That CAD Girl

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September 15, 2011
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Originally posted on **Carlson Connection** by Jennifer Dibona

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What is Carlson up to?

September 15, 2011
This is a good article about Bruce Carlson and where Carlson Software is planning to go in the future…

Independence All the Way

Originally posted on **Carlson Connection** by Jennifer Dibona

Carlson Point Cloud

September 15, 2011
It’s time to take another look at Carlson Point Cloud.

Carlson’s Point Cloud program has been re-vamped with many powerful and exciting new features giving those folks struggling to process data generated from laser scanners the ability to process up to 1 billion points.

Carlson Point Cloud is even more valuable to land surveying, civil engineering and mining professionals because of its seamless integration with Carlson Survey, Carlson Civil and Carlson Mining.

With the new and improved Point Cloud program, your scan can be oriented to a local coordinate system and clouds can be “cleaned” to filter and thin out duplicate points. You also have the ability to snap to edges and code points for use with the Field to Finish feature of Carlson Survey. This allows you to define more accurate breaklines and create

better surface models for generating contours, profiles & cross sections in Carlson Civil.

Read more about Point Cloud by clicking here. There are also several new 5 minute videos demonstrating the functionality of this program available here.

See key features of Carlson Point Cloud 2010

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Carlson Software Manuals

September 15, 2011
Looking for Carlson Software manuals? Prior to the 2010 release, Carlson included printed manuals with your purchase and, in addition, the manuals have always been available to print for yourself from the Help files.

With the 2010 release, Carlson "opened" a storefront on the self-publishing site called Lulu.com. You can order 2009 and

2010 Carlson Software manuals here http://stores.lulu.com/carlsonsw.

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Export IntelliCAD or AutoCAD DWG files to Google Earth

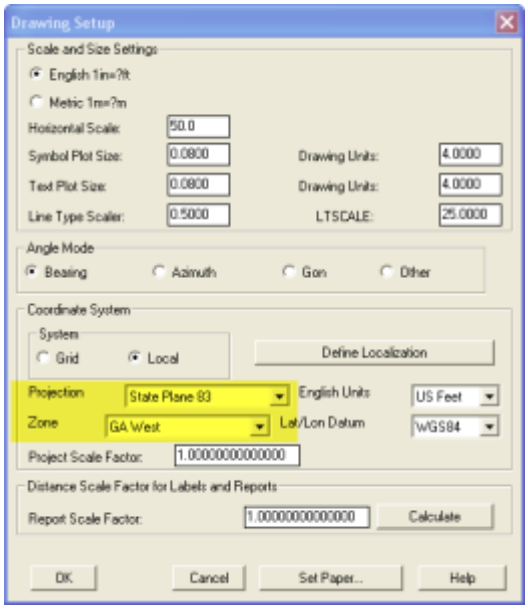
September 15, 2011
I've recently started using a very cool feature in Carlson Software. The bad thing… it was in the 2009 version and I didn't even realize it!

I had no idea exporting our DWG files from IntelliCAD or AutoCAD out to Google Earth was so easy.

1. Download and install Google Earth. You can download it here: http://earth.google.com/
2. Open any one of your project DWG files that has been positioned at its correct state plane coordinate

system.

3. In Carlson, go to Settings –> Drawing Setup and then select the correct **Projection** and correct **Zone** for the project site. If you're not sure of the **Projection**, try using "State Plane 83". This will work for most systems.



4. Next, go to File –> Polyline File –> Write Polyline File. When prompted for "Polyline File Format", type "G" for Google. You will be prompted to specify a new filename and save location for a "Google Earth File to Write (.kml)".
5. You will then be prompted to select the entities that

are to be exported out to the .kml file and viewed in Google Earth. After selecting the entities, press Enter. For this exercise, we only want to see the drawing entities in 2D, so press “N” for “No” when prompted to “Use elevation from drawing in Google Earth [Yes/<No>]?”

6. Finally, you are then prompted “Would you like to display the file in Google Earth now [<Yes>/No]?”. Press “Y” for “Yes”. Google Earth should automatically launch and zoom into the project location.

In the example shown below and pointed out with arrows, notice how closely the new roads and designed turn lanes match up to the existing roadway. Also, you can see the designed graded slopes perfectly avoiding the tank that is to be preserved during construction.
Not too shabby…

This feature is available in all of the Carlson Desktop products: Carlson Civil, Survey, Hydrology, Construction and TakeOff.

