

EwingCole DMG and BERCHTOLD

Bringing operating room design to life with 3DVIA Virtools



Overview

■ Challenge

EwingCole DMG needed to develop a 3D real-time visualization application that would allow its client, BERCHTOLD, to work with hospitals to interactively design operating rooms.

■ Solution

Using 3DVIA Virtools, EwingCole DMG designed a customized, flexible, real-time application that can quickly be updated with new equipment offerings, easily runs on laptops in the field, and helps customers make informed choices.

■ Benefits

Allowing designers and end-users to collaborate in a 3D design environment to achieve an optimum design while eliminating physical mockups and avoiding interferences and design mistakes prior to construction.



“The interactive, immersive environments that we’re able to create using 3DVIA Virtools really set us apart from our competitors.”

Michael Schuldt, Principal and Director of Technology, EwingCole



3D delivers real-world experience virtually

As a division of EwingCole, a 350-person architectural and engineering firm headquartered in Philadelphia, EwingCole DMG (Digital Media Group) focuses on 3D modeling, animation and interactive applications development for a broad range of clients, from manufacturers and equipment designers to entertainment facilities and law firms.

Using real-time 3D helps EwingCole grow its business well beyond traditional architectural disciplines. For instance, the company designed an interactive seating tool for the Philadelphia Phillies baseball team that allowed prospective buyers of luxury suites to get a lifelike, panoramic view of the field from each location under consideration – before the new stadium was even built. The solution was a valuable sales tool for the team, says Michael Schuldt, principal and director of technology at EwingCole.

EwingCole DMG has even created 3D models and real-time visualization graphics for legal trials to explain a difficult concept or recreate crime scenes. Regardless of what virtual visualizations it needs, however, EwingCole DMG

always relies on the same solution: 3DVIA Virtools from Dassault Systèmes.

3DVIA Virtools for interactive animation

In its work with medical equipment maker BERCHTOLD of Charleston, S.C., EwingCole DMG used 3DVIA Virtools to create a visualization application for operating rooms. The software allows BERCHTOLD’s sales representatives to work with hospital staff members to interactively design highly complex and functionally precise operating rooms.

Before the 3DVIA Virtools application, BERCHTOLD presented customers with 2D drawings and scale models that were expensive, time-consuming, and difficult for non-architects to interpret. “We wanted to create an interactive planning tool that would run on a sales representative’s laptop, allowing BERCHTOLD’s designers and their customers to work collaboratively during meetings to evaluate infinite combinations of operating room equipment,” Schuldt says. “After doing the legwork on a variety of software solutions – gaming solutions, primarily – we decided on 3DVIA Virtools because of its ease of use and easy-to-learn scripting interface.”



Dave Buchhofer, technical director at EwingCole DMG, says that while his background is primarily as an architectural artist, he found 3DVIA Virtools' visual development environment easy to learn on the fly. "3DVIA Virtools has a pretty extensive set of built-in building blocks to start with, but also offers the ability to expand with text-based scripting and flow chart-based scripting to create more custom and complex behaviors on your own," he says.

Jon Mueller, architectural design supervisor at BERCHTOLD, confirms that the operating room visualization application EwingCole DMG built with 3DVIA Virtools is everything his team hoped it would be. "We love it," Mueller says. "We think of it as our secret weapon. It's an amazing tool for our sales reps."

Easy design, no surprises

Today, a large percentage of operating room equipment is mounted on a boom suspended from the ceiling, to free floor space and simplify cleaning and traffic flow, Schuldt says. But such concepts are difficult to envision, especially for healthcare workers who might get one chance in a lifetime to help design a new operating room.

"These pieces of equipment articulate from the ceiling booms and move in every conceivable direction," Schuldt says. "For each linkage on the hierarchy tree of possible equipment, you can grab it and move it to see the effect on that piece itself and everything else associated with it. Everything stays connected."

Mueller says many of BERCHTOLD's customers have never been involved in designing an operating room before. "The 3DVIA Virtools operating room visualization application really helps them

see what they're trying to achieve," he says. "And it easily facilitates input from broad and diverse teams of hospital workers."

Buchhofer says user-friendliness is particularly important to ensure a wide range of input. "This kind of application allows hospital workers to get involved in a design meeting who might not have otherwise," he says. "It lets BERCHTOLD's team get more input from people with greater ease and come closer to designing the 'ideal' facility the first time."

The true value of 3D visualization in an architectural context is to eliminate design surprises, Buchhofer says. Employing 3D to visualize and validate designs before construction allows mistakes to be caught early in the process, when they are easier and less expensive to correct. "You see things that you'd never catch in 2D renderings," Buchhofer says. "Using 3D models to do interference and clash detection makes the process more time- and cost-efficient."

BERCHTOLD executives quickly realized the advantages of helping customers experience their spaces in real-time 3D. "The 3DVIA Virtools application EwingCole DMG designed for us helps customers figure out what they are trying to achieve much faster and with fewer design 'mistakes,'" Mueller says. "It really helps people who aren't architects visualize these rooms."

The special beauty of 3DVIA Virtools is its broad applicability, Schuldt says. "3DVIA Virtools is capable of creating a wide range of real-time 3D applications for many different audiences and industries," he says. "We use a variety of applications in our work, but for interactive 3D visualization applications in real time, we rely on 3DVIA Virtools."



"We love 3DVIA Virtools. We think of it as our secret weapon."

Jon Mueller, Architectural Design Supervisor, BERCHTOLD



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