# Designing with computers

## Glass Eye 2000, Tips and Techniques

by Joseph 2bears
Sponsored by Dragonfly Software

*Joseph 2bears*
*[click photo for author biography]*

> Although the program has hundreds of features, the novice can draw a stained glass pattern with only a few simple commands: just point and click.

Editor's Intro: As you may have read in my editorial, Joseph 2bears was concerned that he might be pegged as an employee of Dragonfly Software, the publishers of Glass Eye 2000. He is not. Joseph and I met in Chicago this past June at the AGA Show where he was leading a workshop on this CAD program. It was there that we talked about the possibility of the article and I further discussed it with Dragonfly. With some going back and forth, everyone agreed to the article as you see it. What you have is an honest appraisal by a real consumer, a software company delighted to get the word out and a happy editor who looks forward to repeating this sequence of events many times over.

**W**elcome to my first article for **Artglassinfo**. I am Joseph P. Bremmer, known in our business as Joseph 2bears of Joseph 2bears Art Glass. I hasten to note; I am an independent studio, not an employee of Dragonfly Software, the company that makes Glass Eye 2000, however I have used Glass Eye, since its introduction in 1996, exclusively for all my design work. I offer you candid views of the software in what I hope will be an interesting and informative manner. Fear not! I will do my best to avoid "technical gibberish" and present this review in plain English.

## Glass Eye 2000 Joseph 2bears

> If you haven't considered CAD in your stained glass hobby or business, I think you will see that it is an invaluable tool and will pay for itself by the time you develop your first few patterns.

## Why use Computer Aided Design?

I often hear comments such as, "I'm not very computer literate. I can draw my patterns with pencil and paper as I've always done, so why should I try to use a Computer Aided Design (CAD) program like Glass Eye 2000?"

If you can point, click and drag with a mouse, you can draw stained glass patterns with Glass Eye 2000. It really is that simple. Although the program has hundreds of features, the novice can draw a stained glass pattern with only a few simple commands: just point and click.

In this article, I will give you an overview of what Glass Eye 2000 can do for you. If you haven't considered CAD in your stained glass hobby or business, I think you will see that it is an invaluable tool and will pay for itself by the time you develop your first few patterns.

One of the most basic pattern manipulations we all perform is resizing an existing pattern. For example, we have a panel design that is 18"x24", and a customer wants that panel to fit into a 24"x36" window opening. In the 'Medieval Glass Studio' they get out the projector, pantograph, or heaven forbid, the 1"- grid graph paper, and start tracing. Two hours later (or longer), they have the basic sketch. Next, they spend another half-hour with their colored pencils or crayons putting in some semblance of the glass color. When that's done, call the customer, leave messages, and try to schedule a review for approval of the finished design. When that is accomplished, they stack two more sheets of paper with carbon paper in between, tape them in place, and retrace their drawing to make the lay-up pattern and piece pattern to be cut with pattern shears. They now have at least 3 to 4 hours of labor in the simplest of tasks. This is assuming there have been no alterations to the pattern. Progress is now at a standstill awaiting customer approval. "Has he returned our calls yet?"

At Joseph 2bears Art Glass Studio, I open Glass Eye 2000, and open the pattern file from the design library. A few clicks of the mouse and the pattern is properly resized and printing on my ink jet printer. The first copy, for the customer, is in full color using actual photo images of the glass selections, and with accurate depictions of the lead lines. The customer gets a very realistic 'picture' of what his finished panel will look like, moments after his selection, not a colored "cartoon" that my 'Medieval' competitor hasn't even started drawing. Figure #1 shows an example of the client copy of a design. Work on the panel can begin immediately, pulling the glass from inventory, or getting an order out to my supplier as soon the customer leaves the studio.
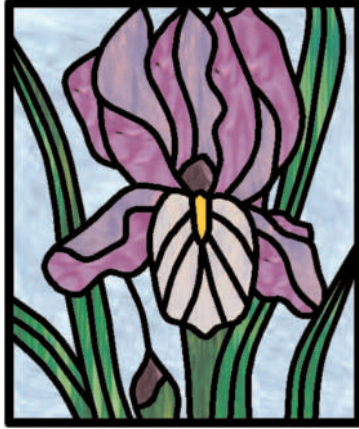
## Glass Eye 2000 Joseph 2bears