Look for a future post on bringing Google Earth surface data into Carlson Software. Hint: It’s easy too!

Originally posted on **Carlson Connection** by Jennifer Dibona

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PDF Conversion in Carlson 2010

September 15, 2011
With more construction bid sets being issued in Portable Document Format (PDF), more companies find themselves in the position of needing to generate estimating and construction data from these files. Carlson Software now provides tools to import PDF files into a drawing as either an image or as CAD linework. These tools are available exclusively through Carlson Takeoff 2010 and the new Carlson Construction 2010.

To import a PDF file into your CAD drawing, go to the Tools pull-down menu, then choose Import/Export, then choose Import PDF. You will be prompted to select whether you want the file imported as a background image or as linework. If you choose the linework option, it will automatically convert the

elements of the PDF image into separate polylines. Please note, since this is an automatic conversion, it may take a while, so be patient as it processes.

Once the polylines have been brought into the drawing, you can use the standard clean-up tools to assign elevation information to these polylines. These tools can elevate polylines representing contours (single elevations) as well as those representing breaklines (varying elevations). This can be done with most of the Carlson desktop software modules including Takeoff, Construction, Survey, and Civil.

Once the polylines have been updated with the elevation information, they can be used to create surface models for design, estimating, staking, or machine control. This procedure can literally save hours of time that used to be spent manually recreating the information released as paper drawings or PDF files. Digitizing may have become a thing of the past!

Originally posted on **Carlson Connection** by Felicia Provencal

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Carlson 2010 Is Here

September 15, 2011
The 2010 version of Carlson software running with IntelliCAD is officially available. This version offers support for 64-bit operating systems, Windows 7, and AutoCAD® 2010. This release is available from the Carlson website for download, or contact us for more information on requesting a demo CD. For those of you on the Carlson maintenance program, you may download the latest release from the Software download section of the Carlson website which can be found here.

If you are already using Carlson software and are part of their maintenance program, the Carlson update page has a new feature that allows you to receive your 2010 serial numbers through an on-line lookup feature. This can be found here. If you want to install your 2010 upgrade immediately, use this tool to look up your serial number, then download and install the software. CD's will be shipped out to maintenance customers automatically, but you don't have to wait, you can get started with all of the new features today!

To view the archived webinars covering several of the new

features of this release, please visit the Carlson webinar archive here.

More information on this latest release will be provided as it becomes available.

Update by Jennifer: You can download a PDF with a list of Improvements in 2010 here: Carlson 2010 Improvements

Originally posted on **Carlson Connection** by Felicia Provencal

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BIM is not GIS

September 15, 2011
As someone quite entrenched in both disciplines (Civil and Architectural), I'll add my 2 cents worth on the BIM vs. GIS subject.

In my opinion, BIM and GIS are both "methodologies" rather than "products". The acronyms each have their own meaning and

refer to designing, building, and managing information in a full life-cycle.

Each discipline has its own standards; from CAD standards to design standards (think of AIA vs. AASHTO), but both BIM and GIS rely on correct As-Built data to provide accurate information about their models.

BIM

The National BIM standard states the definition of BIM as:

"*BIM is best thought of as a digital representation of physical and functional characteristics of a facility…and a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition*."

Autodesk has taken the BIM acronym that has provided a great deal of success with their Architectural Modelling packages and applied it to their Civil products as well. Their logic appears to be that its a "3D" product, therefore it is a "BIM" product. I believe that it is irresponsible to change terminology to simply advance product sales.

On the Autodesk Web Site, Autodesk lists a number of products as being “BIM” products:

- Revit
- Navisworks
- Design Review
- AutoCAD LT
- + several more

With the acronym meaning *Building Information Modelling* (with *building* being a *verb* **OR** a *noun*), its interesting to see products such as **AutoCAD LT** and **Design Review** being shown on the list.

Revit
Revit is a Design Tool that allows the storage of certain pieces of information as well as the ability to add custom fields (heating capacity, cooling capacity, etc.) to the actual objects.

Navisworks
Navisworks integrates information from multiple data sources to provide a cohesive collection of information (graphics and data) to analyze things such as clash detection (HVAC duct

work clashing with structural components, etc.).

