

# [acronym]

An abbreviated look at digital design for government.

ISSUE 9. FALL 2008

inside:

Civil Engineering  
Software: Making  
the Right Choice

Governing in a  
Virtual World

Bridging the  
CAD and GIS  
Divide



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# Letter from the Editor

Flipping through these pages, you will quickly notice that for the first time we have worked in a common theme across several articles – that theme is virtualization. “Virtualization” in government, and in the discipline of digital design, is an innovative concept that is attracting more and more attention.

In the past, we have featured many articles about how 3D design technologies are blurring the boundaries between design visualization and design virtualization. But what has caught our attention in recent months is the flip side of virtualization – Web-based virtual worlds, virtual environments and virtual agencies are opening up government to a new world order of collaboration, training and citizen outreach.

Governing in a virtual world is not quite as sci-fi as it sounds. On page 6, we’ve compiled examples of how agencies, as well as educational institutions, are using virtual worlds and other forms of online collaboration to foster greater dialog with constituents, drive recruitment efforts and encourage design innovation. Read “Governing in a Virtual World” to learn more.

We also sat down with Chiron Technologies (first featured in issue 7) to talk about their development of virtual environments for users in the intelligence and defense communities. Simulating the lay of the land and conducting virtual building walk-throughs of venues such as the Democratic and Republican conventions this past summer, just got very interesting and much more accessible.

Lastly, we’ve been talking about it for months and I am very excited to say that *[acronym] online* is now live. More than just a home for online versions of *[acronym] magazine’s* extensive archive of articles, *[acronym] online* features forums, educational media, expert insights and much more. [www.acronymonline.org](http://www.acronymonline.org)

*[acronym] online* is the new home for anyone in the public sector 2D and 3D design world who wants to share, commune and explore with other government professionals.

Happy reading,

Caron Beesley, Editor with April and Rosie  
[editor@acronymmagazine.com](mailto:editor@acronymmagazine.com)

PS. I’m also excited to welcome a new member to the *[acronym]* family. April has a new playmate – puppy Rosie joined the Cocker Spaniel bench this October and will be graduating to full portrait status for our next issue!



## CONTENTS

On the Government Scene. . . . .	4
Virtually on Tour with Autodesk . . . . .	5
Governing in a Virtual World. . . . .	6
Civil Engineering Software: Making the Right Choice . . . . .	8
From Visual to Virtual at 30 Frames per Second. . . . .	10
The Grand Canyon Skywalk . . . . .	12
The Five Minute Interview with Pete Southwood . . . . .	13
Civil 3D for the Land Desktop User. . . . .	14
Autodesk and Bentley Cozy Up. . . . .	16
Chiron Portal Taps the Virtual World . . . . .	18
Bridging the CAD and GIS Divide. . . . .	20
What’s Going On . . . . .	22
Resource Directory. . . . .	23

Don’t forget you can discuss any of the articles in this issue in the forum at [www.acronymonline.org](http://www.acronymonline.org).

# On the Government Scene

Insights on government from government. *[acronym] magazine* has the scoop on public sector initiatives and resources that impact digital design and the business of government.

## Virtual Alabama: Building a Bridge of Communication between Emergency Responders

The Alabama state trophy cabinet is getting somewhat full these days. Earlier this summer, the state received a fourth award for its Virtual Alabama project. Unveiled late last year, Virtual Alabama is a computerized database of information superimposed on satellite imagery and aerial photography of all 67 counties.

Using Google Earth Enterprise, Virtual Alabama helps the state assemble, display, evaluate and share data with state, county and municipal governments, including emergency responder teams and law enforcement. One interesting example involves historical aerial photography. After a recent tornado, officials could look at pictures of towns before and after the tornado to respond to emergencies and also to help insurance companies estimate damage.

Despite initial worries that state, county and municipal governments would be reluctant to share their data, rapid program adoption by some of the poorest counties in Alabama – many of which had never seen their county mapped in a unified geospatial system – spurred more affluent counties to quickly follow suit in bouts of friendly competition. Since program launch, the

Virtual Alabama user base has grown to more than 2,100 users representing more than 550 agencies across the state. County and municipal governments now supply approximately 80 percent of the state's geospatial data.

Other agencies are taking note. The Environmental Protection Agency's Greenversations blogger Molly O'Neill recently blogged: "... Virtual Alabama started as a Homeland Security project that has been adopted by the entire state ... its success lies in the fact that there is an organization in place well adapted to constantly harvest data – a data fusion center. This is my take away ... seeing Virtual Alabama as a best practice ... something we at EPA can certainly learn from."

For more examples of government collaboration efforts, read "Governing in a Virtual World" on page 6.

[cont'd on next page]

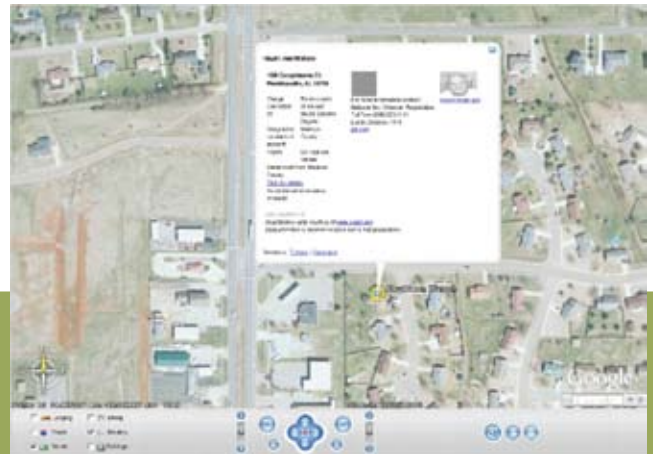
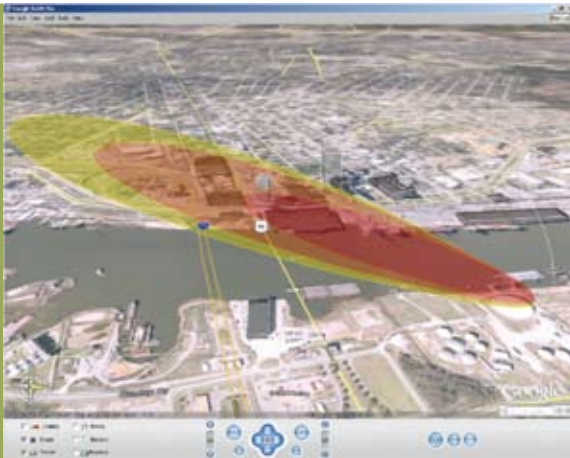


Figure 1 (left): A red and yellow cloud plume overlaid on a Google Earth aerial map helps first responders assess and rehearse for disaster scenarios.

Figure 2 (center): The National Sex Offender Database is fully mapped into Virtual Alabama, providing authorities with virtual tagging of offenders to their residential addresses.

Figure 3 (right): A view from Webcam #2 recording live updates of the I-35W Bridge construction site on the Mn/DOT project Web site. Working seven days a week, crews completed the new bridge ahead of schedule.

## Bridging I-35W: Ahead of Schedule, Ahead of the Curve

Eleven months to build a new bridge is no mean feat, but on September 18, 2008, the new Minnesota I-35W St. Anthony Falls Bridge was officially opened – four months ahead of schedule.