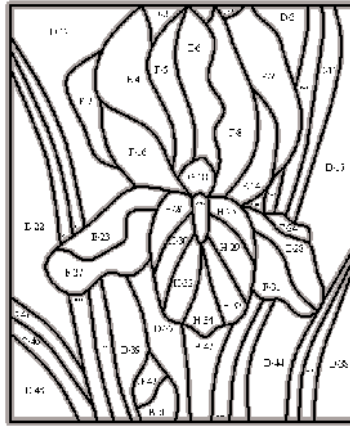*Figure #1: Customer's copy of finished panel design*



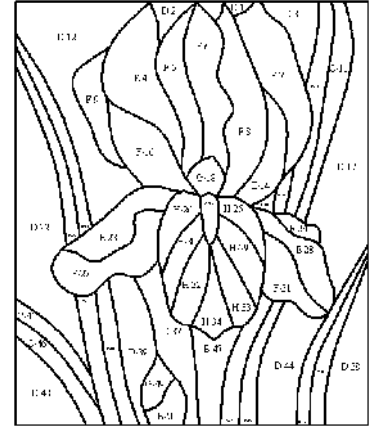*Figure #2: Lay-up drawing for panel construction*



*Figure #3: Piece pattern drawing for cutting*

A few more clicks of the mouse and I have printed a full scale lay-up drawing showing both the face and heart width of the lead, with all pieces numbered and color-coded automatically as shown in Figure #2.

I will also print the piece pattern with heart-width lead lines, ready for cutting with the pattern shears, again with all pieces numbered and color-coded as shown in Figure #3. Less than 5 minutes has elapsed, from start to finish.

The drawing package labor cost at Joseph 2bears is less than 1/40 of that at 'Medieval'. What value do you place on immediate customer satisfaction? OK, so 'Medieval' has been in business a long, long time. How much longer do you think they will last?

### More reasons...

The next day the customer calls and wants the butterfly moved from the flower on the right side of the panel to a flower on the left. He also asks if a caterpillar can be added to the flower where the butterfly was originally situated. This is the second most common pattern manipulation in a glass shop: minor alterations to an existing pattern.

Oh, poor 'Medieval Glass Studio'! They have to get out the tracing paper, erasers, and pattern books to find a caterpillar. 6

hours later 'Medieval' has a revised set of drawings. They have to call the customer and schedule an appointment for review and final approval of the alterations.

At Joseph 2bears Art Glass Studio the design is edited in Glass Eye 2000. Select, snip, flip, rotate, move, and the butterfly is where the customer requested in less than 10 minutes. A design library search, on the keyword "caterpillar," locates a pattern containing that element. Copy, paste, dimension, and clean up a few lead lines and the caterpillar has been added to the design in less than another 10 minutes. A few more minutes to select glass for the caterpillar and the revisions are complete. A full-color "photo" image of the revised design is e-mailed to the customer for his approval in less than 30 minutes following his request for revisions. 'Medieval' has just started thumbing through the pattern books. Joseph 2bears' labor cost for minor pattern alterations is less than 1/30 of that at 'Medieval'. How much longer did you say 'Medieval' would remain in business?

### Professional or Hobbyist...

That example is just a glimpse of how Glass Eye 2000 changes the business side of stained glass. It has an equally dramatic effect on hobbyists. A hobbyist can produce many more panels in a given amount of time when Glass Eye 2000 is used to develop the patterns.

## Glass Eye 2000 Joseph 2bears

Glass Eye 2000 is available in three editions-Standard, Professional, and Professional Plus. The Standard Edition contains all of the basic drawing features for $99 and is well suited for the hobbyist. It even comes with 340 completed patterns that you can browse through using your own search criteria. The time you'll save in manipulating only a few patterns, or in developing one new pattern from a photograph or an idea, will pay back the basic cost of the program.

OK, so you're hesitant to spend $99 on a tool you won't use, like that $200 grinder that doesn't see much use since your glass cutting improved. Perhaps you're afraid the software will be difficult to learn, and maybe it won't work very well, like some other programs you spent money on and don't use. What would you do if the program crashes, or the technical support from the software vendor was poor or non-existent? The list of excuses to avoid change and stay with what you know is endless.

