

The Genesis Group, Inc.

1979 to 1981



The Genesis Group, Inc. founded in 1979 by Robert Ebert and several partners, to design and build custom homes, with an office located in Tigard, OR.

While designing a custom home on spec for the company, Robert predicted that it would be possible to eventually create floor plans and 3D renderings digitally.

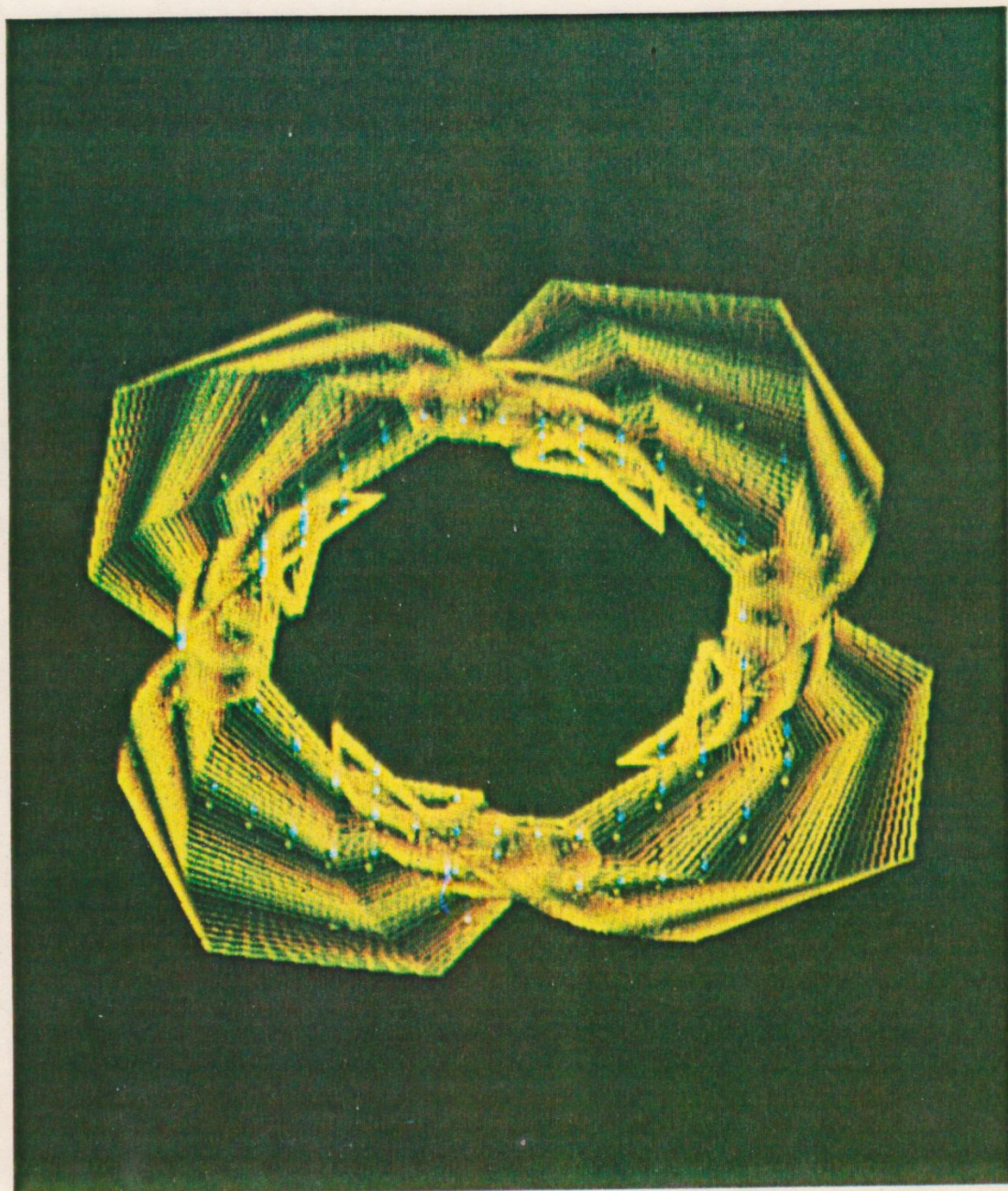
Robert Ebert took on the side project of creating a computer graphics workstation.