The bridge incorporates innovative design features such as a sensor-based monitoring system embedded in the bridge to record structural behavior and enhance security throughout the life of the bridge. Other “smart” features include an in-built de-icing system that will provide the Minnesota Department of Transportation (Mn/DOT) with a bridge that increases operational and maintenance efficiency for years to come. The post-tensioned concrete bridge design is expected to be in service for more than 100 years.

Mn/DOT and the design/construction team also took innovative steps to provide new ways of keeping the public informed about project status. A project Web site (<http://projects.dot.state.mn.us/35wbridge/>) featured weekly updates, two webcams, construction images and more. The public was even invited to tour the construction project every Saturday morning and 2,000 school children participated in education programs envisioned by FIGG (bridge engineers) during the project’s development. ■



# Virtually on Tour with Autodesk

By Vinny Poliseno, Senior Reporter, *[acronym] magazine*

Each year, Autodesk takes its software, industry and technology experts on the road for its new product launch road show. This year the road show was named the “Autodesk® Experience Tour” and included seminar-style sessions that showcased product tips, tricks and insights across industries for users of Autodesk technology.

The *[acronym] magazine* team had the opportunity to get out of the office for a few hours and attend the tour when it hit Washington, D.C., in April. This stop on the tour included a government symposium for the first time. It’s about time the government got a little bit of love.

If your boss isn’t as cool as mine and you weren’t able to get out of the office to catch the tour as it traveled to a city near you, Autodesk came up with a very “green” alternative to attending in person, which included a good deal of content specifically targeted at the public sector.

## Online Virtual Event

The “Autodesk® Experience Virtual Event” came to desktops across the U.S. and Canada on June 2, 2008. Online attendees were given the opportunity to experience the same sessions that occurred on the real Experience Tour, as well as visit virtual booths and talk to Autodesk employees.

The virtual environment included 3D animated simulations of conference rooms, networking halls, trade show booths and interaction through chat. The session line-up included Lynn Allen with tips and tricks for AutoCAD® 2009, as well as fifteen government-relevant sessions, including solutions for public works utilities, green design and construction initiatives in government. What’s even better is that all the presentations, podcasts and download materials are now available on-demand. Looks like this will be a great alternative in years to come for those unable to get out of the office for a day.

Check out [www.dli.com/autodesk/AET](http://www.dli.com/autodesk/AET) to view the sessions in your own time.



# Governing in a Virtual World

When it comes to disseminating information, reaching people and collaboration, more and more government agencies are turning to Web-based, interactive social communities. Traditionally viewed with skepticism in both business and government, Web 2.0 – a term used to describe a two-way collaborative Internet – is gaining firm ground in the public sector.

Blogs, podcasting, virtual worlds, wikis and all forms of new media are increasing public outreach and fostering intra-agency collaboration in a highly accessible, low cost way.

Here are some examples of agencies that are adopting new media in groundbreaking ways.

## VIDEO ON DEMAND

**Who:** Department of Defense (DoD)  
**What:** DODvClips.mil New Media  
**Goal:** Conversing with and educating constituents, bloggers and media.

YouTube for the military and those interested in DoD operations. Includes streaming video news, blogs, Vlogs and analysis from war zones. The site hosts speeches from top military officials and footage from U.S. Coast Guard and National Guard deployments. The agency also posts its videos to YouTube; a 2007 video, “Battle on Haifa Street, Baghdad,” generated more than 3 million hits.

[www.dodvclips.mil](http://www.dodvclips.mil)



## VIRTUAL WORLD

**Who:** National Oceanic & Atmospheric Administration (NOAA)  
**What:** NOAA Second Life Virtual World  
**Goal:** Recruitment, public education and new ways to conduct science.

Soar through a hurricane on the wing of a research aircraft, rise gently through the atmosphere atop a weather balloon or search for a hidden underwater cave on a side trip from a NOAA submersible. These and other virtual adventures are attracting large numbers of “avatars,” or virtual selves, to one of the first government-sponsored, earth-science “islands” in the rapidly growing online world of Second Life. The NOAA Earth System Research Lab developed the site, the most complex government facility on Second Life so far, for users to have the experiences in the virtual world they may not have in the physical world, and learn about the cutting-edge science that NOAA conducts regularly.

<http://www.esrl.noaa.gov/outreach/#sl>



## VIRTUAL WORLD

**Who:** Centers for Disease Control (CDC)  
**What:** CDC Second Life Virtual World  
**Goal:** Ease of access to public health information in an interactive environment.

This virtual world includes a virtual lab where users can check out health information and a conference center that features both real-time and recorded videos. CDC also leads Government 2.0 with a mix of interactive media including blogs, podcasts and MySpace pages.

[www.cdc.gov/healthmarketing/ehm/interactive.html](http://www.cdc.gov/healthmarketing/ehm/interactive.html)



For more information on what government agencies are publicly doing in Second Life, interesting links and guidance from others on government related policies such as firewall security and 508 compliance information, visit: [http://wiki.secondlife.com/wiki/Real\\_Life\\_Government](http://wiki.secondlife.com/wiki/Real_Life_Government)

## VIRTUAL CAD WORLD

Who: Montana State University Creative Research Lab  
What: Architecture in Second Life  
Goal: Teaching architects in 3D.

Architecture students at Montana State University are using the virtual world of Second Life to encourage student collaboration and design innovation.

The University's Creative Research Lab has developed a virtual, digitally interactive version of the city of Oakland, CA, in Second Life that allows architecture students to experience and support their understanding of the impact of common design considerations in the context of a moldable, 3D environment.

Second Life has enabled these students to explore how they can fit sustainability into an urban renewal project with exercises such as:

- Analyzing what traffic patterns would be like without the sluggish freeway.
- Designing street corners to consider the impact of pedestrian traffic, curb angles, bike racks and other items not usually associated with architectural design phase.
- Studying the viability of cultivating urban gardens to support the community.

Currently, there is no easy way to import parametric 2D CAD profiles and 3D objects from outside into Second Life, or export Second Life models in an editable form into CAD programs. Structures in Second Life are created using the construction interface available within the virtual environment. Experts expect that if demand for CAD-to-Second Life import/export increases, then Linden Lab, the team behind Second Life, may look into it.

[www.montana.edu/crlab/](http://www.montana.edu/crlab/)



## BLOG

Who: Transportation Security Administration (TSA)  
What: Evolution of Security Blog  
Goal: Facilitate an ongoing dialogue on innovations in security, technology and the checkpoint screening process.

An outreach blog that provides insight into what's happening at the security line at your airport and why. Includes updates on technology innovations that TSA is working on to stay one step ahead of terrorists and why you may not have to take your shoes off for much longer.

[www.tsa.gov/blog](http://www.tsa.gov/blog)



## GET WEB SAVVY. HERE ARE SOME COMMON TERMS EXPLAINED:

### WHAT IS WEB 2.0?

Web 2.0 is a term describing the trend in the use of Web technology and Web design that aims to enhance creativity, information sharing, and most notably, collaboration among users.

### WHAT IS GOVERNMENT 2.0?

A recent term coined to describe the private sector's online movement towards blogs, podcasts, digital media presentations, wikis and virtual worlds as a way of promoting collaboration more effectively and cheaply than traditional communication methods.

### WHAT IS SECOND LIFE?

A 3D virtual world or community launched by Linden Research Inc. in 2003. The world is imagined and created by its "residents," or members, who create digital representations of themselves. Members can interact with each other, browse businesses and collect information from organizations including government agencies such as CDC and NOAA, and even interface with local government entities such as libraries.

