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CUSTOM STRIPES & FL

CUSTOMIZED AutoCAD SOLUTIONS

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CUSTOM CAD

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Here are some of the alternatives, plus tips for getting management buy-in**

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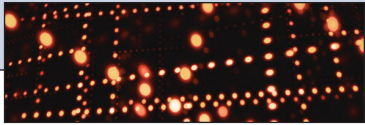
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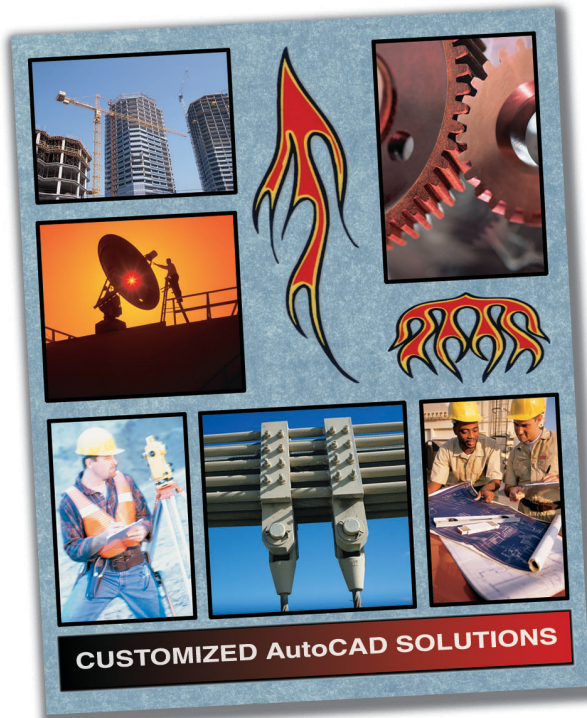
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The Forums, at www.AUGI.com, deliver easy-to-use, peer-to-peer support to AUGI members. Here's a look at how they work

Cyber Support

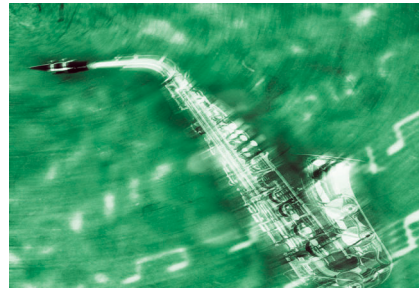## The Forums, at www.AUGI.com, deliver easy-to-use, peer-to-peer support to AUGI members. Here's a look at how they work

By the time you read this, the completely rebuilt www.AUGI.com should be open for business. One of the major features of AUGI's new website is "Forums, " AUGI's new web-based, peer-to-peer support system. Unlike the AUGI Guilds, an email-based support service, it is not necessary to formally join forums. If you can log on to augi.com, you can read, write, and search any public forum.

Three different routes to forums

- Select Forums from the main menu bar and you will go to the main forum page. Here you can select from a complete list of available forums.
- Select Product Channels from the main menu bar, then select a product in the left panel. This will display the various AUGI services for that product in the left panel. Select forums from that menu, and you will see a list of the forums supporting that product.
- Select My AUGI and set your preferences for your chosen product. Select My Home Page and set it to "Product Forums." Log out and log back in to make the changes take effect. When you log in you will be taken directly to your chosen product forums. Follow the same procedure to undo this setting.

Forum Primer

When you have arrived at the forum of your choice, the system requires you to navigate through four levels. From top to bottom they are Category, Forum, Topic, and Message.

Categories and Forums

Only the AUGI Forum administrator can create category and forum definitions. Currently, there are more than 20 categories and over 50 forums. Figure 1 shows a partial list. Architectural Desktop, Architectural Studio, and AutoCAD are the categories. Below each of these are forums within the category. Most Autodesk products will have their own category. Within each product category there will be at least two forums, named X Support and X Wish List; some will have more. There are also several "cross product" categories, such as CAD Management and Programming. **Tip:** If you click on the category link, it will simplify the display to show only that category.

Figure 1

Forums and Topics

In Figure 2, we have entered the AUGI Moderators forum, which was not shown in Figure 1. Two topics have been started here. BigBopper started the "Welcome Moderators" topic. Ed and Mike have replied, thus creating a "thread." This thread is "expanded" showing all replies to it. Notice that the newest topics appear at the top.

The previous topic, "Moving posts," was started by Ed. It is shown "collapsed." You can expand and collapse topics by clicking on the plus or minus signs to the left of the topic name.
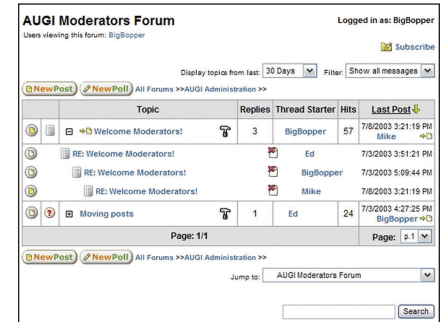
Figure 2: The Forum Level

Topics and Threads

Topics are created within forums by members. Creating a new topic is how you present a question to the forum members. When you use the "NewPost" button (Figure 2), you will create a new topic. The resulting "Post New Thread" window looks and acts just like the "Reply To Message" window (Figure 4).

Before starting a new topic, please search the forum to see if the topic already exists. When you post a new topic, make sure that the subject is concise, but catchy and accurate—don't just enter the word "question." We know you have a question, that's why you're here!

Threads and Messages

Threads are created within topics by members. When people reply to a topic, that group of topic-related messages is called a thread.

You may use either flat or tree style to read a thread. Figure 3 is an example of tree style, which displays thread entries in chronological and hierarchical order. You can see who replied to whom, and in what order. The red text indicates that this is the message shown in the box above. If you click on the line below the red one, it will become red and display its text in the message window, and so on down the line.

Flat style (click on Flat Style; see Figure 3) displays a chronological list of messages.

Figure 3: The Topic Level

Use care when replying

Figure 4 is what you will see when you click reply (see Figure 3). It is best to reply directly to a topic whenever possible. To make a direct reply, you should see the post to which you are replying in the message window when you click Post Reply. Your reply will show up in hierarchical order when viewing the thread in tree style. You may also use the "Quote original" button, which places the text of the original post at the top of your reply (Figure 4).

It is recommended that you avoid asking a new question in a reply. If you do, it is less likely that people will see your question, let alone respond. If people do reply to your post, the resulting tree will end up many levels deep. If this happens, it makes it difficult to find answers to the original question. You should also avoid replying to a reply—do so only if you would like to expand on or disagree with that specific issue.

In the subject bar below, you can choose an "emoticon" to lead your topic or message. The question mark that appears in Figure 2 to the left of "Moving posts" was selected from these two rows of icons. Selecting from the vertical rows of emoticons on the left will place them within the text of the message.

There are too many text formatting options to go into here, but you should know that the "code" button allows programming code to be placed in the message box without being corrupted by format tags. Select the code portion of your message, then click "code."
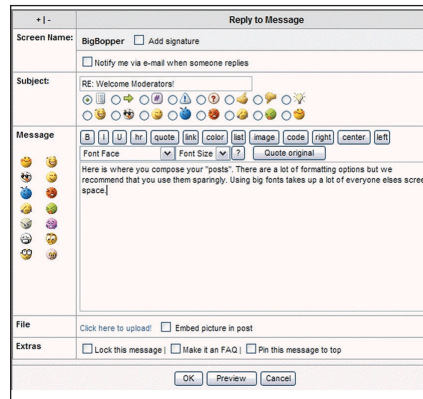

Figure 4: Reply to a Message

Navigating the Forum Levels

All Forums>>

Getting into the forums is intuitive, but most people don't immediately see how to back up. In Figures 2 and 3, look above and below the topic or message box where you see "All Forums>>". This shows your current category and forum location, and is also a navigational link that you can use to move up the tree. Click on the third link to go to the top of the current forum. Click on the second link to go to the top of the current category. Click on "All Forums" to go to the forum main page.

Jump To

You can switch from one forum to another with two clicks. In Figure 2 and 3, at the lower right, notice the "Jump To" box. Select a forum from the list and you will jump directly to it.

<<Newer Topic   Older Topic>>

You will see this only at the topic level (Figure 3) in the upper right corner of the message box. Use these links to move from one topic to the next.

Filtering Forum Information

As the forum database grows, it will become necessary to use some tools to filter through the wealth of information. The three primary tools available are Subscribe, Filter, and Search.

Subscribe to Forums or Threads

When you are at the forum level, in the upper right area of the window you will see the word "Subscribe" (Figures 2 and 3). Click on this, and as a subscriber, every post made to that forum will be emailed to the address you provided in your www.AUGI.com profile. The email will contain the text of the post as well as a link to that point in the thread. If subscribing to an entire forum generates too much email, you may focus your subscription on one or more select threads. To subscribe to a thread, check the box "Notify me via email when someone replies" when composing a reply. (Figure 4).

Forum Filters

In the upper right of Figure 2 you will see a filter box. Here you can instruct the forum to display either all messages, only FAQs, or only polls (we will discuss polls in a later article). You may use the box to the left of this to display messages of a certain age.

Search

When at the forum level (Figure 2), at the lower right you will see a search box. Type in the terms you are seeking, click search, and all replies within that forum containing that term will be listed.

Forum Statistics

When at the category level (Figure 1), at the very bottom you will see the Forum Statistics box (Figure 5). The fourth line offers some useful filters, most notably the "Today's Posts" and "Posts Since Last Visit" link. This will show posts from all forums.

Figure 5: Forum Statistics

Dive In!

We're sure you will find the forums a practical interface to a rich source of information. There is not enough space here to cover all the tricks and tips, but this will get you started. There is also a thorough online FAQ on the main forum page. Happy posting!

David Kingsley is the creator of CADPlayer Streamed On Demand CAD Courseware (http://www.cadplayer.com) and serves as Secretary on the AUGI Board of Directors. He can be reached at david.kingsley@augi.com.

The Cad Manager

John Clauson

CAD Shouldn't Hurt

It was a product demo for a large crowd, and my right hand got so numb that I had to look at it to see which mouse button I was pressing. The next 10 minutes seemed liked hours until the demo agenda moved to another presenter.

I was in my eighth year as an application engineer in the Autodesk dealer channel and I was getting worried. Both hands would get quite numb more and more often, with that tingly feeling often described as the hand or foot "going to sleep." I was shaking my hands almost constantly to reclaim some feeling. My left pinky finger was frequently so numb that I didn't even know it was there. I was afraid I could damage it badly and never know unless I saw blood or something worse.

Guys don't see doctors, right? So I scoured drug stores in search of wrist supports designed for sufferers of carpal tunnel syndrome. I found some that seemed to help, especially if I wore them all night. They were clumsy, but were better than nothing.

I tried mouse pads with gel supports, but found little relief with them. I experimented with different pointing devices such as tablets, trackballs, and a variety of hybrids with similar results: either no improvement or some mild relief. Please note that the benefits of such devices will vary among individuals, as we will see further along in this article.

Always one to practice self diagnosis, I pored over an endless supply of Internet documents on Repetitive Stress Injury (RSI), also known as Cumulative Trauma Disorders. I read James Coates' account of his disastrous experiences with RSI, which nearly left him an invalid. A long-time *Chicago Tribune* computer columnist, his nerve damage is so severe that he had spinal surgery and now writes his popular column with speech recognition software. All too often I found stories of carpal tunnel surgeries that were ineffective or worse. Needless to say, I was scared and confused.

