



3DEXPERIENCE™

## SOLIDWORKS 3D CAD

*TRANSFORM YOUR IDEAS INTO GREAT PRODUCTS*



# SOLIDWORKS CAD

## DESIGN, VERIFY, MANAGE, AND COMMUNICATE FOR A GREAT PRODUCT DESIGN EXPERIENCE

SOLIDWORKS® 3D modeling software is a core design tool you need for developing your ideas and increasing innovation while you cut design time and reduce production costs. An extensive range of 3D design tools, highly intuitive user interface, and broad customer support make it the premier design tool of choice worldwide.

Whether you want to enhance your 3D capabilities or upgrade from 2D, SOLIDWORKS 3D CAD gives you the tools to make your next design project better, faster, and more efficiently.

- Create, visualize, and even animate designs to communicate ideas more easily in 3D
- Quickly create production quality 2D drawings that automatically update when the 3D design changes
- Design complex, multicurvature shapes as well as massive assemblies with hundreds of thousands of components
- Hit product cost targets and help ensure designs can be manufactured using built-in, automated cost estimation and “design for manufacturability”
- Complete design tasks faster with specialized functionality for sheet metal, weldments, mold design, piping, and electrical routing
- Build proper fit with automated interference, collision, and hole misalignment checks and tolerance stack-up analysis
- Provide manufacturers 3D models for 3D CAM machining, fabrication, and rapid prototyping
- Get up to speed faster with pre-built, 3D CAD libraries of parts and online content
- Import and export a wide variety of CAD and data formats to ensure you can work with customers, suppliers, and your existing CAD data

Here are examples of what SOLIDWORKS 3D CAD can do, told through three SOLIDWORKS customers.



Bresslergroup



U.S. Water Services



Brentwood Recycling Systems





## MAKE YOUR DESIGNS WORK SEAMLESSLY FOR MANUFACTURING

SOLIDWORKS provides a direct link to all types of manufacturing machinery to get your designs to production quickly and accurately. Output the specific types of data needed by modern manufacturing facilities, as well as production-ready 2D drawings and other documentation for the shop floor. SOLIDWORKS Gold Certified CAM partners provide CAM software that is integrated inside SOLIDWORKS, helping ensure tight integration of design and manufacturing.



# DESIGN FOR MANUFACTURABILITY

## SHORTEN DEVELOPMENT FOR FASTER TIME-TO-MARKET



**“With SOLIDWORKS software, the back-and-forth between industrial design and engineering takes 30 percent less time, translating into a shorter overall development cycle and faster time-to-market.”**

David Schiff  
Director of Research and Development  
Bresslergroup

Bresslergroup is one of the preeminent product development consulting firms in the United States, with more than 125 patents and over 80 major product design awards. They moved to 3D design to help improve productivity, increase innovations, and take advantage of simulation technologies.

The transition from industrial design concepts to engineered products is an area where Bresslergroup has realized substantial improvements. Because designers use SOLIDWORKS® CAD to create concepts, engineers can work with their models right away, resulting in fewer iterations between the two groups.

“Every product that we work on is something new, which means industrial design is a critical, driving factor,” notes Director of Research and Development David Schiff. “And when we build proof-of-principle prototypes, it requires significant interaction between industrial designers and engineers.

“The SOLIDWORKS user interface doesn’t frustrate our industrial designers,” Schiff adds. “They use SOLIDWORKS surfacing tools to create the organic, free-flowing shapes and forms that are a requirement for many consumer products. The beauty of it all is that our industrial design models now contain the engineering and manufacturing data that engineers need to turn ideas into reality.”

### Results:

- Faster industrial-design-to-engineering interaction
- Fewer prototyping iterations during development
- Optimized designs via design-table-driven simulations
- Production cost reductions

# LEVERAGE ENGINEERING DATA

## CREATE NEW DESIGNS AND SPEED PRODUCT DEVELOPMENT

One of North America's leading water treatment providers, U.S. Water Services formed its own Engineering and Equipment Division to address increased demand for equipment development and installation consulting services. U.S. Water had relied on equipment produced by other manufacturers for its water softening and treatment systems. But according to Senior CAD Drafter Travis Brown, designing and manufacturing its own equipment gives the company more design flexibility, greater innovation potential, and increased revenue opportunities.