In addition, the Linden Research team has developed the "Second Life Grid" – a virtual business tool – that is used by organizations to enhance productivity through uses such as training, simulation and community outreach.  
[www.secondlife.com](http://www.secondlife.com)

## RESOURCE

*[acronym] online*

Connect and explore a green field of digital design possibilities for the public sector at our own Web community.

[www.acronymonline.org](http://www.acronymonline.org)

# Civil Engineering Software: Making the Right Choice for your Needs

By Caron Beesley, Editor, *[acronym] magazine*

Earlier this year, Autodesk declared it was turning the lights out on AutoCAD® Land Desktop (LDT) with its 2009 version release. This news was not so surprising, as Autodesk has been evangelizing the benefits of migrating users to AutoCAD® Civil 3D for some time. ■ However, while Civil 3D is regarded as the *crème-de-la-crème* of civil design software, it has also been perceived as somewhat too heavy-handed for the needs of certain users. Cognizant of this, Autodesk has taken the step of looking beyond LDT to introduce a new technology solution that better fits the needs of civil engineering organizations. In this issue of *[acronym] magazine*, we introduce AutoCAD® Civil and explain the key differences between it and AutoCAD Civil 3D to help you make the right choice for your civil engineering needs.

## Two Great Flavors: AutoCAD® Civil and AutoCAD® Civil 3D

In the new world of Autodesk Civil Engineering, two cousins sit side-by-side, the mighty AutoCAD® Civil 3D – the cream of the crop, dynamic, model-based surveying, design, analysis and documentation tool – and AutoCAD Civil – a subset of its more comprehensive cousin.

Civil 3D provides a comprehensive civil engineering solution with analysis and simulation capabilities for both civil engineers and designers. In contrast, AutoCAD Civil streamlines the capabilities found in Civil 3D to provide a design and construction documentation solution that delivers a more appropriate level of value for the technician, drafter and surveyor – at a better price point.

Both solutions work seamlessly together and share the same model-centric technology, so as designs change, the drafting and construction documents dynamically update themselves.

The capabilities of AutoCAD Civil 2009 include:

- Surveying and Coordinate Systems
- Design and Drafting
- Construction Documentation
- Data Management and Team Coordination

Whereas AutoCAD Civil 3D includes all features listed previously, plus:

- Stormwater Analysis
- Geospatial Analysis and Mapping
- Land Desktop Project Support (available as a download for Civil 3D subscribers only, this companion helps users make the transition from LDT to Civil 3D easier without separate license management)

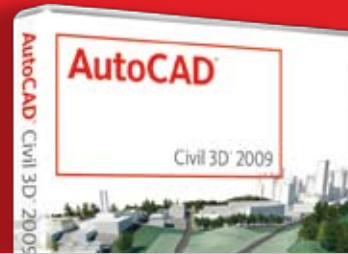
## A Lower Fat, Lower Carb Alternative

With its successor in place, LDT users who have been skeptical to embrace Civil 3D now have a low-fat, low-carb version to embrace. On the other hand, there is also a solution for those already using Civil 3D and find it too feature-rich for their needs.

Check out [www.autodesk.com/civil](http://www.autodesk.com/civil) for complete information, and when in doubt, talk to an expert. Your local government reseller can always help.

## What's Next for LDT Customers?

So where do these changes leave LDT customers? Although Autodesk is still selling LDT through Spring 2009, it has already retired subscriptions (software support) for the product. Unless you are an existing customer, Autodesk literature explains, you will still receive subscription benefits through the term of your contract. ■



Who should use it and why?	Civil engineering technicians, drafters and surveyors for developing civil engineering design information and delivering documentation	Same as AutoCAD Civil, plus civil engineers and designers responsible for design, analysis and simulation
Types of projects supported	Public sector land development, transportation and environmental projects	Same as AutoCAD Civil
Drafting and Documentation Capabilities	<ul style="list-style-type: none"> <li>Plan production and drafting</li> <li>Drafting styles and standards</li> <li>Reporting</li> </ul>	Same as AutoCAD Civil, plus Map Books
Design Capabilities	<ul style="list-style-type: none"> <li>Surface creation and design using grading and feature lines</li> <li>Parcels</li> <li>Corridor modeling and road design</li> <li>Pipe layout</li> </ul>	Same as AutoCAD Civil
Surveying and Coordinate Systems Tools	<p>Full support of surveying workflow for civil engineering projects from field to finish.</p> <ul style="list-style-type: none"> <li>Import and process raw survey data from most data collector formats</li> <li>Survey database</li> <li>Traverse and least squares adjustment</li> <li>Automatic creation of survey figures</li> <li>COGO</li> <li>Coordinate system setting and transformations</li> <li>Export for machine control</li> </ul>	Same as AutoCAD Civil
Data Management and Team Coordination Tools	<ul style="list-style-type: none"> <li>Xrefs (including annotation of civil model)</li> <li>Data shortcuts</li> <li>Advanced data management with Autodesk® Vault (included)</li> </ul>	Same as AutoCAD Civil, plus data management and team coordination functionality from AutoCAD Map 3D
Data Exchange and Interoperability Features	DGN, LandXML, Google Earth™ and SDF	Same as AutoCAD Map 3D
Stormwater Analysis and Simulation Functionality	None	Stormwater analysis and simulation with Hydraflow Storm Sewers Extension, Hydraflow Hydrographs Extension, and Hydraflow Express Extension
Geospatial Analysis and Mapping Functionality	None	Includes geospatial analysis and mapping functionality from AutoCAD Map 3D
Land Desktop Project Support	Import/Export only	Subscription customers can download AutoCAD® Civil 3D® – Land Desktop Companion from Subscription Center

Already an AutoCAD Civil user?  
 Let us know what you think, email [editor@acronymmagazine.com](mailto:editor@acronymmagazine.com) or share your thoughts on the *[acronym]* online forum at [www.acronymonline.org/forum](http://www.acronymonline.org/forum).

# From Visual to Virtual at 30 Frames per Second

By George Matos, Senior Applications Expert, Avatech Solutions

Imagine you are standing in the lobby of your new civic center. To the left, you see the reception area and foyer meeting space. With a movement of the mouse, your view switches to what you would see if you were looking outside the south window. Switch off the structural view to see all the electrical and piping systems tracing their outlines above and around you as you walk toward the elevator. No, this is not a movie and no you are not on the holodeck of Star Trek's Enterprise. You are experiencing a building information model where design visualization crosses the line into design virtualization.

Real 3D design is now pervasive and driven by the vast improvement in understanding that designers and clients gain. Today, anyone can walk down the street to Home Depot to obtain 3D drawings of a new custom kitchen renovation project from multiple angles. They aren't in color and don't show the details of materials and lighting effects, but they are a vast improvement over that of a 2D plan, which most people cannot picture. Large building projects are taking the pervasiveness of 3D and combining that with the power of building information models a step or two further down the visualization line – adding color, materials and lighting effects at the basic end, and comprehensive, animated, virtual walking tours at the higher end.

## 3 Reasons to go the Virtualization Mile

Technologies that originated in the entertainment and gaming industries, like Autodesk® 3ds Max®, are being reconfigured and made available to the design industry to help move drawings from hard-to-visualize 2D plans to virtual 3D walk-throughs that provide people with a life-like experience. For large government projects in which millions or billions are spent, taking the extra time to produce a virtual model for

designers, construction companies and owners can make sense not only fiscally, but also for security, sustainability, safety and overall building efficiency. Today a building information model from Revit® Architecture seamlessly exports to Autodesk 3ds Max® Design, where designers can explore far more, placing the project into multiple levels of context.

