DataCAD Boston Users Group

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A Committee of the Boston Society of Architects

DBUG Meeting Notes

September 15, 2004
Host: Sargert Design Associates
Springfield, Massachusetts

A dozen of the DBUG faithful showed up at DBUG-West Headquarters, namely *Sargert Design Associates*. In addition to the typical good treats, we were also honored to help David Sargert celebrate his birthday on this day along with his lovely and talented daughters and watch him blow out his birthday candles, whose count (a prime number) shall remain unpublished.

In announcements, a growing number of available DataCAD positions were mentioned, such as at *Axiom Architects* in Hanover, *Archi-Tech Associates* in Cotuit, and at *Judge Skelton Smith Architects* in Boston. October's meeting will be at *Blackstone Block Architects* in Boston on the 20th, and be sure to sign up for *Build Boston* for the DBUG meeting in November. David Sargert announced for Gary Segal the pending release of *Spirit 12* which will include: a double precision database, ability to open DWG files directly, drawing reference to room polylines, a new polyhedron modeler, integrated estimating, and inclusion of a new integrated rendering called FrescoII.

Webcam & Keyhole

David then showed the group his webcam setup in Taos, New Mexico that updates a live shot every 7 seconds: a great method for observing construction progress on a site.

Even more impressive was his demonstration of the Keyhole program. He gave the group an eyeful by demonstrating the software <www.keyhole.com> that gives access to relatively up-to-date satellite imagery of the entire globe with a bonus extra of Mars thrown in as well. He started us from Rome, Italy and "blasted off" into the upper atmosphere and landed over Evan Shu's house in Melrose, Mass. This imagery is absolutely spectacular as we could see anything from the actual curvature of the earth and delineation of the continents and snow-capped mountain tops down to the outline of your driveway to see if a car is parked there or not. This software gives you the actual sense of flying over the landscape with the additional controls to spin, rotate, tilt and zoom.

He noted it works best if you have a broadband connection because, once you target your destination, it streams the data to you from its database of over 12 Terabytes of satellite imagery. This software can be extremely useful to give you a birds-eye view of just about any site. You simply type in an address (give as much or as little information as you want) and hit "Go" and it will graphically blast off, travel over the earth's surface, then zoom down closer and closer to your desired location. The imagery will gradually get sharper and sharper as it streams to you the data (a progress bar will show you the percentage) down to an altitude as close as 150 feet above your location. As we tried a few DBUGers suggested sites, we noted that the address might be off a few houses as it often just interpolates the data, but it will be close enough to find the correct location.

The Keyhole's database does not contain uniformly high-resolution data for all areas, but they cover over 80 major metropolitan areas in hi-rez for the US as well as many international cities. You can download *Keyhole 2 LT* as a 9 megabyte free trial version for 7 days and a sale price of $39.95 per year was being offered through September 30. The software works with most major graphic cards and typical Windows operating systems but they also have a special version that works with the NVidia cards for the sharpest resolution.

Keyhole has just added new tools in the LT version to allow you to measure distances on the map in a point to point fashion or else via a defined path. You can also import your own graphic image into a scene or choose what overlay information to show or not show (i.e. street names, etc.)

We could have easily spent the entire meeting traveling the earth to different spots, so be advised this software experience is very addicting!

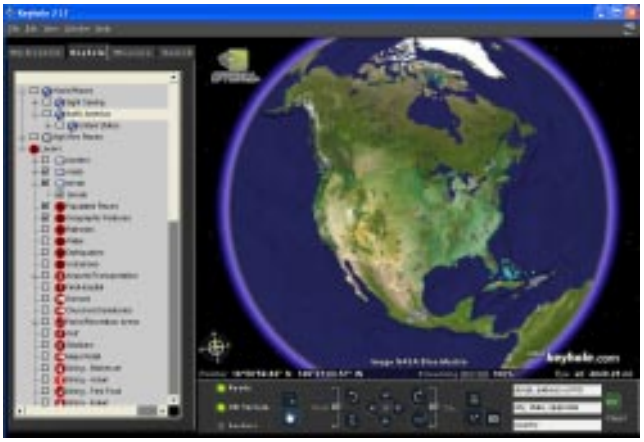


Figure: Keyhole software goes from 5,000 miles altitude down to 150 ft.

