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## Construction Update

### Architecture takes to video game technology

#### Downtown Santa Rosa project makes visualization interactive

BY JEFF QUACKENBUSH  
STAFF REPORTER

SANTA ROSA – The same technology that puts video gamers into a highly detailed virtual world to shoot machine guns and rockets at extraterrestrial invaders is coming to public meetings this summer for downtown mid-rise projects. However, two local firms have checked the firepower at the door in creating a more interactive tool for the public and local officials to visualize project aesthetics and context.

Sebastopol-based computer graphics and multimedia firm Maraizon International wowed attendees of public meetings five years ago with three-dimensional computer “fly-throughs” of

Railroad Square Terrace, now under construction. Today, Maraizon has partnered with Santa Rosa architecture firm Kellogg + Associates to take project animation to the next level.

Instead of a preprogrammed virtual trolley ride around a project, with fixed views and perspectives, they’ve used a graphics software engine from a first-person-perspective video game to allow free-roving movement around a photo-realistic model of downtown Santa Rosa. Because the entire defined area is modeled, users can look, walk, drive, and even fly in any direction they point the computer mouse or arrow keys.

“By accessing gaming-engine technology, we are able to bring a level of work previously only seen in cinema or games to community development issues,” says John Leo, principal of Maraizon.

That technology is based on the Quake III Arena game released by Texas-based id Software. Maraizon picked that game’s engine, because it has been around long enough to be stable, doesn’t demand the latest computers, is easily customizable, and has programming code set for public-domain license in the near future.

Meanwhile, users of the downtown model will have to buy a copy of Quake



Images from the downtown Santa Rosa simulation

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images of building exteriors – 60-70 per block – to recreate details such as awnings and light posts, “painting” the frames with the pictures to give the photorealistic look common to still or animated architectural renderings.

Maraizon and Kellogg have been talking about the potential for such a product for two years. In January, Maraizon started modeling the downtown for an undisclosed mid-rise project proposal Kellogg is planning to submit in the next three months. So far, the area modeled is bounded by U.S. 101, Santa Rosa Avenue, Fifth Street, and Santa Rosa Creek.

That area will expand with other Kellogg projects, such as a mixed-use mid-rise building proposed by Raj Gulati at 433 Riley Street.

“The big issue is with mid rises in Santa Rosa,” says Kellogg + Associates project manager Peter Stanley. “People imagine wall-to-wall 10-story buildings, and that is not very accurate.”

#### A remote walkthrough

That is why Maraizon and Kellogg are funding the downtown visualization project. They see uses not only for their clients but also for public discussions on long-range urban planning issues, such as the proposed downtown mid-rise policy and Courthouse Square re-urbanification.

The game engine can generate villains with some artificial intelligence and

**Photorealistic animated renderings can be an overnight computer-processing endeavor.**

real players to interact and communicate via voice and text. In architecture, those features can render vehicles and crowds for traffic, parking, and public safety planning as well as allow architects to walk remotely with a developer through a project and exchange comments.

Applying three-dimensional game technology to architecture has been discussed over the years as graphics capabilities have improved from the heavily pixelated images of the first generation of id Software’s offerings about a decade ago, according to Jim Bendrick. He’s director of sys-

tem integration for San Mateo-based Webcor Builders and chairman of the Technology in Architecture Practice of the American

Institute of Architects. Photorealistic animated renderings can be an overnight computer-processing endeavor, Mr. Bendrick notes. That’s why he uses features of commonly used design software by San Rafael-based Autodesk, Graphisoft, and others that create simple three-dimensional models. Such can be explored interactively with a developer or at a public meeting without sapping computing power.

To contact Maraizon International, call 707-861-2014 or visit [www.maraizon.com](http://www.maraizon.com). To contact Kellogg + Associates, call 707-570-1160 or visit (when activated) [www.kellogg-associates.com](http://www.kellogg-associates.com).

aided design software. For the Quake III virtual world, it’s called Q3Radiant. The challenge for Maraizon programmer Brad Blanchard is converting the exacting world of computer-aided design to the not-so-exact world of video gaming. For example, six linear feet equate to 64 Quake III engine texture units, so imported CAD data for building measurements must be adjusted to the game engine grid.

Next, Maraizon uses a host of digital (please turn to page 17)