U.S. Water chose SOLIDWORKS software because capabilities like automated routing of piping systems, integrated design simulation, and photorealistic rendering dovetail with water treatment system and equipment development; and it's easy to learn and use.

"SOLIDWORKS helps us automate development processes," noted Brown, "such as using SOLIDWORKS Routing to route piping and flexible tubing systems, and the design library of 5,000 parts that we've created in SOLIDWORKS to facilitate design reuse. SOLIDWORKS has given us the flexibility and agility to efficiently and cost-effectively operate the Equipment Division."

### Results:

- Reduced design cycles by 75 percent
- Grew equipment revenue 80 percent in one year
- Established new equipment business
- Eliminated reliance on competitors' products



**"It would have taken us  
four times as long to  
develop this equipment  
without SOLIDWORKS."**

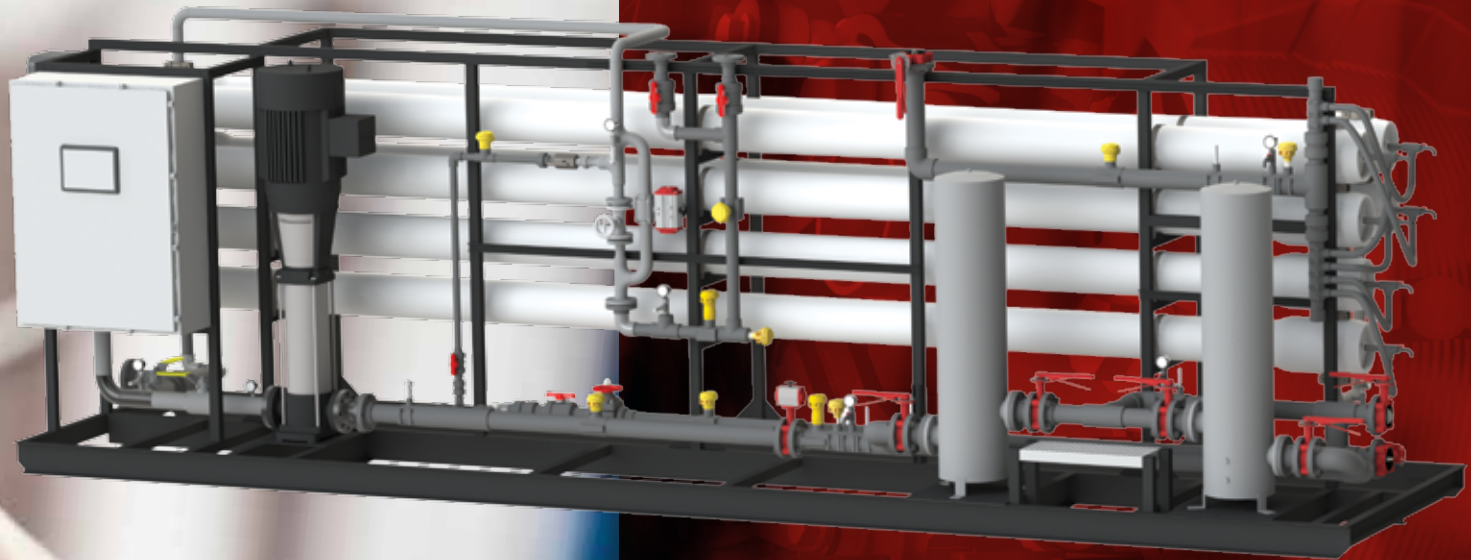
Travis Brown  
Senior CAD Drafter  
U.S. Water Services





## EASILY REUSE EXISTING DESIGN DATA TO CREATE NEW DESIGNS

SOLIDWORKS search, automation, and configuration tools help you reuse existing 3D CAD models and 2D drawings, to help accelerate your design process, save time and development costs, and increase productivity. Designers and engineers can find and configure design data and documentation quickly to create new designs, reduce product development time, and put their focus on creating innovative new products instead of manipulating a CAD system.



