3-D CADD
Workstation Tools for the PC Platform

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DATACAD: Of, By, and For Architects

by Brad Holtz

DataCAD, a 3-D CADD package that exists mainly for architectural use, was recently acquired by Cadkey, and it seems that the acquisition has breathed some new life into its sales and development.

Cadkey and *DataCAD* fit together remarkably well, especially considering that the products were developed independently and for entirely different markets. *DataCAD* (as well as *Cadkey*) has a heads-up keyboard-oriented user interface. All of its functions can be reached either with a mouse off the screen or by using keystroke shortcuts. For instance, the Equals key toggles you between wall mode and single-line mode. Hit "k" in the middle of a process and you will change the color of the entity you are creating. Similarly, "q" changes the linetype, Tab changes to the next layer, and "x" toggles the grid snap on.

The screen is divided into four areas: Menu, Status, Prompts and Messages, and the drawing area. The status area shows the current line style, layer, color, screen scale, selection set, and the state of most of the letter toggles: snap, wall/line, ortho, and whether the various drawing characteristics, including dimensions, are shown.

As an architectural program, *Data-CAD* operates differently from other CADD systems. It is always in a draw line/wall mode. Everything else that happens within *DataCAD* is done as an interruption of drawing lines/walls. (Walls are actually parallel surfaces with height and elevation of the current z settings. Data is directly input only in the x and y dimensions. Z data is a parameter that is modified off the menus.) This makes drawing in *DataCAD* quite intuitive for people who have never used other CADD systems, but the transition from other programs to *Data-CAD* is a little confusing.
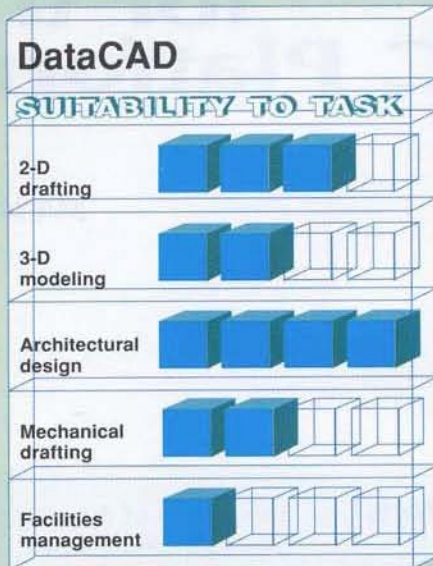
FOR ARCHITECTS ONLY

Architects wrote *DataCAD*, and everything about it makes it clear that architects are its target audience. Everywhere you turn within *DataCAD* you
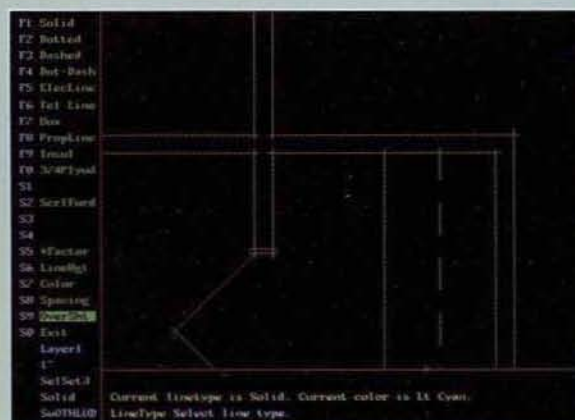
DataCAD lets you draw just as an architect does on paper. With the Overshoot option activated, lines go beyond their meeting point at intersections, making the drawing easier to read.

will find some little touch or nuance that only an architect would fully appreciate, and only an architect would find the lack of those particular touches a frustration. A good example is the overshoot of line intersections. Traditional-

DataCAD

SUITABILITY TO TASK

2-D drafting

3-D modeling

Architectural design

Mechanical drafting

Facilities management

ly, architects have highlighted the endpoints of lines to make their drawings look and read better. You could always tell that a drawing came from a CADD system because the ends of lines met so perfectly. Engineers thought this was great, but many architects felt the drawings were less legible. *DataCAD* addresses that by providing a user-defin-

able overshoot. With *DataCAD*, the lines can be made to appear as if they pass by and overshoot intersections with other lines. The drawings are easier to read, and architects are happy.

Text editing is done one line at a time. Text files can be imported, but each line becomes a separate entity.

The 3-D aspect of *DataCAD* is limited (even with the optional *DataCAD Modeler*). The tools are there to create the types of geometry an architect typically encounters in building, but only as a tool for visualization. The visualization tools, however, are excellent. Once a 3-D model is created, walkthroughs, automated fly-through and flybys, and movies can be created. Another optional program, the $2,000 *DataCAD Velocity*, adds sophisticated anti-aliasing and ray tracing to your images, as well as texturing.

Architects will also appreciate the way *DataCAD*'s display zooms are handled. The zoom magnification is only possible in predefined steps (userconfigurable). These steps generally correspond to common architectural scales. When the scale (zoom magnification) is set to .25 inch, it means that .25 inch measured on the screen corresponds to 1 inch in the real world. In other words, a .25-inch scale in *DataCAD* appears as the same physical size as a typical .25-inch scale drawing.

This is extremely important to architects, who rely on visual scale to understand space. This wonderful scaling system designed for architecture places restraints on those whose reliance on visual scale is not so important.

Though some CADD programs do a good job of providing features for every type of designer (and use that fact to justify their high price tag), there is a case to be made for task-specific software. For an architect making that case, *DataCAD* should be exhibit A. ∎

DataCAD is a three-dimensional computer-aided design program created specifically for architects, engineers, and construction professionals. No other A/E/C CAD product offers such a high level of integration between two-dimensional drafting and three-dimensional design.

DC Modeler, included with DataCAD, greatly enhances the 3D capabilities of DataCAD. Also available is DataCAD Velocity which offers realistic renderings of the designs you create with DataCAD.

DataCAD is the only product ever to be offered to its members by the AIA (American Institute of Architects, Professional Services Division). All DataCAD products are supported by an experienced, worldwide Dealer organization, training centers, technical services staff and a network of User Groups.

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