I doubt that $99 is really an issue, although it is often used as an excuse. When was the last time you left the glass shop with less than $100 worth of glass that you would use in 'something'? Let's move on to the real issues.

### Is the software hard?
In my 6 to 7 years of usage, Glass Eye 2000 has never crashed. I simply cannot make such claims about other programs that I use in my business. My operating system crashes daily, I have had my registry eaten by a worm, and I have had two hard drive failures. Glass Eye has performed unerringly through it all. A few, very few, bugs in Glass Eye have been discovered over the years, and it does have an esoteric quirk or two in the way it does some specialized functions. Despite those few foibles, the product support from Dragonfly Software has been better than any software vendor I have ever encountered and updates for the few bugs, once discovered, have been released for download within a day or two. Other updates with new or improved features are released regularly, at no charge to the user. Major upgrades with significant new features, such as the recently released Professional Plus Edition, do have an added cost.

If you compare Glass Eye 2000 to other more generic CAD programs such as Illustrator, Corel Draw, et al, I think you will find the cost of Glass Eye 2000 to be more than reasonable. In my opinion, it is under-priced for the value it delivers.

### The learning curve
Glass Eye 2000 is easy to learn. It does not confront you with 'computer language' or nonsense. It is designed to work the way an artist thinks and works. It is intuitive, straightforward and easy, period! Open it up and just start drawing as you would with a sketchpad. Dimensioning, lead versus foil, and other considerations can be decided later, after you have captured your ideas in a drawing. The iris pattern, shown in Figures 1-3, was drawn freehand in 30 minutes (including the finishing touches of dimensioning, glass and lead width selection) from a photograph a student handed me in one of my classes. This is a testament to Glass Eye 2000, its features and ease of use, not to my meager drawing abilities. Normally I would import a scanned image of the photo and trace it in Glass Eye, but on this particular occasion I had a student who challenged my claims on how easy it was to draw with Glass Eye 2000. Glass Eye did not let me down. The editing features for reshaping lines (basic click & drag operations) allowed me to produce a reasonable facsimile of the photographic image quickly.

# Glass Eye 2000 Joseph 2bears

A comprehensive tutorial, within the program itself, will take you through all of the features and show you how to use them. I highly recommend it for the first-time user. The tutorial is divided into individual lessons that take only 5 to ten minutes each to complete, so you can go through it at your own pace. A sample page from the tutorial is shown in Figure #4.
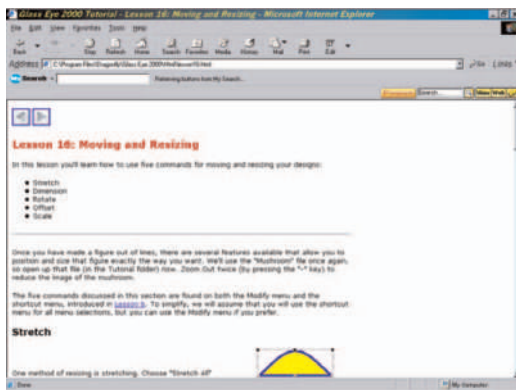


*Figure #4: Glass Eye 2000 Tutorial*

There is also an extensive, context sensitive help menu. The explanations of what a feature does and how to use it are very clear and concise. The help menu is an embedded user guidebook in the software. A sample of the help menu is shown in Figure #5.
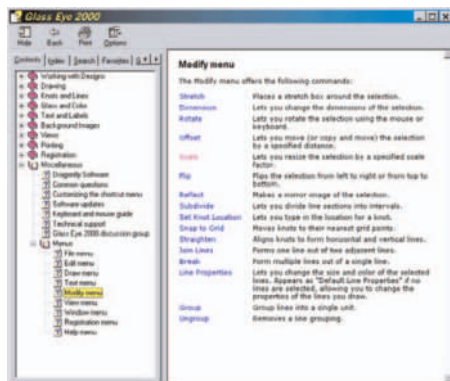


*Figure #5: Glass Eye 2000 Embedded Help*

Once you start using Glass Eye 2000, you will never go back to the good old pencil & paper days. All of your patterns will be drawn and manipulated with Glass Eye. It truly is an essential, invaluable tool of the trade. It is like your favorite glasscutter, the one tool that is always used in every project.