AutoCAD LT
AutoCAD LT is Autodesk's low-end design package. Apparently, any DWG file creation tool is now a BIM product as well.

Design Review
Design Review is a light-weight DWF viewer and markup tool. While it has been used as a backbone of products such as FMDesktop, its neither a Design tool, nor a Modelling tool.

FMDesktop
Absent from the list is FMDesktop. FMDesktop was one of Autodesk's tools for managing the Building Information and Autodesk just dropped the product (***Note*:** There are dozens of Facilities Managent Products available that provide similar capabilities such as FM:Systems, Archibus, Tririga, Manhattan, Cadapult, Famis, and more).

In the 2006 – 2007 time frame (when Autodesk acquired FMDesktop), Autodesk themselves showed customers Power Point slides regarding BIM. These slides showed where the "Design", "Build", and then "Operate and Manage" processes were performed. FMDesktop was Autodesk's solution to tell the

story of the building lifecycle and where the *information* was to be *managed*. These were broken down into 2 sections: The “Data Collection” piece and the FMDesktop piece.

Data Collection incorporated the Design (several disciplines such as Architects, MEP Systems Engineers, and Structural Engineers) as well as the majority of the Build process. The FMDesktop piece overlapped the Build process and then took over for the “Operate and Manage” process.

In my opinion, building that model of information **AND** managing that information is the true test of a “BIM” solution. There is no 1 product that is a “BIM” product. Its a series of technologies that are incorporated to provide the “information”.

Ultimately, a database component is required to work with the graphical representation of data (which certainly could be referred to as the “Building Model”).

GIS
GIS is BIM’s counterpart whereby Geographic (position on the planet) information is being stored and managed.

Most end users might think of GIS solutions as Google Maps or Google Earth where they can enter an address and out pops a graphic representation of that location or directions on how to get there. The graphic is just the tip of the iceberg. Without the data, the graphic would simply be a pretty picture.

Just as with BIM data, GIS data utilizes design tools to build the graphics and As-Built data and then tools to expand upon the As-Built information.

While there are a number of individual products on the market to assist in the creation, manipulation and distribution of GIS data, a complete GIS system involves more than 1 product or techonology.

A couple of the common Design Products are: Autodesk Civil 3D and Carlson Civil Suite

AutoCAD Civil 3D
Civil 3D is an object-oriented design tool for Civil Engineering applications. Because the tool is object oriented, the end product is not easily distributable. The data can be transferred to other links in the GIS solution

chain by using technologies such as LandXML, but the graphical interaction is lost in this process (i.e. the objects are lost).

Carlson Civil Suite
Carlson's Civil products work with DWG files in an AutoCAD or IntelliCAD DWG format. Because the data is stored as compatible DWG information with external data files, the data is easily transferred to other products in the GIS solution chain.

Managing the data developed in the design process is the next component of the GIS life-cycle. A number of products provide those solutions: ESRI ArcGIS, Vueworks, and Custom Mapguide Solutions.

ESRI ArcGIS
ESRI's shp (shape) and adn (coverage) files are quite possibly the most prevalent GIS specific data files available and are often integrated in GIS solutions. ArcGIS allows GIS solutions to be deployed similar to FM solutions in the BIM world.

Vueworks

Vueworks is an organization that builds GIS and Work Management solutions using the ESRI base applications.

MapGuide
MapGuide is Autodesk's development environment to build GIS applications. It is often used in concert with ESRI, Microstation and Autodesk data files.

GIS Standard
While there is not yet a concensus on a singular GIS standard, there are independent Spatial Data Standards employed by each digester of GIS data. You can view some of those here:

- Denver Colorodo Spatial Data Standard
- Oregon Spatial Data Standard
- Federal Geographic Data Committee

Both GIS and BIM perform very specific functions in accordance with their own disciplines. While the terminology is often mis-used, they refer to unique information systems; BIM in the structural facility world and GIS in the geographic world.

Originally posted on **Carlson Connection** by Jon Luby

BIM for Civil… Not

September 15, 2011
Several months have passed since I made my original post BIM This, BIM That… What is BIM?. In that time, I have asked a lot more questions, read a lot more on the internet and had a lot of discussions with Ladd and Felicia and also read the post by one of our commenters. I think I've developed a more concrete idea about BIM and how it applies, or doesn't, to the civil/survey world and where the various software packages stand in regard to their "BIM-ability".