Knowing all that, you won't be surprised to hear that a CAD Manager's AUGI Guild

message caught my attention. In response to a thread involving the use of digitizing tablets with AutoCAD 2004, Dale Black wrote that he supervised a drafter who had shoulder pain and asked whether a tablet was ergonomically better. I wondered how many AUGI members suffered physical pain or serious discomfort at their workstations, and what they might have done about it, so I asked Guild members for remarks that I could use in this column.

Elizabeth Mitchell noted that she was in her sixth week of physical therapy on her "mousing" shoulder. To prove that using a mouse was not always the problem, Kirsten Larson said, "Two years into my career, I was the hotshot at my company. [I] worked through breaks, [had] lunches at the computer, stayed late, and missed vacations with my family. I used a tablet with puck at an average height table, but my chair was not adjustable and I had no footrest. I ended up with RSI (both forearms and under right shoulder blade) so bad I was 100 percent disabled for months, with a 17 percent permanent disability." In fact, as a partial response to Sarah Watts' workman's compensation claim, a physical therapist recommended discarding the tablet because it required that she reach too far. Obviously there are there factors that contribute to RSI besides the choice between a tablet or mouse.

Before looking at some of the solutions to RSI from our Guild members, I should mention that Richard Binning, author of the fabulous VBA for beginners series that concludes in the *PaperSpace* section of this issue, has done some research in this area for his company. Richard directed me to http://ergo.human.cornell.edu, the Cornell University Ergonomics Web (CUErgo).

Carpal Tunnel Syndrome (CTS) is probably the most widely known of the RSI group. Dan Ulrich explained to the Guild that he "had carpal tunnel surgery done about ten years ago because of repetitive stress. It's a buildup of scar tissue under the tendon at the base of the palm that was pinching the nerve," which Dan said was squeezed down to almost half its normal

size in his case. Dan says he wears a brace to keep the condition from returning.

One noteworthy statement in a CUErgo study says not to use a wrist rest because it doubles the pressure on the carpal tunnel. That is one of the Ten Tips for Using a Computer Mouse, found at http://ergo. human.cornell.edu/cumousetips.html. I recommend that any CAD or IT manager spend some time exploring that site. It may save your employees and you some pain, and perhaps avoid awkward legal situations.

Other common forms of RSI occur in the elbows, neck, and shoulders. To find out about those conditions, check CUErgo and listen to Elizabeth Mitchell. She made the following suggestions.

• Ensure that your drafters work at stations where the weight of their arms rests on the work surface.
• Make sure they are using the mouse efficiently. A combination of mouse and keystrokes can be the most efficient method of operation.
• Check that their mouse tracking is at a proportion that allows minimal hand motion for the size of the display. If the tracking is too slow, they'll have excessive arm motion.
• Work on stress issues. Most people carry stress in the shoulders and this is complicated by the use of the hands for detailed tasks. One sign of this is cold or tingly fingers.
• Encourage the use of therapeutic devices, such as a warm wheat bag/heated pack across the shoulder intermittently during the day. This helps relax and alleviate stress as well. Stretching helps as well. Once or twice an hour should make a big difference.

CUErgo emphasizes regular rest and stretching periods as an effective treatment for muscular stress. Guild member Bill Goetz uses Break Reminder (http://cheqsoft.com/break.html) and Bill Hunt uses RSIGuard (http:// http://www.RSIguard.com) to help them pay attention to those rest breaks.

Kirsten Larsen took several positive steps and has some good advice for us, too. "With changes to my workstation, including a chair with adjustable arm rests, a foot rest, and a keyboard tray with room for mouse, as well as physical therapy that taught me many ways to maintain good tendon and muscular health, I have now been in this business for 12 years. I still have occasional pain, but am careful about stretching and varying my tasks as much as possible. Posture makes a big difference;

when in a rush, I tend to tuck legs and hunch over, and suffer because of it."

Kirsten notes the CAD operators, much like athletes, must take better care of their bodies because they are so important to their livelihoods. "They need to learn to treat their bodies with the respect that a priceless tool deserves. Above all," she says, "remember that jobs and careers

change, but you will live with the consequences of your neglect possibly forever. The sooner you see a doctor after the start of pain, the easier and faster your recovery will be. One of the reasons my recovery was so long was that I waited until the pain was waking me at night."

What did I do about the numbness I described at the beginning of this article?

After describing my symptoms to the HR director at my current company, she filed a workmen's compensation claim for me and I went to see an orthopedic surgeon that our insurance company recommended as being very skilled in RSI cases. With the results of a CAT scan and a neurological exam, my doctor recommended carpal tunnel surgery on both hands and an ulnar nerve release in my left elbow. Three years after those surgeries, I am 100 percent symptom-free. I hope that my experience will encourage others to take serious action before it is too late.

This article was not intended to be an exhaustive study of Repetitive Stress Injuries. Rather, it was meant to get you thinking about them, and to stimulate you to take action whenever they occur. Please join me in thanking the following CAD Manager Guild members who contributed: Richard Binning, Colin Cookney, Bill Goetz, Bill Hunt, Diane Lanthier, Kirsten Larsen, Elizabeth Mitchell, Michael Partenheimer, Gary Sarver, Dan Ulrich, Sarah Watts, and Matt Womeldorf.

John Clauson is CAD Manager at Indak Manufacturing Corporation and President of AUGI.

CUSTOMIZED AutoCAD SOLUTIONS

Users seeking a customized, AutoCAD-based solution have a number of options. Some users opt for the home-grown approach; others buy an application from a third-party developer. Here are a few tips for determining which option works best for you, and how to sell your decision to management

CUSTOM CAD

Some 16 years ago, Autodesk formalized its developer partner program, called the ADN (Autodesk Developer Network) program. Before that organized effort was born, however, end users were already "tinkering" with AutoCAD. "There is definitely a grass-roots aspect to the development of the ADN program," says Amanda Welch, marketing manager for the Autodesk Developer Network. "For many years, people have used the available customization tools to enhance and extend AutoCAD to perform specialized tasks."

There are many reasons users choose to customize AutoCAD themselves or find an add-on solution from an Autodesk partner. Some do it out of necessity, such as those who work in vertical industries or those working in countries which have specific requirements that AutoCAD by itself can't address. For these users, obtaining some form of customized solution is a must. And then there are those who simply love to program, who never met a core software product they didn't want to make uniquely their own.

Do It Yourself or Buy It?

Informal Autodesk surveys indicate that as many as 70 percent of AutoCAD users use third-party applications and services to some extent. And AUGI reports that many of its members do programming on their own. There are four dedicated AUGI Guilds on which members can share their

favorite Menu, LISP, VBA (Virtual Basic Application), or ObjectARX shortcut, says Peter Jamtgaard, AUGI board member. The AUGI Exchange service at www.AUGI.com also invites members to post self-written programs and routines to share with others.

If you're thinking of taking on the job of customizing AutoCAD yourself, consider this from John Clauson, AUGI president. "Many people make the mistake of overestimating their programming skill and underestimating the scope of work they must do to create effective and robust customized code. Realistic appraisals of those factors should make the choice more obvious than it seemed at first glance. Internal programming projects too often wind up being more expensive than purchased code and squander company resources that should be applied to making money. There may also be accounting benefits from purchasing software instead of paying your own people to create it."

There is another option here, a sort of hybrid approach using both in-house customization and a purchased solution. "If your customization needs are considerable and you do not have the equivalent of a nearly full time programmer, consider third-party programs and figure on tweaking them rather than reinventing the wheel. Conversely, if you can start off with some mild customization and plan on

adding to it as time goes on, you may be able to handle it in-house," Clauson says.

If your needs are so specialized that a third-party application isn't practical, yet you lack the in-house programming talent needed to write a custom application, another solution is to hire the work done by a custom programming firm. Many consultants with close ties to Autodesk perform custom programming for clients. It's an option worth considering.

Determining ROI

Let's say you have reached the decision that embarking on a full-blown, in-house AutoCAD customization project might not be in your, or your company's, best interests. Now you need to sell management on the idea of spending more money, above the purchase of AutoCAD, on additional software from an outside source such as an Autodesk third-party developer partner. There are a number of ways to approach this. Begging and/or pleading with your company's management might work, but talking dollars and cents versus productivity gains is a more likely winner.

Determining ROI is a fairly simple exercise, at least in theory. John Clauson, AUGI president and a CAD manager, says, "CAD managers try to estimate the average number of hours per week or month that the application will save and then calculate how soon the investment would be

returned based on the hourly costs of the particular company."

Clauson recommends talking to current users of an application to come up with the initial estimate of time saved by using it. Any respectable application developer will provide user references—obtain users names and then follow up.

Developers also can help determine ROI. Cynics will scoff at this notion because, after all, developers are in business to sell a product and obviously will put the best possible spin on the efficiencies produced by it. But look at it this way— professional developers with solid reputations didn't get where they are in this business by misleading customers.

ACS Software often sits down with potential customers for an in-depth discussion about the customers' business processes, then help them determine how, or indeed if, ACS's AutoEDMS document management solution can help, says Todd Hays of ACS. One of the most basic tasks that document management systems perform is document retrieval. Says Hays, "If 20 people will use the system and each one will save an average of a half-hour a day looking for documents, that's 10 [saved]

hours. Then you figure the saved hours times the hourly salary rate. The system shows payback quickly."

Robert Steltman, owner of Steltman Software Solutions, also helps potential customers determine ROI and how to sell management on a software purchase. Referring to a recent survey his company conducted among customers, Steltman says, "We found that not only do users look at it on an emotional level—how it makes their lives better because it saves time— but they also need to stress to their CAD managers the decrease in the amount of errors that can occur as a result of automation. If you get something automated, it takes out the person who can generate errors."

While time savings and fewer errors are both good things that will intrigue virtually any company's management team, better designs are perhaps an unexpected benefit. Steltman says, "One of my clients told me that the work gets done a lot faster, but they're actually taking just as much time [as before] because now they're looking at more iterations. Their final design will be a much better design than it was before, because it's not as much of a pain to look at alternatives."

Try Before You Buy

Item number one on the accompanying "Tips for Buying Third-Party Applications" advises users to try products before they make the purchase decision. To help you down this path, we've included a chart of several AutoCAD 2004-compatible products from third-party developers. The developers in this chart have made available a demo or trial of their product for AUGI members. To access the links to these developer sites, go to http://www.augiworld.com/autocad2004/.

Do Your Homework

An honest assessment of your company, its talent pool, and the packaged solutions available for your industry niche will make the decision about how to obtain a customized AutoCAD-based solution easier. If your decision is to buy, there are a wealth of solutions available to you, both in the chart accompanying this article and at the Autodesk Partner Products and Services website, described in "Vertical Markets and More."

Marilyn Law is managing editor of Augiworld.

