Nov/Dec 2004

AUGIWorld

The Official Publication of Autodesk User Group International

Best of 2004

How do you sum up a year? Our readers give their opinions on 2004: the best Autodesk product, their favorite feature, awards and accolades, best web resources, and lots more.

- What's Behind the Curtain Wall?
- This year's new Autodesk-compatible applications
- Autodesk Inventor 9: Stress Analysis

www.AUGI.com

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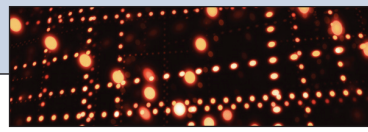

feature

Best of 2004

From new AutoCAD features to favorite training classes, from product tips & tricks to at-work accolades and the most-used key on your keyboard, here are your favorites this year.

AUGIWorld

Editorial
Managing Editor
Marilyn Law
marilyn.law@augiworld.com

Technical Editor
David Harrington
david.harrington@augiworld.com

Contributing Editors
Doug Broad
Dwayne D. Ellis
Gil Hoellerich
David Kingsley
Bruce Madsen
Alireza Parsai

Production
Tim Varnau
tim.varnau@augiworld.com

Advertising
Dan Teeter
dan.teeter@augiworld.com

Controller
Larry Teeter
larry.teeter@augiworld.com

Publisher
Rich Uphus
rich.uphus@augiworld.com

AUGI Board of Directors, 2004
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Station A
PO Box 54
Windsor, ON N9A 6J5
Email: cpcreturns@wdsmail.com

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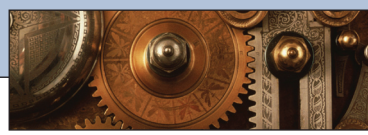
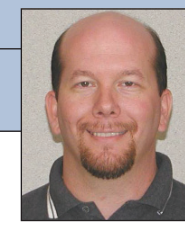
The Cad Manager





David Harrington

Learning By Fire

Since I began writing for this column early this year I have focused on output problems and offered suggestions for how to solve them. I have been rewarded with many emails stating "that is exactly how I feel" and others requesting further insight in the plotting and lineweight topics. However, I believe I have milked this theme for long enough. It is time for something different!

To learn or not to learn – that is the question

If you think this is a good question, then you probably don't use Autodesk products! Sure, AutoCAD is easy (and fun) but knowing what to do and when to do it doesn't come naturally. My natural instinct when I can't fillet two polylines is to pick up a rock and bash the computer. But I have learned—through training—that a little investigation and use of the EXPLODE, TRIM, or EXTEND commands can actually make it possible.

Now one can always learn by brute force. Try, try, try, get some coffee, try, try, then exit. Not exactly proficient is it? I have found several other methods that really do kick butt!

First up, talk to your neighbor! Get up out of your chair, swallow a little ego, and ask a question of someone in your office who knows that answer. In the end your company probably would rather you finish your task than beat your head on the desk for minutes or hours. If your wise colleagues know the answers often enough, then your resource search may just be over.

But maybe you are the brightest light in the room. What then? Well, congrats, you get to be the guru to the others you work with, but at some point you will probably need help. Kick in the LUG! Local Users Groups abound across the world. Passionate fellow users get together on a regular basis and network. Now the odds of having a problem the same day your LUG meets are not good, but hanging out at these little functions and actually 'networking' will provide you with the buddies to call when the poo hits the electric air mover. I do know I feel 'lost' when my local AutoCAD buddy list shrinks because someone moves away.

Next up, the Internet. Those that go back a while remember CompuServe, that virtual land where geeks got together and bashed competing CAD packages! I can even remember my old member number, "75254,2534". Scary, huh? Well after a few years ol' CI$ got replaced with the Inet and its Newsgroups. These posting areas still rock today! You can ask a question, wait a little while, and get answers. In addition to those are our own AUGI Forums, similar in form, but a bit more sincere in a desire to help you out.

Please don't confuse asking questions of your resource, wherever it may reside, with getting real 'rear in a chair' training. Whereas your buds and newsgroup posts may answer a question or twenty, learning a package from the ground up takes hours of full throttle instruction. If you need to, you can visit a community college for a few hours a week. Want more? Hit up a local authorized training center for day-long sessions on any Autodesk product. Still want more? Go custom and have the vendor train in your office on exactly what you need. Looking for the extra edge? Perhaps you know most of the features about the application you use, but need a refresher for a new release. Perhaps you need to dive into 'expert' level concepts? I know of only one place for that: Autodesk University. Held this time of year in Las Vegas, AU hosts thousands of users of varied skills and experience levels meeting and sharing their experience about Autodesk software. Of course there are the lectures, panels, and hands-on-labs. They are the primary reason users go, after all, and there is no substitute! Get out there and learn, whether that means pestering the person at the desk next to yours or making the trip to the MGM Grand in Nevada. Make an effort to improve your gray matter!

First up, talk to your neighbor! Get up out of your chair, swallow a little ego, and ask a question of someone in your office who knows that answer

This edition of *AUGIWorld* will be available during Autodesk University 2004. If you are there (or here I guess), please take the time to find me at the AUGI booth and let me know what you think of my column and the rest of this fine magazine. We are always looking for new topics and ways to improve, and our best help is you—the reader!