## SOLIDWORKS COMMUNICATION TOOLS LET YOU EASILY SHARE COMPLEX DESIGNS

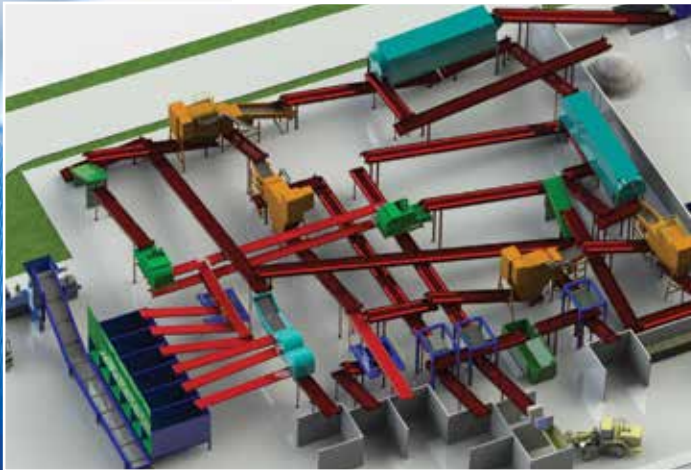
With manufacturers and partners, SOLIDWORKS 3D design software has a suite of built-in tools that enable you to email detailed design renderings and complete drawings. eDrawings® software lets you share 3D designs with downstream suppliers who may not have SOLIDWORKS. You can use eDrawings built-in mark-up capabilities to conduct full design reviews via email. Customers and suppliers will experience your designs in 3D—and measure, rotate, and manipulate them in ways that would be impossible in 2D.





# PRESENT DESIGN CONCEPTS

## DYNAMICALLY COMMUNICATE IDEAS TO YOUR AUDIENCE



**“With SOLIDWORKS, we can produce designs for complex plants in just a couple days and develop designs we could not have achieved using 2D.”**

Graham Badman  
Managing Director  
Brentwood Recycling Systems

Brentwood Recycling Systems in Australia is a leading global manufacturer of recycling and waste processing machinery. The company designs and manufactures turnkey recycling plants, as well as individual waste processing equipment, such as conveyors, shredders, feeders, and trommel screens. Brentwood turned to 3D CAD to help improve design accuracy and secure an advantage over increasing competition.

Since implementing SOLIDWORKS Premium software, Brentwood has increased productivity in design and production. “Our greatest productivity gains derive from our preliminary plant designs,” explains Graham Badman, managing director.

The SOLIDWORKS implementation also helped elevate the quality and effectiveness of Brentwood’s sales function. Using SOLIDWORKS design visualization and communication tools, such as PhotoView 360 and eDrawings, Brentwood can demonstrate how machinery and plants function in full 3D.

“SOLIDWORKS has had a phenomenal impact on our sales effort,” Badman stresses. “With PhotoView 360, we create renders of every aspect of our plants, which is much more effective for illustrating how our systems operate. I use SOLIDWORKS on my laptop to make detailed presentations, such as walking a client through the health and safety features of our equipment.”

### Results:

- Shortened development cycles by 75 percent
- Cut rework by 90 percent
- Realized return on CAD investment after two projects
- Improved design visualization and communication