AutoCAD Third-Party Developers

Links to demos and trials available at http://www.augiworld.com/autocad2004

Company	Description	Web	Geo. Location
BUILDING DESIGN			
ACERI Soft, Inc.	Electrical engineering design	www.aceri.com	USA
Albacore Research, Ltd.	ShipConstructor, a modeling tool for ships and offshore structures	www.shipconstructor.com	Canada
Archibus, Inc.	Facilities management solutions	www.archibus.com	USA
Architectural Details, Inc.	Organizes, retrieves drawings	www.details-details.com	USA
Asuni CAD	Pipe design, architectural symbols, utilities	www.asuni.com	Spain
ASVIC Engineering & Software	Piping, structural detail, mechanical, material, and more.	www.asvic.com.au	Australia
Autograph Technical Services	Productivity enhancing AutoCAD reference tool	www.cadcard.com	USA
Bluebeam Software, Inc.	Easily produces PDFs from AutoCAD	www.bluebeam.com	USA
Cimmetry Systems Inc.	Viewing, markup and collaboration	www.cimmetry.com	USA
COADE, Inc.	Analysis and design; plant design	www.coade.com	USA
Consistent Software	Raster editing and conversion; architectural software	www.csoft.com	Russian Federation
Design Master Software, Inc.	Calculations, automation, and drafting within AutoCAD	www.designmaster.biz	USA
faciliCAD LLC	Facility management software	www.facilicad.com	USA
GTX Corporation	"Intelligent Paper to CAD" solutions; digital imaging	www.gtx.com	USA
IDEAL.com	Converts 2D drawings into intelligent models	www.ideal.com	USA
LiftPlanner Software	Diagrams crane lifts; intelligent 3D cranes	www.liftplanner.net	USA
Motive Systems	Add translucent and gradient fills and bitmap texturing	www.motivesys.com	Finland
NavisWorks Ltd.	3D design review solutions	www.navisworks.com	United Kingdom
Oasys Limited	Civil and structural engineering; document management	www.oasys-software.com	United Kingdom
Orange Technologies, Inc.	Process/plant design, plumbing, HVAC	www.cadpipe.com	USA
R. A. Rezzelle, Inc.	Process and instrumentation diagram (P&ID)	www.rarezzelle.com	USA
Robert McNeel & Associates	Photorealistic imaging, rendering; 3D architectural modeling	www.mcneel.com	USA
Softco Engineering Systems Inc.	Enhanced drawing production, CAD management, more	www.softcosys.com	Canada
Trace Software SA	Electrical schematic design	www.trace-software.com	France
Transoft Solutions	Turn simulation software; roadway sign design	www.transoftsolutions.com	Canada
VIA Development Corp.	Generates electrical schematics	www.viadevelopment.com	USA
HARDWARE			
3Dconnexion, Inc.	Advanced input devices for AutoCAD designers.	www.3dconnexion.com	USA
IDEAL.com	Distributor of Context large-format scanners	www.ideal.com	USA
Oce-USA, Inc.	Large-format printing systems	www.oceusa.com	USA
PNY Technologies, Inc.	Graphics boards for CAD, CAE, DCC, visualization	www.pny.com	USA
INFRASTRUCTURE			
Robert Steltman Inc.	Tools for civil engineers, land planners and surveyors	www.rsteltman.com	USA
RZI Software GmbH	Civil engineering applications	www.rzi.de	Germany
TCI Software	Tools and services for mapping	www.tcicorp.com	USA
Transoft Solutions	Turn simulation software; roadway sign design	www.transoftsolutions.com	Canada

Verticals Markets and More

Autodesk's Partner Products website is packed with third-party product information

If you've decided to seek a software solution from an Autodesk third-party developer partner, you'll need a good information source to start your search. These days, that means go to the Internet and start browsing. If you begin at Autodesk's Partner Products and Services site (http://partnerproducts.autodesk.com), you may not need to look further.

The Autodesk Partner Products and Services site offers a wealth of detailed product information from Autodesk third-party developer partners. You can see all solutions by category: Building Design, Infrastructure, Manufacturing, Productivity Tools, Learning Tools, Professional Services, and Hardware. Other links reveal third-party products compatible with particular Autodesk products such as AutoCAD 2004, Autodesk Inventor, and others.

Search options include Partner Index, which lets you find developers alphabetically by name or via keyword; Product Index allows you to search by product name, either alphabetically or via keyword. A site-wide search engine allows you to search by keyword, then select the Autodesk product for which the solution is compatible and the product's language.

Once you've found products that appear to fit your particular requirements, a click on any product title provides more detail, including developer name and link to the developer's website. You're on your own from that point on, of course, but the Autodesk Partner Products and Services site gives you a jump start on creating your list of software candidates.

AutoCAD Third-Party Developers

Links to demos and trials available at http://www.augiworld.com/autocad2004

Company	Description	Web	Geo. Location
LEARNING			
4D Design Solutions, LLC	CD- and computer-based training for Autodesk products.	www.dtitech.com	USA
ASCENT, a division of Rand Technologies of MI	Courseware development, web-based learning	www.ASCENTed.com	USA
Autograph Technical Services	Developer of a reference tool for AutoCAD	www.cadcard.com	USA
Caddex Inc.	Modular courseware for AutoCAD and Inventor	www.caddex.com	USA
Landnut Video Training	Video- and CD-based learning for LDT and Civil Design	www.landnut.com	USA
New Vision Software, Inc.	CD-based instruction for AutoCAD 2004	www.nvsi.com	USA
Softco Engineering Systems Inc.	CAD standards and management tools	www.softcosys.com	Canada
Thalheim Consultants Inc.	Training documentation for VBA, AutoLISP/Visual LISP	www.thalheim.ca	Canada
MANUFACTURING			
ASVIC Engineering & Software	Piping, structural detail, mechanical, material, and more.	www.asvic.com.au	Australia
AutoSolids, Inc.	Enhances solid modeling, UCS, viewing, visualization	www.autosolids.com	USA
Consistent Software	Intelligent assembler for mechanical engineers	www.csoft.com	Russian Federation
Data M Software GmbH	Sheet metal bending and roll forming applications	www.datem.de	Germany
NavisWorks Ltd.	3D design review solutions	www.navisworks.com	United Kingdom
Robert McNeel & Associates	3D conceptual design and modeling	www.mcneel.com	USA
Striker Systems, Inc.	Sheet metal fabrication including part design and unfolding	www.striker-systems.com	USA
PRODUCTIVITY TOOLS			
ACS Software, Inc.	Document management and workflow solutions	www.acssoftware.com	USA
ASVIC Engineering & Software	Bills of materials utilities	www.asvic.com.au	Australia
CADwerx	General drafting utilities for AutoCAD	www.cadwerx.net	USA
Consistent Software	Raster editing and conversion	www.csoft.com	Russian Federation
Cyco Software BV	Document management solutions	www.cyco.com	Netherlands
Dotsoft	A variety of productivity enhancements for AutoCAD users	www.dotsoft.com	USA
Furix	Software to enhance drafting productivity	www.furix.com	The Netherlands
GTX Europe Ltd.	Raster and hybrid editing	www.gtx.com	United Kingdom
Hitachi Software Global Technology	Image editing; line tracing; text, line and symbol recognition	www.hsgt.com	USA
IDEAL.com	Converts scanned raster to DXF	www.ideal.com	USA
Motive Systems	Add translucent and gradient fills and bitmap texturing	www.motivesys.com	Finland
Oce-USA, Inc.	Engineering document printing and DWG plotting	www.oceusa.com	USA
PROCAD GmbH & Co. KG	Product data and document management	www.procad.de	Germany
Softco Engineering Systems Inc.	Standards translation and more	www.softcosys.com	Canada
Technesis	Tracks, manages, and reports on printing and plotting	www.technesis.com	USA

Tips for Buying Third-Party Applications

Consider these items when shopping for an AutoCAD third-party application

- **Features:** Read all about your product of choice. Search the Web for independent product reviews and articles as well as the developers' own websites. Carefully examine product features, talk to other users if possible, try the products out. Most developers provide a demo for trial purposes. Take advantage of this offer.

- **Support:** Buy only from companies that support their products, preferably by telephone. The good news is that third-party developers, in general, have a pretty good reputation for being attentive to customers' needs, says David Harrington, AUGI member and author. "Third-party developers tend to be responsive and fluid in terms of upgrades and enhancements that are user-driven."

- **Upgrades/bug fixes:** Do new releases of the third-party application closely follow Autodesk's new releases? Many Autodesk developer partners get new releases of AutoCAD and other Autodesk products at least a couple of months before general release to the public, giving them time to test their solutions and ensure compatibility with Autodesk's newest release.

- **Track record:** Ask for and check references from product users in your business. Research the company, looking for a proven record of performance and quali-

ty. Talk to fellow user group members or post an inquiry on the AUGI Guilds, suggests AUGI President John Clauson.

- **Price:** When it comes to the cost of a third-party application, there are a couple of things to think about besides whether or not your budget can accommodate it. Clauson notes, "Seemingly expensive software quickly pays for itself if it increases productivity and reduces the time it takes you to deliver a quality product or service." Elise Moss, AUGI board member, agrees. "How much time will it save me versus how much it costs?" is a question users should ask themselves, she says.

Autodesk Land Desktop 2004

A conversation with Terry D. Bennett, P.L.S.-L.P.F.
Senior Manager, Civil Industry Marketing, Autodesk, Inc.

>> Autodesk Land Desktop 2004 unites key processes, streamlines data collaboration, and dramatically increases efficiency

AW: What are compelling reasons for users to upgrade to Autodesk Land Desktop 2004 from a previous version?

Bennett: One of the main reasons to upgrade is the platform change to AutoCAD 2004, which has many great features. For Autodesk Land Desktop customers, the most important ones are faster DWG opens, and the reduction in file sizes because they're optimized more cleanly. That's important with regard to engineering because a lot of the drawings are very intensive depending on the scale of the project. So the dexterity of being able to open and close quickly and easily allows us to save time as we work through a project. Additionally, features like rollup dialogues and toolbars provide quick access to commands but take minimal screen real estate. Other enhancements include more powerful XREF management and the ability to check a drawing and its compliance to preset drawing standards which is a huge timesaver for CAD managers.

Also compelling on a broader scale is how this product fits into the bigger picture. Autodesk Land Desktop 2004 is part of a product line we started six years ago to bring together the distinct processes of civil engineering, GIS, and CAD. We brought those processes together with this product. Now the industry finally caught up with where the product has been and I think customers who have Autodesk Land Desktop 2004 are in a great position. It is a proven product with six years of experience uniting those processes and in this post-9/11 environment, having quick access to design information intelligence is now mission critical. The industry needs a product that operates in those 3 modes—civil engineering, GIS and CAD—more so then ever.

AW: Are there compatibility issues between older versions of the product and this release?

Bennett: Ensuring data compatibility for customer's project information between product releases is something that is very

important to Autodesk and on which we spend a lot of time. As we move forward with new products, we migrate the project information from previous versions forward so that customers who want to go forward don't have to worry about their information being left behind or tied to a version because it's proprietary to that release. We have maintained almost 100 percent forward capability for all our customer's project data and DWGs for many years. Saving project data back to the previous version of Autodesk Land Desktop 2004 is possible but does require certain steps and we can provide a technical paper to explain that process for those that require it.

AW: What's the benefit of running the previous version alongside the new one, as I understand a user can do?

Bennett: The transition period to migrate between versions is at the pace of the individual customer and not the result of software limitations. The ability for customers to run both versions of the product

at the same time provides for a rapid ramp-up time and transition time that minimizes impact on work they are doing for their clients. In other words, it allows our customers to work the new release into their production cycle within the organization at a time that makes sense.

AW: Talk about the collaboration process. Who communicates with whom in the process and how is it done?

Bennett: Surveyors, engineers, planners, and architects have been collaborating for centuries on design projects. Today, when we say collaboration, we mean data collaboration—the ability to plug and play information between different programs in different phases of a project. Autodesk Land Desktop, along with the rest of the products that make up our Engineering and Construction solution, integrate and share the same information between each application. Our solutions provide our customers with the tools needed to collaborate with everyone along a project's lifecycle, as well as produce the needed information in customizable form depending on the deliverable and the clients' needs.

For example, in the land development process, there are six general phases on most projects: planning/analysis, surveying/data capture, design, documentation/drafting, construction, and management/operation. Within each phase there is a need to view information in a unique way by each contributor in that phase—a way he/she understands and that is focused on his/her particular area of expertise. These contributors work as a team and Autodesk believes software that supports them must follow that same thought process.