David Harrington, Technical Editor for AUGIWorld, *works for Walter P. Moore and Associates in Tampa, Florida, USA. David is the author of* Inside AutoCAD 2005, Inside AutoCAD 2002, *and original programmer for REVCLOUD. He can be reached at david.harrington@augiworld.com.*

Best of 2004

We asked and you answered (overwhelmingly). An AUGI survey sought your opinions on a wide variety of topics, from the serious to the silly. From new AutoCAD features to favorite training classes, from from Autodesk University highlights to at-work accolades and the most-used key on your keyboard, here are your high points from this year

Best Autodesk product you used this year

Here are your 10 favorite Autodesk products.

1. AutoCAD
2. Autodesk Architectural Desktop
   Tied for 2nd: Autodesk Land Desktop
3. Autodesk Inventor
4. AutoCAD LT
5. Autodesk Map 3D
6. AutoCAD Mechnical
7. Autodesk Building Systems
8. Autodesk VIZ
9. Autodesk Civil 3D
10. AutoCAD Electrical

AutoCAD remains the clear favorite, by a large margin, among our survey respondents.

My favorite feature

We asked you to tell us which new AutoCAD feature you most like or to point out AutoCAD features that you've just discovered.

Without a doubt, the Sheet Set Manager and Tool Palettes features within AutoCAD 2005 were big winners among our respondents. Following closely behind are enhancements made to Fields and Tables. Several of our respondents named the Multiple Copy command as their new favorite, while others pointed to eTransmit, MText improvements, and AutoCAD 2005 software's Publish command as standout features.

AUGI's got game

What AUGI resources were the favorites last year? The AUGI Forums ranked high on the list, followed closely by this magazine, *AUGIWorld*. Here are your responses.

1	AUGI Forums
2	*AUGIWorld* magazine
3	*AUGI HotNews*
4	ATP (AUGI Training Program)
5	Autodesk University Channel
6	Revit Community

How do you like your training?

By a wide margin, our respondents voted Autodesk University "best" in the training category. Autodesk's Go Further Tour garnered votes, as did online Revit training. Online training, overall, scored pretty well with our respondents. AUGI's ATP was mentioned by several respondents as was a variety of online webcasts and seminars.

What was notable about this question was the high percentage of respondents who responded "none," as in they didn't get any training this year. One respondent, in fact, answered, "I have never attended a training class in my life."

Apparently, training is still considered a luxury in some companies. Some of

the responses that lead us to that observation are: "Training? What training? Who can afford training?" and "Training? What's that?"

Your third-party applications choices

There are hundreds of commercially available third-party applications that complement Autodesk software. Our respondents mentioned about 50 by name. The products receiving the most mentions are:

- AccuRender, from Robert McNeel & Associates
- Eagle Point Software (various products)
- Pushbutton PDF, from Bluebeam Software
- QuikPik, from ManuSoft
- SketchUp, from @Last Software
- AcroPlot and AcroPlot, Jr., from CADzation
- DocBar, from CADwerx

Clapping coconuts and other AU highlights

Okay, I guess we should have asked the question this way: Q: BESIDES John Cleese and Lynn Allen, what was the best AU moment from the 2003 event? Once again, Lynn Allen is always a favorite with AU attendees, and we believe the feeling is mutual, by the way.

Autodesk's closing night farewell—a screening of *Monty Python and the Holy Grail* with a special guest appearance by star John Cleese—was the most-mentioned highlight from the last Autodesk University.

Lots of sadness (and did we detect a few tears?) from respondents who have not been to Autodesk University due to expense, inability to get away from work, and other factors. On the flip side are those who will attend the 2004 event for the very first time. This crowd is pumped and ready to go.

Attaboys & attagirls

We asked for the "favorite" work-related accolade or award you earned this year. Your answers, boiled down to a single phrase: Show me the money. That's right, nothing can motivate quite like dollars and cents. One respondent put it this way: "A nice raise was greatly appreciated. It's better than an award."

But there were other awards such as employee recognition certificates, literal pats on the back, being told you are "invaluable," and others.

And from the "This is a compliment?" category comes this gem: "My boss tells me I'm lucky to have a job."

And this from a CAD Manager: "LOL…AWARD? That's funny!"

And then my boss said…

We asked for the favorite quote from your boss this year. We'll let your words speak for themselves. Here are some of our favorites…enjoy!

- "Let me know if they give you too much work."
- "You got that done yet?" (this, and variations on it, were the most-quoted boss's comment)
- "This shouldn't take you more than five minutes."
- "Can you tell me when the next hard drive will fail?"
- "My monitor won't turn on" (the power button was off)
- "Your request to attend AU has been approved!"
- "I believe we will have to agree to disagree."
- "Don't take too much time doing this."
- "You really DO know what you're talking about."
- "How long will it take to fix the undiscovered bugs?"
- "Would you share some of your CAD skills with me?"
- "That's wonderful! How did you do that?"
- "You can go home early today."
- "You are too hung up on accuracy."
- "Every time I think you can't work any faster, you surprise me!"
- Boss to employees: "How can you guys do this all day?" Employees: "What?" Boss: Sit here all day!"
- "This shouldn't take very long."
- Boss to client: "Sure we can have it done by then…no problem." (Usually heard at 3:45 p.m. on Friday)
- "Can you just…"
- "Nothing is going to change." (During a merger)
- "I hate to do this to you, but…"
- "Don't ask, just fix it!"
- "You have aggressive mannerisms."
- "A watched plot never boils."
- "Can't you just push a button?"
- "I thought computers were supposed to be quick."
- "Are you sure this thing knows what it's doing?"
- "It's just a small change…how long can it take?"
- "The deadline is not really that important. Nothing will happen if it's not met. I still expect you to work five hours of overtime a day until it's met."
- "If it looks wrong, it is wrong."
- "I don't want the labor pains, just give me the baby."
- "If a mistake doesn't reach six figures, it doesn't really matter."
- "I'm lost. It's all [up to] you now."
- "The beatings will continue until morale improves."
- "I'd love to help, but my hands are tied."
- "You want to go where? How much? Forget it!"
- "Remind me what I pay you for."
- "You do great work…(pause)…just not enough of it."
- Finally, this comment: "Nothing my boss says is EVER worth remembering!"