He foresaw the coming digital revolution for creatives and focused on building an Intel 8080 based computer workstation for designers. The system featured two 8" floppy drives, a Tektronix 4027 color raster display, full size digitizing drawing board, a flat bed plotter, video digitizing board, audio capture, and a Xerox 6500 color copier with a digital interface. Coding in CP/M we were eventually able to create wireframe designs in 3D. The following article was published in March, 1980.

March/April 1980

Volume 3, Number 2

Computer Graphics World



**Health Planning • Graphics Service Bureau
IC Design • Understanding Image-Making**

The Color Graphics Service Bureau- An Idea Whose Time Has Come

Robert C. Gorley
The Genesis Group

If history is a record of Man's progress, then the lesson of all history is that a single positive idea of a single person with insight can improve the lives of all. "Communigraphic Services," a phrase encapsulating the founding philosophy of the Today's Graphics division of The Genesis Group, Portland, Oregon, is, according to Robert Ebert, chairman of the board and vice president/design, "an idea whose time is now."

The brochure definition of Today's Graphics Communigraphic Services dazzles one for a moment:

'A unique service system which accepts graphic-descriptive data input in any form convenient to the client, translates that data into the electronic language or languages required by the most efficient computer programs available to perform any necessary manipulations of that data, and outputs the desired graphic representation in any medium required.'

Say again, please?

Ebert chuckles at the reaction. "I know, it's quite a bite to chew. Bear with me on a broad sweep and I'll try to clear it up.

"What we are doing is the next step in the information revolution.

"The word 'progress' means advancement, forward movement, development. Say a person 'progresses' from Point A to Point B; in a real sense, no one else can 'progress,' except purely individually, merely by going from Point A to Point B—it's already been done.

"In the history of scientific development we can clearly see the prime example and implications of this. As communication improved over the years, less and less effort was wasted on problems already solved because researchers were more aware of what had been done before and could therefore move from Point B on to Point C without, so to speak, constantly 'reinventing the wheel'.

"'Useful' progress, then, hinges upon that communication. Communication, however, being the sharing of information, has an inherent problem—method. What happens when there is no means to share ideas? What do we do if we don't speak each other's language?

"Somewhere there has to be a translator or we're all stuck in an information vacuum at Point A."

Ebert paused to let that sink in. Then, smiling, said, "Hold that thought a moment.

"Enter the computer age. Lots of hardware and lots of software with an enormous amount of performance capacity, spitting out numbers all day long. While each item may be objectively useful, the sheer volume of data to be absorbed becomes an impossible Gordian Knot for any human being to untangle while still having time for anything else.

"That," he said, waving at a wall full of graphs, charts and diagrams put out by his system, "is what led to 'simple' graphic representation, which is, to one degree or another, pre-interpreted information; a synthesis of data into a more easily understood form. The more you have on the one hand, however, the more you need on the other.

"What we are doing is the next step in the information revolution."

"Listen," he emphasized, "we are at the point where readily available computer graphics is *necessary* to real progress; its speed of generation and clarity are essential, not merely desirable. The amount of information we have to stay on top of demands it.

