



“The developer was happy about the money they saved and even happier about being able to get their sales people on the road with a scale model one month earlier.”

Ken Champlin / President and Founder, KMCA



KMCA, which builds architectural models, created the bulk of this model on a Fortus 250mc 3D Printer, drastically reducing time and cost that traditional construction would have taken.

CASE STUDY

A Model Production

3D PRINTING ARCHITECTURAL MODELS HALVES THE TIME AND COST OF STICK CONSTRUCTION

As of 2015, CityCenterDC was the largest urban development on the East Coast of the United States. Its impact on the nation's capital has been compared to the impact of Rockefeller Center on New York City. The building was developed by Gould Property Co. and designed by Pickard Chilton.

During construction, architectural models helped the developer's sales team convey the buildings' appearance and layout to prospective tenants, before the actual buildings were completed. The largest building in the complex, when it is finished, will be 900 New York Avenue, a 620,000-square-foot 12-story office tower featuring a garden-style atrium, street-level retail and private terraces. Gould hired one of the leading builders of architectural models, KMCA, to build large-scale models of both buildings in the CityCenterDC development.

Traditional vs. 3D Printed Model Construction

Gould tasked KMCA with building both buildings using traditional stick construction. Skilled craftsmen built these models using tens of thousands of components each. The models were displayed in the design center for each building and used in meetings with prospective tenants.

But the developer also wanted a smaller scale model of each building that the sales team could use to motivate prospective tenants to visit the design centers. Ken Champlin, president and founder of KMCA, presented two alternative approaches to building the scaled models.

The first approach was to use stick construction. It would have taken about eight weeks and cost about \$20,000 to use this method to build a smaller model. Champlin recommended instead using 3D printing to produce the majority of the model as a single piece. This approach made it possible to provide a high level of detail while eliminating the time and cost involved in producing and assembling most of the individual components.

KMCA printed the core of the model comprising the majority of the structure as a single part on a Fortus 250mc™ 3D Printer. KMCA technicians separately printed the colonnades, the interior columns of the atrium; the arcade, the series of arches on the top of the building; and the mechanical rooms which are also on top of the building. The entire model was produced in ABS material.

Models Created One Month Earlier

“The developer was pleased that we were able to produce a scaled-down model that looked just as good as stick construction and was considerably more accurate at less than half the cost and in half the time of traditional stick construction,” Champlin said. “The developer was happy about the money they saved and even happier about being able to get their sales people on the road with a scale model one month earlier.”

Gould is also developing another high profile project a few blocks away, a 400,000-square-foot office building at 600 Massachusetts Avenue. KMCA also used 3D printing to produce a scaled down model for 600 Massachusetts Avenue while providing the same cost and time savings.



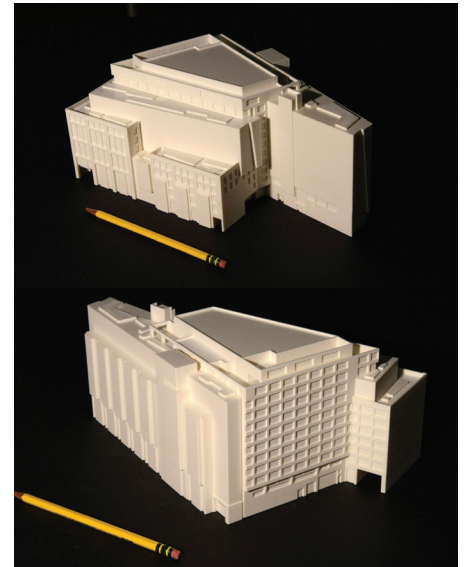
Smaller scale model of 900 New York Avenue



Top view of smaller scale model of 900 New York Avenue



Image showing scale model of 600 Massachusetts Avenue project. Note the quarter on the left.



Two views (above) of a 30-scale model of the 600 Massachusetts Avenue project right out of the printer.

METHOD	TIME	COST
Stick construction	8 weeks	\$20,000
3D printing	4 weeks	\$8,000
Savings	4 weeks 50%	\$12,000 60%



E info@stratasys.com / STRATASYS.COM

ISO 9001:2008 Certified

HEADQUARTERS

7665 Commerce Way, Eden Prairie, MN 55344
 +1 888 480 3548 (US Toll Free)
 +1 952 937 3000 (Int'l)
 +1 952 937 0070 (Fax)

2 Holtzman St., Science Park, PO Box 2496
 Rehovot 76124, Israel
 +972 74 745-4000
 +972 74 745-5000 (Fax)