## Super-Visualization

Simulate what a building will look like using a variety of materials and explore options. Or see how your building lobby works with people milling about. This comprehensive approach gives you the ability to validate your design in context. Here, design virtualization enriches your concept by helping team members do more than just see it. You can convey design concepts in whatever way is appropriate for the stage of the design process you're in – from non-photorealistic, basic animations to interactive walk-throughs or full cinematic presentations.

## Improving Safety and Security

One compelling reason for using virtual walk-throughs, especially for government and military projects, is to identify



Figure 1



Figure 2



Figure 1: This 3D architectural view shows walls with texture and lighting effects as created in Autodesk® 3ds Max®.

Figure 2: Turn off the wall layers and you can view the underlying structure and anything behind the walls with HVAC in place. The building model was created in Autodesk Revit® Architecture 2009 using Autodesk® 3ds Max® to achieve the transparency effect.

potential safety and security risks present within the design prior to construction. Emergency exit paths can be simulated and then explored for pitfalls in planning which will allow for corrections prior to construction. For example, I worked on the animation for the new Oklahoma City Alfred P. Murrah Federal Building. We used 3ds Max to create an animation

to show how concrete walls would be impacted in the event of an explosion. We also showed how the planned memorial would look from every angle to help security officers picture whether or not there were any potential security threats intrinsic to the building design.

## Keeping Construction on Track

Getting things right in the field is critical to project budgets and timelines, and 3D animations can help construction workers at all levels. One client created full motion videos showing how to construct custom concrete walls for a project. The animation exported from Autodesk Inventor® to 3ds Max to show all the parts, and then moved right inside the form so they could see how the structure tied together. A 2D diagram would never give you all this information, nor would static 3D drawings, since you would not have the ability to see inside structural elements. The video gave them the ability to see right inside the form. After initial training, construction companies can revisit how the wall system can be modified.

## Getting the Necessary Horsepower for Virtualization

There is really no question about the value of going to the

extra effort to experience a structure prior to its construction, and the move is starting to happen. One impediment to creating animated renderings to “virtualize” designs has been computing power. For near lifelike visuals, an animation must sample 1800 frames per minute (FPM) or 30 frames per second (FPS). The math behind what seems simple on screen is sophisticated and complex – requiring mega-horsepower from the CPU processing the graphical information. By importing a building model from Revit into 3ds Max, rendering becomes easier because Max offers two features that support distributed rendering. In the first method, you use more than one computer at your site to perform the calculations. In the second, you can send the model to an out-of-house server farm that will perform the animation for your company for a fee.

Tests I have performed show that the same rendering that took one computer more than four hours to complete takes only 49 minutes when harnessing the power of six computers using the ‘distributed bucket rendering’ available in 3ds Max Design. You can set the rendering to take place when people are not working so their machines are not tied up during the day and still get your animation done in-house.

## Coming Up Next

For all of their sophistication, virtual models still just work on static animations that choose a path and present that to the viewer. A true virtual experience would allow the user to choose their own path through a building, designating what time of day to ensure lighting aspects are corrected as they move through their virtual world. While these features may be a while in the making, it’s amazing how much value customers find in the comprehensive virtual models of today. I can’t wait to go to a client review meeting to hear feedback based on a comprehensive virtual model we have created. ■



Prior to working with Avatech Solutions ([www.avatech.com](http://www.avatech.com)), George worked as a professional renderer at various architectural firms. As senior applications expert at Avatech, George shows organizations interested in producing high quality renderings which software and hardware combinations are best to achieve their goals. George’s knowledge of industry best practices and technologies allows clients to obtain attractive, accurate and intelligent renderings at both the big-picture and detail levels. You can reach him at [george.matos@avatech.com](mailto:george.matos@avatech.com).

# Grand Canyon Skywalk

The Grand Canyon Skywalk is a U-shaped, glass-bottomed walkway owned by the Hualapai Indian Tribe. This feat of engineering was built to draw tourists to the lesser known Grand Canyon West, which draws in only 3 percent of the 4 million tourists that the more popular Grand Canyon National Park boasts. Here are some facts and figures about the 1.07 million pound glass and steel behemoth.

## HIGHEST BIRD'S EYE VIEW

The Skywalk is 4,000 feet above the canyon floor, which is taller than other notable buildings such as the CN Tower, Taipei 101, Sears Tower and the Empire State Building.

## BUILT TOUGH

The Skywalk can hold 70 tons, which is about 71 fully loaded Boeing 747 planes or 800 people weighing 175 pounds each. However, only 120 people are allowed on the Skywalk at a time. It also can withstand winds of 100mph from eight directions and an 8.0 magnitude earthquake within a 50 mile radius.

## IMPORTED GLASS

The glass for the deck was supplied by Saint-Gobain, a 300-year-old Paris firm, and manufactured in Cologne, Germany. The deck is made up of 46 pieces of tempered and laminated glass. The glass contains less iron oxide than regular glass, which improves clarity.

## GOOD VIBRATIONS

To prevent the Skywalk from swaying with every wind gust, footstep and earth rumble, there are three 1.6 ton tuned mass dampers. The dampers act as shock absorbers and neutralize the vibrations, converting the motion energy into heat energy. That means you can jump as much as you want and no one will be any the wiser.

## GLASS AND STEEL

94 steel rods buried about 50 feet into the canyon wall and four inches of glass protect the casual observer from a 15 second free fall to the canyon floor.

## CLEAR VIEW

The goal of the architects was twofold: to allow people to get an unobstructed view of the Grand Canyon, and to make them feel as if they were floating on air. To maintain this feeling and keep the glass scratch free, visitors must wear non-slip shoe covers when on the Skywalk.

# The Five Minute Interview: Pete Southwood, Brit at Large

Pete Southwood is a Geospatial Technical Evangelist for Autodesk's Geospatial Solutions, specializing in GIS, Web and mobile applications. British-born Pete is well known as the "face of GIS" at Autodesk and relishes his role of evangelizing the company's GIS solutions on webcasts, on tour, and most importantly, with customers. Pete's 25 plus years in the industry has also made him a notorious airline favorite! What spare time Pete has sees him walking his lab Charlie, tinkering with his classic Porsche or just vegging out at home. You can pose questions to Pete about all things GIS by sending an email to [askpete@autodesk.com](mailto:askpete@autodesk.com)

**If I weren't talking to you right now, I'd be...**

Multi-tasking with a Sony PSP in hand, setting precedence over family TV viewing and at the same time throwing a ball for my dog!

**A phrase I use too often...**

"AutoCAD Map." Map being an acronym for "More AutoCAD Productivity" – true

**I wish people would take more notice of...**

How easily AutoCAD® Map 3D can be used to manipulate a wealth of GIS/CAD data natively and how it can sit unobtrusively within another vendor's environment.

**The most surprising thing in my career was...**

Being asked to move to the United States from the United Kingdom and continue doing the job that I love, then to become the 'personality' for the Geospatial Solutions.

**A common misperception of me is...**

That I'm Australian. No disrespect to my antipodean friends, but if I had a dollar for every time someone had asked me, I suppose I would have almost \$100 by now.