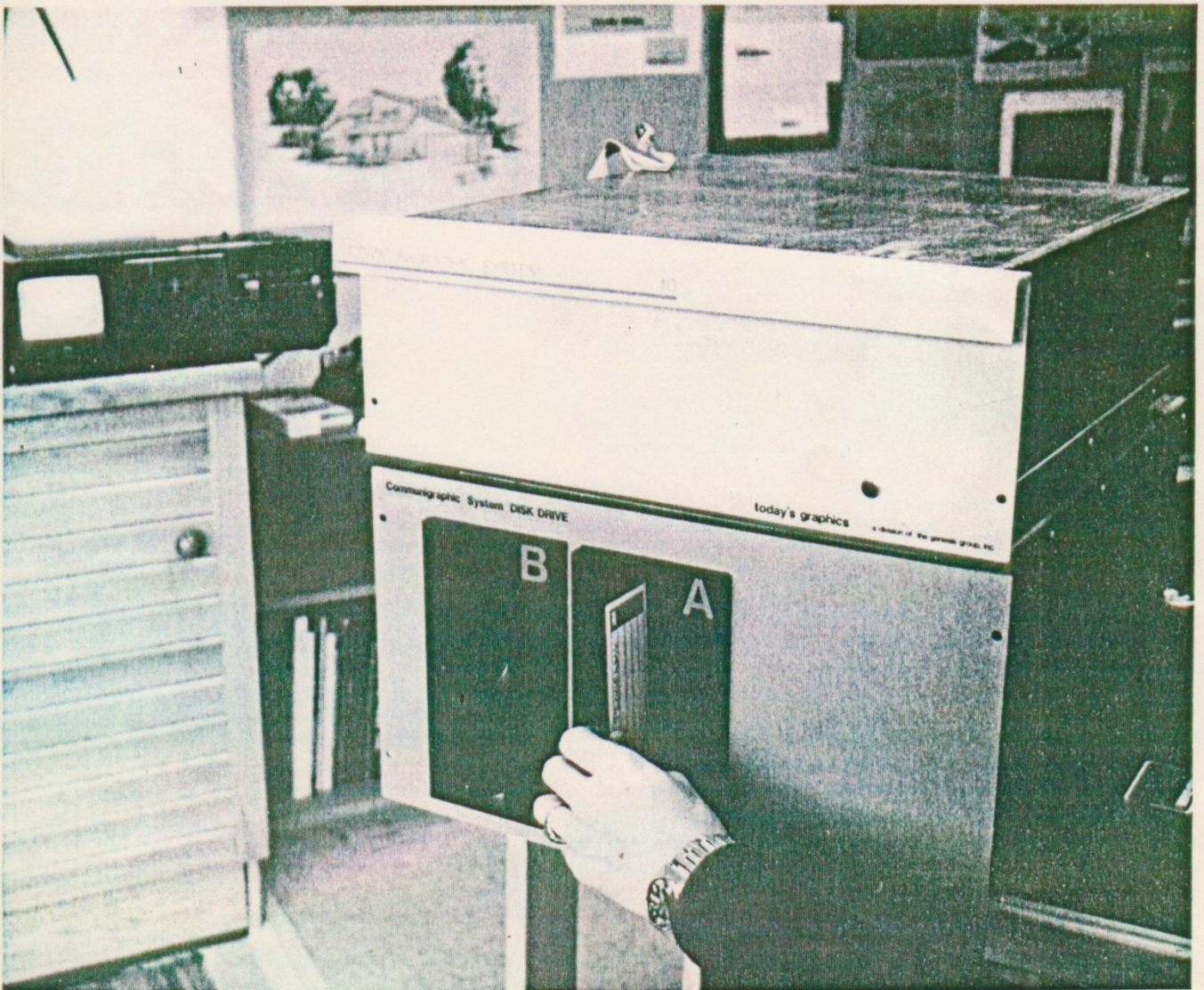
"Okay, now we go back to the principle of the communication 'gap,' if you will, which left us stuck at Point A—and this is the nasty part."

Ebert leaned forward, held up his hands and wiggled his fingers, saying, "Here are all these computer graphics programs and devices representing millions of hours of work getting from Point A, raw information, to Point B, graphic output. It would be nice," he said, folding his hands together by interweaving the fingers, "if everything was linked together and could be used to build on to Point C.

"The problem," he said as he pulled his hands apart and turned them face up imploringly, "is that they, the computers, our *tools*, don't speak the same language!

"That leaves the businessperson, architect, designer, video producer—anyone who could profit from the 'progress' in computer graphics—stranded at Point A, left alone with the task of having to learn the languages of hundreds of systems and programs, experimenting with hardware and training with which he has no real relationship except his desire for their output. Why? Because there has been no translator, no middleman with experience in *his* field and computer competence.

"Our job is to provide that service. To be able to take data from *any number of sources*, digitizing tablet, keyboard, lightpen, videotape—*anything*—and translate it



Communicographic System 10

"In the future we plan to have outside locations much like a 'quickie-print' chain."

The Communigraphic System develops day by day, using equipment from sources like Tektronix (4027 Color Graphics Terminal), Xerox (6500 Color Copier System with laser interface), Summagraphics (digitizing and plotting equipment), and continually adding new suppliers and consulting with their staffs and those of databases like Control Data's "Cybernet."