And the AUGI Forums say…

Top three AUGI Forums, according to respondents.

1	Revit forum
2	Coffee Without CAD
3	ACAD 2005 Sheet Sets

Most-used key on your keyboard

Except for a few responses like this one: "Keyboard? We don't need no stinkin' keyboard (well almost)," most people answered this question earnestly. Here are four answers that appeared most often.

1	Esc
2	Space bar
3	Undo
4	Delete

Least-used key on your keyboard

Virtually no one, it seems, sees any use for the Scroll Lock key. Here are the top responses for the keys that remain more or less untouched.

1	Scroll lock
2	~ (or, as one respondent refers to it, "that tilde thingy")
3	Windows icon key
4	Pause/break ("Who has time for a pause/break?" asks one respondent)

So then I told my boss… (best excuse for getting out of work)

There were a few respondents who claim never to have used an excuse to get out of work, but most of you came up with something. Illness, real or imagined, remains the number one reason for not coming to work. You're sick, your spouse is sick, your kids are sick, your pets are sick—all were mentioned by the survey respondents.

People living in the Southeast United States got a real "break" recently, citing "hurricane" and "no electricity" as their reasons for missing a day (or two, or three…).

Oddly, recreation was an excuse used by several respondents, one using "golf tournament" as an excuse and others saying, similarly, "I don't feel well so I need to go golfing" and "I'll be on a course tomorrow (a golf course)." A couple more said they used "I'm going fishing."

Technical glitches, system crashes, and other work-related problems were used often by our respondents.

Here are a few more of our favorites.

Animal-related

- "I stubbed my toe on the cat."
- "I haven't used any, but I'm sure if I did it would have to do with my dog eating something."
- "Hitting a bear on the highway my second day of my new job." (This MUST be legit; nobody could make that up!)
- "I need to feed my kitten."
- "The dog ate my computer."
- "My mare had a foal at 2:00 a.m."

Travel-related

- "Stuck in another state; planes are not leaving."
- "The FedEx plane carrying our documents to Atlanta crashed on landing."
- "The train."
- "Going to the islands."
- "Going to training; going to AU."
- "The power was off and I couldn't get my garage door open to get my car out. (I didn't mention the emergency door release I could have used.)"
- "Disneyland vacation."
- "Car accident."
- Finally, there's this one: "I don't use an excuse, I just sneak out."

The mother of all bad days

Wow. We're sorry we asked about your most memorable "bad event." Here's what some of you had to say.

- "Controller failure on the RAID system."
- "When half of the office walked out to start their own firm."
- "A set of drawings we worked on for literally hundreds of hours fell into a large puddle."
- "Getting a dwg from a client's kid using "Educational Version" software and having this file inserted into several dozen files and they all had 'Educational Version" stamped on all of the plots. Nobody realized this until it went to the client. Lots of explaining to do!"
- "Boss deleted a prototype by accident."
- "LDT drawing file corrupted and ballooned to 753Mb… took a day to recover."
- "I had one very huge 'Oh no!' second—that miniscule point in time that seems unending where you realize that you just made a huge mistake and you can't get it back."
- "dwg files getting corrupted beyond recovery by Backup Exec."
- "Network Server off-line for three days!!!"
- "Hmm—probably finishing an entire preliminary floor plan just as the architect came over with the 'revised' scheme, which put everything from the second floor on the first floor—but in a completely different arrangement."
- "I was trying to clean up an engineer's project folder and accidentally erased all their team's projects for the past two years. It took my server about three hours to recover all the drawings and data files."
- "Sitting next to my boss for a 12-hour flight to South Africa… and he snores."
- "Co-worker kept cancelling my plots."
- "Closing AutoCAD – "Save Changes?" – "No" – Day's work lost!"
- "Only worked at my current job one month…give me time."