**5 famous people I would love to have dinner with...**

Groucho Marx, John Belushi, Keith Moon (The Who), Sir Richard Branson and Dr. Who (look him up!).

**I'm good at...**

Saying 'yes.'

**I'm bad at...**

Saying 'no.'

**In moments of weakness I...**

Can be twisted around my daughter's little finger. Dads out there will know what I am saying.

**I am a Geospatial Technical Evangelist but in a truer life I'd have been...**

A Formula One race car driver.

**The most interesting digital design-related project I have worked on...**

25 years have shown me a fair share of remarkable projects, but the most interesting and personally rewarding have been the vignettes, podcasts and webcasts created for [www.autodesk.com/gogeo](http://www.autodesk.com/gogeo). I have had so many people thanking me and commenting on how useful they are.

**In a nutshell, my philosophy is this...**

Try and get to that happy balance between work life and home life, and excel at both. ■



# Civil 3D Tips and Tricks for the Land Desktop User

By Marissa Jenkinson, Applications Engineer, CADD Microsystems, Inc.

Well, it's finally happened. After a few years of toying with the idea, Autodesk has made the official decision to stop making our beloved AutoCAD® Land Desktop (LDT). Of course, we knew this was coming. But are we ready? Can we make the move to AutoCAD® Civil 3D, or even the new AutoCAD® Civil?

But take comfort, my friends, for there is hope. There are many courageous souls who have braved the waters of Civil 3D and have come out with wind in their sails. From them, we can learn that while Civil 3D does run a bit differently than LDT, much of the same functionality we've come to know and love in LDT is right there in Civil 3D too! So if you've ever found yourself fiddling around in Civil 3D and saying "but in Land Desktop, I could [insert your favorite LDT command here]," then hopefully this will put your mind at ease. Below are a few tips and tricks to show you how to perform some of those great Land Desktop tasks in Civil 3D 2009 or even AutoCAD Civil 2009.

Note: These tips refer to Civil 3D but are also applicable to Civil 2009.

## Tip #1 – Using Point Groups and Styles to “Add/Remove Points”

The back-end project database in LDT allows users to add and/or remove points to isolate certain point types in a drawing. Since Civil 3D points are stored in drawings instead of a database, there is no tool to “insert” or “remove” points. However, Point Groups can be used in Civil 3D to control how and when the points are displayed in the drawing.

Civil 3D Point Groups, like LDT Point Groups, are used to organize points that are similar or share certain properties into logical groupings. Also, just like in LDT, a Point Group called “\_All Points” is created in a drawing as soon as a point is created to house all of the points in the drawing.

In Civil 3D, Point Groups are assigned a Point Style and a Point Label Style that dictate how the points in that Point Group will be displayed in the drawing. For example, if you

have a tree point that belongs to the “Trees” Point Group, this Point Group may be set to use a Point Style that will display a tree symbol.

To turn off a certain set of points, open the Point Group Properties dialog for that Point Group and set the Point Style and the Point Label Style to “<none>.”

Keep in mind, though, that this tree point also belongs to the “\_All Points” Point Group, which may be set to use a different Point Style, such as a generic X or +.

So which Point Group rules? Which symbol will a point use if it belongs to two different Point Groups? The answer is up to you. As the user, you can decide which Point Groups get a higher “Draw Priority” than others. This is done through a separate dialog accessed from the Prospector tab of the Tool-space:

Right-click on the category “Point Groups” and choose “Properties.” The Group at the top of the list will be used first. Highlight a Point Group and use the arrows to rearrange the order.



*AutoCAD Civil 3D Point Group Order*

This functionality is what allows you to isolate certain points in the drawing. Strategic use of the “\_All Points” Point Group is the key. Here are the two steps you need:

Set the Point Style and the Point Label Style for the “\_All Points” Point Group to “<none>.”

Change the draw order of the Point Groups so that the one you want to isolate is at the top and the “\_All Points” Point Group is listed second. This will turn off all of the points except the ones you want to see.

As AutoCAD® Land Desktop is retired, learn how you can make the right choice for your future civil engineering software needs. Read “Civil Engineering Software: Making the Right Choice for your Needs” on page 8.

## Tip #2 – Allow Description Keys to Override Point Group Settings

In Civil 3D, just like in LDT, Description Keys use a point's description to control its appearance and properties as it is created or imported into a drawing. Along with assigning a master layer to the point, Civil 3D Description Keys can assign a Point Style and a Point Label Style to a point.

But wait, don't Point Groups do that too? Actually, they don't. A Point Group's styles do not get assigned to the point's properties. They are simply used to display the point if it doesn't already have styles independently assigned to it. However, sometimes Point Groups can override any styles that are already assigned to points. To prevent this from happening and to ensure that the styles assigned by the Description Keys will be used, there's just one thing you need to do – turn off the overrides on the Point Groups:

Open the Point Group Properties dialog, and on the "Overrides" tab, clear the check boxes next to "Point Style" and "Point Label Style."



AutoCAD Civil 3D Point Group Order Overrides

## Tip #3 – Editing Individual Surface Contours

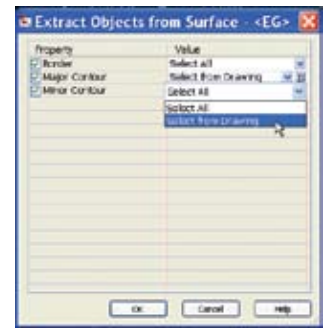
Both LDT and Civil 3D surfaces can display contours at any chosen interval. But, while LDT requires you to generate contour polylines, Civil 3D allows you to simply display the contours as part of the overall surface through the use of a Surface Style. This has many advantages, but it does mean that you cannot individually select the contours that you see for manual editing. However, depending on how the surface was

generated, there are two things you can do:

If the drawing already contains polylines that were added to the surface definition, these polylines can be edited and the surface will automatically update itself.

If no contour polylines exist in the drawing, you can extract them from the surface for editing. This second option is discussed here.

In Civil 3D's Surfaces menu under "Utilities," you will find "Extract Objects from Surface." This command allows you to extract any surface element that is being displayed by the current Surface Style to individual objects. Therefore, in order to extract contour polylines, you need to first make sure the surface is set to a style that is displaying the contours at the desired interval. Once this is set, you can use the command mentioned above to create polylines from all of the surface contours or just specific contours that you select. The objects that are created are 2D polylines that are set to the correct elevation.



AutoCAD Civil 3D Extract from Surface

Once the polylines are extracted, you can use standard AutoCAD polyline editing tools (grips, PEDIT, etc.) to make the necessary changes. However, they are not dynamically tied to the surface. In order for your changes to be applied to the surface itself, all you have to do is add the edited contours into the definition of the surface itself through the Prospector. Now that these contours are part of the surface's definition, any changes to the polylines will automatically be reflected in the surface! ■



**Marissa Jenkinson** is a Sales Applications Engineer for CADD Microsystems, specializing in Civil and GIS solutions. Marissa has been working with Autodesk products for more than 10 years and has a Bachelor's and Master's degree in Civil Engineering from Virginia Tech. She has worked for a number of reputable engineering firms in Virginia providing CAD support to transportation, utility, land development, mapping and GIS projects. At CADD Microsystems, Marissa's responsibilities include performing product demonstrations, teaching classes, giving seminars and workshops, and performing consulting for many Autodesk products such as Civil 3D, Land Desktop and Map 3D. [www.caddmicro.com](http://www.caddmicro.com)

# Autodesk and Bentley Cozy Up

Got questions? We've got answers. Each issue, our team of experts weighs in on a variety of topical issues relevant to public sector digital design. In this issue our team of experts includes leading technical and public sector experts from Microdesk, U.S. CAD and CADD Microsystems.