Ebert says that the system they're currently operating is close to what he eventually wants to franchise, "but not quite."

"We're banging away on executive programs to interface new equipment and software as quickly as we can lay hands on it," he declared. "Refining, speeding up, simplifying, improving resolution—anything to make it faster, cheaper, better; always higher quality. Right now our Communigraphics 10 computer is a very healthy unit we put together enabling us, among other things, to create files to talk to seven information networks at high speed and cut down on the outside time we have to buy. In the future we plan to have our own high-power mainframe with the Communigraphics 10 in various outside locations as a sort of franchise service bureau, much like a 'quickie-print' chain, tied into the massive capability we'll have then."

Ron Laster and Leo Campbell, vice presidents/corporate operations, see The Genesis Group itself being one of Today's Graphics' best customers.

"We were talking the other day about what Bob calls 'reality mapping,'" Campbell explained. "We can create graphic representations of any number of factors involved in business, research and the general economy at the speeds those factors change these days. We will always know exactly where we are and be able to 'predict' quite accurately how and why decisions are going to affect our growth. That takes care of a lot of 'garbage in, garbage out' intuitive mistakes."

"Judgment calls' are a reality in any business," Laster added, "but the more information you have, the better

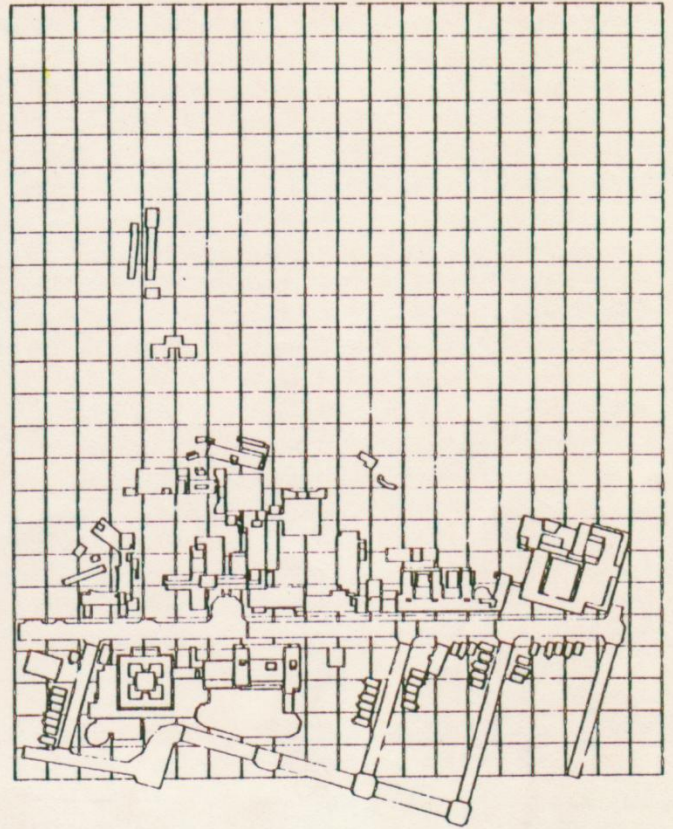


Figure 1. Orthographic Projection

equipped you are to make intelligent ones. The information networks we're tied into and the graphic power we have available to present that information will make The Genesis Group an invaluable business consultancy service, for both small operations and large ones as well."

Voss explained that the personnel involved were a large factor in the company's concept. "The range of experience

