



"The high performance the HOOPS 3D graphics engine provides us with a comprehensive toolkit to develop and deliver advanced functionality in our MX family of products. Over the years we have found the advances in technology delivered by Tech Soft have mirrored the demands and direction required by our customers. I look forward to a long and successful partnership."

Brian Hunter, Technical Director MX Product Group

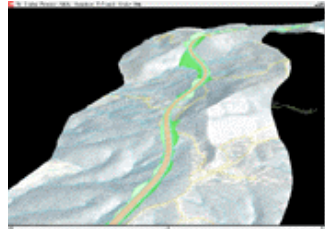
Business Profile

Products Using HOOPS
MX Series

More Info
www.bentley.com

Industry
Civil Engineering

TS3D Products
HOOPS/3dAF



Company Brief

Bentley Systems, Inc. provides software for the life cycle of the world's infrastructure. The company's comprehensive portfolio for the building, plant, civil, and geospatial vertical markets spans architecture, engineering, construction (AEC), and operations. The company's MX series of civil engineering products were acquired with the acquisition of Infracore Ltd in 2003.

The Challenge

Bentley Civil (then Infracore Ltd) needed to respond to market demand for a standalone version of their MX-series of civil engineering products (to complement their MX versions embedded inside popular CAD applications. Company management was counting on the small MX development team to deliver a product as graphically advanced as the CAD packages their marketplace was accustomed to. The HOOPS libraries, coupled with TS3D's knowledgeable consulting & support team, enabled the MX group to ship a powerful product that met those expectations - without the need to add significant development resources.

The Solution

The MX development team took a careful look at two graphics options. The first was to internally develop an entire graphics subsystem on top of the low-level OpenGL API. The other option was to work from a much higher-level using the advanced HOOPS libraries. Research into the two approaches clearly demonstrated that the HOOPS component would immediately provide the needed functionality and power. By contrast, the OpenGL approach would require many man-years worth of ongoing development and have the additional risk that the internally developed graphics engine would not work as intended or perform as optimally as the proven solution, HOOPS.



The Results

- Thanks to HOOPS, MX shipped and exceeded marketing expectations with Wireframe, Hidden line and Shaded Rendering as well as sophisticated interaction and hardcopy output.
- Graphics rendering performance was and remains at least equal to the CAD systems in which other versions of MX are embedded.
- The MX development team estimates that they save up to 3 head count per year by relying on HOOPS rather than implementing the graphics on their own.

About Tech Soft 3D

HOOPS toolkits from Tech Soft 3D (TS3D) dramatically simplify the design, development and maintenance of high-performance, interactive 2D/3D engineering software. HOOPS components are part of over 175 commercial software applications that run on millions desktops worldwide. Headquartered in Berkeley, CA, TS3D is on the web at <http://www.techsoft3d.com>. For more information, contact Ron Fritz, Managing Partner: 510.883.2180 x 201 or ron@techsoft3d.com.