Part of our civil engineering solution is a product called Autodesk Envision 8, which allows the user to present land development plans to clients and reviewers in terms they understand. Autodesk Envision allows the planner to bring in all the different data types from CAD to engineering data to GIS information to imagery and put it into one solid model, what I call a 3D model of existing conditions. You can take the imagery, for example, and drape it over the terrain model; you can bring in some preliminary design information—from roads to houses to parcels—and display it. You can show the model from any perspective to show people what it will look like from their view, not just yours. You get an engineering accurate model but have not wasted hours and hours to do it. Time at this point in the project is critical as you

are not sure if the plan is viable and costs are tight. Envision allows you to communicate and show the plan and let people suggest changes and collaborate to buy into the concept.

AW: Describe the other products in the Autodesk Civil Engineering Solution and how they fit into the collaboration process.

Bennett: The next step in the collaboration process is the surveying/data capture. At this point, surveyors are gathering the "on the ground" precision information of the area the user is considering for the project. Autodesk Survey allows you to download everything from the conventional survey equipment, GPS, and all the latest in the data collectors and puts it in a digital representation of existing conditions that integrates with Autodesk Land Desktop. Once you get all the information on the location of sewers, pipes, and utilities, you can pass it over to engineering for the design phase where we have Autodesk Civil Design. Like Autodesk Survey, it is an add-on to Autodesk Land Desktop, and with it you can design sites, roads, subdivisions, sewer and water projects, grading, hydrology, and more.

Autodesk Land Desktop holds all the crucial project information. The project information can be shared real time with all the other professionals on the project team. The same information that went into Autodesk Survey, then Autodesk Land Desktop, and onto Autodesk Envision, is the same information that was entered by the surveyor. The user only needs to input data once and can use it multiple times. Everyone on the project team is working off the same accurate data, as the data maintains integrity. The more times information needs to be re-entered it increases the chance of errors and omissions being introduced.

In the documentation and drafting phases we offer AutoCAD and AutoCAD LT for those who want to do plan detailing or construction details and standards, but don't want to tie up or use an engineering application. During the construction phase if you wanted to pass a DWG or DWF to a contractor who doesn't necessarily want to learn how run a design or CAD application, Autodesk Express Viewer allows them to read and redline DWG/DWF without the worry of changing the engineer's design. Autodesk Buzzsaw allows for project file and construction documents to be hosted for all to access and provides document manage-

ment tools. The goal here is not to replace what firms do internally, but to provide a nice secure connection outside any one company's firewall where team members can post the most current construction information. With every new project you have new team members, so to continuously grant new people permission to every other company's sites can get very expensive and time-consuming. Autodesk Buzzsaw provides one secure location and grants new team members permission to access important project information.

Once the project has been constructed, Autodesk MapGuide, a Web- and desktop-based GIS application for asset management and analysis, assists in the operate/manage part of the project lifecycle. The Autodesk website (http://www.autodesk.com) provides great detail on all of the products as well as a demo of how they all work together in a project lifecycle.

AW: And this process is actually in use today?

Bennett: Yes, absolutely. One example is the City of Seattle. The City of Seattle is integrating many of its departments, which traditionally have been silos where GIS was one group, survey was one group, and engineering was one group. Even though the departments were individually very efficient, when they had to pass information from one department to another, it was another story. They spent more time doing data conversion than they spent on design work.

By having software tools for each phase of the project lifecycle, with the ability for each to work off the same information from any source, you can link in all the various players on a project, creating a more efficient way to get the project done. It allows you to get the right data to the right people at the right time, resulting in a better and more predictable delivery schedule and a better bottom line. And in the end what you get is a very happy client—all because more time was spent with them and their design than on converting data.

Terry D. Bennett, P.L.S.-L.P.F. is Senior Manager of Civil Industry Marketing for Autodesk's Infrastructure Solutions Division. He is responsible for the strategic management of the company's industry solutions for Land/Environmental Planning, Land Surveying, Civil Engineering and Construction.

Ladies and gentlemen of the civil/survey world…

It's Time To Rock

》 A veteran user turned trainer and consultant writes about the state of the civil/survey industry and offers solutions to some common problems

Consider this question: "What is it that makes a civil engineering or survey company/organization successful?"

I would open the bidding with:

1. A good bunch of people that look forward to coming to work because there is…
2. a positive environment for them to come to work to and…
3. good, challenging, interesting projects to which they can apply their talents.

This environment can result in:

4. Good designs for those projects coming from those people, producing either…
5. good service to clients and profit, for the for-profit firms, or…
6. good service and fiscal responsibility to the public for the public civil/survey organizations.

The million dollar question, literally, is "What part does a truly empowered CADD implementation play in achieving that positive end result?" I believe that the role that CADD plays is significant. If a civil/survey organization also believes that, top down to bottom up, and acts on it, the effect can be extraordinary.

Survey Issues

Let's start with survey, since it has long been the case that civil design projects typically begin with a survey of the existing conditions. That survey needs to produce two key products: a 2D base plan and a 3D digital terrain model of the site.

1 Field survey personnel need to understand the digital terrain modeling (DTM) process. In some rare instances, the people that collect the data in the field are actually the people that develop the DTM, but in most cases, they

are not. In this majority of cases, it is extraordinarily helpful to have the field personnel aware of how their work is transformed into a DTM. If the field crew can visualize the surface that will be built from their work as they are collecting the data, they are guaranteed to collect the data more efficiently, thereby expediting the creation of an accurate DTM.

2 Field work should be closely tied to the use of description keys. They are easy to implement and are a significant enhancement to the process. Description keys enable the automated placement and sizing of symbols, layering of points, and generation of full descriptions.

3 Implement some form of automated linework. There are several options available today to get 2D and 3D linework drawn for you. Utilize one of them. Automated linework generation aids greatly in the creation of the 2D base plan and the 3D DTM.

4 Establish what data is to be passed on to the design department, or client, and in what form. Are you going to send just .dwgs, or are you going to send the entire Autodesk Land Desktop Project dataset? If you send part of the Project, which parts? The point database? The TIN folders?

We now widen the discussion out to all civil design and survey organizations.

5 Figure out who your CADD gurus are. These are the people that really understand this thing—eat, sleep, and breathe it; those who keep current with the technology. They are not necessarily your IT people, and in fact often are not the computer hardware and networking systems gurus. Make one or two of these people key players in the organization. For every project your company is working on, have one of these people at the kick-off meetings for the sole purpose of steering the CADD effort to make sure it is done with the highest level of efficiency possible. Have them keep an eye on the CADD process as the project proceeds.
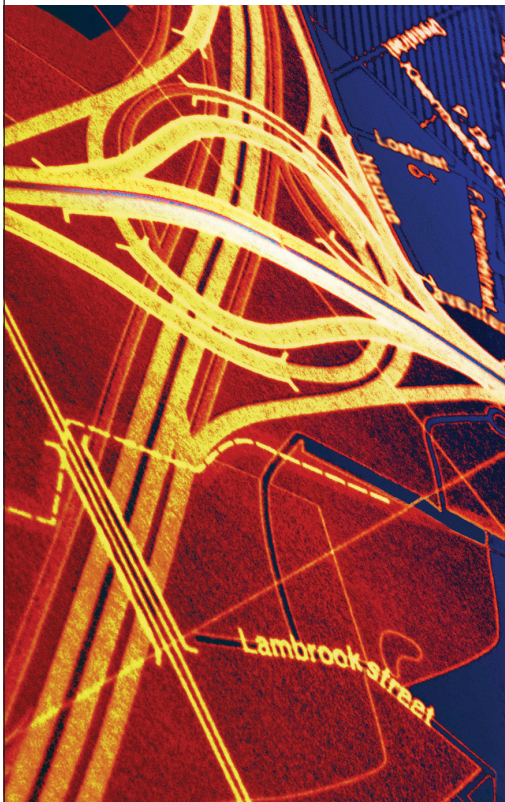
6 If you don't have CADD gurus, hire at least one.

7 Send them to Autodesk University each year.

8 Utilize CADD talent appropriately. If someone rises above the average CADD ability level through his or her own efforts and natural affinity for CADD, don't waste this person's time with mindless corrections and redlines. So many times I have seen CADD-illiterate management assign this type of work to the wrong people because they don't understand the process at all and see anyone who can use CADD as a "warm body" to get their work done. This usually leads to one end result: the talented people burn out and leave.

9 Have regular meetings to discuss CADD issues—at least one hour once a month, more if possible. I'm not talking about what color layer "X-EOP" should be. Let's get real here. It doesn't matter what color layer "X-EOP" should be. Pick one and get on with it. I'm talking about CADD methodology such as how you are going to use x-refs, or North Rotation. Important stuff.
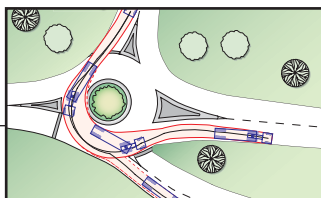
10 Document your standards, methods, and CADD policies on an internal intranet site. Make sure all new employees read it thoroughly.

11 And while we're on the subject of new employees, if you are hiring someone who is expected to do CADD work, make sure they actually know how to do CADD, using the software you use, before you hire them. Give them a test. We used to give secretaries typing tests and while I realize we live in a new world of political correctness and equal opportunity, it is ridiculous to hire someone to do CADD that can't, and expect them to learn on the job. All that does is burden the staff that actually knows. It is great to hire people who want to learn CADD on the job, on your clock, but you had better know that going into it, not after the fact. Start them out doing simple redline edits and simpler tasks to free up your more experienced CADD users to do more complex work. It's all about who does what.

12 The concept of CADD literacy is itself greatly misunderstood. The general concept today remains that either:
a) You do CADD all the time, know what commands to do, in which order, eat drink and breathe the stuff, are a classic CADD jockey (aka a weirdo), or
b) You never touch the stuff...you don't know anything about it, you don't want to know, and you truly believe that you don't need to know. People sometimes tend to think of things the way they were when the first heard of them—kind of like thinking of people the way they were when you last saw them. When AutoCAD hit the streets in 1982, it was introduced as "Drafting on a Computer," and that's actually pretty much what it was. There are many people in this group that first heard about it as such and still basically think of it in those terms.

There is another possibility that many overlook:
c) You don't actually use the software to do design yourself, but you understand what it is, how it works, you speak the language, you understand the process, and you make sure that it is engaged to the fullest potential on all of the projects for which you are responsible.

The key today is this: not everyone on the design team needs to be As, but Bs are a real problem.

CADD Literacy

I know this one is controversial, but it needs to be recognized. We are at a point in history in the civil engineering industry where many of the individuals that have risen to the role of project manager are CADD illiterate. They are usually extremely knowledgeable people in all other aspects of the business and are in their current roles due to many years of hard work, but their lack of understanding of the CADD process is often crippling to a project's overall success. Project managers are the generals in the civil engineering world, but so many of them have absolutely no idea how to use the tool to

It's Time To Rock
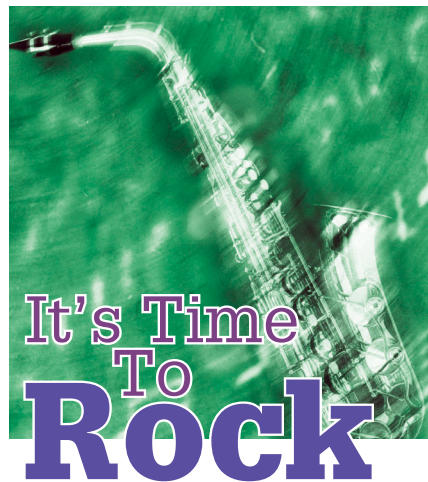
get their jobs done. They once knew, when it was done by hand. They knew how long things should take; they knew the sequence in which things should be done; they understood the process intimately. But today, many of them have lost touch with the process; it is a mystery to them, and a source of great frustration.