Faux 3D

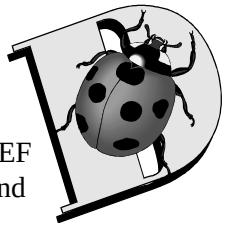
Neil Blanchard then presented his techniques and methods to draw and coordinate a building so that it is accurate in all views. In essence his method uses "stacked plans" and XREFs to overlay and align information (such as plans to elevation) to allow maximum coordination of data. Neil's full handout is posted on the DBUG website <http://world.std.com/~eshu/dbug.htm>.

By using GoToViews, XREFs, Self-XREFs, Highlighting in XREFs, XClips (Clip Cubes of XREFs), the Context Menu (CTRL-right click), and Multi-scale plotting, Neil was able to demonstrate how he organizes a set of working drawings for maximum "Faux 3D" coordination.

His general list of drawing files and uses are noted in his handout and listed as follows.

Border.AEC = all **common** border information like project title, and GTV's for all **dates**. I always draw this at full size, and then use MSP to plot.
ExistingConditions.AEC = an accurate and **updatable** drawing of existing plans.
FloorPlans.AEC = contains all the construction floor plans, with **XRef's** of Border.AEC with native title information, and ExistingConditions.AEC – the latter used with highlighting for the demolition plans.
Structural-Electrical = Uses **highlighted XRef's** of the FloorPlans.AEC, with native entities for information specific to each. Also uses the Border.AEC with native title information. Both these drawings require the same sort of information, so I try to make the most of the overlap.
Sections-Details.AEC = Uses plan XRef's for *reference only*, so you can accurately extend the the X and Y planes (as appropriate) into the Z plane. Details are done within this file, with self-XRef's using XCC's.
Elevations.AEC = this is the "culmination" drawing, where the plans are meshed with the sections, and where you can cross-check everything against the other things – the roof plan being the most important of these.
InteriorElevations.AEC = Uses XRef's of plans and sections to generate the required interior elevations.

By going through his drawing files, we saw how he uses the various GTV and XREF techniques to display information from one file to another. For example, the Existing Conditions file is kept updated separately but, in the demolition plan (in Floor Plans), that file is XREFed in and highlighted as dashed lines. Then any walls to remain are simply shown in solid lines as a GoTo View from the Floor plan information. Thus, they will overlay the dashed lines from the XREF and expose only the dashed lines of the demo entities to be removed. Slick.



In similar fashion, XREF plans are X-Clipped and rotated to provide perfect overlays for both exterior and interior elevations. Other interactions between drawing files are noted above in the list.

Beta Demo for 11.05

Mike Smith gave us a comprehensive demo of all the features to be incorporated in the free update 11.05, which is due out soon. You can find his full handout on the DBUG website <http://world.std.com/~eshu/dbug.htm>. A few of the more interesting features to be added are as follows:

a. A new option, **Hatch Origin**, has been added to the **Display** menu. When toggled ON, DataCAD will display the origin of associative hatch entities. Its importance increases with the "Locked Hatch" feature noted below.

b. A new option, **Lock Toolbars**, has been added to the **View** pull-down menu. If checked, all docked toolbars will be locked into their current position. Floating toolbars will remain undocked. Also added to DCADWIN.INI, you can customize which regions (i.e., Top, Bottom, Left, and Right) of the program interface will become fixed when Lock Toolbars is enabled.

