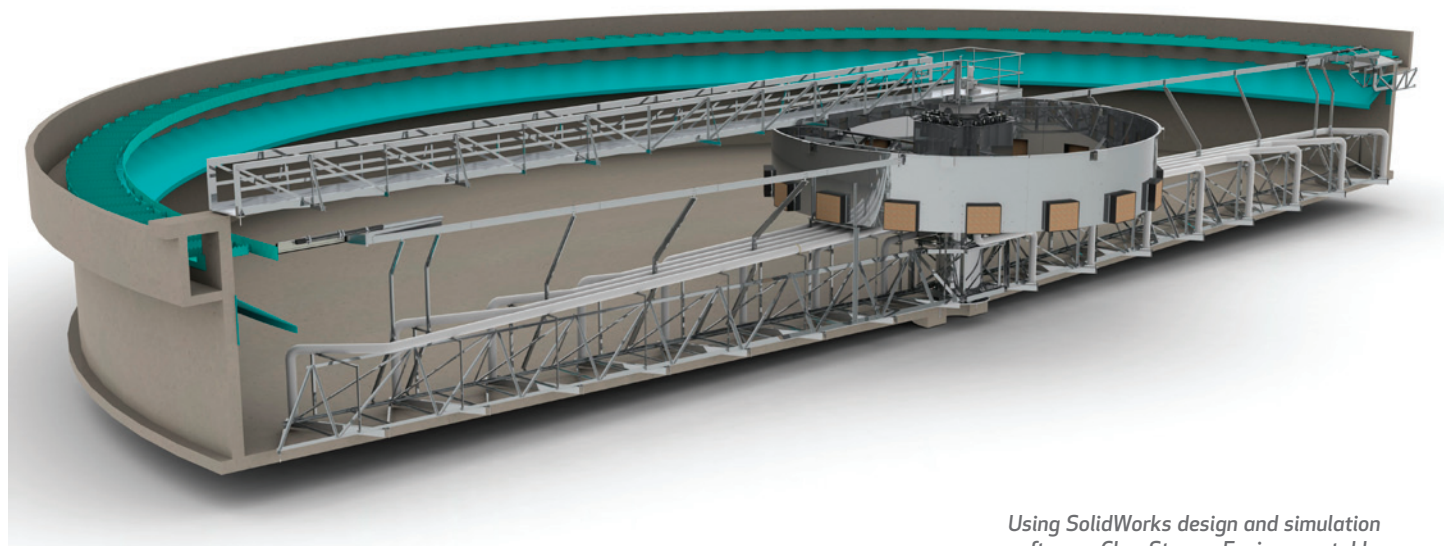


# CLEARSTREAM ENVIRONMENTAL, INC.

Advancing water treatment technology with integrated SolidWorks solutions



*Using SolidWorks design and simulation software, ClearStream Environmental has improved the quality and performance of its water treatment systems.*

When ClearStream Environmental, Inc., entered the water treatment market in 2002, the company was swimming against the industry stream in more ways than one.

Instead of adopting the development approaches that its competitors had used for decades, ClearStream embraced a philosophy of innovation and a commitment to using 3D design and simulation tools. The water treatment system developer did not want to merely match existing equipment for water, wastewater, and industrial treatment applications, but sought to grow its business by exceeding the effectiveness of traditional equipment and advancing the state of the art in water treatment system design.

“While many water treatment companies use 2D tools, we made the decision to use 3D design and simulation technology from the very beginning,” explains Director of Engineering Dustin Birch. “By having detailed design and engineering analysis information at our disposal, we are able to consistently develop innovative, better-performing equipment, faster than our competitors.”

A critical part of ClearStream’s approach was selecting the right 3D development environment. The company chose SolidWorks® solutions, implementing SolidWorks Professional design, SolidWorks Premium design and simulation, and SolidWorks Flow Simulation computational fluid dynamics (CFD) analysis software. ClearStream values the ease of use of SolidWorks and the power of its integrated suite of design and simulation tools.