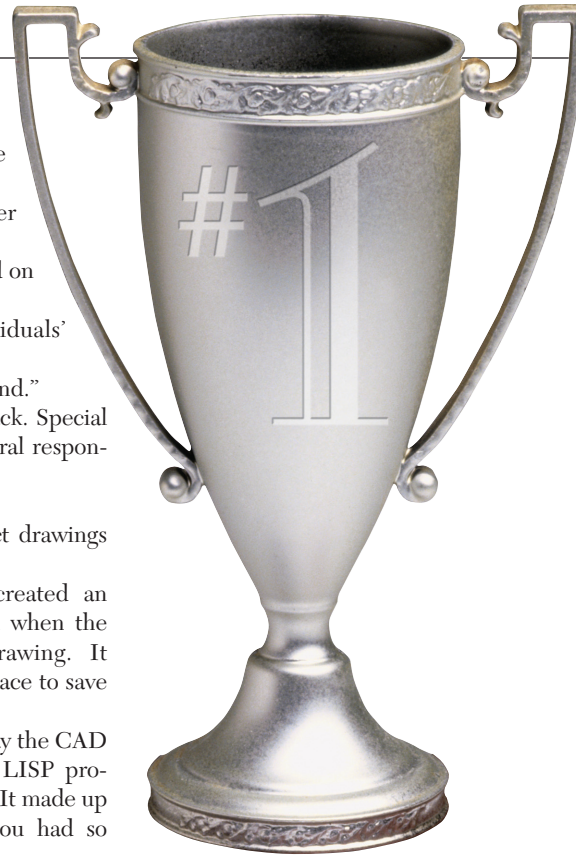
And when it was good…

Fortunately, there are good days. You told us about the births of your children, raises and promotions, getting that new job you hoped for, and lots more. Here's a sample.

- "Figuring out how to remove the 'Educational Version' invisible plot stamp WITHOUT sending all of the files to Autodesk." (Refer to "bad days" above)
- "Finishing for the day."
- "When I was told I could go to Autodesk University!"
- "The day I knew we were upgrading to AutoCAD 2005." (Several similar responses.)
- "Completing my first training as a teacher."
- "Had to recover a year's worth of work after a crash. After days of searching, the network backup had them in the archives!!"
- "The view from Table Mountain in South Africa." (We're guessing the 12-hour flight next to the snoring boss was worth it…)
- "Being a new employee able to keep up with the 'old timers.'"
- "Something actually got manufactured as drawn."
- "After the company party I met this girl and, well, you know the rest…."
- "Two job offers on the same day!"
- "Client called raving about my work to the boss upstairs."

Gotcha!

We asked you to describe the best CAD-related prank you played on a colleague this year. This gives a whole new meaning to tips & "tricks."



- "I made it 'rain' in their drawing area."
- "Changing the xref files to be on the defpoints layer."
- "Put a small Post-it note over the optical mouse laser."
- "Changed all the keys around on his keyboard."
- "Turned random individuals' QTEXTMODE on."
- "I undefined the line command."
- "Turn the cursor color to black. Special thanks to Lynn Allen." (Several respondents tried this one.)
- "Switched "Z" key to Enter."
- "Replaced all of their project drawings with dummy drawings."
- "For April Fool's Day, I created an AutoLISP routine that fired when the user tried to save his drawing. It said there was not enough space to save the drawing."
- "This year for April Fool's Day the CAD programmer and I wrote a LISP program called 'Drawing Audit.' It made up a random number saying you had so many spelling errors."
- "I dropped a hyperlink to a "time for retirement" website in his drawing."
- "Changed unit accuracy to 1/2" and he finished the drawing and the dimensions were all wrong."
- "All the fun you can have with the redefine command."
- "I created a desktop picture from a print screen of his AutoCAD setup. He kept trying to click the X to close his screen. He even re-booted." (There were several of these. Very clever!)
- "Remapped a sheet set to point to bogus files that had rather humorous info contained within...wasn't she surprised when she printed that set of drawings!"
- "Set everyone's AutoCAD to "Beep on Error" and giggled as everyone's computers beeped all day long."
- "Locked one of the five viewports on a sheet in a drawing belonging to the "I know how to do everything" person. He could not figure out what was wrong with that one viewport."
- "Turned off the UNDO."
- "Turned layers off while they were at the plotter."
- "Missing files…ha ha ha!"
- "Used alerts to pop up and call people names on certain commands."
- "April 1st. When my users started AutoCAD I ran a VB app that brought up a message box saying, 'There was a problem with AutoCAD. Click ok to reformat.' When the user selected OK, I brought up the Windows dialog saying, 'Reformatting hard drive. You computer will have nothing on it in 5 minutes.'"
- "Changed his cursor to give [an obscene gesture] every 5 minutes."
- "Redefined the line command to undo."
- "Installed a background program of a big bloodshot eye that looks at you and winks. The program is so fast that it leaves you wondering what you might have seen. Try explaining what you just saw to people. The program is so random that it may only show once or twice a day or several times over a few minutes."
- "Used net send to send fake error messages that told them they were using AutoCAD wrong and would be kicked out unless they shaped up."
- "I made a LISP with an alert that told a guy to hit "Esc" or the OK button to format his hard drive now. It was good until he actually called the IT manager."
- "This prank was played on me. My friend who sits in the cube in front of me attached another keyboard to my CPU and was opening and closing windows for about a week before they let me in on it. Drove me crazy."

So ends another fun year! Thanks to everyone who participated in this survey. We'll do it again next year.