Earlier this summer, Autodesk and Bentley, two of the leading providers of design and infrastructure software, made an agreement to expand interoperability between their portfolios of architecture, engineering and construction (AEC) software.

The two companies will directly exchange software libraries, including Autodesk's RealDWG, to improve the ability to read and write the companies' respective DWG and DGN formats in mixed environments with greater fidelity. In addition, the two companies will facilitate work process interoperability between their AEC applications through supporting the reciprocal use of available Application Programming Interfaces (APIs).

In light of this announcement, we asked our panel of experts the following question:

**Question:**  
How will the Autodesk and Bentley interoperability agreement affect the public sector AEC design community?



**Melanie Santer**, Civil Engineering Technical Manager for California-based U.S. CAD, stresses the benefits of greater collaboration and data integrity that this announcement will facilitate.

“The interoperability agreement between Autodesk and Bentley will greatly benefit the design community in two ways.

First, it will benefit agencies that are collaborating on projects using both Autodesk and Bentley products. This will increase efficiencies and ultimately save time for all parties involved. Currently when collaborating on projects using both Autodesk and Bentley products and moving data between the two platforms, users tend to experience a loss of information in the translation from .dwg to .dgn or vice versa.

Second, when you have “dual shops” (agencies and/or their supporting contractors that have both Autodesk and Bentley products in production), this will allow teams within a single organization to collaborate more effectively.”



**Richard W. Reid Jr, PLS**, Technical Specialist, Civil/Survey, Google Earth Pro Certified Instructor, Microdesk, sees cost savings and a whole new level of confidence among agencies looking to keep up with technological advancements in their blended software environments.

“We all know that many design teams move traditional CAD data between platforms and sometimes have to devote a significant portion of a project's budget to ensure that drawings are converted precisely and correctly. Most agree that it's a tedious, but necessary, process. Some of the project managers we talk to express concern about bringing a new platform, such as a BIM solution, into the mix and possibly compounding that problem. I think this agreement will help many agencies feel confident selecting and implementing a BIM solution, regardless of platform, because the process of converting data will become noticeably more reliable and efficient in the near future.”

[cont'd on next page]

## Got Questions for Our Experts?

If you have a question that you want answered, send an email to [editor@acronymmagazine.com](mailto:editor@acronymmagazine.com) and we'll consult the experts on your behalf.



**Jeff Gravatte**, CEO and Owner, CADD Microsystems, has been recognized as an expert in BIM and CAD systems, speaking frequently on the applications of BIM at conferences and seminars around the country. Gravatte digs a little deeper into the specifics and encourages users to step

to the forefront about future interoperability enhancements.

“This is good news for the design community; however, I believe the specifics are what people are searching for.

There are a few targets for what Bentley and Autodesk are trying to achieve with their interoperability agreement. Richard See, Chair of the NBIMS Models & Implementation Guidance (MIG) committee and the Managing Director of Digital Alchemy, stated in a recent email to the Federal Facility Council that ‘...both Autodesk and Bentley have developed support for at least three agreed subsets of the Industry Foundation Classes (IFC) model schema - for which their products have been certified.’

These subsets are called Model Views and their definition is called a Model View Definition (MVD). An MVD generally satisfies data exchange requirements for one or more related end user scenarios – between two ‘types’ of applications or project roles (e.g. architect to owner).

Three Model Views for which Autodesk and Bentley products, as well as products by other companies, have been tested (in historical order) are:

- Coordination View. Enabling exchange between architects and the engineering disciplines.

- Singapore Code Checking View. In support of code compliance checking.
- GSA Spatial Program Validation View. Aids validation of a design for compliance to the client’s spatial program.

Additional Model Views that Autodesk, Bentley and others should consider supporting in the coming year include:

- AECOO Quantity Takeoff (QTO) View. Enabling QTO and cost estimating in early design.
- AECOO Building Performance – Energy Analysis View. In support of energy analysis in early design.
- SMARTcodes Code Checking View. Allowing automated code compliance checking, based on ICC’s SMART-codes™.
- GSA Concept Design View for 2009. Enabling spatial program validation, energy analysis, human circulation analysis and security analysis.

The issue here isn’t vendors complying with the IFCs, it’s that people having trouble using the data from different applications need to be vocal about their problems and be clear about the data exchange features they want in the software applications they use. This will drive what IFCs are in the future.

In order to achieve this, end users can do three things: 1) Be vocal about the exchange scenarios IFCs should use as the basis for interoperability; 2) work together to define requirements and a Model View that can be implemented; and 3) urge vendors of the products they use to implement support for the Model View.

All of these things can be done through NBIMS at <http://www.facilityinformationcouncil.org/bim/about.php> ■



**Did you know** the new U.S. Green Building Council building in Washington, D.C., was built with construction materials that were 90 percent waste recycled? The 166,000 square foot building is aiming for Platinum LEED Certification. It uses 40 percent less energy for lighting with high efficiency lighting and 100 percent of the building’s energy consumption is offset with green power. [www.usgbc.org](http://www.usgbc.org)

# Chiron Portal Taps the Virtual World

Desktop application helps users display 3D datasets

By Colleen O'Hara, Reporter, *[acronym] magazine*



Chiron Technology Services, Inc. has developed a portal that gives users an easy way to display and interface with different datasets that it has created in a serious gaming environment.

With serious gaming, information is presented with the look and feel of a video game, but offers a deeper experience: It helps a soldier prepare for battle by showing real-life battle-field scenarios or gives a facilities manager a 3D view of the buildings he manages.

Chiron uses Autodesk software to develop virtual environments for its users, many of whom are in the intelligence and defense communities. The company's new desktop application offers an easy interface to the data stored in these 3D environments.

"The whole reason we decided to build a portal is because there were no applications out there that could ingest and display all the different types of datasets we were creating using Autodesk tools," said Jeff Weaver, vice president of business development at Chiron.

"The nice thing is that the Autodesk tools really democratize the data creation side of it," Weaver said. "We could quickly create datasets, but had no place to put them. The idea is to create an interface... and leave it up to the user

on how to use it. It's always going to be data-driven."

"A user can, through a simple executable on the desktop, launch an interface that will reach back to a database," said Jack Farmer, director of serious gaming at Chiron. "We try to make it as seamless as possible and as non-intensive on end users' machines as we can."

The end users benefit from this approach. "Let's say there is an explosion and you wanted to see what the effect on the area would be if a strong wind comes blowing in," Farmer said. "Data fusion allows users to exploit the data for mission planning, and also for training. Once we create the scene and load it within the viewer/portal, the built-in tools and the database connectivity are available. Users can then exploit the data as they see fit."

What also makes the application unique is who it's developed for. "A lot of other gamers deal with gaming," Farmer said. "We're dealing with the intel community. We have a different mission. And because we work on government machines, we don't want to install new software. We try to be as agnostic as possible."

Not only has Chiron made advances in application development, but it has also developed improved workflow analysis



**Jeff Weaver** is vice president for business development at Chiron Technology Services and has more than 16 years experience serving the U.S. Intelligence Community, Air Force and other DoD elements.