“Our company was founded around SolidWorks,” recalls Senior Designer Chris Price. “The biggest difference from 2D is that you can conceptually visualize how the system will function, so you can spot possible interferences. That’s something that you just don’t get from 2D CAD.”

ClearStream management also foresaw how important 3D visualization would become in differentiating the company’s proposals and design materials. “In our business, we typically begin by responding to a request for proposal (RFP),” Birch points out. “With SolidWorks, our proposals are quite detailed, highly visual, and a clear step above other providers.”

## Challenge:

Carve out market space in the water treatment equipment industry by automating system development and advancing the effectiveness of water treatment technology.

## Solution:

Implement SolidWorks design, simulation, and computational fluid dynamics (CFD) analysis software along with the Certified Gold Product TactonWorks product configuration software.

## Results:

- Increased sales 100 percent annually for seven consecutive years
- Boosted water/sludge separation efficiency by 25 percent
- Delivered systems four to eight weeks faster than competitors
- Cut proposal development time from days to hours

## Analyzing what's really going on

Integrated SolidWorks solutions have not only enabled ClearStream Environmental to achieve its goals and grow its business, but also have allowed the company to improve upon an established industry standard. Using SolidWorks Flow Simulation software, Engineer Travis Kenworthy demonstrated how historical flow hole sizes and spacing for water sedimentation equipment were inefficient.

"The industry design standard was based on a flawed equation," Kenworthy notes. "Using SolidWorks Flow Simulation software, we were able to challenge some fundamental ideas about sedimentation system design and dramatically boost performance, improving water/sludge separation efficiency by 25 percent. Instead of just assuming that the common, accepted practice represented the best approach, we were able to conduct a detailed simulation using SolidWorks Flow Simulation to show how the process really works.

"By gaining a better understanding of the physics involved, we developed a more efficient system," Kenworthy adds. "Simulation capabilities provide a huge benefit and give us a real competitive advantage."

## Automating proposal and system development

SolidWorks solutions help ClearStream to more quickly develop its design proposals and actual water treatment systems. Using the SolidWorks Certified Gold Product TactonWorks software, an integrated knowledge-based product configuration application from Tacton Systems AB, the company has cut proposal development time from a day and a half to a couple of hours. ClearStream delivers products an average of four to eight weeks faster than its competitors because of the automation afforded by SolidWorks solutions.

"In the water treatment industry, lead-time is often more important than price," Birch stresses. "With the combined SolidWorks and TactonWorks solution, once our proposal is accepted, design goes through engineering in just a few days, then out to fabrication. This type of automation has been a key factor in our business growth."

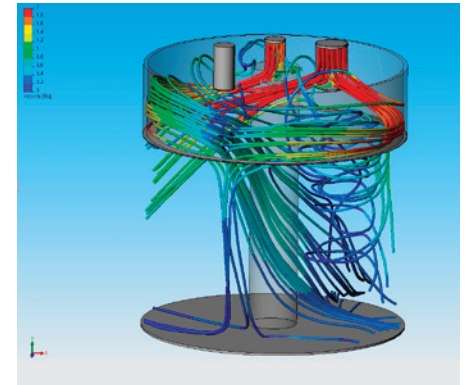
## Sales growth through enhanced visualization

Since its founding, ClearStream has seen its revenue grow continually and consistently. With 100 percent annual sales growth in each of the last seven years, the company has risen to become a major player in the water system development industry. While much of that success stems from the hard work of ClearStream's designers and engineers, Birch attributes some of it to SolidWorks software's design, simulation, and 3D visualization capabilities.

"The ability to create compelling photorealistic renderings and 3D animations of our systems gives us a real leg up," Birch says. "We use design visuals in our product literature, marketing materials, and technical instructions, but where they really have an impact is during the sales process. Whenever we can get our design documents and visuals into the prebid process, we generally win the job. When a prospective customer sees our SolidWorks design renderings, our sales closing rate is somewhere between 90 and 100 percent."

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Dustin Birch  
Director of Engineering



With SolidWorks Flow Simulation software, ClearStream Environmental was able to successfully challenge some fundamental ideas about sedimentation system design, dramatically improving performance in the process.



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