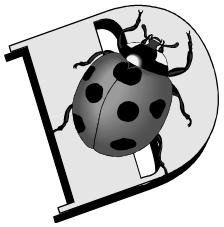
c. The Symbol Browser Folder window is **now re-sizable** on Windows NT/2000/XP

d. The **Area** selection box now rotates to match the cursor angle when using **Tangents**

e. DCAL for Delphi has been integrated into DataCAD 11.05.00 to add **DMX** (DLL-based) macros as well as the current DCX macros. (Great news for 3rd party programmers.)

f. A new option, **Locked**, has been added to the **Hatching/ Hatch Type** menu. If **Locked** is enabled at the time you create an associative hatch, DataCAD will remember the origin, angle, and scale of the hatch pattern relative to the entity versus relative to the drawing. For example, now in moving an associated hatch ceiling grid with its plan, your won't lose your alignments.

g. Display Enhancements for Panning / Zooming. In addition to using the scroll wheel to zoom in and out (**[Ctrl] + Scroll Wheel** by default), you can now use **[Ctrl] + [Alt] + Left-click** to pan the current view.



h. Perspective walk-throughs can be performed with the mouse using dynamic panning (**[Ctrl] + [Alt] + Left-click**). If **Set Persp. / Pan View** is ON, the perspective view will be panned as a 2D projection of a perspective view.

i. Display Enhancements DataCAD's graphic pipeline has been enhanced for improved performance and the time required for Panning, Zooming, Dynamic Panning, and Scroll Wheel Zooming has been significantly reduced. Refresh times are 2 to 3x faster. New controls are added for the Perspective **Walk Throug / Pan View** settings and **Scroll Dist**.

j. Many New/Updated **DCADWIN.INI display** options have been added to also speed up graphics. (See full Smith Handout.)

k. New Command Line Calculator Tokens are added: *Z-Base, Z-Height, Last X, Last Y, Last Z, Truncate, Fraction, Logarithm*, plus the following are now documented: *Power, Exponential, Absolute, Value,* and *PI.*

l. You can add the following entries to the [DEBUG] section of DCADWIN.INI to enable the new **Symbol Attribute Database Link** (often called "keynoting" ability):

[DEBUG]
AttributeReporter=TRUE
AttributeLookups=TRUE

Now, when you create a Symbol Text Attribute, you'll notice a new section, **Database Linkage**, for defining a database source to select values via: **No Link, Lookup Field (**Define field within database record to choose values from); **Field Filled by Lookup** (Field value set by previous symbol attribute); **Database Name: (**Choose Tab Delimited Text File (*.txt) for database source (ODBC to be enabled in the future).

You will also find new menu items located on the **Options** menu from the Symbol Browser to do the following: **Extract Attributes (**Allows you to run reports on symbol attributes you've inserted into your drawing); and **Refresh Fields From Database(s)** (Allows you to update the values contained in symbol attributes you've inserted into the drawing to reflect the latest changes in the database(s).)

And as a sneak preview of future versions, Mike also showed a feature in development of smart text that allows you to change wrap lengths for paragraph text. Can't wait for that one.

XREF Tips

Finally, Mike gave the group some excellent tips on "Getting the Most from XREFs." per the following outline.

a. CTRL + Right-Click key options

- File
- XREF Tools

b. How well do you know the latest Reference File Manager?

- Redefine (useful after renaming a file, etc.)
- Layers (the layers in the XREF'ed file)
- Available Views (the Goto Views in the XREF'ed file)
- Highlighting (useful for engineering backgrounds; or to keep down visual clutter when tracing over, etc.)
- Nesting

c. XREF Clipping for almost everything!

- Reference plans for drawing elevations (use GTV's for floors)
- Enlarged plans
- Advantage over regular CC's: you can draw/note outside X-Clip boundaries
- Limitations: Can't snap to everything

d. Insert Self-XREFs

- When inserting a self-referencing XREF, a "**Self XREF**" option added to the pull down "insert" menu instead of having to navigate the entire Windows directory tree just to get to the path of the file you're already in because the last XREF you did was in another directory.

e. Open RFM

- When inserting an XREF, there is a new option in the InsertXREF menu: Open RFM. It allows you to choose all the Reference File Manager settings for the XREF before inserting it into the drawing.

And with that, another productive and informative night at DBUG came to a close around 9:30 p.m.

-- Meetang Notes by Evan H. Shu, FAIA