

AT A GLANCE

Company: Rietveld Architects LLP
URL: www.rietveldarchitects.com
Location: New York, NY, USA
Industry: Architecture

Challenges

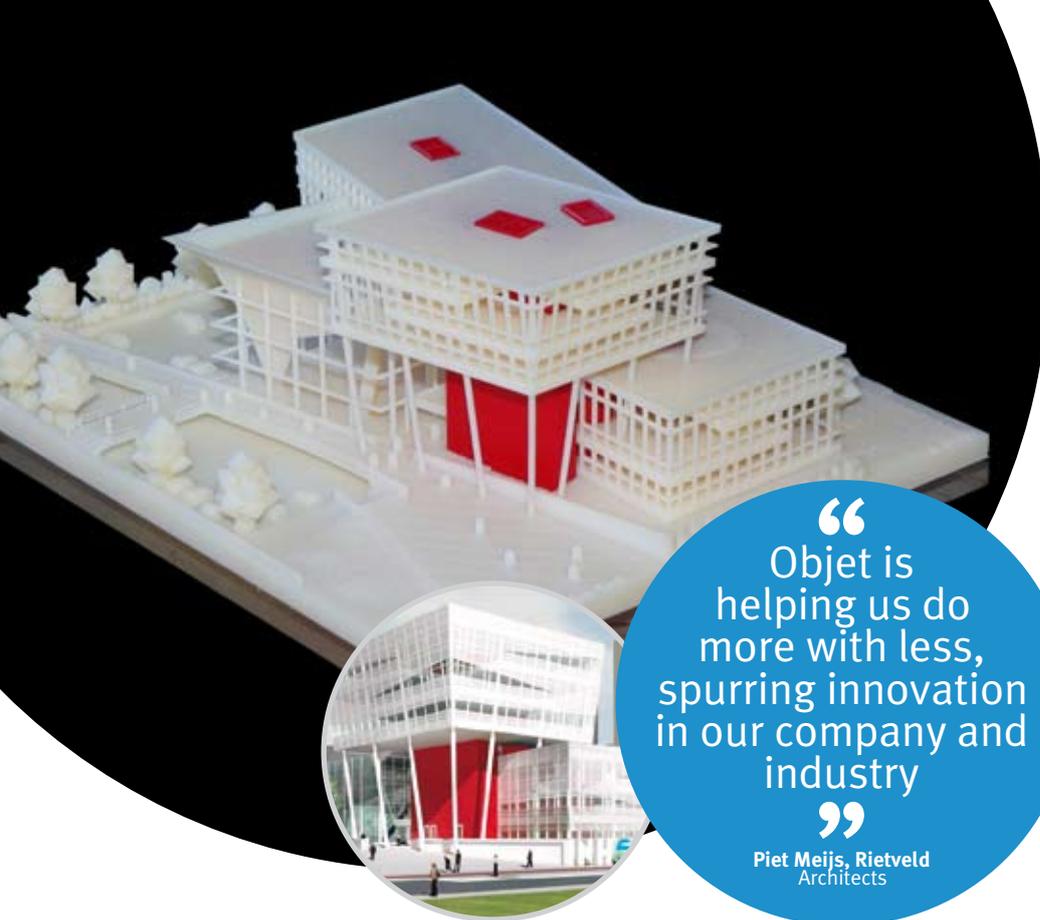
- > Significantly reduce the time and expense in producing building models, often requiring highly delicate details
- > Impress clients with the ability to quickly produce better representations of designs and to quickly respond to new ideas facilitating the decision-making process

Solution

- > The Eden350™ 3D Printing System from Objet

Results

- > Reduced the time to create models from two full months for two employees to just hours by a single employee
- > Yielded more detailed models, which help clients better visualize final projects, ultimately helping the firm to win more projects



“
 Objet is helping us do more with less, spurring innovation in our company and industry
 ”

Piet Meijs, Rietveld Architects

Objet Technology Enables New York-Based International Architecture Firm to Shave Months Off Model-Building Time

Rietveld Architects LLP, established in New York City in 1994, is known throughout the United States and Europe for its large-scale, creative commercial and residential spaces. Its international team of architects places a premium on embracing the latest technologies in such areas as energy savings and individual environmental controls.

