

Using Computer Simulations for Economic Development

By Wayne T. Wilcox, ASLA



Figure 1

As many economic developers and planners know, in the highly competitive arena of industrial site marketing, being ready for a prospect is essential. A prospect who finds an attractive site and a completed building is more likely to buy than one who must face the uncertainties and delays that are typical of building construction.

Similarly, printed advertisements for available industrial sites are more effective with photographs than with line drawings or textual descriptions. Unfortunately, before a site is developed, plans and sketches may be the only graphics available to help a prospect envision what is being planned or built. Since early marketing can result in early sales, which can likewise enhance the image, success and profitability of an industrial project, what are the options?

PRACTICAL APPLICATIONS

Floyd County officials are finding that computer simulations of industrial facilities can be effective tools for attracting prospects to consider pre-development sites, because the simulations illustrate the potential or planned development on a particular site. After commissioning a computer simulation of a planned shell building, Floyd County Administrator Randy Arno said, "Having the simulated

image of the shell building on the site gave us a three month head start on marketing. After the shell building was finally completed, we'd been marketing for three to four months, with several good prospects."

A computer simulation is an image which has been digitally produced or altered for the purposes of illustration or evaluation. The most common tools for producing these images are computer aided design and drafting (CADD) and image editing software, used together or separately. One technique involves "scanning" photographs (converting a picture printed on photographic paper or a slide into a digital representation) for use in image editing software. Photographs of the site and of a building similar in size and form to the proposed structure are "merged" to produce the simulation. The process is analogous to "cutting" the building from one photograph, and "pasting" it upon the image of the industrial site.

If an accurate or effective photograph of the site is unavailable, the land and features such as roads, streams, trees and existing buildings can be "created" or modeled in CADD. The CADD representation is "drawn" into the computer in much the same way a drafter might draw the site using pens and paper, but in the computer model, the lines and shapes

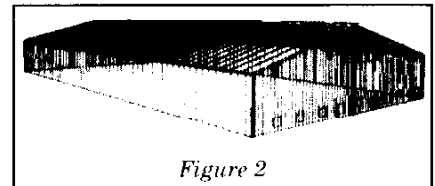


Figure 2

which represent the site are given elevation, height and width. The model is an accurate, three dimensional representation of the site. A CADD model of the prospective building is added to the site model, and then the model is "rendered" by the computer. The result of the rendering process is a photorealistic image. Once the CADD representation is constructed, it is possible to view the model from any perspective. By a process similar to taking a picture of a real building, any number of "views" of the proposed structure may be rendered, from an aerial view to an accurate eye level picture.

Recently, scanned photographs and CADD models were combined to create a simulation. This involved taking a photograph of the site and developing a CADD model of the proposed structure. The model was rendered to create a photorealistic image, which was superimposed over the site picture. Because Floyd County Administrator Randy Arno had detailed construction plans for a shell building

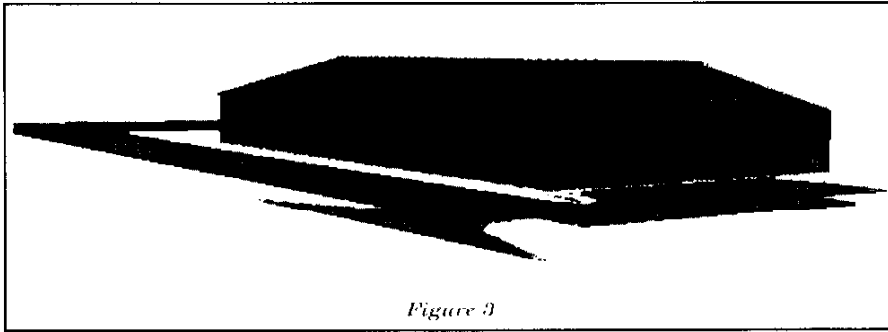


Figure 3

and a site that was easy to photograph, this combination of methods was the fastest and most cost efficient. He even obtained an Appalachian Power Company cherry picker to lift the photographer to the optimal viewing position for taking the site photograph (figure 1).

The building was constructed in CADD, and included essential features such as windows and doors. Figure 2 shows the raw CADD model as an unrendered wire frame before rendering. Colors, textures and shadows were applied to the CADD model during the rendering process (figure 3). Finally, the CADD model was superimposed over the site photograph, so that the two images were blended into a realistic picture (figure 4). During the final editing of the image, the image was also enhanced to present a more pleasing image for marketing purposes. The pickup truck seen in the original photograph, for example, has been removed, and clouds have been added. Trees, too, have been moved to represent the future landscaping of the site.