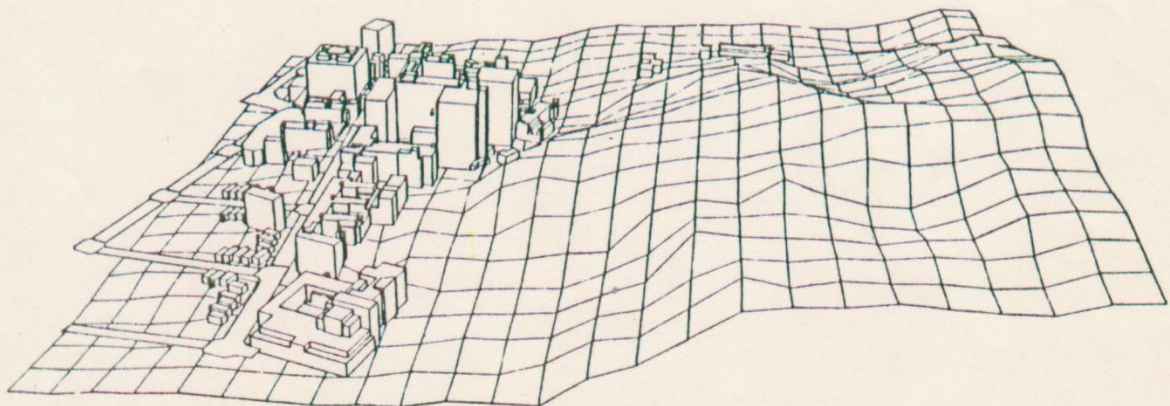


Figure 2. The preceding pictures were produced for Anshen and Allen

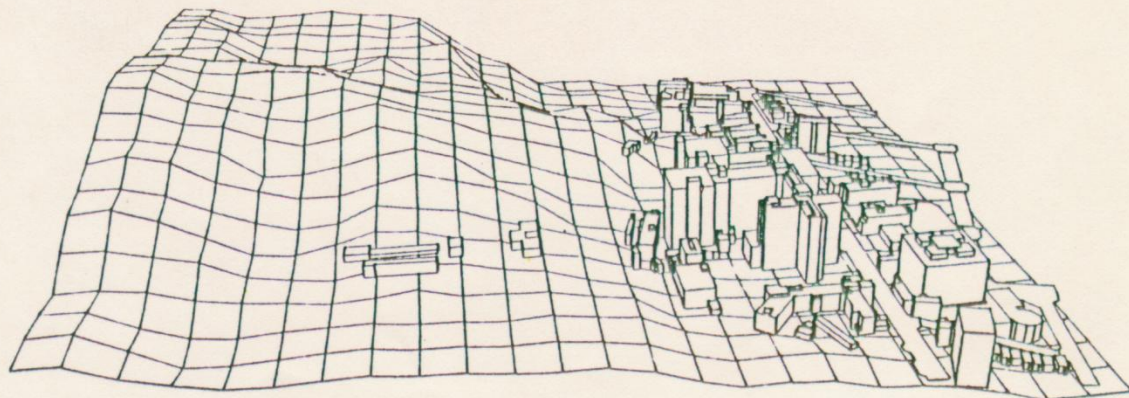


Figure 3. Any number of observation points may be selected by the user. **Perspective** can draw many different views of the pictorial data as easily as it

can draw one- and for very little additional cost. The user can then select the most dramatic pictures for presentations or renderings.

here is broad, but there's again a common factor. While each person may have specific expertise in, say, art production, business management, architecture and design, government or whatever, we all tend to be 'general specialists.' We are all learning the system's capacities as completely as possible so that we can expose and guide clients in our own areas of 'outside' expertise to the many other services offered under our 'total systems' concept of information communication."

Then, too, it's not all "business" business; Today's Graphics will also affect the entertainment business and what the general public will consume in the future. Keith Holznagel, vice president/video production, is working closely with Ebert on computer video manipulation. Holznagel has extensive broadcasting experience and is openly enthusiastic at the possibilities.

"'Special effects' is an area that has rarely been inexpensive enough to take full advantage of," he says. "But when 'reality' can be economically created in any conceivable

image then obviously the range of subjects and approaches commercial producers will feel comfortable dealing with becomes totally open-ended.

"Video is a visual medium; however, the cost of utilizing its full visual capacity has often been prohibited enough to reduce it to a sort of 'radio with pictures' in the commercial environment—without much emphasis on the 'pictures.' Close your eyes and listen sometime.

"Little by little," Holznagel says confidently, "we intend to change that.

"I think we're going to open some eyes."

Overall, it would seem likely. Until now, computer graphics itself has been a hard idea for most people to absorb. The idea of a small, personally financed group of men and women revolutionizing the entire range of human endeavor through its creative use may *indeed* be a hard idea for the "powers that be" to accept.

But then again, there are always a few special people willing to listen to an idea whose time has come.