Thankfully, the solution is not a difficult one. First, project managers need to get enough training to understand the CADD process, even if they will never actually do it themselves. They must be able to at least speak the language and understand the basic principles. After that, they must consciously defer the overseeing of the CADD implementation to a qualified individual. A project manager cannot just drop a set of plans on a technician's desk, quickly explain what they need done, and then walk away and hope for the best. Someone has to evaluate the task at hand, develop a strategy for the most efficient solution, and make sure the individual assigned the task understands

how to accomplish it. Then that person's work needs to be checked on a regular basis to make sure it is done correctly.

Stranger Than Fiction

Please indulge me while I share a few short anecdotes. As Dave Barry says, I'm not making this up.
• A new CADD technician is hired, given a set of plans that need to be changed from one scale to another, and left to his own devices. A week later, progress is checked, and to the assigner's disappointment, the progress has been extremely slow. The technician has been using an AutoCAD SCALE command, one piece of text at a time, to painfully and tediously redo the plans. Nobody showed him any of the various shortcuts that could have been used at the outset.
• Another project manager needs some profiles drawn. A brief explanation of what is needed is relayed to the technician assigned the task, and again, he is left to his own devices. The technician, unfamiliar with how to accomplish this with Autodesk Land Desktop, proceeds to draw the profiles by hand with AutoCAD commands.
• A set of sewer plans needs to be developed. Unfamiliar with how to use Pipes in Civil Design, the technician draws the pipes and all of the annotation on the profiles, by hand, with AutoCAD commands.
• A redesign of a subdivision is required. Somewhat familiar with AutoCAD, but unfamiliar with the use of the Vertical Alignment editor in Civil Design, the project engineer redesigns the entire subdivision roadway design by hand, and then hands it to a technician to "put into CADD."

Are you cringing yet? I hope so. This is simply not acceptable. The solution is not unachievable. The first step is to admit you have a problem.

System Misuse

When I started in this business in 1979, there were engineers and there were drafters. The engineers developed a design on paper, and the drafters drew the plans with ink on mylar. CADD is computer aided design and drafting. As you read this, hear Jim Morrison of The Doors screaming, "CADD IS NOT DRAFTING ON A COMPUTER!!!"

If your organization has senior designers/project engineers/project managers developing designs on paper and then handing those paper plans over to a CADD technician/designer to trace, you

are using your systems as $10,000 Etch-a-Sketches. If instead, the senior designers/project engineers/project managers indicated their design ideas and parameters to the CADD technicians/designers to develop with the software, a very different dynamic is in place.

Try "For this roadway into the subdivision, we're going to run a 2 percent grade from the existing edge of pavement all the way to the cul-de-sac. For the cul-de-sac we'll use a 1 percent grade in, halfway around, and a –1 percent grade the other half way back out. Work up the profile for that for me." It works great to have the lead designer sit with the CADD designer to try out scenarios. The engineer is learning about CADD, and the CADD designer is learning about design. They are both becoming more valuable to themselves and to the organization.

Autodesk Land Desktop Tips

Now back to the list. How about Autodesk Land Desktop specifically? Here are a few guidelines.

13 Don't let anyone near it that hasn't had at least some fundamental quality training. They can use viewers, AutoCAD LT, or even AutoCAD itself, but keep them away from Autodesk Land Desktop.

14 Make sure the people using Autodesk Land Desktop continue to receive regular quality training. Learn how to do roadway design. Learn how to do site design. Learn how to use Pipes. Let me put it another way: Training, Training, Training…

15 Utilize Land Desktop projects to work efficiently. Don't carry everything around in drawing files that could be accessed in Projects instead, like Points and TINs.

16 Use Land Desktop prototypes to store LDT settings to be used on all drawings.

17 Make sure the Land Desktop "Data" folder is on the network, and being shared by all users in the organization. This way they will at least be using the same Contour Styles, Label Styles, Drawing Setups, Menu Palettes, Roadway Templates, and of course, again, Project Prototypes.

18 Learn Autodesk Map. You paid for it, it's inside of Land Desktop, and it is an extraordinarily powerful program. Learn what it can do and how it can be applied to the work done in your organization. For instance, do you ever need to determine what percentage of each proposed lot is which soil type? Try using a Map overlay analysis of two polygon topologies.

19 Use 3D. All of the data in a project is three-dimensional, unless you are designing helicopter landing pads on the Bonneville Salt Flats. Use Autodesk Land Desktop to view your projects in 3D and to show your projects to the design team, the Planning and Tech Review Boards, and the public. They will appreciate it.

20 Use drawing viewer software throughout the organization. Designers, project managers, and principals should be keeping tabs on works in progress with a viewer, not a million time-wasting paper prints, even if they still go to paper to do redline markups.

21 Slow down a little. It is amazing how many people I have trained drive the software a little too fast, resulting in a lot a needless repetition of work or avoidable dead ends. Read each dialog box and command line dialog carefully, don't just blast through them.

Autodesk has successfully created an enormous installed base of this software. It is high time we seriously put it to the task.

Gary Rosen, aka Professor Landnut, began working on a survey crew in 1979, went from there to board drafting for seven years, and began using AutoCAD and the DCA Civil Application software in 1987. Today, Gary owns and operates Electric Pelican Ink CADD Consulting Services, Salisbury, New Hampshire, the company he founded in 1991. His training videos, Autodesk Land Desktop in a Nutshell, the Movie, *and* Autodesk Civil Design in a Nutshell, the Movie, *were reviewed in the May/June 2003 issue of* Augiworld. *Visit http://www.landnut.com for more information about these training materials and visit http://www.electricpelicanink.com for more information about his company.*

VBA Foundations
Final installment in this series

"As quickly as you can...take the pebble from my hand," he had said as he extended his hand toward you. You tried, but you opened your hand only to find that it was still empty. Looking down at your hand you hear, "When you can take the pebble from my hand, it will be time for you to leave." (Master Kahn, Kung Fu) Upon completion of this last lesson—the twelfth in the VBA for Beginners series—you will have all the tools necessary to snatch that pebble and much more. But before we proceed with this lesson, let's review all that we have accomplished thus far. Remember the quote from Part One?

"My vision for the future is that PC systems will evolve to the point where the user is not even aware that different applications are being invoked to produce a document. One essential element in this vision is a common macro language. A common macro language will have several advantages for users. First, it will be easy to use. Second, it will be the same in a variety of applications. Finally, by using agents—a graphical interface "operative" that can cross applications boundaries—users can work in one application and call parts of other applications into play as needed, or they can start from outside any application and tie them together in various ways..."

—Bill Gates, Chief Software Architect, Microsoft, Inc., Guest Editorial, *BasicPro Magazine*, 1991

Ponder that quote while I reassemble the pieces of our VBA puzzle. I began this series with that quote as a means of demonstrating both the philosophy and enthusiasm behind the Visual Basic phenomenon. That introductory article paved the way for our further learning by reviewing the history of Visual Basic and introducing and explaining some common terms. The second article continued our exploration of this graphically rich and easy-to-learn software development environment by introducing the key components of the editor. The third article jumped back into the editor and continued our exploration while further explaining some of the key concepts of the interface. The fourth and fifth articles actually contained some example code utilizing the command line interface and intrinsic objects. It was in the fourth article that our first macro was written. The fifth article explored common programming constructs such as loops, variables, functions,

etc. By the midpoint of this series we were deeply exploring the built-in functions provided in the VBA language itself. Part seven began the exploration of the "Visual" portion of our studies by looking at Userforms, objects, controls, and demonstrated the usage of some of the implied objects like "Me," which make programming in VBA so much easier. Parts eight and nine were devoted to error trapping, debugging, and demonstrating how to best make use of the editor for these purposes. In part ten, we returned to the core concepts of the VBA language, explored the Object Model and the tools used to expose it, and broached the concept of events. The eleventh article explored events—the very heart and soul of VBA which hold its true power.

Of course this series is merely an introduction to VBA and as such cannot be considered a complete and thorough treatment of the subject, but to be thorough in this introduction I must honor my promise

and finish by returning to that original Bill Gates quote. The stated goal of a common macro language has been realized in the VBA language. This commonality promotes code that can work both inside and outside of AutoCAD as well as many other VBA-enabled applications. Note that there are now hundreds of applications that can be programmed in this way. The key to controlling this type of automation application is to have a firm understanding of the application's object model. Be aware that each application's object model is different and is programmable to varying degrees. Where some object models are well developed and allow access to virtually every interface and function, others only allow minimal interaction. Remember, too, that once you become familiar with an object model or two, the rest will fall into place quite easily and rapidly with but a little exploration.

Can you picture that pebble in your hand yet? Let's take a look at the references from a few different VBA-enabled applications to get familiar with the default object models and type libraries. The default object model or type library for each application is automatically included in any new project at creation. Let's verify this by looking at the default libraries that get referenced by default when we create

a new VBA project inside of AutoCAD. We can do that by creating a new project, opening the VBA editor, and left clicking on "Tools —> References" (See Figure 12-1) or by simply opening the Object Browser and reviewing the available libraries. Do you see the available references? Now try the same activity in another application's VBA editor such as Microsoft Excel or Microsoft Word. Notice the similarities? Each editor has a type/object library automatically referenced for use with that application's object model. (Note: As far as we are concerned, a Type Library is a term that is interchangeable with object library.)

"How then do we access other applications?" you ask. "Simple," I respond. "We add a reference to the chosen application's object model or type library." For example, to create a reference to Microsoft Excel, select the check box next to "Microsoft Excel #.0 Object Library." Note: replace the pound symbol in the previous example with the number corresponding to your version of Excel. (8 = Excel 97, 9 = Excel 2000, 10 = Excel 2002, and so on). Now to control that applica-

tion, we create an object to hold an instance of the application and link to that object in the following fashion.

Dim oApp as Excel.Application
Set oApp = New Excel.Application

The "Dim" keyword creates the memory space for the application object. The new instance of Excel is actually created when the "New" keyword is acted upon in the "Set" statement.

Note: This is the preferred method of creating an instance of an automation server because it gives you the greatest amount of control over when the instance is actually created.

Now you can begin using your instance of Excel from within AutoCAD just like you were working in Excel itself. The method for creating an instance of other automation servers is similar.

As always, use the online help and the additional resources presented in this article to further explore these concepts as necessary. Be sure to download the longer version of this article from the AUGI website at www.AUGI.com to get a more in-depth treatment and many "hands-on" examples

using these concepts. In the long version I will also introduce the object model for some of the vertical products and provide an extensive resource list as well.

Look at your hand now. Slowly open it and turn it so that your palm is facing the sky. Isn't that the pebble you were reaching for? It must be time for you to leave, Grasshopper. Thank you for following this series. I have enjoyed writing it.

See you in the AUGI Guilds.

Richard L. Binning is the CADD Coordinator for the Haskell Company in Jacksonville, Florida, where he acts as a liaison between the Information Technology Department user groups and functional departments, and Upper Management. Richard also coordinates and conducts in-house training and manages large-scale, offsite training for CADD users. He oversees the automation and customization of AutoCAD for 120 CADD users at Haskell, and is also an adjunct faculty member at the Technology Institute of the South, his local ATC.

Digitally Publish It!