2004 In Review New Products

Autodesk third-party developer partners were asked to submit information about new software, hardware, and training materials introduced in 2004. Below are submissions from those who participated. Products are sorted into three sections: Software, Training Resources, and Hardware. Contact the developers directly and/or visit their websites for more information on these products

Software

2D DESIGNER is a piping and plant design software suite designed to maximize design efficiency to save time and money on every project, regardless of size or complexity. Purchase the 2D DESIGNER product line as the Piping Suite bundle for significant savings or choose just the applications you need: AutoFLOWS P&ID drafting, AutoORTHO-piping/structural/civil drafting, and AutoISO-isometric drafting.
PRO-CAD Software Ltd.
www.procad.com

3D Helical Ramp enables users to build a complete 3D helical ramp, including sidewalls, landing bridge, and center shaft quickly.
AFV Software
www.cadopolis.com/prod3DHelicalRamp.asp

3DSMART is a 3D design solution that creates a seamless, cohesive work environment that allows departments to share information through a central SQL database. This software comes standard with all the modules you need for 3D modeling, including Project Manager, Specification Manager, Modeler, BOM Settings Manager, and BOM Generator.
PRO-CAD Software Ltd.
www.procad.com

3G.author 2004 Plus is Autodesk-certified design analysis software for simulation of Autodesk Inventor-based models, including parts, assemblies, sheet-metals and welding components. This dimension-driven FEA software offers an intuitive user interface with a broad range of simulation capabilities that is ideal for design simulation and optimization.
PlassoTech, Inc.
www.plassotech.com

AcroPlot Pro is digital CAD conversion software with the capability to convert an extensive list of file formats and the flexibility to create both the Portable Document Format (PDF) and the Drawing Web Format (DWF).
CADzation
www.cadzation.com

ARCHIBUS/FM V.14.3 offers a comprehensive repository of facilities and infrastructure management data and drawings. With AutoCAD 2005's new features such as table formatting, ARCHIBUS/FM users can see enterprise data in the context of their properties, buildings, floors, and rooms and turn this raw data into meaningful information.
ARCHIBUS, Inc.
www.archibus.com

ArchVision Composer makes it easy to add RPC (Rich Photorealistic Content) to your 2D renderings and photographs. Composer works stand-alone or in conjunction with Adobe Photoshop.
ArchVision, Inc.
www.archvision.com/Composer

Atributai is an add-on for Autodesk Map with functions that allow you view and edit objects data easier and filter objects by objects data. Functionality includes: view and edit object data of selected object data table using user interface; select objects of drawing by using object data table editor; and select objects of drawing easily by creating filters for object data values.
InfoEra
www.infoera.lt

Autumn Color adds seasonal plant color to architectural renderings. Red, orange, yellow, and golden hues are featured in this collection of 52 photorealistic deciduous trees and shrubs.
Realworld Imagery, Inc.
www.realworldimagery.com

Bluebeam Lite is a PDF converter designed specifically for AutoCAD LT and Windows Office users. This application adds Bluebeam buttons to a user's AutoCAD LT and MS Word, Excel, and PowerPoint toolbars for PDF creation.
Bluebeam Software, Inc.
www.bluebeam.com

CADPIPE Electrical allows the 3D design of cable trays, conduit, and electrical wiring. Also included are the symbols for single line and control drawings. CADPIPE Electrical includes an easy-to-use graphical user interface, collision checking with any 3D objects including objects in Architectural Desktop, complete Bill of Materials reporting which can be sent to Excel spreadsheet or Access Dbase formats and auto routing ability.
AEC Design Group
www.cadpipe.com

cartoManager improves the management of cartography by easing processes. Its main users are the managers of cartography who need to work with a large amount of maps or need to repeat processes many times. Features: massive plotting, massive change of attributes, and more.
SGSmap
www.sgsmap.com

Copy Audit is a hardware tracking solution that allows users to track all of their walk-up photocopying. Copy Audit is a seamless addition for customers who also use or wish to use Print Audit 4 for print cost recovery.
Print Audit
www.printaudit.com

DeliView is a DWG file viewer and preview extractor that shows previews of DWG files from AutoCAD v13 to version 2004.
DeliCAD
www.cadopolis.com/prodDeliView.asp

DWG Explorer is drawing explorer and preview technology. It allows users to quickly and easily scroll through and visually scan directories of drawings.
3rd DAY SOFTWARE
www.cadopolis.com/prodDwgExplorer.asp

DWG iFilter allows users to extend the Microsoft Internet Information Server, Microsoft SharePoint Portal Server, and all other Microsoft Index Servers to look inside your drawings and index all valuable information.
CAD & Company Group B.V.
www.cadcompany.nl

EASYnat is a 3D photorealistic plant modeler for AutodeskVIZ 2005 and Architectural Desktop 2005. It enables architects to simulate a large variety of plants at any age and season. Adjusting age, height and/or diameter of the plant launches these simulations
Bionatics
www.bionatics.com

ELECTRICAL Designer is a complete solution for control schematics, panels, PLC, electro mechanical, hydraulics, or pneumatics engineering projects.
ACERI
www.aceri.com and
www.electrical-designer.com

Feature Manipulation Engine (FME) Suite consists of a family of Extract, Transform, and Load (ETL) tools, including a data viewer, translator, and a graphical transformation editor. FME Suite enables Autodesk Map 3D 2005 users to access an additional 100+ GIS and CAD formats from directly within Autodesk Map.
Safe Software Inc.
www.safe.com

FeatureCAM 2005 provides several CAD/CAM improvements including high-speed machining (HSM) toolpaths and importing enhancements. The Curly Corner Toolpath uses a trochoid path through slots and tight corners for more efficient HSM. The Interleaved Toolpath keeps retract moves to a minimum so the tool stays in the metal and maintains smooth transitions. Version 2005 also automates the machining of holes by automatically recognizing the machinable CAD data for all holes when Autodesk Inventor part files are imported.
FeatureCAM / Engineering Geometry Systems
www.featurecam.com