MARKETING TOOL


Glynn Loope, executive director of the Alleghany Highlands Economic Development Authority, said he considers computer simulations to be effective marketing tools: "We were recently on the West Coast with a company with which we have had an extensive dialogue, but their visitations have been delayed. Prior to departure, using their specifications, we were able to take a complete view of a finished and operating facility on their proposed site, with complete simulations of everything from shrubbery to loading docks. When you are 3,000 miles away, and you can visualize the beauty of our mountains and the strategic nature of our locations, the effort is well worth it."

PRACTICAL SOLUTION

Graphic artists, architects, movie studios and many other professionals have been creating computer simulations for many years, but the cost of providing a simulated image was enor-

mous because of the expensive computer hardware and software required and the great deal of time need to manipulate the images.

Today, however, the computer com-

ponents are comparatively inexpensive, and are fast enough to complete an image in days rather than weeks. As the power of the PC increases, animated computer simulations will be more and more common. Many designers already have the tools and talent to create computer "movies" using the same simulation techniques described for photographic images. Soon, prospects might be able to do more than just view a potential site and building. By way of virtual reality, they could experience the feeling of walking through the proposed building and around the site. This could be just around the corner, so keep your eyes on your nearest CD-ROM. 

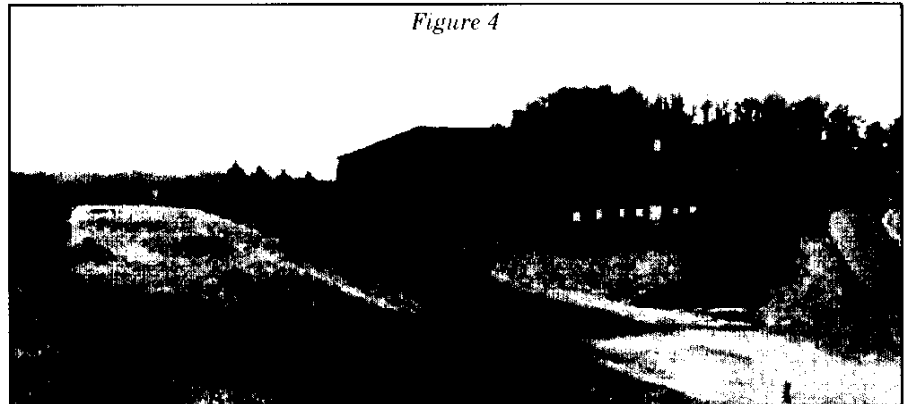
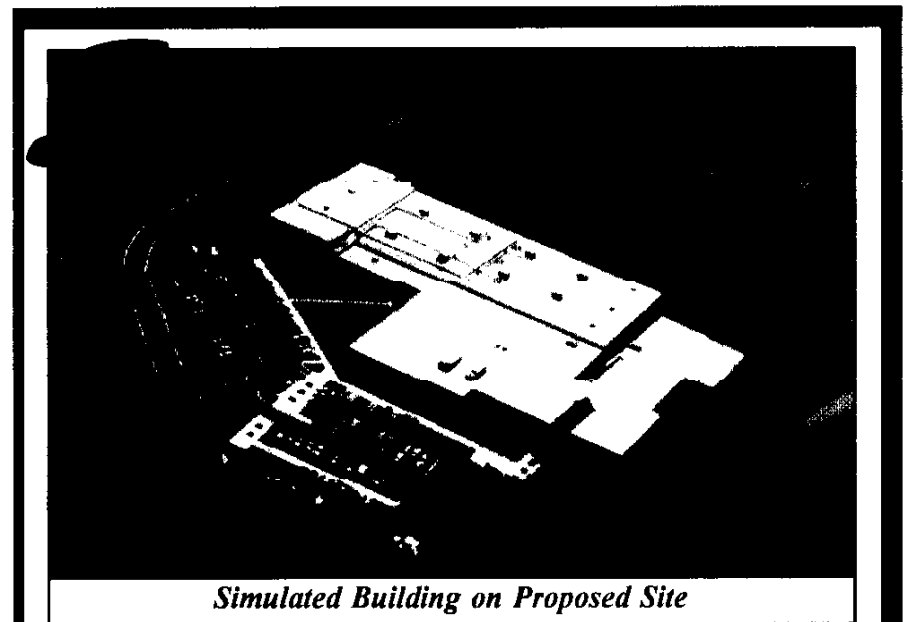


Figure 4



Simulated Building on Proposed Site

Using computer modeling and animation techniques in your economic development approach allows your prospects to visualize the possibilities. It's quick. It's efficient. It works.

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