**Jack Farmer**, director of serious gaming, Chiron Technology Services, has more than eight years of experience delivering creative visualization solutions for the U.S. Intelligence Community.

[www.chirontech.com](http://www.chirontech.com)





**Did you know** when the 2004 G8 Summit was held in Sea Island, GA, that the state's Emergency Management Agency turned to Georgia Tech's Research Institute's Battlefield Virtualization system to help organize law enforcement and emergency responders? ■ Georgia Tech's Geographic Tool for Virtualization and Collaboration (GTVC) allowed officials to monitor all activities to ensure that law enforcement resources were accessible when needed. It also allowed officials to compare dignitaries' travel routes to the locations of demonstrators. GTVC's multilayer mapping capability helped synchronize different functions, ultimately allowing responders to easily respond and keep confidential data secure. <http://www.govtech.com/gt/365761>



*Chiron's new desktop application gives users an entryway to their datasets, such as these correlated 3D views of a building.*

that compresses the amount of time that it takes government users to analyze the data and deliver it to decision makers, Weaver said.

“We have around a dozen workflows that have taken the analysis time of different types of data down to a third of what it was, or even less,” Weaver said. “In one instance, analysis that took a month now takes a day and a half. Our services team works with our clients to develop these workflows. It’s a process change.”

It’s easier now to conduct analysis that wasn’t happening before. “We saw that a lot of analysis wasn’t being done because it took too long,” Weaver said. “It wouldn’t be done in time to be useful. We create workflows to help satisfy requirements. That’s the strength of the Autodesk tools. We’ve learned that if you put simple tools in clever analysts’ hands, they do great things.” ■

Chiron Technology Services, Inc. has already put its new portal application to use. The company worked with the Democratic and Republican National Conventions to help police, security and first responders visualize the buildings where the conventions were held to keep people safe. Chiron acquired the architectural plans for Denver’s Pepsi Center, where the DNC was held in August, as well as the plans for the Xcel Energy Center in Minneapolis-Saint Paul, where the Republican convention was held in September.

“From the data, we created 3D models within a gaming environment so people that were working there could get the lay of the land and walk the building before they got there,” said Farmer. “We used Revit Architecture, AutoCAD® Structure and Map 3D to bring in all the data we could,” Farmer said.

In addition, analysis tools allowed them to virtually put themselves in a particular point in the building, which is useful for counter sniper points, and to measure how long it would take for a vehicle to travel from the airport to the arena without actually having to drive it. “Our feedback from the customer is we’re allowing them to do things they couldn’t do before because they didn’t have the manpower,” said Weaver.

# Bridging the CAD & GIS Divide

The City of Roseville Environmental Utilities Department Streamlines CAD & GIS Workflow Processes While Getting a Grip on Rapid Growth

By Jason Hill, Geospatial Business Development Manager, Ideate, Inc.

Located a few miles to the north east of Sacramento, CA, the City of Roseville began as a sleepy railroad town. Recent years have seen the city grow outward in all directions with an expansive industrial zone that is headquarters to many large corporations. With just four full time employees, the City of Roseville's Environmental Utilities Department (REUD) needed to scale quickly and efficiently to handle the challenges of managing and maintaining its extensive utilities infrastructure, without increasing head count.

## Impact of Growth

Facing the challenge of a rapidly growing population, the City of Roseville has expanded water, electrical, sewage, recreational, police and fire protection services. The downstream impact on REUD has meant rapid mobilization to manage the now 1,500 miles of combined pipeline for water, wastewater, stormwater and recycled water.

In addition to its mapping responsibility, REUD supports asset management across 12 groups and seven city departments and relies on a variety of asset management systems, including HANSEN, MP2, Cascade, Land Logic, Squarerigger and several ad-hoc Microsoft Access databases.

Keeping their asset data up to date and forecasting maintenance with just four full time employees soon became a significant challenge for REUD.

## Putting Two and Two Together

Headed up by Roy Van Ness, Mapping Supervisor, REUD initially relied on a variety of mapping software tools. Like many state and local government agencies, Van Ness' team was using AutoCAD® Map 3D to capture and create data, simply because they believed that a CAD-based tool was better for quickly and accurately editing their pipe networks. From CAD, they then exported to ArcInfo Coverages so they could perform the hydraulic modeling in ArcInfo. Within ArcInfo, they wrote Arc Macro Language (AML) routines to link raw data tables



*Roy Van Ness, Mapping Supervisor, City of Roseville Environmental Utilities Department in his city office.*

to their linework originating from CAD and their asset data tables stored in HANSEN, which required the proper data structure and IDs to populate.

REUD determined early on that they needed both CAD and GIS software to get the job done, and as a result they invested in both platforms –however, this brought unexpected challenges. While the tools operated brilliantly in isolation, the lack of integration soon began to cause headaches.

For instance, the initial workflow between REUD's CAD and GIS software involved importing and exporting data back and forth, which often led to redundant or outdated information and a greater chance of losing data. According to Van Ness, this process "wasn't an easy thing to do, and was very cumbersome." Although the process worked, he needed to streamline it so his busy staff could keep up with the increasing updates. Additionally, he needed to simplify the steps so he wasn't the only person who knew the intricacies of what needed to be done.

To help streamline the process, Van Ness engaged his local Autodesk reseller, Ideate, to replicate all point and arc graphical data that was stored in ArcSDE in AutoCAD Map



## QUICK FACTS: CITY OF ROSEVILLE, CA

Located 16 miles from Sacramento, Roseville was established by disappointed miners from the Gold Rush and is now a thoroughly developed, independent city boasting an estimated population of 104,655 residents.

Roseville incorporated on April 10, 1909, and is a charter city operating under a City Manager-Council form of government.

According to the 2004 Sacramento Business Journal, 14 of the top 100 fastest growing companies are located in Roseville. Companies range from professional and financial services, automotive related and tech-based companies.

City services include public safety, electric power supply and distribution, electric power generation, environmental utilities (solid waste, storm water, water, recycled water and wastewater), parks and recreation, housing, libraries, and general administrative and support services.

3D according to a newly developed CAD standard. They then replicated all the ArcSDE attribute tables as object data tables within the CAD drawings. Through some custom programming, several routines were created to automatically populate pipeline attributes with its coincidental “from” and “to” attributes. Using feature classes, REUD technicians were able to create GIS-quality graphical and attribute data within the CAD environment. This data would then be exported to shapefiles with the click of a button and populated with asset data from HANSEN. Finally, after Van Ness had finished some additional quality checking (QC) on the data, he would import the shapefiles into ArcSDE.

## Bridging Design and Geospatial Asset Data with AutoCAD Map 3D

As Map 3D has evolved today to support ArcSDE running SQL server, Van Ness and his team have connected their CAD mapping software directly to ArcSDE for editing live spatial and attribute data within Map 3D, greatly reducing the demand on the GIS department. REUD then distributes the most current data from ArcSDE to its field personnel by periodically publishing it to DWF format and storing it on the network, making it readily available and up-to-date for field crews to access.

