

DataCAD Boston Users Group

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A Committee of the Boston Society of Architects

DBUG Meeting Notes

October 20, 2004

**Host: Blackstone Block Architects
Boston, Massachusetts**

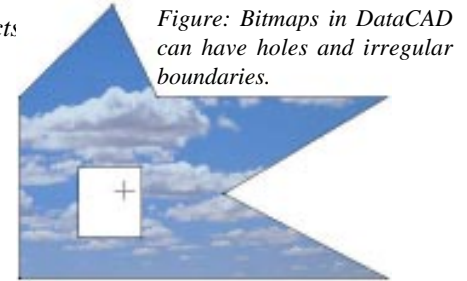


Figure: Bitmaps in DataCAD can have holes and irregular boundaries.

After an 8 year hiatus (and firm name change), Blackstone Block Architects (formerly MGIA Architects) once again welcomed DBUGers to their offices in downtown Boston. And for the second straight year, DBUG coincidentally met on the evening that the Red Sox were to play the Yankees in Game 7 of the American League championship. *But this time we got it right* — speeding through our evening agenda and thus giving the Red Sox the impetus to never lose again on their way to the World Series Championship!

Host, James Duncker, welcomed the group of 15 and after everyone gobbled up the good pizza and snacks, he led the introductions. Evan Shu reminded everyone to sign-up for DBUG's annual anniversary meeting at Build Boston, which will be DBUG's 17th anniversary and November 17 in the usual amphitheater location.

Bitmaps in DataCAD

Evan then gave the group a quick quiz testing how DataCAD “thinks” about bitmaps. Is it a symbol? Is it a polyline? Is it an XREF? Is it an Associated hatch fill?

It is not a *Symbol* but DataCAD does think of a bitmap as a single entity like it does a symbol file, but it is not stored or used in the same way. You can save a placed bitmap as a symbol for placing into another drawing file.

It is not exactly an *XREF*, per se, but DataCAD does treat a bitmap as an eXternally REferenced file. In other words, the bitmap file is always considered outside of the DataCAD drawing file, while only its extents (boundary) is stored in the drawing file. For this reason, there may be times when you open a DataCAD drawing file and see blank boxes. DataCAD has lost its reference to where that bitmap is located. It can't find it. The most common reason for blank bitmap boxes is that you have moved the original bitmap locations. You can now use the *Orphaned Bitmap Manager* (*Insert* menu) to redefine those locations, or an easier cheap trick way is to simply place all your bitmaps in the same hard drive folder where your drawing file is located and then DataCAD will automatically find them there if their names haven't changed.

It is in fact a *Polyline*, because DataCAD treats the boundary for your inserted and externally referenced bitmap exactly like

a polyline. In fact, everything you can do with a polyline, you can do with an inserted bitmap by using the Polyline editing tools (*Create/Polyline/Edit*) to add, delete, move vertices of a bitmap boundary to your hearts content. And yes, you can even draw new polylines and define them as voids to “punch out” bitmap “holes.” So, you can, for example, put a bitmap picture of an existing building elevation and then use Polyline voids to cut-out where your new windows and renovated storefront might be located. Evan also showed a cheap trick to use voids to link separated polylines, such as for a series of windows showing a reflected sky or street front.

Associated Hatch Fill is perhaps the best description, because that is exactly how DataCAD treats an inserted bitmap file. Another way to insert a bitmap is to go the *Hatch* menu, pick *SPB Fill* (Solid/Pattern/Bitmap) then *Settings* to pick your bitmap file. And now, you can pick Boundary and no longer be limited to a rectangle but define any polyline boundary to define the limits of your bitmap. Use of the SPB Fill command is also the way to *change* a bitmap association where you want to make sure your original bitmap extents is kept intact. Under *SPB Fill/Settings*, you pick a new bitmap file and then simply “re-hatch” you polyline boundary and the bitmap will be swapped. This method is also a quick and easy way to re-associate orphaned bitmaps: just re-hatch the blank box with your bitmap fill.

