



GEORGIA TECH VIDEO:

CONSTRUCTION VISUALIZER COULD IMPROVE PLANNING OF CONSTRUCTION SITE LAYOUTS

March 31, 1992

Organizing people, materials and machines to work effectively could become easier for construction managers, with help from a computer visual simulation being developed at Georgia Institute of Technology.

The Construction Visualizer (CV) would let managers simulate construction processes and thus better plan the arrangement of equipment and materials at each site. The simulation would provide information in three dimensions and as real-time simulations, said Dr. Walter Rodriguez, associate professor and chairman of the Engineering Computer Graphics Program in Georgia Tech's School of Civil Engineering.

VISUALS AVAILABLE:

*Close and wide shots of the Construction Visualizer (CV) at work. Includes moving crane, dump truck and bulldozer at construction site. Features bright primary colors against black background.

*Footage of activity at a real construction site.

*Interview with Dr. Walter Rodriguez of Georgia Tech's School of Civil Engineering.

The CV might eventually make drawing a site layout on paper obsolete. Currently, many paper-and-pencil layouts become dated before a project is even finished, because construction projects move so quickly.

CV, developed in C programming language and using a UNIX-based workstation, displays several different construction situations. One option depicts a material hoister, or elevator. The simulation's size, speed and other characteristics can be programmed to match those of an elevator at a site -- including workers and equipment at different floors.

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The simulation tells the manager how long each person has to wait for the elevator. This reveals whether the elevator's operating parameters need changing -- so that it stops more frequently on certain floors, for example.

Another program, viewable in 3-D, simulates the operation of a large crane. Still another simulates site topography -- the land features on which buildings, bridges, roads and other civil engineering projects are constructed. A designer can alter the topographic model on the computer screen to aid in planning. The designer might increase the vertical axis, for example, to exaggerate hills and valleys and visualize tiny contour changes caused by a particular design decision.

Engineer/architect Rodriguez became interested in improved planning of construction operations while he was supervising the construction of a \$20-million courthouse in Puerto Rico during the 1970s. He noticed many workers wasting time waiting for materials because the supplies were not located conveniently. He noticed similar problems at a construction site for the University of Florida's football stadium, while studying for his doctorate at the Gainesville school.

Rodriguez also wants to develop visual thinking tools to allow students, designers and builders to communicate and reason with images, rather than just with words. He says such tools would enhance the user's ability to communicate and think *visually*, as well as verbally and mathematically -- adding another dimension to the human mind.

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Rodriguez' book, THE MODELING OF DESIGN IDEAS, was released in February. If you are interested in reporting on the Construction Visualizer and need more information or missed our March 31, 1992 satellite feed, please call David Kennedy at (404) 894-2453 or Lea McLees/John Toon at (404) 894-3444. Rodriguez can be reached at (404) 894-2390. Our satellite feeds are scheduled 3 to 3:15 p.m. each Tuesday through May 25, 1992, at coordinates Westar 5, Transponder 24, Audio 6.2/6.8.