MEGA BLOKS

Creating innovative new toy lines with SolidWorks Professional

Mega Bloks uses SolidWorks software to design and visualize complex shapes, such as those used in the company's Lil' Dump Truck.

Mega Bloks™ Inc. designs, manufactures, and markets the Mega Bloks® brand of toy building blocks. As one of the top toy brands in North America, Mega Bloks has the goal of becoming the best and fastest-growing toy company in the world. To achieve that objective and support a continual increase in new toy concept development, Mega Bloks management decided to upgrade the company's design tools.

"Every year, we need to update our existing product lines as well as put new products on the shelves," explains Alain Pilon, vice president of design and development. "The pace of our product development efforts demands a flexible yet technically powerful design package."

According to Daniel Bourgeois, vice president of research and development, the company's past reliance on 2D CAD software constrained design creativity and led to long, iterative prototyping processes. For example, engineers could not manage assemblies well in 2D, and had to build complete prototypes to detect errors in the design of moving parts. Also, working solely in 2D compromised a designer's ability to visualize complex 3D shapes without building a prototype, resulting in design limitations.

Mega Bloks evaluated two 3D CAD systems before standardizing on SolidWorks® 3D CAD software in 1999. Since then, the company, working with reseller SolidXperts, has upgraded its design environment to the SolidWorks Professional suite, which includes SolidWorks product data management (PDM) software. Bourgeois noted the short learning curve, outstanding value, design focus, engineering support, and robust 3D capabilities, including complex shapes and assemblies, as the reasons why Mega Bloks chose SolidWorks software.

Results:

- Removed unnecessary steps from the development cycle
- Designed more complex shapes, surfaces, and assemblies
- Reduced prototype development costs
- Improved the management of product design data

SOLIDWORKS

Rapid prototyping of assemblies in 3D

Using SolidWorks Professional, Mega Bloks design engineers have reduced costs, shortened design cycles, improved the flow and management of design data, and created innovative new product designs. By utilizing the large assembly and 3D visualization capabilities in SolidWorks software, the company has dramatically increased its new concept development efforts. Starting with the Mega Bloks Lil' Dump Truck™, the first product designed completely in SolidWorks Professional, the company has continually added unique, new product lines, such as the Cyborgs vs. Mutroids™ Transforming BLOK BOTS™, Command Ops™, and MEGA PLAY™ product lines.

"We leverage the assembly capabilities of SolidWorks software heavily," Bourgeois explains. "Using the real-time collision detection capabilities, we are able to detect areas of collision and interference on the computer, and fix them before building a single prototype. In the past, we would have had to build a prototype of the whole assembly to understand the same thing, a costly and time-consuming process. Now, we do it all on the computer. That's what I call rapid prototyping."

Bourgeois notes that SolidWorks software gives Mega Bloks designers more freedom to push the limits on a design. "In the toy business, it is important to design an attractive product that is pleasing to the eye. With SolidWorks Professional, we are able to add more detail and use complex surface shapes. Style is very important for us, and SolidWorks software gives our designers an edge."

Eliminating design steps

By deploying SolidWorks Professional, Mega Bloks has also streamlined its design process. The company's traditional prototyping process involved three steps: reforming, adding complex features, and functional prototyping. During reforming, the rough model was scrutinized and drawings were redrawn. During the second phase, complex features were added with additional drawing rework. Phase three involved functional prototyping prior to production. "With SolidWorks Professional, we have eliminated the first two steps," Bourgeois says. "We don't need those functions anymore. We're using the time savings to push more on the limits of design."

Mega Bloks also plans to utilize the animation capabilities found within the design communication tools of SolidWorks Professional and PhotoWorks graphics feature to create product renderings and animations for sales support and market research, functions that required the production of a prototype in the past.

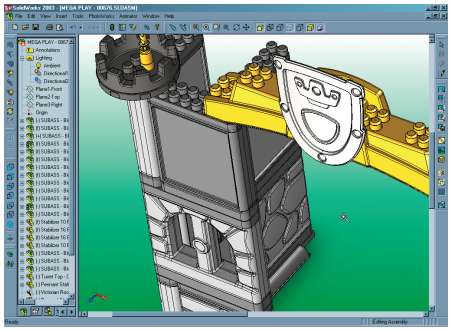
Managing data to support growth

The SolidWorks software implementation and an accelerated design effort at Mega Bloks created the need for a robust, design-centric PDM solution to control and manage the growing volume of product data. Upgrading to the SolidWorks Professional suite meant Mega Bloks could implement SolidWorks PDM software.

"We needed to know who was working on what, who modified a concept, and what the most recent version of a design was," Bourgeois explains. "Our company is growing at an explosive rate, and we needed a means for tracking changes and organizing and managing drawings. We determined that SolidWorks product data management software is the best and most user-friendly tool for those tasks."

"WE LEVERAGE THE ASSEMBLY CAPABILITIES OF SOLIDWORKS SOFTWARE HEAVILY. USING THE REAL-TIME COLLISION DETECTION CAPABILITIES, WE ARE ABLE TO DETECT AREAS OF COLLISION AND INTERFERENCE ON THE COMPUTER, AND FIX THEM BEFORE BUILDING A SINGLE PROTOTYPE. THAT'S WHAT I CALL RAPID PROTOTYPING."

Daniel Bourgeois
Vice President of Research and Development



Using the SolidWorks Professional suite, Mega Bloks has dramatically increased its new concept development efforts, resulting in innovative products like the MEGA PLAY building system.

Mega Bloks Inc.
4505 Hickmore
Montreal, QC
CANADA H4T 1K4
Phone: +1 514 333 3339
www.megabloks.com

Dassault Systèmes
SolidWorks Corp.
300 Baker Avenue
Concord, MA 01742 USA
Phone: 1 800 693 9000
Outside the US: +1 978 371 5011
Email: info@solidworks.com
www.solidworks.com