



Case Study

Anatomy of a Successful CE Bid

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Design Consultant Brian Morse discusses how new breakthrough technology helped TBE to streamline the Review Board Process

Background:

Today, most engineering areas are highly competitive and civil engineering is no exception. Design companies seek out first-rate engineers with cutting-edge expertise. But in the race to win a bid for a project, a company must be able to go the extra mile. And in today's hi-tech world, user-friendly advanced technology is what gets you to the finish line ahead of your competitors.

Going the Extra Mile

That's why when TBE Group, Inc.(TBE) in Clearwater, Florida decided to bid for the Starkey Road improvement project in Pinellas County, Peter Nikolov, Vice President of Transportation and the head of TBE's presentation team, asked CAD Engineering Consultant Brian Morse to help represent the company at the County Board review committee. "Morse had worked with us before so we knew his expertise would be valuable for complying with the county's electronic submittal requirements. We also knew first hand about his familiarity with applying state-of-the-art technology for dynamic 3D computer presentations. Competition in this business is tough. We wanted to use every advantage we could to set us apart from other contenders," says Nikolov.



Running the Review Board Gauntlet

As a veteran CAD design consultant, Morse is well familiar with the challenges and snares that consultants encounter when making a presentation to a review board. TBE's team of experts, representing the specialties from various disciplines – storm water, maintenance of traffic, environmental, and transportation, to name a few – face a panel of department heads, project managers, and experts from the public sector. "There is a good chance that someone in the audience will have difficulty envisioning the site by looking at a set of blueprints or aerial photos," says Morse, "especially when dealing with non-engineering professionals. Showing a 3D virtual model is the next best thing to being on site."

That's why TBE and Morse decided to approach the Review Board with a presentation based on RDV – Rapid Design Visualization – new state-of-the-art software that presents a 3D virtual model of an engineering plan. RDV demonstrates exactly how the project will turn out. RDV is a product of Israel's sophisticated high-tech industry. It has been used on several major projects in Israel and is now being discovered by engineering and design professionals in Europe and North America as well.

Wowing the Board

The Starkey Road project entailed milling, resurfacing and widening the road from four to six lanes, with the addition of turn lanes. "We wanted to wow the Review Board with a technical presentation, using advanced computer graphics," relates Morse. "So I used RDV and Land Desktop for the live presentation, including a 3D interactive flyover around a terrain model. I wanted to show the review panel how simple it is to create a model at any stage during the design process. I also wanted to emphasize the best feature, the ability to view and navigate this 3D interactive design in a web browser. Now the client and the entire design team have





Access to the 3D interactive model at any time, on the web, with no specialized CAD skills required."

Online Collaboration

Morse explains that with the 3D simulation of the project published on the web, access to information is no longer limited to the CAD staff. Everyone can stay up-to-date with the design status and discuss particular design features without the expense of running progress prints. They can compare it to other designs and review the alternatives online, at their own convenience.

"For example, we can show how a left turn at a specific spot on the road would affect traffic, safety, drainage, site distance and other essential factors, by easily setting up a dynamic, interactive visualization that can be reviewed by anyone from any computer with internet access."

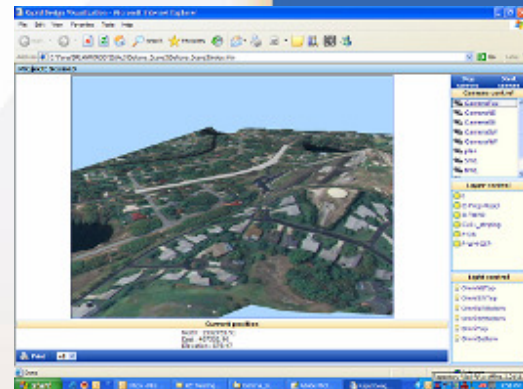
RDV software pulls together all the disciplines and offers an easy tool for viewing a design plan and making informed decisions about features in the plan. With the simulation published on the internet, more people can look at the design and understand the decisions taken, such as the left turn at a specific segment of the road. Its convenient availability to all interested parties is one of the main benefits of RDV technology. Based on Active-X technology, the solution is easily integrated into standard Microsoft applications such as PowerPoint or can even be used as a component of a custom developed application in Visual Basic or other programming environments.