Another important concept Evan emphasized is that bitmaps are opaque. Even if you change your background color in DataCAD to match the background color of your bitmap (i.e. white on white), understand that if an entity is considered “behind” your bitmap, it will not display on screen. Bitmaps should always be placed on a separate layer, so that you can always rearrange the layer refresh order (*Display/LyrOrder*) so that your other drawing entities display “on top” of your bitmap. If you want the layer you are drawing on to always show up on top of your bitmap, select *Display/LyrOrder/* and pick “Last” and your *Active Layer* will always refresh to show its entities on top of the bitmap.

The other vital concept he stressed is that just because a bitmap displays on screen does not mean it will print that way. Make sure that in your *Pen Table*, under *Bitmaps and Fills*, that you have the “Print First” box checked. Almost all



the standard default files provided with DataCAD will have this checked “wrong,” so that your drawing entities may not appear over the top of bitmaps as they “should” in most cases.

Evan also handed out Mike Smith’s tips about bitmaps (from his book, *Advanced Construction Drawing & Visualization*, available via www.tecedu.com) for more about these how DataCAD handles bitmaps.

Using Photoshop for Architecture

James Duncker then went through the process of how they used DataCAD and Photoshop to create a realistic photo-rendering of a rooftop chiller plant on an existing multi-story building at Simmons college.

First, in DataCAD, he created a 3D model of both the existing building and the new addition. Their office uses the “tilt-up slab” technique for creating 3D models from building elevations. The model didn’t need to be detailed since it was only to be used to find the correct perspective view of the chiller plant addition on the roof. With an existing digital photo as a guide, James worked the perspective view of the 3D model until it closely matched the view in the digital photo. Next, he did a hidden line perspective in DataCAD and saved that image to a separate layer for printing as a PDF file.

Using *PhotoShop 6.0* (*PhotoShop Elements* or *CorelDraw Essentials* will also work as less expensive alternatives), the PDF file was imported into the same PhotoShop file of the existing building but on a different layer. With the DataCAD model PDF layer “on top,” he showed how you can make that layer semi-transparent (via *Layers/Photo/Opacity*) so that the digital photo showed through. Now by scaling the size of the building outline so it closely matched the digital photo beneath it, you can properly “sit” the chiller plant where it should be located on the roof. Use also of the *Edit/Transform/Skew* command can help for correcting distorted perspectives.

With the match of model to photo done, it was a simple matter of erasing the extraneous model outlines and then painting in conventional fashion the proposed color for the siding material. But James noted that to achieve a realistic effect, he used the *Smudge Tool* to introduce transitional and imperfect coloring coverage to make it seem more “real.”

Now the final result was printed and presented to the owner who was very pleased with the result and in the security of knowing exactly how the new addition would look when completed.

Quick & Easy Animations

Evan highly recommended buying a low-cost shareware program called **Snagit** <www.techsmith.com>. It is free as shareware for 30 days, then it costs \$39.95.

First, as a basic image capture utility, the program does some very nice things that regular Windows screen captures *can't* do such as: a) *Region Capture*; b) *Object/Icon Capture*; c) *Text Capture* (Folder contents /Directories) as “real” text not image; d) *Menus/Mouse Capture*; d) *Scrolling Capture* for long web pages; and it also includes features for quick markup and annotation of existing photos/images such as for field notes or instructions.

But the real bonus of this shareware software is that it can save animations in DataCAD with its video capture feature that creates AVI files, which are easily played on just about any Windows computer using the *Windows Media Player* that comes standard on most computers. Here are the steps involved below.

- a) After creating model in DataCAD, use the Object Viewer to view model and create desired action.
- b) Use Snagit *Video Capture* model (under options, check “do not include cursor”) just like a continuous screen capture with start/pause/end commands.
- c) It creates AVI files, which are viewable by *Windows Media Player* and other standard players and can be sent to clients on CD or via e-mail for review.
- d) Note: it does not capture “rendered” view (no shadows or textures) but still shaded view for base modeling can be very effective. (It will capture rendered views from any program that provides them, e.g. *Sketchup* for dynamic shade and shadow animations.)
- e) You can also use this feature as a general presentation tool of static images such as to go through a series of DataCAD Drawings with *GoToViews* — now, particularly with the new dynamic scrolling ability of DataCAD 11.05.

Thus educated, our DBUG faithful completed our full agenda in what was probably a DBUG record time, and the chant was heard as we left the premises, “Go Sox, Go Sox, Go Sox!” Thus it was written, and thus it was done!