

DataCAD Boston Users Group

120 Trenton St., Melrose, MA 02176-3714 (781)662-0020 Tel. & Fax eshu@world.std.com

<http://world.std.com/~eshu/dbug.htm>

A Committee of the Boston Society of Architects

DBUG Meeting Notes
September 19, 2007
Host: Eric Gjerde, AIA
MZO Architects, Stoneham, MA

Over 20 DBUGers attended this meeting hosted by Eric Gjerde of MZO Architects. After an excellent smorgasbord of dinner selections, including homemade waffles, the group gathered for the main presentations. The group introduced themselves and Eric called for announcements. Evan Shu reminded everyone to register for Build Boston before October 19th for free registration and that October's meeting would be hosted by Eileen Kelly of Lesko-Kelly Associates in Norwell. He also asked for ideas on how best to commemorate DBUG's 20th anniversary and floated an idea for a 20th anniversary hat at \$6-\$7 each, which was met with lukewarm response. So, we will keep our thinking cap on for other ideas.

Basic Lesson: PenStyles . Evan presented the first lesson on using PenStyles with DataCAD 12, which are like "line types for linetypes." Here is an excerpt from *Cheap Tricks* that explains his presentation.

Originally PenStyles were billed as "Windows Line Types" but that was obviously confusing because they can be used in conjunction with DataCAD's Line Types, so they were renamed. The current DataCAD 12 Reference Guide does not cover the use of Pen Styles at all, so we are happy to oblige with our own chapter on their use.

First of all, the characteristic that makes Pen Styles appealing is that they are "scale independent." We put that term in quotes because its functional reality is that any particular Pen Style (dashed, dotted, dot-dash, etc.) will both display and print properly no matter what scale they are viewed or printed at. A dashed line will always look properly dashed whether printed at 1/16" scale or 1/2" scale.

You know that in using conventional DataCAD linetypes, you must always be aware of what your line type spacing is, because a dashed line with 3" spacing will look okay for a 1/4" scale plan but if you then print at 1/16" the same line will look almost solid not dashed. The line type spacing is based on real world scale, thus its spacing varies based on the scale it is printed at.

In the same instance if you used a solid line with a dashed Pen Style, you would get the appropriated dashed look no matter what scale you printed it at. In addition, you can also adjust its spacing further based on printed output (or viewing scale). If you specify Pen Style spacing at 1/8", it will print at a measured 1/8" spacing whether you print at 1/4" or at 1/8" or at 1/16" scale output.

The key concept to understand here is that a Pen Style is paired up with a Line Type. The Pen Style is like an overlay feature on your basic Line Type. If you are using a typical solid line type with any typical Pen Style (see Figure X), it will look exactly like the Pen Style itself. It may look like a dashed line to you, me, and your contractor, but to DataCAD, it's a solid line . . . with a dashed *Pen Style* applied to it. One analogy is to think of Pen Styles like those pen nibs that you can attach to ink pens. If you put on a fancy double-point scroll nib, your hand is drawing a single solid line, but your pen is creating a double stroked stripe instead. (Figure X).

Yes, a Pen Style in many ways sounds exactly like a "line type" but the key here is that it is applied together with your existing DataCAD linetypes — in other words, their characteristics are *combined*. In many ways, it can be thought of as a "line type" for Line Types! So, say you want an insulation linetype that is also dashed. That required task is a perfect use for the pairing of your DataCAD "insul" linetype together with the "dashed" Pen Style. In your *LineStyle* menu. Draw a sample line in DataCAD to confirm it. Now, select Pen Style from the main *LineStyle* menu, then pick "Dashed R" (starts with line then space on right). In addition, click on the Spacing command and set it for 1/16". You will see both your line type selection and Pen Style selection and spacings for both confirmed on the message line below. Then exit the Pen Style menu and draw your new line; it will be an insulation line that is dashed. Zoom in or Zoom out (*Page Up/Dn*) and you will see that it maintains an appropriate dash spacing no matter how you view it. You can pick any scale to print it at and it will maintain your specified 1/16" spacing.

Another reason to use Pen Styles is for use with arcs, curves, and ellipses, especially in creating PDF output. Users have reported in the past that custom linetypes, such as property lines, do not print