Now, after all this additional information has percolated in my brain, I'm drawing two main conclusions:

1. It's a fact that the term BIM as it's always been used applies to actual **BUILDINGS** – the noun form of the word. But, more specifically, it starts with construction drawings/design data but then incorporates the as-built data and, over time, continues to grow and collect data through

the entire lifespan of the building.

Nothing in all this discussion of “BIM for Civil” gets beyond construction drawings and design data of a civil project. Autodesk is trying to stretch the definition of BIM to cover Civil 3D even though they never move beyond the design process with it either.

Remember, we do not talk about “BM” or Building Modeling. And, we don’t work with “GS” or Geographic Systems. The “I” is THE critical factor. And the “I”, or Information, piece of BIM is so valuable because it chronicles and helps manage the building through its lifespan.

To be able to legitimately call what we’re doing with our Civil programs “BIM”, we would need to have a mechanism to attach some sort of database or information to the objects in our drawings.

I know, I know… that’s why Civil 3D is so great – you can attach data to the objects. But, remember, we’re talking about attaching ***AS-BUILT*** data to these objects. Even though we could attach data using Carlson GIS or AutoCAD Map or ESRI, it’s simply not part of our current project scope to go

back into our construction drawings and update them with as-built data so that:

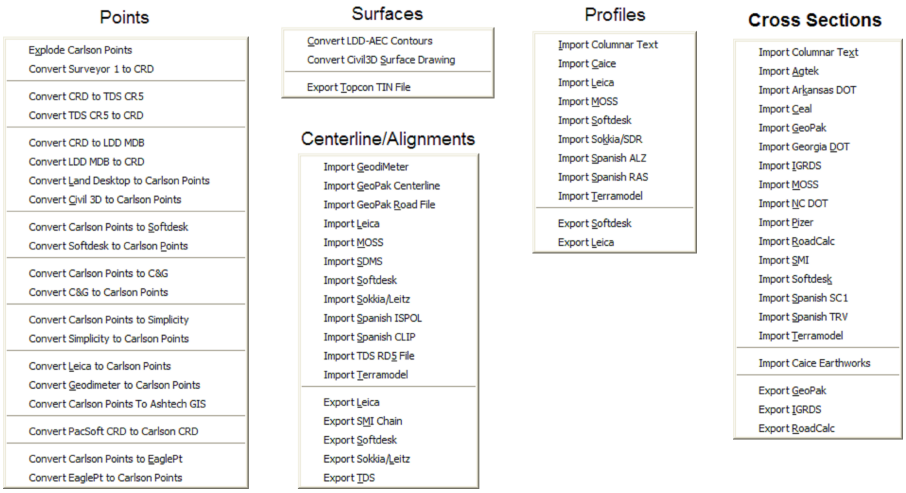
- maintenance schedules are attached to roadway template surfaces based on asphalt type,
- model numbers are associated to pump stations or
- inspection reports and flow rates are attached to fire hydrant blocks.

My conclusion here is that neither of these products – Carlson nor Civil 3D – meet the true definition of a BIM for civil. Until we start addressing the Information piece for the lifetime of a project, starting with the as-built data, using the term BIM is wrong.

In my opinion, if anyone has the lead on this in the civil arena, it's ESRI.

2. Just because we don't yet attach as-built data to our objects doesn't mean that the data we do attach to our objects isn't valuable. But, leading to my 2nd conclusion, why is it valuable? It's only valuable if it can be shared. And this is where I believe Carlson has the undisputed edge. The image below shows the number of formats and other

programs that Carlson is able to import data from and export data to.



Originally posted on **Carlson Connection** by Jennifer Dibona

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Dewberry – Aligning

Technology with Business Strategy

September 15, 2011

Some of you may have heard David Palumbo, PE, Technology Manager for Dewberry, at the Carlson User's Conference back in April. For those that missed his presentation, his story has been published in CE News this month. Read about the process Dewberry used to evaluate new technology, its impact on their business methodology, and how they planned the roll-out and implementation. Regardless of the size of your company or the software you use, there are some good tips and pointers in this article.

http://www.cenews.com/article.asp?id=3928

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