making and production. The team prides itself in producing the highest quality models and prototypes available. Clients include attorneys who need models for litigation work, and architects, engineers and manufacturers that require accurate models as sales tools. Clients also need beautiful display models of larger-than-life projects for lobbies and museums.

Automobile models can have a major impact on juries during trials

Most of the firm's attorney clients do litigation work related to automobile accidents. When cases go to trial, they often use models in the courtroom to demonstrate the details of an accident. Accuracy of each individual model is crucial so that attorneys can show details about the progression of an accident and resulting physical evidence such as damage to the vehicle and ground markings. Models can have a major impact on a jury's ability to understand and evaluate a case.

For many years, Coleman & Associates built automobile models based on available model car kits, and then customized each finished vehicle by hand – adding scratches, dents, etc. as directed by the client.

With so many vehicle models and manufacturers it was difficult to always have a model car kit available to meet the attorneys' requirements. Sometimes the toy companies don't make a particular vehicle in a particular year. So Coleman & Associates began purchasing 3D vehicle databases that they could outsource to a CNC machinist or 3D printing bureau. Once a vehicle shape was made for them by a vendor, Coleman & Associates would make a silicone mold of the master vehicle and reproduce the part as many times as the client needed.

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Firm Founder Richard Coleman knew there had to be a better way. He was interested in bringing all the process steps of a project back to the firm. Coleman had been following 3D printing technology for many years, but had never found a system that offered the appropriate build envelope, high resolution and robust material to address his firm's needs. After revisiting the market, he invested in Objet's Alaris30.

The Alaris30 Desktop 3D Printer delivers a unique combination of high-quality, finely detailed printed models available in a compact office-friendly system. It can be used to create smooth surfaces, complex geometries, small moving elements, fine details, stand-out text and whatever else a design demands.

Coleman & Associates purchased an Alaris30 in early 2009, and Coleman reports that it has streamlined many aspects of the company's model-making process. With the Alaris30, Coleman & Associates model makers can now use software to modify the 3D car databases – for instance, adding an extended cab to a truck, separating bumpers and chassis from the solid database, or adding material thickness to make new parts – and within a few hours have a sturdy, accurate plastic model. The model can be painted and used as-is, or can be used to create a mold (in cases where many versions of one car are required). One model produced from the Alaris30 can be used to make a silicone mold which can produce up to 30 perfect, identical models.

Objet's Alaris30 takes several days out of process, produces highly accurate models

Coleman and his staff are thrilled – as are their clients. "The Alaris30 takes several days out of the process and gives us a more accurate model because it's easy to customize," says Coleman. "This approach represents the next step up in the evolutionary process of model making. We are always finding new ways to integrate our Alaris30 with the model-making process.

"It has become an indispensable tool in making scale models, not just for our litigation clients, but for all our clients."

Coleman & Associates also finds the Alaris30 useful in work for its architectural and engineering clients. The work horse of the firm for the past 10 years has been its laser cutters. The laser takes the CAD data and cuts it into 2D artwork. Once it's cut, a model maker painstakingly fabricates the individual pieces into the finished product. With the addition of the Alaris30, model makers can now print completed components that are incorporated into the finished model. Sometimes the entire model can be 3D printed instead of fabricated, saving significant time and labor.

"Clients can now send us their 3D files and have models by the end of the week," says Coleman. "We could not do that before we had the Alaris30. It's a great new service that really sets us apart."

Alaris30 saves valuable hours on architectural projects

Recently, the firm worked with an architectural and landscape client unveiling the new George W. Bush Presidential Center, scheduled to open at the Dallas SMU campus in 2013. The project required construction of a 6 ft. by 10 ft. scale model at 1 in. equal to 20 ft., completed in just five weeks. The building was fabricated from acrylic and painted. The base and landscape were a combination of foam materials, plywood, scale-model landscaping and acrylic plastic. The short deadline for such an intricate model meant every minute counted. Using the Alaris30 to produce quick and accurate component work for

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the project saved the firm valuable time. The vertical freeway walls, light fixtures and Oval Office were all printed instead of fabricated. Importantly, Coleman & Associates captured detail for the project that could not have happened without the versatility of 3D printing.

Coleman & Associates is often working on very tight timelines, says Coleman, with immovable deadlines such as a scheduled trial.

"When it's crunch time for a client, in the past it wasn't unusual for our model makers to be working late into the night," he says. "Now that we have our Alaris30, that happens a lot less often. It's less pressure on our staff, and clients still get their models on time. Everyone wins.

Alaris30 has had direct impact on firm's ability to win and keep clients

Coleman loves the fact that his model makers can print out parts overnight, unattended. He also notes that clients are increasingly using organic, ergonomic shapes in their projects. "Our laser cutters can't reproduce a human skull or a tool grip on a hammer," Coleman says. "In the past, we've used artistic means to create a close likeness for our clients. Now we can take the data and reproduce models that exactly meet our clients' specifications. Our Alaris30 printer has helped Coleman & Associates strengthen its reputation for creating the highest-quality models and that's had a direct impact on our ability to win and keep clients. It's an important part of our firm's evolution."

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About Objet Geometries

Objet Geometries Ltd., the innovation leader in 3D printing, develops, manufactures and globally markets ultra-thin-layer, high-resolution 3-dimensional printing systems and materials that utilize PolyJet™ polymer jetting technology, to print ultra-thin 16-micron layers.

The market-proven Eden™ line of 3D Printing Systems and the Alaris™30 3D desktop printer are based on Objet's patented office-friendly PolyJet™ Technology. The Connex™ family is based on Objet's PolyJet Matrix™ Technology, which jets multiple model materials simultaneously and creates composite Digital Materials™ on the fly. All Objet systems use Objet's FullCure® materials to create accurate, clean, smooth, and highly detailed 3D parts.

Objet's solutions enable manufacturers and industrial designers to reduce cost of product development and dramatically shorten time-to-market of new products. Objet systems are in use by world leaders in many industries, such as Education, Medical / Medical Devices & Dental, Consumer Electronics, Automotive, Toys, Consumer Goods, and Footwear industries in North America, Europe, Asia, Australia, and Japan.

Founded in 1998, Objet serves its growing worldwide customer base through offices in USA, Mexico, Europe, Japan, China and Hong Kong, and a global network of distribution partners. Objet owns more than 50 patents and patent pending inventions. Visit www.objet.com.

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