FM Desktop 6.0 is a professional-level, 32-bit CAD/database program used for: Space & Asset management, Project Management, Emergency Management and Maintenance Management. FM Desktop uses industry-standard components such as AutoCAD, Microsoft Access, and SQL manage and report facility information in both graphical and tabular formats.
Applied Spatial Technologies
www.appliedspatial.com

FME Provider for MapGuide provides an integrated solution for MapGuide users, enabling them to access over 100 FME-supported formats directly from within the application. With FME Provider for MapGuide, customer data can be published directly from its native format or database system without any need for conversion.
Safe Software Inc.
www.safe.com

FM:Interact 6.2 provides tools for management and optimization of property, space, assets and facilities processes. FM:Interact's web-based platform empowers the entire organization with real-time access to critical data for planning, operations and strategic decision-making. Modules included for space management, strategic planning, lease & property management; asset management; move planning, CMMS/Facility maintenance; and preventive maintenance.
FM:Systems
www.fmsystems.com

Data exchange between different systems often causes high costs—either important information is lost or building parts have to be completely redrawn in the target system. **IFC-Utility 2x for ADT 2005** defines an interface that helps to handle these problems in a more intelligent way. IFC-Utility 2x for ADT 2005 can be used to import and export IFC 2x data with Autodesk Architectural Desktop 2005.
Inopso GmbH
www.inopso.com

GlobalCAD ADT Schedule enables users to create schedules and bills of materials easily.
GlobalCAD
www.cadopolis.com/prodGCAECSchedule.asp

IRISCO Elmo BoM 2005 extracts bills of materials from AutoCAD, Autodesk Inventor, AutoCAD Mechanical, and Mechanical Desktop documents. In one unattended session, It obtains the exact composition of each Autodesk block, assembly, or sub-assembly, as well as the contents of all the attributes and "iProperties" of each component, including user-defined properties.
IRISCO-Quebec
www.irisco.com

Master Foundry Designer is a complete IC Packaging electrical layout system that automates the physical and electrical layout of all IC Packaging technologies.
CAD Design Software
www.cad-design.com

Master IC Test Designer is a complete design-specific IC Test design system that automates the physical layout of all IC Test technologies, including Load Boards, Probe Cards / Interface Boards, and Burn-In Boards.
CAD Design Software
www.cad-design.com

Master PCB Designer is a complete PCB design system that features an integrated and seamless electrical environment in which designers can create mixed technologies for the most challenging PCB designs. Master PCB Designer also automates the physical layout of all PCB technologies including Schematics, PCB (Analog/Digital), RF (Microwave/Wireless), Hybrid/MCM (Laminate/Co-fired Ceramic/Thick Film/Thin Film), and Flex (Polyimide).
CAD Design Software
www.cad-design.com

Mathcad 12 is calculation management software enables organizations to more efficiently create, manage and exploit their engineering information. Mathcad 12 includes an open data model, scalability, new flexibility to document engineering-critical values, greatly expanded units and dimensions handling, and new 2D plotting capabilities.
Mathsoft Engineering & Education, Inc.
www.mathsoft.com

Maxsurf is an integrated suite of CAD/CAM software for the design, analysis, and construction of all types of marine vessels. Maxsurf provides naval architects and shipbuilders with a complete range of software tools for all phases of the ship design and construction detailing process.
Formation Design Systems Pty. Ltd.
www.formsys.com

McLaren Enterprise Engineer, an integrated suite of user configurable content management applications, provides a comprehensive solution to manage engineering content—and CAD drawings—and the business processes that use it, on a common Enterprise Content Management (ECM) platform.
McLaren Software Ltd
www.mclarensoftware.com

MEP (Multiple Environment of Productivity) is a CAD standards solution consisting of two parts: the "Administrator" side and the "User" side. On the Administrator side, you can define the parameters by using predefined models or read from template drawings, without imposing any model. The standards can be also imported or exported to collaborate better with your customers and subcontractors. The User side allows users to consult the standards or to conform to them. Numerous tools are provided to help with the configuration, the layout settings, and other essential elements.
CAD Novation
www.cadnovation.com

Microdesk GPS Extension for AutoCAD or Autodesk Map enables users to plug in any NMEA-capable GPS receiver into their mobile PC loaded with either AutoCAD or Autodesk Map to start automatically capturing point and linear features in the field using real-time GPS coordinate values. The product allows you to use Microsoft Access to define the feature categories, features, and attributes you'd like to collect.
Microdesk
www.microdesk.com/gps

Multiframe is intuitive, graphical software for the analysis and design of all types of framed structures. Multiframe is used by engineering and construction companies to model, analyze, and design structures ranging from simple residential houses through to bridges, mining structures, and high rise buildings.
Design Systems Pty Ltd
www.formsys.com

MultiQuote allows Autodesk product designers to get an instant price quote and compare multiple manufacturing processes side-by-side. Processes include Stereolithography (SLA), Selective Laser Sintering (SLS), Fused Deposition Modeling (FDM), and Cast Urethanes.
Quickparts.com, Inc.
www.quickparts.com

The **Munsys** product range consists of an integrated set of applications that cater to all the spatial information needs of utility and government organizations. Munsys provides a range of ready-to-use applications for the management of spatial information in a database environment.
Munsys Technologies (Pty) Ltd.
www.munsys.com

