

## Affordable Architecture With Full Functionality

**With release 5 of DataCAD design software for architects, Cadkey lowers the price to an almost irresistible level**

▲ When I first reviewed Cadkey's DataCAD software for architects back in 1989, I thought it was a decent product that was somewhat overpriced at \$3495. Over the years, Cadkey has improved both the price and functionality of this program. But it's with release 5 that Cadkey has made its greatest advances: Not only is this software as powerful as ever, it now costs only \$149 for the high-end Professional version (there are two cheaper versions outlined below). The previous release, DataCAD 4, cost \$1995. Similar products from Autodesk, Foresight Resources, and Graphisoft now cost from five to 20 times as much as DataCAD. Put simply, PC-based DataCAD 5 is a fantastic bargain. (Note: DataCAD 5 does not run under Windows.)

DataCAD 5 actually comes in three versions, offering slightly differing functions for varying levels of need and expertise. The low-end DataCAD Starter program, priced at \$49, is for small- to medium-size projects and has a 256KB file limit. DataCAD Plus, which costs only \$99, adds a set of macros and on-line documentation. DataCAD Professional comes with all the features of Plus and a library containing more than 1000 additional AEC symbols. Core features are reportedly the same, but I only reviewed DataCAD Professional.

These low prices aren't much good if the program doesn't provide the functionality you need. That's not the case with DataCAD 5. This program still sports all the accrued functionality of its previous lives (plus one added feature, detailed below). To begin, the program pro-



**To design and render this 3D architectural model of a theater complex,** designers at William Wiseman Associates used DataCAD Professional. Features used include associative dimensioning and hatching as well as automatic insertion of doors and windows.

vides a reasonably intuitive system of menus that address both the casual user and the professional: Menus and helpful messages guide the novice, while the expert can use hot keys to go immediately to most functions with a single keystroke. To improve drawing efficiency, a set of window navigation tools—zooms, pans, and customized windows—are always on screen and can be used at any time, even in the middle of another operation.

Of particular significance is the number of features designed specifically for architectural work. For example, you can draw walls in a simple 2D motif and the program will automatically convert your model to a 3D perspective, complete with properly trimmed intersections. Cre-

ating doors and windows is equally a breeze. You simply draw the openings in your 2D plan, and DataCAD will cut holes into the 3D walls and insert the doors and windows. Additionally, there are a number of macros that make drawing standard features—like stairs, roofs, plumbing, and elevators—a matter of simply hitting a few keystrokes. Other aids, such as a square-foot calculator and built-in concrete forms, make the architect's life easier, too.

Another feature that stands out is object snapping. Object snapping automatically creates precise intersections, which are difficult to "eyeball" on a computer; oftentimes, you might think you've connected two lines, but when you blow up the model you find they are off just a bit. DataCAD 5 will automatically connect to an endpoint, an intersection, or a midpoint depending on where your cursor is. If none of these options suffices, you can override the automatic snap and enter a relative position.

### DATA CAD 5

Cadkey Inc.  
Windsor, CT  
203-298-8888

CIRCLE 215 ON INFORMATION CARD

**Price:** DataCAD Professional, \$149; DataCAD Plus, \$99; DataCAD Starter, \$49

**System requirements:** 80386/486-based PC, 4MB of RAM, 40MB hard drive, math coprocessor, 256-color graphics card, and three-button mouse.

## REVIEW

The one new feature in this version of DataCAD is the quick-shade module, which gives you a rough view of what your shaded model will look like. The module actually breaks down objects into 3- or 4-sided polygons and then applies the shades according to the light sources you've selected. I found it easy to use, "quick" like it says, and helpful for visualizing my design.

DataCAD also comes with an external, high-quality renderer called Velocity. With Velocity, you can assign such surface attributes as color, texture, opacity, and light re-

flectibility. Although Velocity does render nice images, I found it tedious to use. I had to refer to the manual way too many times. The problem is you have to define a lot of attributes, and you're going between numerous file types, so you have to remember a lot of file names. Still, it's hard to complain too much for the price.

Which brings me to my final point. For some specific functions,

you'll probably find competitive software with more features (such as rendering or virtual-reality strolling). But I bet you'll pay a lot more for that one function. DataCAD 5 puts it all together in a package that works well yet is reasonably easy to learn and use.

Never again do I want to hear an architect tell me "It costs too much to get into CAD." Cadkey has pulled the rug out from under that excuse.—**Martin Ramsay**, *president of CEATH Co., a Berea, Kentucky, consulting firm that matches information technology to business needs.*

## An Uneven Road for Ray Dream

**Added functionality makes Ray Dream's 3D design and rendering software more powerful but also harder to learn**

▲ Back in 1991, Ray Dream Inc. introduced Ray Dream Designer, its Mac-based 3D design and rendering program. I reviewed this first release, and at the time I considered it to be innovative in a number of ways. For one, its user interface broke with the traditional split-window views of most 3D design programs, instead using a shadow-box metaphor (I'll provide more details later). Designer also focused on rendering still frames rather than animations like most of its competitors. For an artist who was more accustomed to working in 2D, I thought Designer was an interesting program for getting started in 3D.

With release 3.0.2, Ray Dream takes Designer several steps forward by including more functionality. But it doesn't always provide an intuitive means for using these functions. So although you can do more with this release of Ray Dream, I think it's harder to learn. Additionally, as of press time, there were several bugs that needed fixing.

But let's start with the positive. Designer was created so that artists who work in 2D could more easily access the power of 3D object creation. Toward this goal, the program

has been enhanced in several ways. To begin, Ray Dream made it easier to create and arrange objects by merging what was formerly two programs—one for object creation and

ble or invisible, and you can make each plane active or inactive. Additionally, you can view each object in full color or in a variety of faster drawing options.

To help you manipulate 3D objects, Designer displays projections of the object's bounding box (the smallest box that will enclose an object) onto the X, Y, and Z planes. You can move an object directly or via its projection using a variety of tools that act in relationship to the current active plane. For example, moving an object along the side-to-side X axis with the Z-floor plane activated will keep your movements parallel to the floor.

Other tools, which appear in additional windows, let you organize, group, texture, shade, create, and edit shapes; add lights and cameras; and determine your render settings. You can drag and drop objects and their properties from one window or image to another. So although you



**To create the above image**, the author first imported the paths to the radio, which was created in Illustrator. Other Ray Dream Designer features that she used include texture maps, text, compound paths, 3D clip art, and 3D paint tools.

another for scene design—into one.

The shadow-box interface, which has been continued with this release, was also created to help 2D artists work in 3D. The idea is to present you with one reference view when you're in object-creation mode, rather than the multiple views provided in most 3D programs. In Designer, the reference view resembles the inside bottom corner of a box: The left side of the box represents the X-plane, the right side represents the Y-plane, and the Z-plane is the "floor." Each plane has a grid, which can be made visi-

### RAY DREAM DESIGNER 3.0.2

Ray Dream Inc.  
Mountain View, CA  
415-960-0768

CIRCLE 216 ON INFORMATION CARD

Price: \$349; upgrade, \$99  
System requirements: Any color-capable Macintosh, System 6.0.5+, and 5MB of RAM.