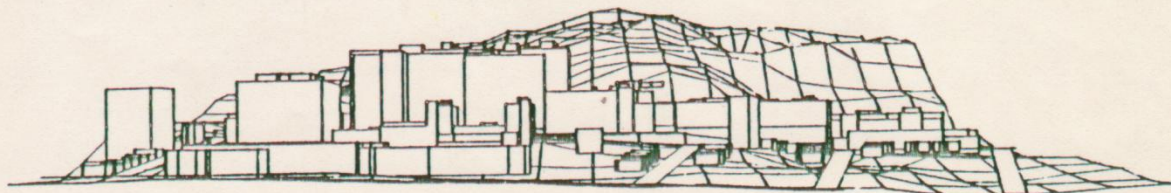
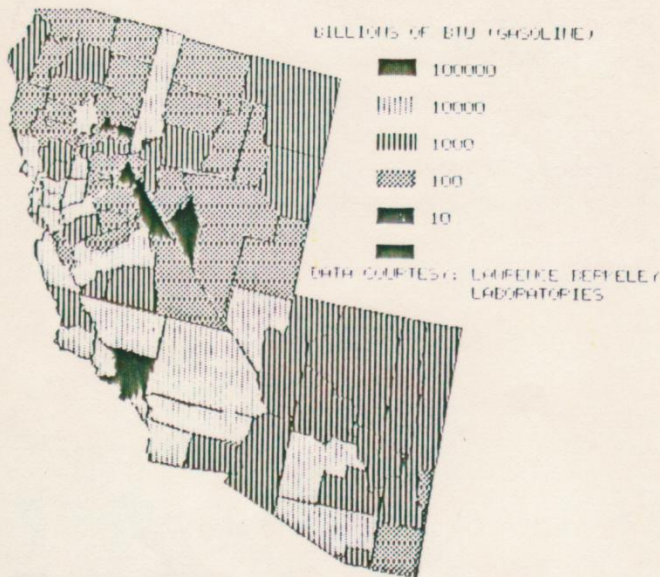


Figure 4. Planned perspective projection

"The businessperson is left with the task of having to learn, experiment, and train. Why? Because there is no translator."



TEKTRONIX 4027 COLOR GRAPHICS TERMINAL

into usable form. There exists systems and programs to produce virtually any graphic image and do anything you can conceive of doing to it. And it can be put out in any form necessary. This has been done already, it's there, it's available."

Ebert leaned forward again and emphasized the point. "Graphic imagery, right now, can be made to jump through hoops. But *somebody's* got to tell some computer where to hold the hoop and another computer which way to jump—in a language they can both understand!

"That's us.

"Our 'communigraphic' concept means communication in graphic form and is double-edged.

"We get machines to talk to machines efficiently *about* graphics, so people can talk to people efficiently *with* graphics."

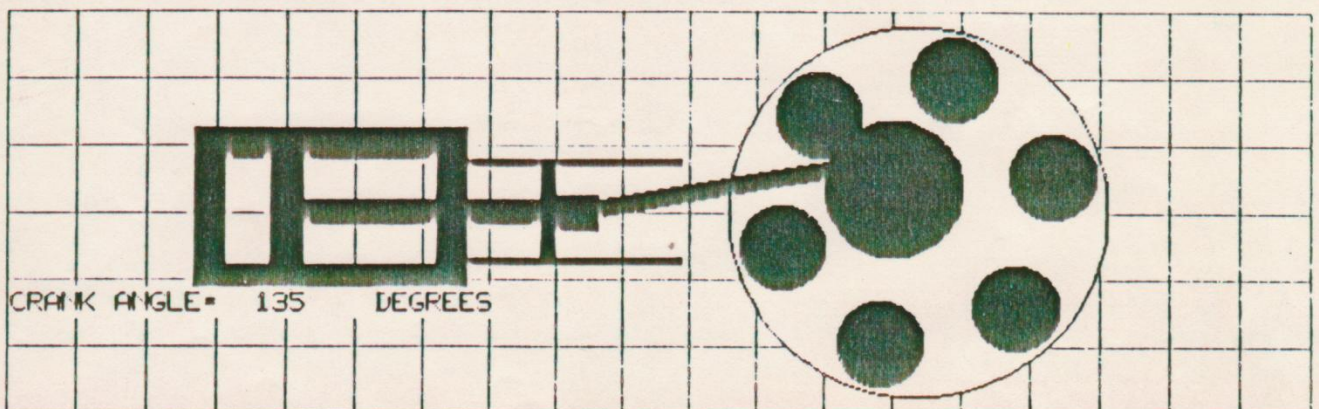
The range of services, the process involved in their development and the personal makeup of Today's Graphics and The Genesis Group are built on an underlying awareness of the need for constant growth and adaptation. That awareness permeates the company's present operations as well as its future direction. Charles Voss, president of the parent group, explains:

"Every move we make, every vendor we talk to, and certainly every person we hire has to satisfy two basic criteria. First, are they future-oriented? Second, are they likely to advance *humanistic* communication as well as technical expertise?"

The concept of improving the quality of life within a basically commercial venture demands a commitment that can tend to be a strain at times. The development of their own computer system, the "Communigraphics 10," has taken long hours, large amounts of capital, and an extraordinary amount of patience. Ebert and Voss say it's been worth it.

"When Bob first started working on this," Voss says, "we knew it would be not merely a long process, but an endless one. In a funny, reverse sort of way, that's made it easier. Each piece of equipment we buy and software we develop has its uses, and they constantly increase. Together, we have an array for which our goal is that it be the best available in each area of demand. If it needs to be economical, we adjust to that as the determining factor; if speed is most important, we want to be able to work in whatever framework is required.

"We can go from providing one Color Xerox copy to a walk-through of a proposed structure in true perspective on videotape. Our capacity sometimes grows more slowly than we might like, but our primary commitment is to make sure everything we do satisfies our standards of quality and flexibility."



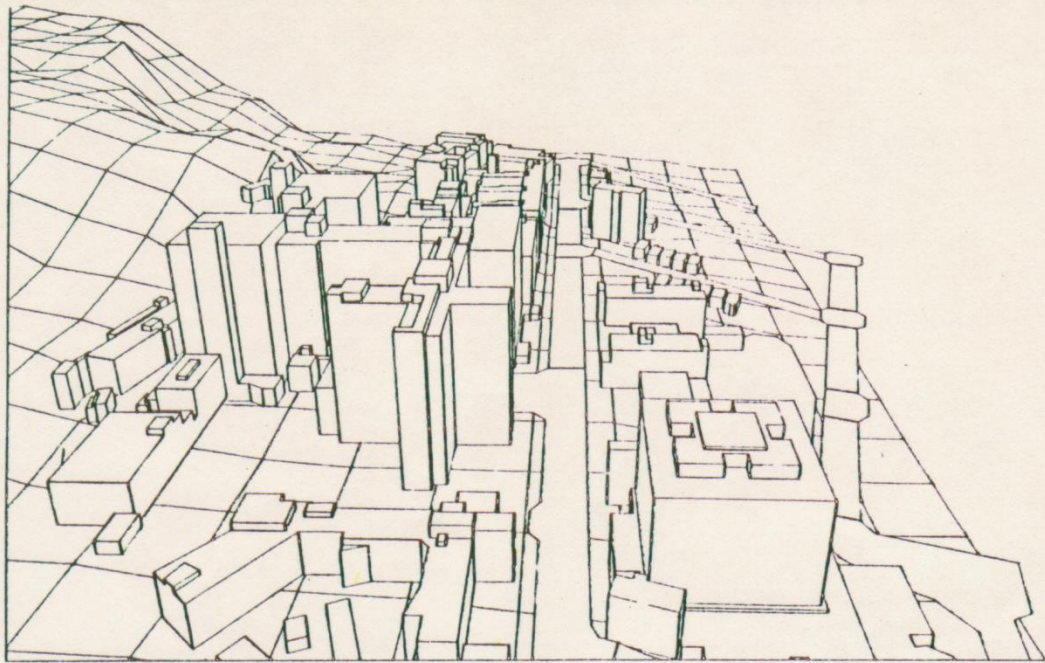


Figure 5 & 6. **Perspective** provides exact visual simulation. Each picture is produced in true perspective, exactly as it would look in the real world if viewed from the observation point selected.