The firm’s partners, Margaret and Rijk Rietveld, became aware of 3D printing several years ago through a contact at the National Aeronautics and Space Administration (NASA), who shared with them some of the first 3D-printed models. They saw in this new technology the potential to vastly increase productivity and innovation in the field of architecture.

During the course of a typical project, Rietveld, like other architecture firms, builds numerous models in increasing detail and scale that help clients to visualize designs. And, like other firms, they had traditionally built these models by hand – a task that usually required two employees to spend upwards of two months cutting, assembling and finishing components made of cardboard, foam board and Plexiglass. The time and expense to hand craft these complex elements dictated that the models have an inadequate amount of detail, limiting the creativity and therefore showcasing a model that sometimes did not sufficiently highlight the selling points of the design.

Several years ago, when the construction industry began to slow down, Rietveld decided the time was right to explore 3D printing as a means to set the organization apart from the competition while at the same time increasing quality and productivity for model production. “It became evident that the pace of the industry wasn’t going to hold,” said Rijk Rietveld. “We knew that a big change was coming, and in the new environment those firms that could do more with less and stand out with superior models would be more competitive.”

Objet’s Eden350™ chosen for detail, accuracy and office friendliness

Rietveld’s leadership was familiar with the available 3D printing technologies and, after in-depth research on eight different systems, selected the Eden350™ from Objet Geometries. “We were particularly impressed by the ability of this system to quickly produce highly detailed, accurate models with minimal office clean-up,” said Rijk Rietveld. “Some of the other technologies produced brittle models and just didn’t have the fine detail of the Objet solution”.

According to Piet Meijs, an associate with the firm, the prototyping capabilities offered by Objet have helped the firm to secure several new projects. What's more, existing clients have been enormously responsive to the technology, as new models can now be created and finished by a single employee in merely a matter of hours. "Frequently during a project, clients request design changes or wonder how particular changes may impact the overall aesthetic," said Meijs. "Our Objet system lets us create a whole new model right away, and that wows the client every time."

A unique university building design, brought to life in an Objet model

One compelling illustration of the power and versatility of Objet 3D technology was a project for INHOLLAND University in the Netherlands, which sought to replace a small, existing building with a much larger space for its applied sciences program. The new space required a flexible interior plan that preserved the identities of three distinct entities that were to occupy the building.

Among the components of the building's design were a suspended auditorium within an innovative composite material glass-wall atrium, as well as an open scissor staircase and self-study area where students could mingle and collaborate. Using the Eden printer, Rietveld created detailed models that brought to life a precise representation of the complex functional requirements of the university and the unique design concepts of the Rietveld team. "The enthusiastic response from the university's leadership played out in the extremely collaborative and streamlined approval process," said Meijs. "Showing the details with projects like this would simply not have been possible with hand made models."

Making Objet technology its own

According to Rijk Rietveld, less than one percent of architecture firms worldwide currently use 3D printing. He noted that the industry has been reluctant to embrace rapid prototyping technology because of concerns over the delicacy of some models produced at extreme scales. "The concerns may be justified with other products, but Objet has given us the technological tools and flexibility to create even the most delicate model components," said Meijs. For example, Rietveld has devised a method to preserve the more intricate model components by slightly modifying some design specifications for the prototypes, protecting the fine details while effectively capturing the look, feel and proportion of the structure.

Said Meijs, "The name of the game is innovation. You find a new technology with promise, and discover new and better ways of utilizing it to deliver the best design and concept to the client. We are constantly striving to better ourselves, better our industry, and Objet is helping us do just that."

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. Connex500™ 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 3-dimensional models.

Objet's solutions enable manufacturers and industrial designers to reduce cost of product development cycles and dramatically shorten time-to-market of new products. Objet systems are in use by world leaders in many industries, such as automotive, electronics, toy, 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, Europe and Hong Kong, and a global network of distribution partners. Objet owns more than 50 patents and patent pending inventions.



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