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### Balfour's Realistic Graphics Set It Apart

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By Harry Goldstein

Balfour Technologies LLC, Bethpage, NY, is run by identical twins Richard and Robert Balfour, who come from the military simulation field. Richard Balfour, president and CEO, was responsible for the technical design and development of Grumman Corp.'s \$50-million state-of-the-art, real-time simulation facility and Robert Balfour, executive vice president and chief technology officer, worked on the flight simulator for the F-14 combat aircraft.

They debuted their flagship product, fourDviz, at the Transportation Research Board meeting in January. Over the last 18 months, the program has been used by the National Aviation and Transportation Center, Brookhaven, NY, and Frederic R. Harris Inc., Boston, Mass., for several current and proposed projects, including the LaGuardia Airport Rail Access project, Boston's Logan Airport Modernization Program as well as on simulations created in conjunction with Auburn University for a project planned for the Huntsville International Airport in Alabama.



Balfour's fourDviz gives users control over how real their virtual reality models appear



One of Balfour's first projects was to model part of the Boston Logan Airport Modernization

The fact that the Balfour brothers came from the aerospace industry where they created high fidelity simulators in multi-million dollar laboratories affected business decisions they made later. For instance, they insist that clients use low-end Silicon Graphics machines (Balfour says SGI's graphics card is the best out there) costing around \$5,000 to run their Linux-based desktop visualization tool. They also brought on board Bing Zeng as director of business development. Zeng, who has a degree in civil engineering, a master's in architecture and was CAD manager for Frederic R. Harris for five years, gives Balfour the domain expertise AEC customers demand when considering an investment in a 4D tool.

Balfour is keen on leveraging the power of the open software architectures such as Linux, OpenGL, DirectX and Java 3D to create "4D portals." This

patent-pending concept takes information from a corporate database such as a project schedule and uploads it to a 4D portal, where the schedule data is mapped to 3D models. In the current version of fourDviz, the 4D portal then serves the combined data to a client computer. Balfour is developing a 4D browser that is slated for release by the end of the year which will allow users to access a 4D portal or multiple portals via the Web or corporate intranet.

"We're replacing spreadsheets with this kind of high fidelity simulation. It's easy to see time-dependent data with things like this," says Rich Balfour. fourDviz is aimed at broad swath of industries, from warehousing operations and management to transportation planning and traffic simulations to real estate management and sales support. Currently, Balfour is looking to gain a foothold in the AEC sector by focusing on transportation infrastructure and on organizations responsible for presenting environmental impact statements to the public, something Balfour believes can benefit tremendously from dynamic, interactive simulations.

Images courtesy of Balfour Technologies LLC

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Balfour is working with Auburn University to model proposed construction for the Huntsville International Airport. Here, a crane off-loads containers from a train on to waiting trucks in real time

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