If you want to build a presentation of your drawings, AutoCAD 2004 has made it easy for you. The new Design Publisher creates multisheet DWF files. With the power of DWF you can change the zoom factor of the image, control layer visibility, change the view settings, and so forth. In this article and accompanying tutorial you will learn how to use this fantastic feature.

To enable digital publishing, click the Design Publisher icon on the Standard toolbar or select Publish from File menu. If the current file is not saved, a message prompts you to save it. Otherwise the Publish Drawing Sheets dialog box will appear (*figure 1*).
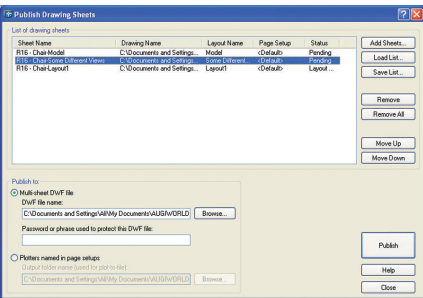
Figure 1

The available sheets of the current drawing (i.e., the model tab and all layouts) appear on the list. You may use the Move Up and Move Down buttons to arrange the items on the list. Select one or more items on the list and then click Remove to remove them from the list. The removal will not affect the drawing file. If you want to add more items to the list, click Add Sheets. The Select Drawings dialog box will appear (*figure 2*). You may add sheets
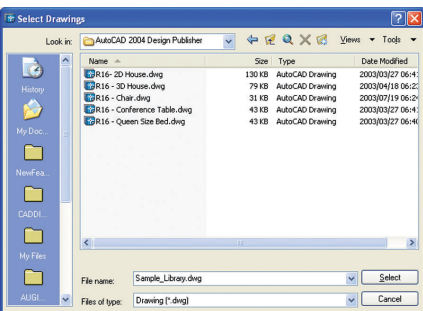

Figure 2

from as many drawing files as you wish.

If you double click a sheet you may

select another page setup to plot the sheet (*figure 3*). This feature uses the saved page setups.
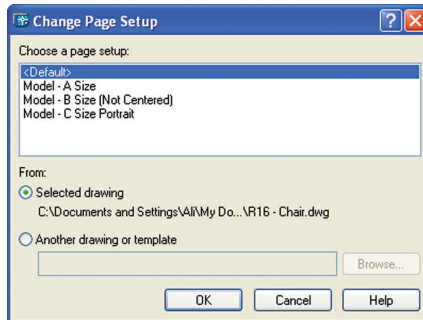

Figure 3

Click Save List to save the list as a DSD file (*figure 4*). Such files can be loaded to the list area with Load List button.
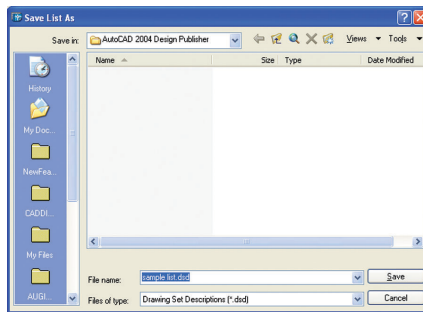
There are two options available for out-

Figure 4

put: Multisheet DWF file and plot files. The first option uses the DWF6 ePlot.pc3 plotter to create a multisheet DWF file. You also have the chance to protect the DWF file with a password. The second option creates some plot files based on the page setup settings of the drawing files. All plot files will be created on the same folder.

By clicking the Publish button, AutoCAD opens the drawing files one by one and creates the DWF sheet or the plot files. At the end of the publish session, a message a message prompts you to save the log file, view the DWF file, or close the dialog box (*figure 5*).
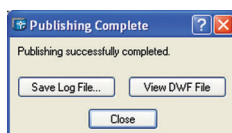

Figure 5

Tutorial

In this tutorial you will create a password-protected multisheet DWF file based on some sample drawing files.

1. Download the following drawing files from the from the AUGI website (www.AUGI.com). The drawings are in AutoCAD 2004 format.
   – 2D House.dwg
   – 3D House.dwg
   – Chair.dwg
   – Queen Size Bed.dwg
2. Start AutoCAD.
3. From File menu select Plotter Manager. A list of available plotter drivers appears.
4. Double-click DWF6 ePlot.pc3.
5. In the Plotter Configuration dialog box select Device and Document Settings tab (*figure 6*).
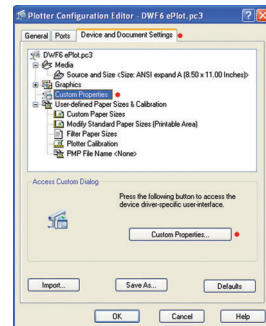

Figure 6

6. On the list select Custom Properties and then click the Custom Properties button.
7. Make sure that Include Layer Information is selected (*figure 7*).

Figure 7

8. Click OK on both dialog boxes.
9. In AutoCAD invoke PUBLISH.
10. Click Add Sheets. Add all downloaded drawings.
11. Remove Model sheets from the list.
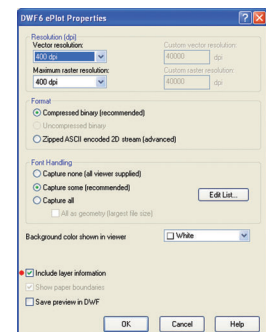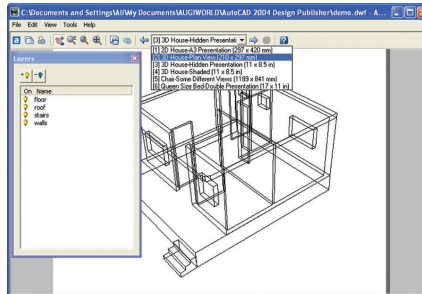12. In DWF file name box enter DEMO.

Figure 8

Figure 9

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13. Enter a password for the DWF file (e.g., test).
14. Click Publish. You need to reenter the password (figure 8).
15. When publishing is finished, close dialog boxes. You may save the list for later use.

16. In Windows Explorer locate and double-click the DWF file. You will be prompted to enter the password.
17. Enter the password and view the multisheet DWF file (figure 9).

RPC and ADT

Rendering is often an afterthought for many architects, but a good rendering can help sell a project to a client or a planning commission. While Autodesk Revit has Accurender, the newest version of Autodesk Architectural Desktop has VIZ Render, a version of Autodesk VIZ. With VIZ Render, you can create photorealistic renderings and animations.

Additionally, Architectural Desktop 2004 now supports RPC (rich photorealistic content). The big advantage when using RPC is the ability to create views from any angle without having to reposition the content. One of the cool things about RPC is its portability. You can use the same content in Revit, Architectural Desktop, VIZ, Photoshop, Microstation, and Accurender, and the list continues to grow. This allows you to leverage your favorite content. ArchVision, the maker of RPC, has worked with Autodesk so that their content now works with the VIZ engine as well as Accurender.

To check this out, go to http://www.rpc-net.com/adt/adt_new.cfm. First, you need to download the free plug-in that allows you to open and read the content in Autodesk VIZ. The download is a little over 2 MB and takes only a few minutes, especially with a high-speed connection. Be sure ADT is closed during the installation so that it installs properly.

Once you have installed the plug-in, you can download some free sample content from the ArchVision site. You can choose between some plants, some people, and even an automobile.

Currently, ArchVision sells the content grouped in categories, such as plants, people, vehicles, and so on. Additionally, the content has subcategories for geographical regions or building types. So, if you are an architect in Phoenix, you can purchase a pack of plant content that is specific to the Arizona area. Or, if you are designing a school, you can purchase people who look like students and faculty or furniture for a campus.

Sometime in the third quarter of 2003, ArchVision plans to introduce some sampler packs. These packs will be a mixture of people, plants, and vehicles. AUGI members will get a special deal on this new product.

Although the content is not posable, ArchVision does have a selection of Moving People that can walk along a designated path during an animation. You can download some sample people, such as Penny, at no cost to try out this new ability.

ArchVision also has some free tutorials on its site to help you get started. Lessons include how to work with moving people, populating a parking lot, and how to use RPC content to create a horizon line.

In order to use the RPC, you need to launch VIZ Render. Type vizrender at the command line in an open session of ADT. If you have an open drawing, the active drawing will automatically be imported into Autodesk VIZ, along with any assigned materials. Select the Software option and then press OK.

This launches a version of VIZ specific to ADT. This is a new add-on available only in Autodesk Architectural Desktop 2004. Before you can use the content, you need to configure the path (figure 1).
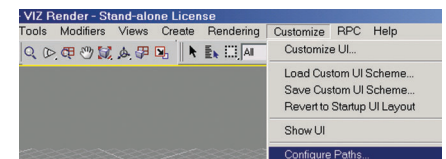
In the VIZ Render window, go to

Figure 1

Customize->Configure Paths. Select the Bitmaps tab. Then select Add and browse to the folder where you have stored the free RPC files you downloaded (figure 2).
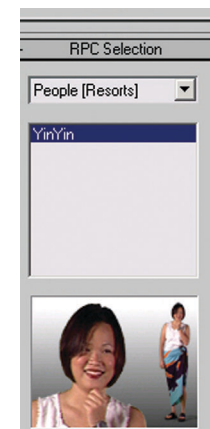
In the lower left corner, you can browse through your RPC content and preview the file before you place it in your model.

Architectural Desktop comes with a pdf guide on how to use VIZ Render. The Quick Start Guide is located in the Help folder.

Figure 2

PaperSpace

Setting up your rendering is not a trivial task. You need to set up the materials and lighting. If you installed the tutorial files with Architectural Desktop, you will have a few practice files available in the VIZ Render folder under Tutorials. To try it out, you can open the \tutorial\vizrender\ library\library_rendering_intro.drf.

Download one of the RPC sample people from ArchVision's website.

Select RPC from the menu.

Locate the person you downloaded and place in the scene *(figure 3).*

If you right-click on the display title in the viewport, you can set the display to Smooth + Highlights *(figure 4).*

Select the Render Scene tool *(figure 5).*

On the Radiosity Meshing Parameters rollout, click to make Global Subdivision Settings Enabled. This simply ensures that all objects are treated in the same way when the solution is generated, unless an object has settings specific to itself.

On the Rendering Parameters rollout, make sure Re-Use Direct Illumination From Radiosity Solution is chosen. This option will speed up rendering.

On the Radiosity Processing Parameters rollout, set Initial Quality to 60.0 per cent. This helps limit the time to generate the solution.

Figure 3

Figure 4

Figure 5

Select the Environment tab.
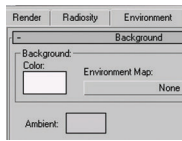
Set the background color to a lighter grey color.

Set the ambient color to a lighter color *(figure 6).*

Switch back to the Radiosity tab.

On the Radiosity Processing Parameters rollout, click Start.

Click the Render tool. Your scene will be rendered in a separate window *(figure 7).*
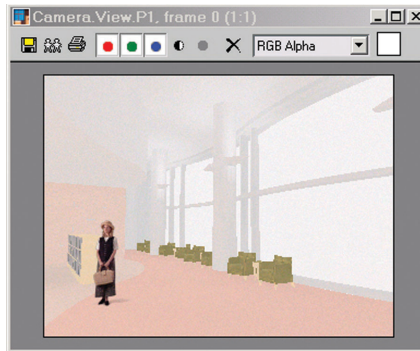
Figure 6

Figure 7

This rendering is pretty rough. To make it better, you could tweak the materials and the lighting. Rendering can be a pretty time-consuming task, so I'll leave it to the reader to continue the exercise.

Autodesk Revit comes with a small sample of RPC files, but Autodesk Architectural Desktop requires that you go to the ArchVision site and either download the free sample files or purchase a collection. ArchVision posts new free samples on a regular basis, so if you find RPC files useful, you may want to bookmark the website and visit every month or so.