“The time savings and ability to quickly convert CAD data to the GIS have been invaluable,” said Van Ness. “We have also realized cost savings by the ease of conversion and manipulation.” Van Ness continued that by using the predefined tables created by Ideate, the REUD technicians can now easily be trained to clean up their own data, without as much of his involvement. They can do their QC within ArcInfo by comparing the incoming CAD mapping and attribute data with the existing assets in HANSEN, all from within one location. All the data input is done on the CAD side, from the start, creating a more “streamlined” process, minimizing overlapping of work, and reducing the time spent maintaining the data. ■



Jason Hill holds a degree in Physical Geography with an emphasis on GIS and Remote Sensing techniques from University of California, Santa Barbara. With more than eight years of experience, he has worked as a GIS Specialist conducting Business GIS analysis and has designed, developed and deployed GIS/Web based mapping applications. For the past several years, Jason has worked with state and local government agencies in an effort to increase their productivity through better management and integration of their CAD and GIS infrastructure data. As an Autodesk Certified Instructor and ESRI ArcGIS Authorized Instructor, Jason provides Ideate’s geospatial clients with training, consulting and support for Autodesk, MUNSYS and ESRI products.

# What's Going On

You might be surprised to know just how many government and training events are taking place online and around the country. Here are some that you shouldn't miss.

## Happenings

### *[acronym]* online is here!

If you haven't heard already, our new Web community, *[acronym]* online, went live at the end of the summer.

In creating *[acronym]* online, we have launched the first online community dedicated to those in the public sector who work within the 2D and 3D digital design disciplines.

Quite simply, *[acronym]* online is all about you! Take a look at [www.acronymonline.org](http://www.acronymonline.org) and you will find an interactive online community that includes forums, technology tips, product reviews, articles, downloads and lots more. In fact, *[acronym]* online was developed to give you all the tools and resources you need to enhance your skills, while bringing together a like-minded and driven community of government professionals.



What does this mean for *[acronym]* magazine?

*[acronym]* online and *[acronym]* magazine will co-exist but with two very different purposes. While the magazine will still bring you invaluable editorial insight and viewpoints on all things digital design, our online community takes it to the next level. It lets you steer the discussion and share your experiences (software and otherwise) with peers and experts.

If you are a registered *[acronym]* magazine subscriber, you will continue to receive your issue in the mail. Alternatively, visit [www.acronymonline.org](http://www.acronymonline.org) to select your subscription preferences or sign up as a new subscriber.

Questions? Send them to [editor@acronymmagazine.com](mailto:editor@acronymmagazine.com).

## Events

### Autodesk University

Las Vegas is hosting Autodesk University December 5-8, 2008. With more than 640 multi-level classes and labs organized in 20 discipline-specific tracks, Autodesk University offers the world's broadest curriculum of technical content designed specifically for Autodesk product users.

This year's Government Campus includes scores of Government-relevant classes, an AU Government Keynote featuring customer design innovation, and a special Government Networking Reception.

Register at [www.autodeskuniversity.com](http://www.autodeskuniversity.com)

### AUGI CAD Camp

CAD Camp is a full-day learning and networking event held in cities worldwide. Attendees walk away from this AU-style event with tips, tricks and new techniques guaranteed to make them more productive immediately.

Check the latest calendar for a CAD Camp near you at [www.cadcamp.com](http://www.cadcamp.com)

### Government Technology Seminars & Webcasts

The Autodesk reseller community is a great resource for "on-the-ground" seminars and quick lunch 'n' learns, as well as Web-based events. These events are tied to your core industry, covering everything from building information modeling, facilities management, civil design, geospatial, product release updates and more. Find an event near you at

[www.acronymonline.org/events](http://www.acronymonline.org/events)



Interested in staying current about What's Going On? If you received this issue of *[acronym]* magazine long after some of these events took place, you can still get current information about public sector events at [www.acronymonline.org](http://www.acronymonline.org)

# Our Extended Community

[acronym] magazine thanks our extended community who generously provided insight and articles for this issue. Without the expertise of these Autodesk Government Premier Solutions Providers, Independent Solutions Vendors and their teams of technology experts, we would not be able to bring you such a diverse collection of articles and opinions.



Ideate, Inc., a leading Autodesk® Value Added Reseller, Autodesk Authorized Training Center, and ESRI Authorized Training Program, provides public and private sector organizations in the areas of architecture, engineering and construction with software, implementation services, training and support for creating and managing infrastructure. Ideate employs top architects, engineers and geospatial professionals offering its clients premium services to ensure their maximum productivity and return on investment. Ideate is headquartered in San Francisco, CA.

[Read Ideate's article "Bridging the CAD & GIS Divide" on page 20.](#)

Ideate, Inc.  
www.ideateinc.com  
sales@ideateinc.com  
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We recognize each idea is full of potential. And because almost everyone at Microdesk has worked in the AECO industry - more than 100 experienced, agile minds - we know that technology should help an idea evolve as smoothly and fully as possible. So we offer a complete range of the world's leading CAD, GIS, FM and BIM platforms, fit precisely to your needs. To increase efficiency. To improve process. To nurture innovation.

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[Microdesk's government expert Richard W. Reid Jr. contributed to "The Experts Weigh In: Autodesk and Bentley Cozy Up" on page 16.](#)

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800.336.3375  
www.microdesk.com



Chiron Technology Services, Inc. is an Autodesk Independent Solutions Vendor (ISV) and provides innovative visualization and engineering solutions to the Department of Defense and U.S. Intelligence Community.

Staffed with engineers and subject matter experts from a variety of our customers' disciplines, Chiron delivers visualization and analytic solutions that are faster, better and cheaper. Chiron is based in Odenton, Maryland.

[Chiron contributed to "Chiron Portal Taps Virtual World" on page 18.](#)

Chiron Technology Services, Inc.  
410.672.1522  
www.chirontech.com



Avatech Solutions, Inc. is America's leading professional services company for design and engineering technologies. Avatech advances the way organizations design, develop and manage building, infrastructure and manufacturing projects.

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[Read Avatech's article: "From Visual to Virtual at 30 Frames per Second", by George Matos on page 10.](#)

Avatech Solutions, Inc.  
800.706.1000  
info@avatech.com  
www.avatech.com



Based in Costa Mesa, CA, U.S. CAD, Inc. (formerly L.A. CAD) has grown to be the largest Autodesk reseller in California and the Western U.S.

Specializing in the civil, mechanical, architectural, building-engineering and geospatial industries, the company provides technical expertise and customized training to deliver superior customer solutions. Customers value U.S. CAD's quality instruction from Autodesk Approved Instructors, and its flexible training options, including modular mobile training labs. With Autodesk Authorized Training Centers at its Costa Mesa, Los Angeles, San Diego, Honolulu and Guam locations, U.S. CAD has become the Autodesk provider of choice for many of the West's leading CAD-related companies.

[U.S. CAD's government expert Melanie Santer contributed to "The Experts Weigh In: Autodesk and Bentley Cozy Up" on page 16.](#)

U.S. CAD, Inc.  
877.648.7223  
www.uscad.com



Headquartered in Alexandria, VA, CADD Microsystems, Inc. (CMI) is an Autodesk Premier Solution Provider in Civil Engineering, Building Architecture, Federal and State and Local Government, with more than 21 years of experience with architectural, engineering and construction design software solutions.

Staffed with Registered Architects and LEED certified consultants, CMI collaborates with customers from needs analysis through implementation, including process consulting, data migration, custom development and training. CMI works closely with federal, state and local government agencies as well as commercial design firms to provide solutions in support of BIM and other mission critical objectives.

[CADD Microsystems contributed to "The Experts Weigh In: Autodesk and Bentley Cozy Up" on page 16 and "Civil 3D Tips & Tricks for the Land Desktop User" on page 14.](#)

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