Not Just a Pretty Picture

"No other design company has this convenient tool," remarks Peter Nikolov. "Combined with the technical expertise of our specialists in the various divisions and our 22 years of experience in and around this area, RDV made it easy to visually show the design elements of the project. This software sets us apart from other companies that can produce static, pretty pictures, but not the interactive visualization that is not only accessible to all, but understandable even to those without engineering expertise."

One Success Leads to Another

Following the success of the Starkey Road bid, it is not surprising that TBE invited Morse back to help prepare for another CE bid, this one in neighboring Hernando County. This project was for widening a two and half mile segment of Deltona Boulevard. It involved another rehearsal, another presentation and another win for TBE. "I had only a weekend to work on this presentation," says Morse. "I was starting from scratch. But the main work was conceptualizing the project. Putting together the RDV design component for Deltona Boulevard took me about 20 minutes. "I wanted to present an accurate representation of the terrain in 3D. In this case there were ponds with steep side slopes in the area. I emphasized the banks of the ponds, so that they stood out quite prominently in the presentation. Then I overlaid an aerial photo to provide recognizable features for those familiar with the area.





Next, I inserted a concept of the road design. I even inserted a buried pipeline with manholes to demonstrate the value in viewing the site from above and below. Navigating the virtual site in the browser is very easy. In a few mouse clicks we were virtually flying over Deltona Boulevard."

Beyond the Bid

Of course, winning the bid is only the first step. Once the race is won, the winner gets to enjoy the prize, which in this case includes not only a sought after contract, but a new and revolutionary way to work on design projects. Companies that have adopted RDV technology have found that the product enables them to analyze project conditions at every stage of planning. This means that users can virtually see exact distances and potential problems that are almost impossible to detect without such simulation. There are automatic controls for selecting predetermined viewpoints and animations. The lighting can be manipulated and layers can be adjusted to illustrate different design alternatives from the same vantage point. The user can pan, zoom, or change the direction of the viewpoint by simple mouse manipulation. It is also possible to measure distances as well as generate and save screenshots on a local disk drive at any time.

Speed, Ease and Economy

Even experienced designers, with AutoCAD experience, are delighted to find how fast they can create and visualize their projects, whether it's for preliminary designs, detailed plans for construction, or any of the stages in between. With RDV, an interactive 3D environment becomes part of the standard design workflow. Design professionals have also discovered another valuable advantage of using this technology. It saves time and money. The decision-making process is shortened dramatically when the review agency can cut to the finish quickly. Costly errors are avoided, too.

TBE Group, Inc. is a medium-sized engineering company headquartered in Clearwater, Florida. They have over 450 employees and over 40 offices nationwide and abroad. Incorporated in 1983, the company offers a full range of consulting engineering and planning services, including civil engineering, highway and bridge design, transportation planning, water resources, site development, surveying, utility and subsurface utility engineering, right-of-way services, environmental services, construction management and more.

Brian Morse – www.brianmorse.com – is a free lance CAD consult who helps individuals and design teams improve their CAD talents and design intuition. He leads CAD training courses, offers live web presentations for support and training and provides services in custom configuration, CAD standards assistance and contract CAD work – design, drafting, data collection and processing.

RDV Systems is a dynamic company that has quickly emerged as a leader in Building Infrastructure and GIS visualization. Its unique approach to modeling and simulation of complex engineering projects is revolutionizing the way the Building Infrastructure and GIS community use visualization to evaluate, communicate, Analyze and publish their projects.

RDV Systems is a subsidiary of the DataSafe group with corporate headquarters in Lod, Israel.

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