MVPort is an AutoCAD add-on that simplifies the page setup process of drawings and drawing standardization. With MVPort, AutoCAD users can create ModelSpace Viewports that are dynamically linked to the PaperSpace layouts. This MVPort object is pro-reactive, which means that users can move, resize, and rotate objects directly in ModelSpace without worrying about the page layout.
CAD Novation
www.cadnovation.com

Novapoint Virtual Map 1.8 generates real-time 3D virtual models automatically from digital terrain and mapping data. The user can walk and fly freely inside the virtual model and save still images and animations. The software is easy to use, customizable, and there is a free full working demo version available for download.
Viasys Oy
www.viasys.com or
www.novapoint.com

Panel Suite is a complete estimation, drawing automation and linked BOM generation solution for panel manufacturers (Low Voltage, Medium Voltage and High Voltage).
DeltaCADD Solutions
www.deltacadd.com

The bi-directional **PCB interface to AutoCAD** enables the physical aspects of a PCB design to be modified within the AutoCAD system with the changes reflected in the PCB system as they are completed. By using the PCB interface for AutoCAD, the mechanical integrity of the PCB design can be verified at any stage of the design process.
Latimer CAD Limited
www.latimer-cad.com

Pdf2vector software automatically converts vector PDF and PostScript files to DXF. This enables the linework and text in Acrobat files to be reused and edited in AutoCAD.
Trix Systems, Inc.
www.trixsystems.com

PolyTrans 3D Data Translation & Visualization System imports geometry, hierarchy, and materials (assembly data) from native disk-based Autodesk Inventor files or from a running copy of Autodesk Inventor and subsequently provide high-end rendering, viewing, and scene composition of the data, or have the data optimized and then re-exported to all major 3D file formats and animation packages.
Okino Computer Graphics
www.okino.colm

Professional Trees & Shrubs III - Zones 8 thru 12 are photorealistic images of evergreen trees, palms, and shrubs for architectural visualization. This CD has 163 images in 32bit TIF file format with opacity maps.
Realworld Imagery, Inc.
www.realworldimagery.com

ShipConstructor2005, a software program for ships and offshore structures, features the Hull module, which brings complex surfacing technology and lofting functions directly into AutoCAD. ShipConstructor2005 also features functions for 3D modeling of structure, pipe, HVAC and equipment.
Albacore Research Ltd. (ARL)
www.ShipConstructor.com

SimonView is a dedicated viewer for CAD drawings and images that has ability to display them fast, including the most recent DWG, without using the related applications of the original files.
SimonSoft
www.cadopolis.com/prodSimonView.asp

SITE Optimizer provides automated cut and fill excavation balancing and volume optimization for commercial and residential site land development. Allows operators to preset project parameters while optimizing excavation factors between multiple roads, lot parcels, building pads, and/or parking lots.
PacificSoft LLC
www.pacificad.com and
www.pacificsoftsolutions.com

TahlCAM produces ready-to-run G-code programs right from AutoCAD. There is a plug-in that works with version 2000 through 2002 and one for AutoCAD 2004 and 2005.
Tahl Inc.
www.tahlcam.com

Tahoe 2005 is a front-end for Microsoft SharePoint Portal Server 2003 that enables firms to share AutoCAD drawings. It offers an easy-to-use and effective middleware solution for central storage and Web publication of AutoCAD drawings and related design data. The solution uses Microsoft Windows SharePoint Services and Microsoft Office SharePoint Portal Server 2003.
CAD & Company Group B.V.
www.cadcompany.nl

TheoContour, working within AutoCAD, provides a cost-effective contour generation solution. TheoContour acts upon AutoCAD point entities, building a triangulated surface mesh from the points. This mesh may be used to generate contours or produce a rendered surface.
Latimer CAD Limited
www.latimer-cad.com

Utilities to Profile is a routine that places station, offset, and pipe size from 3D lines that cross an alignment onto CL profile.
Steltman Software
www.steltman.com

VisionREZ is an enhancement solution, available as a plug-in or stand-alone, for Autodesk Architectural Desktop. VisionREZ accelerates the creation of construction documents for residential and light commercial applications.
Ameri-CAD, Inc.
www.visionrez.com

Training

Accelerated Productivity R8 is a multimedia training course for Autodesk Inventor Release 8. This course uses short movies you watch from your computer's CD player to show you efficient ways of using all the commands required to make single part solid models.
TEDCF
www.trainingtutorial.com

Architectural Desktop 2005 Level 1 enables students to create basic floor plans, including walls, doors, and windows; use Design Content to add furniture, fixtures, and equipment; create specialty objects like column & ceiling grids, stairs, and roofs; generate elevations and sections; add marks, dimensions, tags, and schedules; understand the 3D capabilities of Autodesk Architectural Desktop.
ASCENT
www.ASCENTed.com

Architectural Desktop 2005 Level 2 allows students to construct conceptual massing studies using mass elements and mass groups; design buildings using spaces and areas; create an ADT project and use Project Navigator to manage drawings; define multi-view blocks, masking blocks, and customized design content; use advanced editing tools for walls and curtain walls; create wall, window, door, and other object styles; and customize layer properties and display systems.
ASCENT
www.ASCENTed.com

AutoCAD 2005 3D Drawing & Modeling introduces users who are proficient with AutoCAD's 2D commands to the concepts and methods of 3D modeling. The course gives a thorough grounding in 3D fundamentals and explores the main features of AutoCAD's advanced 3D workspace.
ASCENT
www.ASCENTed.com