## What does it include?

The essential features of the Standard Edition of Glass Eye 2000 are draw lines, curves, arcs, ellipses, circles, and polygons; line width and color. You can alter lines with tools for resizing, rotating, stretching, flipping, straightening, and reflecting. There are features for aligning pattern elements with grids, crosshairs, and rulers. You can color pieces with an unlimited color palette and fifteen glass textures. Import and export of BMP and JPEG images are possible, as well as accessing an embedded design library of over 340 patterns from artists and studios across the country, or access an embedded bevel library of over 160 stock pieces and bevel clusters from Mika International; import scanned images; and automatically number pieces or produce a bill of materials. Where else can you find such value for only $99?

The Professional Edition of Glass Eye 2000 sells for $250. It contains all of the features in the Standard Edition with the addition of the following features: select and fill pieces with JPEG photo images of actual glass samples from a glass library of over 1800 glass samples from Armstrong, Bullseye, Kokomo, Spectrum, Uroboros, Wissmach, and Youghiogheny. You can also extend the glass library with your own glass sample images from specialty glass suppliers. This edition allows you to show measurements in either decimal numbers (as in the Standard Edition) or as fractions. Do you want to add text? It is possible to do so in unlimited fonts and colors. You can import/export additional file types, including TIFF, PNG, PCX, and DXF. Assign color codes and prices to glass and textured colors, number pieces by color or location, or number them manually. Design flat panel lamps using the Lamp Wizard 3D modeling tool; export, print, or print with a scale factor, selected design elements; and calculate materials usage and cost, including scrap factors, piece labor, and profit margin to fairly price your work. While these additional features are extremely useful in the professional studio, many hobbyists also find them to be a helpful addition to the expression of their craft.

# Glass Eye 2000 Joseph 2bears

## Come towards the light!

The Lamp Wizard alone may be worth the additional cost, even if you only do a few lamps a year. In the Lamp Wizard, you simply select the number of tiers, the top and bottom diameter of the tiers, and the number of panels. The Lamp Wizard produces a 3D model of your selections, which you can rotate up and down, and all around, to see what your creation looks like from any viewing aspect. By simply pointing and clicking you can alter the design until you are satisfied with the shape and form. The Lamp Wizard instantly calculates the geometry of each piece (length, width, angles, and cutting allowance for 3-dimensional structure), and produces a pattern for the pieces. If you make lamps, and geometry is not your friend, the price is inexpensive. Figures #6 and #7 show an example of the Lamp Wizard and the pattern drawing it produces.

## Top of the line

The Professional Plus (Pro Plus) Edition of Glass Eye 2000 sells for $395. In addition to all of the features in the Standard and Professional Editions, it adds the new AutoTrace and customizable shortcut menus features. AutoTrace has long been the "Holy Grail" of CAD programs. How do you convert a bitmap image into line equations, intersections, fill color, lead width, etc.? Dragonfly Software has found the solution! Now you can download or scan a pattern, and automatically produce a Glass Eye pattern with AutoTrace.

The few, very few, CAD programs with a similar feature are priced higher, much higher, than Glass Eye 2000 Pro Plus. Moreover, Glass Eye 2000 is tailored to stained glass work. Other CAD programs are not. Nowhere else can you find CAD software that easily connects and disconnects lines, fills any region surrounded by lines with color, puts a glass browser at your fingertips, automatically numbers pieces and assigns color codes, calculates materials usage, sets lead face width and heart thickness, straightens lines with a single command, automatically traces line images to produce a stained glass pattern, and is uncluttered by features you won't use.