## PRODUCT FEATURES

**SOLIDWORKS  
STANDARD**

**SOLIDWORKS  
PROFESSIONAL**

**SOLIDWORKS  
PREMIUM**

<b>CAD Capabilities</b>			
Easy Heads-Up User Interface	▶	▶	▶
Part and Assembly Modeling	▶	▶	▶
Production-Quality 2D Drawings	▶	▶	▶
Realistic Real-Time Rendering	▶	▶	▶
Advanced Surfacing	▶	▶	▶
Data Translation (Import/Export)	▶	▶	▶
Sheet Metal Design	▶	▶	▶
Welded Structures Design	▶	▶	▶
Plastic Part and Mold Design	▶	▶	▶
Large Assembly Management and Performance	▶	▶	▶
Assembly Motion Visualization and Video Capture	▶	▶	▶
Part and Assembly Checks (Interference, Draft)	▶	▶	▶
Automatic Bill of Materials (BOM)	▶	▶	▶
Design Automation	▶	▶	▶
Intelligent Modeling Capabilities	▶	▶	▶
Design Reuse	▶	▶	▶
Design Collaboration		▶	▶
Automatic Feature Recognition		▶	▶
Standard Hardware Libraries		▶	▶
Photorealistic Rendering		▶	▶
Design Standards Checking		▶	▶
Advanced Productivity Tools		▶	▶
Import and Create Geometry Using Scanned Data			▶
Routed Systems (Cable and Harness, Pipe, Tube, Hose)			▶
ECAD-to-MCAD Integration			▶
<b>Data Management Capabilities</b>			
Secure Access		▶	▶
Revision Control		▶	▶
Find Files		▶	▶
<b>Design Validation Capabilities</b>			
Tolerance Stackup Validation			▶
Structural Simulation of Parts and Assemblies			▶
Mechanism and Motion Simulation			▶

For more details about SOLIDWORKS Premium, visit [www.solidworks.com/premium](http://www.solidworks.com/premium).

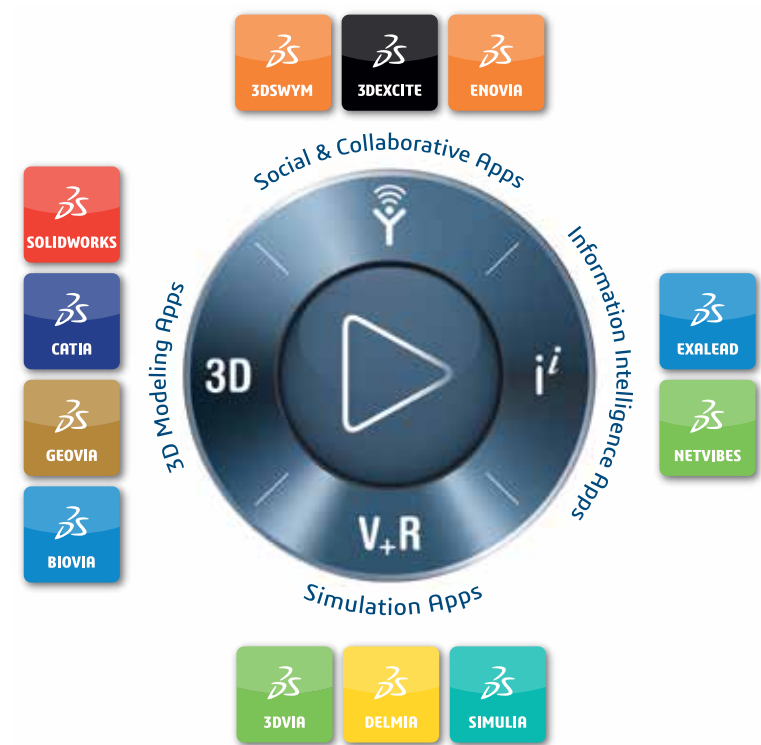


## IMAGINE WHAT SOLIDWORKS 3D CAD SOFTWARE CAN DO FOR YOUR COMPANY

You've seen the ease of implementation, productivity, and cost savings SOLIDWORKS 3D CAD software brings to small design firms and international corporations alike. Now find out what it can do for your organization. Talk to your local SOLIDWORKS Value-Added Reseller or visit [www.solidworks.com](http://www.solidworks.com) to learn more about all the integrated features and functionality.

**Our 3DEXPERIENCE platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.**

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 190,000 customers of all sizes in all industries in more than 140 countries. For more information, visit [www.3ds.com](http://www.3ds.com).



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