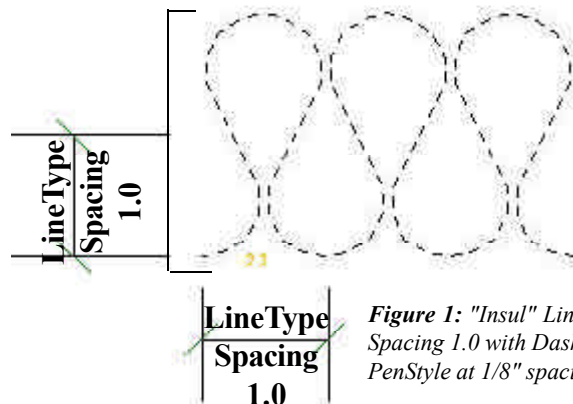


Figure 1: "Insul" LineType at Spacing 1.0 with Dashed PenStyle at 1/8" spacing

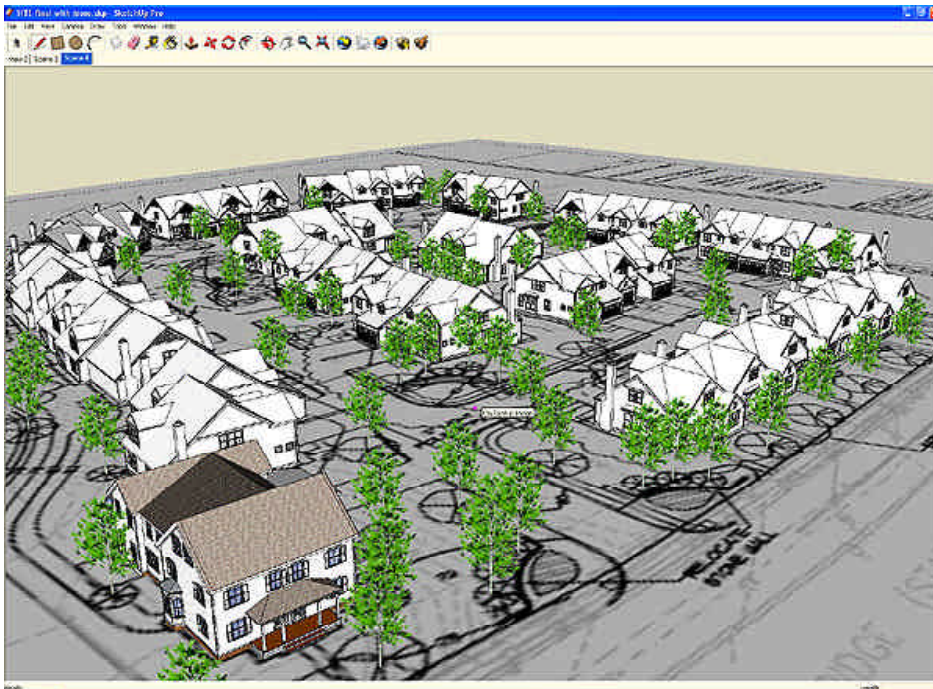


Figure 10: Mixed media of DataCAD, Acrobat and SketchUp site rendering by Eric Gjerde.

features. If it doesn't outright crash, it slows down to a crawl that makes working in it a total pain.

In this technique, you take your site plan in DataCAD and save it as a PDF, using the *Plot Preview/File/Save As* menu. Then in Adobe Acrobat or Adobe Reader, you can use the *Snapshot Tool* (or *Graphics Selector*) to draw a box around the image

properly for curves, particularly when creating PDF output. Since Pen Styles (*aka* Windows linetypes) are more universal, you should find that they print and display more reliably for use with curves and arcs.

Keep the characteristics for Pen Styles in mind when planning your drawings. A key plan that will be used at several different scales in a good place to use your Pen Styles. Certainly site plans are good candidates as well (curved property lines, printed at several scales). Once you start using Pen Styles, you will get the hang of how they work fairly quickly. In sum, Pen Styles are like alternate nibs for your CAD ink pen or, if you prefer, like line types for Line Types; they are scale independent and their spacing is set separately from line types. Keep these concepts in mind and your CAD pens will soon be styling.

BIM Architecture 2008. Michael Coviello from the MZO Group then gave the group an excellent look at Revit, Architecture 2008 version as the leading edge of what is considered BIM CAD programs. There are aspects of *Revit* that are truly outstanding in terms of coordinating drawings by being able to work in one view or plan and have it be similarly updated in elevation as well. Also, to be able to work at various scales from site plan down to details was very powerful. Very telling, however, was the need to "cover" automatic detailing intersections with dumbed-down 2D drafting elements on top to fix incorrect automated joints. So, there is no need for DataCAD users to go into full CAD-envy as yet. It was interesting, however, to see the direction in which DataCAD (and probably all CAD programs) are headed with their BIM development. Most clearly, the chief advantage in fully BIM CAD products is the ability to coordinate between all views of a project.

Creating a SketchUp Landscape. Eric Gjerde then presented an elegant approach to doing site plans combining the use of *DataCAD*, *Acrobat*, and *SketchUp*. Those of you who have used SketchUp for site plans know that it has a big problem with importing site plan DWG files showing contours and site

you want to save to the Clipboard. In *Acrobat 8*, you can also save the whole image to a better quality TIFF or PNG file.

To insert this image into SketchUp, go to the *File* pull down, then *Import*, and pick the image file to insert into SketchUp. Make sure you Insert as image *not* texture. Find a known dimension in your site image and scale up to match.

You can further utilize this bitmap image to create SketchUp site contours or other ancillary buildings. First, *explode* your image. Now, you can trace and place your buildings on the site.

Once the image is exploded, you can also use the pull and push tool to work with the contours so that whole planes can be lifted or lowered. Another trick that Eric presented was placing all the objects (trees, landscaping, people, entourage, etc.) on a single flat plane, then drop them down on the site using a free *Ruby Script* (like a DataCAD macro) called *Drop Down*. He advised we check out *Smustard* <www.smustard.com> which is like *Cheap Tricks Ware* for SketchUp. They have some interesting ones, even freebies like "Drop" which works like DataCAD's *Insert symbol/Z offset/On Poly*. To install a Ruby Script file (.RB) just save it into your *PlugIns* folder under SketchUp.

Another great tip that Eric demonstrated for entourage was taking a tree image and placing it in SketchUp as a texture on a plane. Then he cut out around the tree and deleted that excess part of the plane, so the tree/polygon will cast a proper shadow (i.e. not a box). This tree was now saved as a component (like a DataCAD symbol) in SketchUp. Now when he places these trees in a SketchUp landscape, he turns on the *FaceMe* setting. This setting causes the face of the tree (polygon) to face the viewer at all times. So, no matter what view you are using of your model, the full face of the tree is facing you. You are getting the output of a full-fledged 3D modeled tree for the price and low file size of a small bitmap texture file. An excellent cheap trick for sure!

The meeting adjourned at around 9:30 p.m. -- *Evan H. Shu, FAIA*