Because the RPC people are not posable, they are not useful for factory floor ergonomic layouts. The RPC files are used more to provide scale and help sell an architectural design.

ArchVision is not the only source for 3D content for use in rendering. For example, http://www.autocadlibrary.com/3dindex.htm is a source for 3D people who are fully posable as well as assorted 3D objects. The products are for sale and there are no free downloads available on this site. Another source for 3D people can be found at http://www.peopleforpeople.com. The products are for sale and there are no free downloads available on this site. Charles Bliss has 3D people available on his site at http://www.cbliss.com for use in Autodesk Inventor assembly files. Some of these models are posable and work well for factory floor layouts.

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The Road Less Traveled

In years past I frequently traveled by car to Seattle. It was a nice, four-hour ride, I knew the way and was comfortable with the trip and considered myself a veteran of the freeway. While traveling I would get caught up in the hustle and bustle of freeway traffic, changing weather, and, sometimes, hazardous road conditions. I considered the trip routine and, after several years, downright boring. Then one day a

friend of mine suggested I try a different route, a less-traveled road, but nonetheless a viable route that would take in some new scenery. I would be pleasantly surprised, said my friend.

I took the advice and made the trip. Wow…what a view of Mt. Rainier—a view not available from the freeway—and what a drive through much different countryside! One wouldn't even know that a free-

way existed only a few miles away. I liked the trip so much I would consider going no other way. The trip was very pleasing for me the many years I traveled it. The point is, there probably are many "less-traveled commands" in AutoCAD that can provide similar solutions to problems, but we've not yet "taken the trip" on that road. Here are a few roads to explore.

The Scale command asks you to select

an entity to be scaled. Next, a base point is required. The base point is the stationary point on which the scaling will be focused. For example, if you're scaling a circle and select the center of the circle for a base point, the scaling will be focused on the center and will either increase or decrease in diameter depending on how you move the mouse. Moving the mouse is one way to specify the "scale factor," which is the next requirement. The scale factor is a value that can be typed in at the command line or dynamically selected with the mouse. If the entity is required to be twice as large, the scale factor would be 2; if the entity is to be half the size, the scale factor would be .5, and so on. The less-traveled road here would be the option that shows up during the scale factor prompt at the command line. It looks like this:

Specify scale factor or [Reference]:

Let's venture down the road of [Reference]. If you type in "r" or "R" at the command prompt at this point you will be asked:

Specify reference length <1>:

The default is <1>. A simple example of how to use this option is a circle with a radius of 8 units that needs to be increased to 15 units. What's the scale factor? I don't know off hand; I would have to figure it out. But I do know the reference radius is 8 and the new radius needs to be 15. So in this case I would type in 8 at the "Specify reference length" command. The next prompt is:

Specify new length:

This would be 15. The circle is now the size we need.

Sometimes we need to stretch our imaginations when using this command. For example, say we have drawing with an entity that is too small and needs to be scaled
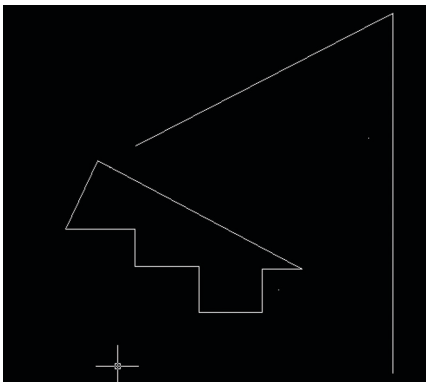
larger. Both the scale factor and actual final size are unknown to us. We know only that it needs to be scaled so that the final size is right at the end of some other geometry on the screen. See Figure 1.

The object on the left needs to be scaled such that its point is extended to the vertical line. The scale factor is unknown and the actual size is unknown. This could represent any complex 2D or 3D part. The procedure would be to extend the upper line of the part to the vertical line, as seen in Figure 2.
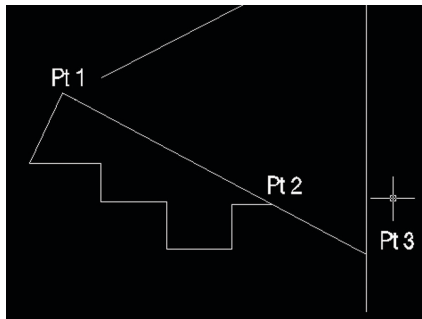

Figure 2

Then with the scale command select Pt 1 as the base point, and enter "r" to use the

reference option. Rather that typing in a reference length at the command line, digitize Pt 1 and Pt 2 using the "endpoint" OSNAP. This allows you to enter an unknown reference length. When prompted to enter the "new length," digitize Pt 3 using an "endpoint" OSNAP and the whole part is scaled to the proper size, as seen in Figure 3.
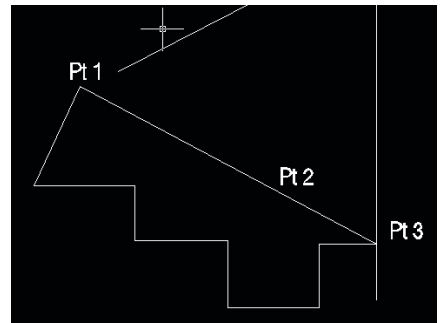

Figure 3

The scale command is much more than just making something bigger or smaller based on a scale factor or "eyeballing" a scale while moving the mouse. Once you travel this road, you'll find reasons to travel it more often.

Figure 1

Another "road" we'll explore are some of the options and methodologies associated with the "Chamfer" command. For example, how many times have you used the "Chamfer" command to square an edge rather than chamfer it, or to connect and trim two lines that are not connected? If you set the chamfer length and angle to 0 and select two lines, it will square them off rather than chamfer them. In addition, if you set the trim mode to "Trim," you can connect and trim two lines by selecting them with the chamfer command. When you type in the command, it will echo as follows:

(TRIM mode) Current chamfer Length = 0'-0", Angle = 0.0
Select first line or [Polyline/Distance/Angle/Trim/Method]:

The (TRIM mode) tells you what trim mode you are in. It can be either (TRIM mode) or (NOTRIM mode). The current chamfer length will tell you just that, along with the angle. Then the options:

"Polyline" – allows you to chamfer all corners of a Pline at once by just selecting the Pline. Knowing this may influence whether you use a line or a Pline in your construction of an object.

"Distance" – sets the chamfer distance. Remembering that this value can be 0 is very important.

"Angle" – sets the chamfer angle if the "Method" option has been set to "Angle."

"Trim" – determines the trim mode when performing the chamfer function. This is very helpful when the two lines being chamfered are not connected or cross each other.

"Method" – when set to "Distance," the chamfer will be made according to the Distance setting. Each line selected will reflect the distance according to the first and second distance set with the Distance option. To make a 45-degree chamfer, set distance 1 and distance 2 equal. When set to "Angle," the chamfer will be made using the chamfer distance on the first line selected and then will use the angle from the first line to second line.

Don't think of the Chamfer command as just a chamfering tool. Using these options in a combination of TRIM = on, Distance = 0, Method = Distance, turns this command into a powerful connection tool for lines and Plines as it will connect the lines and trim at the same time.

There are many less-traveled roads in AutoCAD that, once traveled, make a lot of sense and provide an increase in productivity. It further fills our toolbag with some specialized tools that "do the trick" when any other way was just a lot of work.

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Autodesk Revit: Collaboration Methods and Features

Autodesk Revit's collaboration methods and features enable your AEC team to be more effective and efficient during a project's design and production of drawings. Autodesk Revit manages all of the project information in what has been termed a Building Information Model (BIM). The single-file BIM provides the essential development of building components and elements (e.g., walls, floors, roofs, doors, windows, and so on) to construct the building model, display graphical views (e.g., elevations, sections, details, etc.) and the annotation of the building model's graphical components with symbols and text, and the coordination of schedules for a project. A project can be one building or multiple buildings on the same site. Autodesk Revit provides collaboration tools to manage small and large projects alike.

The release of Autodesk Revit 5.0 in December 2002 made this program officially part of the Autodesk AEC product group. In March of this year, the Autodesk Revit team issued release 5.1—its first update with a number of enhancements. Two of these features are Model Linking and Shared Coordinate Systems, adding another Collaboration method feature with tools for managing large projects which incorporate multiple buildings on a site and enhancing team coordination. Other improvements enhance project performance, component development, element customization, and visualization, viewing, and animation tools.

Autodesk Revit's collaboration features can be divided into two main categories: Project Team Sharing (PTS) and Project Team Interoperability (PTI).
• PTS allows multiple team members to work on portions of the BIM concurrently and update the central BIM file for other team members to view. This enables the project team to complete the project design and documentation in a shorter time span. The primary tools in Autodesk Revit are File Linking and Worksets.
• PTI is the exchange of data between software programs with different formats and file structures. These primary tools in Autodesk Revit are located under the Import and Export commands. This includes importing AutoCAD, Microstation drawings, and image (jpg and bmp) files into Autodesk Revit and exporting Autodesk Revit views to DWG/DXF, DGN, and image formats, as well as AVI and ODBC-compliant formats.

This article looks at the first of two collaboration features that Autodesk Revit has for coordinating team projects and focus on the Model Linking method. Another method that allows multiple team members to work on portions of the BIM concurrently is Worksets, which will be examined in a future article.

The tools and options for Model Linking provide team members an effective method for managing large projects involving multiple buildings or structures on a single site.

Since Autodesk Revit develops the entire building model in a single BIM file, developing a site with multiple buildings or structures would make the project file very large and adversely affect the performance of most CAD workstations. Thus, developing each individual building model in a separate project file and then linking each into a host site file would improve CAD workstation performance and provide members of the

project team access to each of the building files. During a building project's development, each discipline contributes its information in an orderly process. Often, however, building revisions in one discipline cause changes in other disciplines, disrupting the flow of the project. With each BIM in a separate file and linked to the master site plan file, the design and development of each building can proceed at its most efficient pace.

Model Linking in Autodesk Revit is similar to External References in AutoCAD or Autodesk Architectural Desktop, but it is enhanced with features not available in AutoCAD or ADT.

Importing/Linking RVT Files

Linking files in Autodesk Revit involves a Host file and a Linked file.

1. From the File menu, choose Import/Link, RVT.
2. From the Add Link dialog box, navigate to the directory containing the .RVT model to link.
3. Select the model.
4. Set the desired positioning options. See Positioning for more information.
- Automatic placement: Revit automatically places the imported geometry.
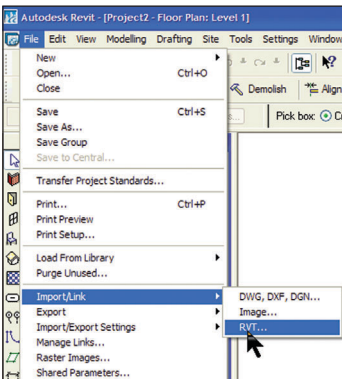
Import Link
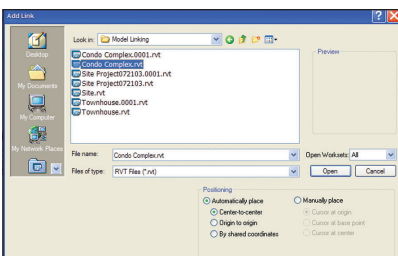
Add Link

- Center to Center: Revit places the center of the imported geometry at the center of the project.
- Origin to Origin: Revit places the origin of the imported geometry at the approx-

imate origin of the Revit project.
- By shared coordinates: Revit places the imported geometry according to its location with respect to the shared coordinates between the two files. If there is no current shared coordinate system between the files, Revit notifies you, and uses center-to-center positioning.
- Manual placement: You place the imported document using the cursor.
- Cursor at origin: The imported document's origin is centered on the cursor.
- Cursor at base point: The imported document's base point is centered on the cursor. You should use this option only in AutoCAD files that have a base point set.
- Cursor at center: Sets the cursor at the center of the imported geometry. You can drag the imported geometry to its location.
5. Click Open.