The Pro Plus Edition also allows customization of shortcut menus to the way you work. You can select the commands and their order of appearance (such as most frequently used at the top of the list) in each shortcut menu. This feature greatly enhances the pattern editing process and tailors Glass Eye 2000 to your preferences and work habits.
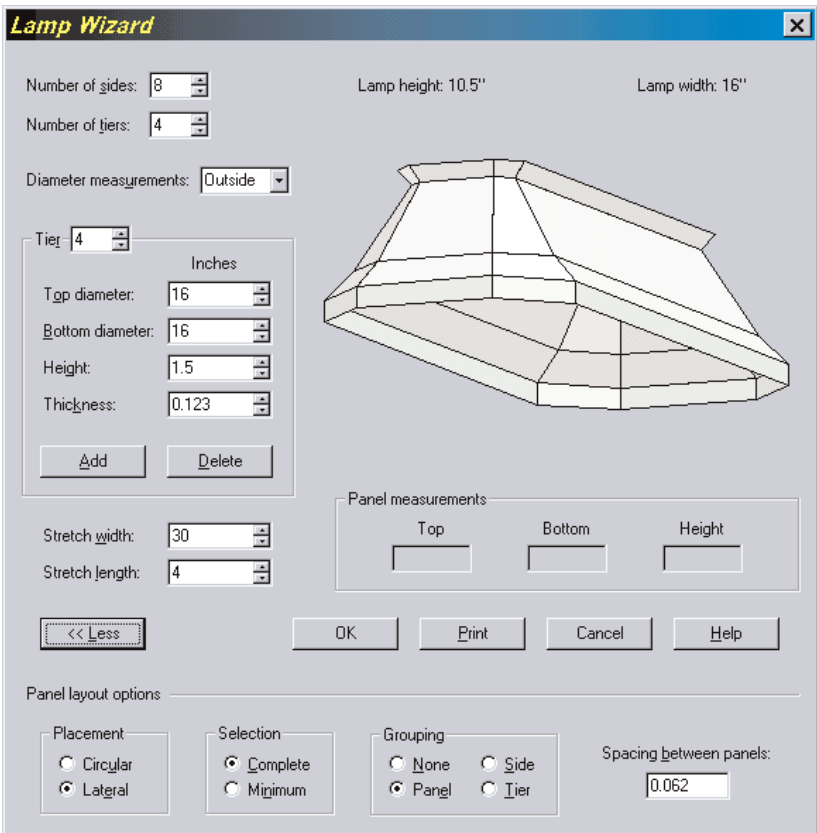


*Figure #6: Designing with the Lamp Wizard*

## Glass Eye 2000 Joseph 2bears

### What to do next

If I have caught your interest and you want to learn more about Glass Eye 2000, visit Dragonfly's web site at www.dfly.com. Not only will you find a lot more information, such as a comparison table of features, but you can also download a 30-day free trial version and try it for yourself without risk or obligation. Even if you decide not to purchase the program, Dragonfly Software lets you keep the embedded pattern library, and the pattern resizing and printing features of Glass Eye 2000 remain active for your free use.

Please send any comments, questions, or topic suggestions you may have to editor@artglassinfo.com, or to me personally, at joseph@joseph2bears.com. In the meantime, if you need help in using Glass Eye 2000, aside from the tutorial and embedded help menus, on-line technical help is available at help@dfly.com. Send Dragonfly Software an e-mail describing your problem, and they will respond promptly with the assistance you need, even if you have not yet purchased the software and are only evaluating the 30-day free trial version. You can also visit the Yahoo Glass Eye 2000 Discussion Group at www.groups.yahoo.com/group/glasseye. This site is a user's forum dedicated to Glass Eye 2000, as well as help and education in all facets of the stained glass art can be found. It is a friendly gathering place for beginners, as well as professionals, to ask questions, chat with others, share designs, and get important product announcements.

May all your scores break cleanly. ● ● ●

This Article originally appeared in ArtGlassInfo Mag-e-zine on Nov. 2003. For more Information on how to subscribe, log in to our website www.artglassinfo.com

**BIO** Joseph Bremmer has been a stained glass hobbyist for over twenty years. Two half-Cherokee brothers gave him the name, Joseph 2bears, while they were working together in a gold camp in California's Mother Lode region. Retired from the engineering profession, he adopted the name for his art glass studio in Lomita, California, which has become a full time business in architectural panels and instructional classes. He was an early adopter of Dragonfly Software's Glass Eye in 1996, upgrading to Glass Eye 2000 when it was introduced. All of his design work has used this tool exclusively since. Visit his website at: **www.joseph2bears.com**.