You can use the move, copy, rotate, mirror commands on linked files to position and create additional instances of the linked model.

You can use the align command to adjust the linked model in any view and set dimensions between elements in the linked model and the host model.

## Some Tips on Linking Revit Models

- Linked RVT models store file data in memory.
- Linking models was intended for multiple buildings on a single site, not for managing multiple building levels and hosting them in a master building model file.
- You can link and manipulate the RVT model with many toolbar commands but not the individual components or elements.
- Elements in the linked instance can be used to reference dimensions and for aligning, but do not support constraints between the host and linked models (i.e. locks).
- When the host model is open you cannot open the linked model in the same Autodesk Revit session.
- You can use the Transfer Project Standards from the linked model to the host model.
- A linked model can also have links.
- Imported instances of DWG, DXF, DGN, and RVT files can be mirrored.
- You can use the Levels in the host file to control the level views in linked file.

Visibility for Linked RVT Files

The visibility and appearance of linked RVT files are grouped into their own tab.

From the Visibility column, you can control the visibility of the linked model, or categories within that file.

From the Halftone column, you can select a linked file to be drawn half-toned. You cannot have individual categories be drawn half-toned.
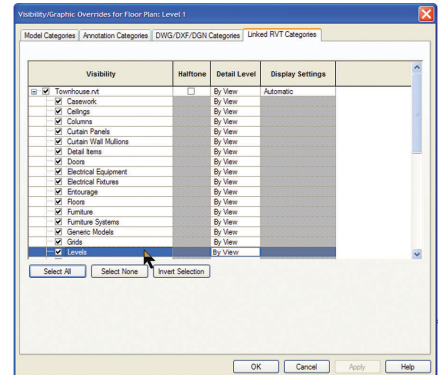

Visibility

From the Detail Level column, you can set a detail level for a linked file or categories within that file. Choosing By View for a linked file means that the detail level of the target view will be used.

From the Display Settings column, click the button under the column to open the Display Settings dialog box. In this dialog box, you can set the linked instance to use the view range, phase, and phase filter from the linked file. This is another way to work with levels in plan views.

Note: If you set a phase, you must also set a phase filter. If the phase filter is set to <None>, the phase is ignored.

Managing the Host and Link Models

The linked model in the current project can be unloaded or reloaded and its status is indicated by a checkmark in the box

Managing Links

PaperSpace
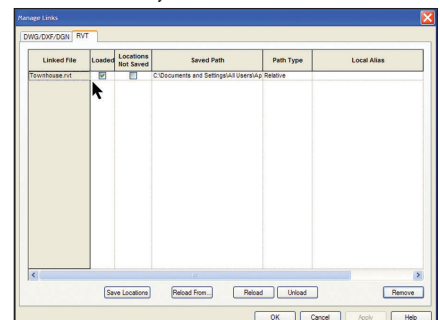
under the Loaded column. It is necessary to reload a linked model to update any changes that have been made to it.

Locations Not Saved column is only relevant for links whose coordinates are shared with the active project.

Linked File Paths can be by Relative Path or Absolute Path. A Relative Path is preferred over an Absolute Path, because if you move the project and the link models together to a new directory, the link is intact. If the link is an Absolute Path then the links will be lost if the project is moved to a new directory.

In many respects, linking a model to the active host is identical to AutoCAD's external reference command. Both need to have their respective linked models or external references files reloaded to see updates and both automatically reload all linked models or external references files on opening the host file. In addition, they both support relative and absolute paths. But this is where Autodesk Revit goes beyond AutoCAD with Shared Coordinates.

Sharing Coordinates (Shared Positioning)

An Autodesk Revit project has internal coordinates for all of the elements that compose the model in a project. These coordinates are known only in this project. This is acceptable if you have a standalone model whose position is not relevant to other models or to a site, but if you want the position of this model to be known to other linked models, you need to share coordinates.

Shared coordinates are used for remembering the mutual positions of multiple interlinked files. Those interlinked files can be all .RVT files, or a combination of .RVT and DWG and DXF files.

Recommended Uses for Shared Positioning

If the significant coordinates for a project are in a linked model, such as a building model with a linked site, acquire the coordinates from the linked model.

If the significant coordinates for a project are in the host model, such as a site with linked building models, publish coordinates from the host to the linked models.

Acquiring and Publishing Coordinates

Acquiring and Publishing Coordinates commands are in Locations and Coordinates

Locations/Coordinates

under the Tools pull-down menu.
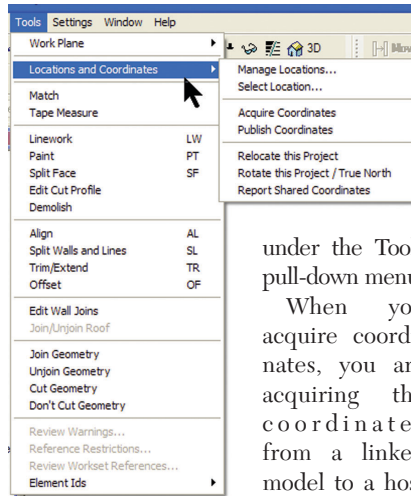
When you acquire coordinates, you are acquiring the coordinates from a linked model to a host model. Any previous shared coordinates inside the host model are overwritten.

When you publish coordinates, you are publishing the coordinates of a host model to any linked models inside it. Any previous shared coordinates inside those linked models are overwritten.

The Select Location dialog box opens and provides the name "Location 1" for the first instance of the linked model file. The linked model location name can be changed.

Choose Modify from any tab on the Design Bar to exit out of the Acquire or Publish Coordinates tool. Autodesk Revit does not exit from these tools automatically, but waits for additional links to be selected.

Location 1 now shares coordinates with the Host file.

Acquiring or Publishing Through Linked Instance Properties

This procedure assumes that you have a linked model instance in the host model, and its coordinates are not currently shared with those of the host model. You select Acquire or Publish Coordinates and then select a linked model in the active host model.

When there are multiple instances of the same linked model, you need to establish shared coordinate locations for each. This is accomplished by selecting one of the multiple instances and selecting its Properties button. The Properties dialog box will show it is <Not shared> and by selecting this button you will be asked to Publish or Acquire the shared coordinate system. If this is not the first linked model

to have shared coordinates (i.e., Location 1) the Change button needs to be selected and the existing location renamed. Then the Shared Coordinates for this instance of the model file can be Published or Acquired.

One of the benefits of Acquiring or Publishing shared coordinate locations is any attempt to reposition the linked model will produce a warning message and the relationship of multiple linked models or instances in the host can have their positions established back in each linked file.

Reporting Shared Coordinates

This feature allows you to determine the location of elements and points in the model with respect to the shared coordinate origin. This tool is similar to AutoCAD's ID command.

Tutorial

Autodesk Revit has an excellent tutorial on Linking Models, Shared Coordinates in the located on the Autodesk Revit CD or you can download it from the Autodesk Revit website. Go to http://usa.autodesk.com/adsk/servlet/index?siteID=123112&id=3106396&linkID=2749457 and select Download Revit. At the Autodesk Revit 5.1 Download Center, select "Other 5.1 Documents and White Papers" and scroll down to the Autodesk Revit 5.1 Documentation section. From that section, select "5.1 Update Tutorial Files - Imperial - Letter - PDF."

The associated tutorial files can also be installed from the Autodesk Revit CD or from the Web. Follow the directions above to reach the Autodesk Revit 5.1 Download Center, scroll down to the Optional Extras section, and select Autodesk Revit 5.1 Content Libraries, Templates and Training Files. Once there, scroll down to Download Training Content Files and select Training Files Common.

Mel Persin is a licensed architect who has worked in the industry for more than 35 years. Mel is an 18-year AutoCAD veteran who has taught all levels of AutoCAD and related third-party AEC software in Authorized Training Centers and for corporate clients. Mel currently is exploring Autodesk Revit and has begun preparing training programs for Revit users.

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Advertising Index

Back In The Day

David Kingsley

Then and Now

In this column we're going to look backward and forward. After all, historical knowledge is of little value unless we use it to predict what could happen in the future based on a current set of circumstances.

The first time I saw the Internet in action was in the early '80s. I was working at an aerospace company in Boulder, Colorado, and I noticed a guy on our project sitting in front of a computer terminal typing, pausing, and giggling. Granted, there were a lot of creative rocket scientist types around there, but sitting alone and laughing at a computer screen was pretty strange back then. Now that we all know what instant messaging is, it's not so strange.

The Internet's name at birth was "ARPAnet" (Advanced Research Projects Administration). The initial configuration included trunk lines linking a few major government laboratories. How does little Boulder fit in there, you ask? Well, President Eisenhower married a gal named Mamie, who was born and raised in Denver. Ike and Mamie spent their honeymoon in a little place about 10 miles south of Boulder. Call it pork barrel politics if you like, but the Eisenhower administration placed several major government labs in the Denver/Boulder area.

In Boulder, we have the National Bureau of Standards, the National Oceanic and Atmospheric Administration. Within fifty miles we have the Air Force Academy, Rocky Flats was the largest manufacturer of nuclear bomb triggers, and The Federal Center west of Denver was the largest concentration of government employees outside of Washington DC. There was also some cold war logic applied, which stated that the geographical center of the country was safer than the edges. All of this leads to the fact that when ARPAnet was fired up for the first time, Boulder was one of the first few nodes on the network.

A lot of people think that instant messaging is a relatively new development, but it's not. The giggling guy was doing "IRC" (Internet Relay Chat), which to this day is the backbone of instant messaging technology. The advent of MS Windows enabled Yahoo and AOL to put a pretty graphical interface on it and make it available to the masses.

Compuserve was the first commercial Internet service I ever signed up for, and was my very first email account. I have had a subscription since 1984 and I still remember my Compuserve ID, 70274,3434. I'm pretty sure that ID is defunct now. You have to maintain some really old software to use it. Those were the days of the Internet Purists, who thought the Internet should never be used for commercial purposes. Anything that leaned away from academic or scientific purposes was considered spam. The term spam is also an old term, again dating back to the early '80s. Compuserve was considered by some people to be the tool of the devil because it had the audacity to charge people for Internet access and then display advertising to them.

In the following years, email rose to be one of the modern wonders of the world, to what I now believe is its slow decline into one of the banes of our existence. I regularly get 60-100 spams a day. It has gotten to the point where I can't sort the good from the bad. More and more often I am deleting valid messages while trying to delete all the spam. I have done what I can to filter and sort and route into folders. Everything I read says there is no solution in sight. I find it very difficult to participate in the AUGI Guilds because of the additional deluge of email it entails.

Over the last couple years, other support groups I belong to have begun using "forum" software. For many reasons, I find it to be far more practical than email. For years now, I have been a proponent of applying it to the AUGI Guilds. AUGI Forums, a web-based peer-to-peer support service, has now been introduced. A primer on how to use the new Forums appears in this issue of *Augiworld* and the reasons behind the migration will appear in this space in the next issue.

David Kingsley is the creator of CADPlayer Streamed On Demand CAD Courseware (http://www.cadplayer.com) and currently serves as Secretary on the AUGI Board of Directors. He can be reached at david.kingsley@augi.com.

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