AutoCAD 2005 Level 1 teaches students to create a basic 2D drawing using drawing and editing tools, organize drawing objects on layers, add text and basic dimensions, and prepare to plot.
ASCENT
www.ASCENTed.com

AutoCAD 2005 Level 2 focuses on using efficiency tools including grips and advanced object selection, drawing with complex objects including polylines, regions, and advanced text objects, defining blocks and attributes, using external reference files and image files, using layouts and advanced plotting features, using sheet sets, and enhancing productivity with simple customization of AutoCAD.
ASCENT
www.ASCENTed.com

AutoCAD 2005 Plotting and Sheet Sets is designed as a one-day survey of plotting and related features in AutoCAD 2005. It is appropriate for users upgrading from earlier versions of AutoCAD who need to master new techniques related to plotting, or any user requiring a better understanding of plotting concepts and techniques in AutoCAD.
ASCENT
www.ASCENTed.com

AutoCAD 2005 Update introduces the new features of AutoCAD 2005 to users of AutoCAD 2004. There are a wide variety of enhancements to existing commands and several new commands and methods that will help you streamline both large and small projects. In this release, you will see the new Sheet Set Manager, which coordinates multi-sheet projects, and the new annotation tools of tables and fields.
ASCENT
www.ASCENTed.com

AutoCAD 2005 Update for AutoCAD 2000/2000i Users introduces the new features of AutoCAD 2005 to users of AutoCAD 2000 and AutoCAD 2000i. It therefore covers changes from the intermediate releases (AutoCAD 2002 and AutoCAD 2004) as well as AutoCAD 2005. The combined changes span a wide range, from the visible interface to the file format, from the new Tool Palettes window to sheet sets.
ASCENT
www.ASCENTed.com

AutoCAD LT 2005 Level 1 enables students to use basic drawing and editing tools, organize drawing objects on layers, add text and basic dimensioning and prepare to plot the drawing.
ASCENT
www.ASCENTed.com

Autodesk Hydrology Personal Trainer is a training series that showcases the features of the Hydrology routines in Autodesk Civil Design. It is a computer-based training multimedia tutorial.
AGT, Inc.
www.agtcad.com

Autodesk Inventor 9 Accelerated Productivity: 2D Drafting and Customization is a multimedia training course for Autodesk Inventor Release 9. This course shows you how to create 2D mechanical drawings from your 3D solid models. You'll learn how to customize your drafting standards and create custom title blocks and drawing borders.
TEDCF
www.trainingtutorial.com

Autodesk Inventor 9 Accelerated Productivity: Assemblies and Advanced Concepts shows you how to perform advanced tasks such as working with assemblies, creating iFeatures and iParts, and customizing text, styles, and template files. You'll also learn how to animate your assemblies and produce presentations.
TEDCF
www.trainingtutorial.com

Autodesk Inventor 9 Accelerated Productivity: Sheet Metal Design is designed to show you how to use all the commands required to create sheet metal parts. You'll learn techniques that will make your work more efficient, and will assure that your sheet metal parts are editable. You'll become an expert at creating custom punches, unfolding flat patterns, working with bend tables and k-factors.
TEDCF
www.trainingtutorial.com

Autodesk Inventor 9 Accelerated Productivity: Single Part Solid Modeling is a multimedia training course for Autodesk Inventor Release 9. This course uses short movies you watch from your computer's CD player to show you efficient ways of using all the commands required to make single part solid models.
TEDCF
www.trainingtutorial.com

Autodesk Inventor for Designers, R9 is a textbook that introduces the readers to Autodesk Inventor Release 9. The textbook includes free technical support, a detailed explanation of Autodesk Inventor tools and commands, approximately 55 real-world tutorials and projects with step-by–step explanation, and coverage of all modules of Autodesk Inventor.
CADCIM Technologies
www.cadcim.com

Autodesk Revit 6.1 Level 1 enables students to create full 3D architectural project models and set them up in working drawings. The class focuses on basic tools that the majority of users will need to work with Revit.
ASCENT
www.ASCENTed.com

Digging Into Autodesk Land Desktop 2004 provides step-by-step procedures for many common tasks while taking the reader through a complete project using Autodesk Land Desktop and Autodesk Civil Design. Topics include Project Setup, Importing GIS Data, Points, Description Keys, Point Groups, Surfaces, Breaklines, Contours, COGO, Labels, Parcels, Alignments, Existing and Finished Ground Profiles, Sections, Templates, and Volumes.
Cadapult Software Solutions, Inc.
www.cadapult-software.com

Digging Into Autodesk Map 3D 2005 takes the reader through a complete project using Autodesk Map 3D. Topics include Drawing Cleanup, Object Data, External Databases, Annotation, Feature Classes, COGO, Coordinate Tracking, Importing Data from Other Sources such as ArcView Shapefile or ArcInfo Coverage, Raster Images, Queries, Save Backs, Points, Surfaces, Topologies, Thematic Mapping, Plotting Map Sets, and Exporting Data to Other Formats.
Cadapult Software Solutions, Inc.
www.cadapult-software.com

Exercise Workbook for Beginning AutoCAD 2005 is ideal for classroom instruction or as a self-study tutorial. Providing only what you need without all of the jargon, it includes 30 lessons with step-by-step instructions followed by exercises designed for practicing the commands learned within the lesson. 400 pages.
Industrial Press Inc.
www.industrialpress.com

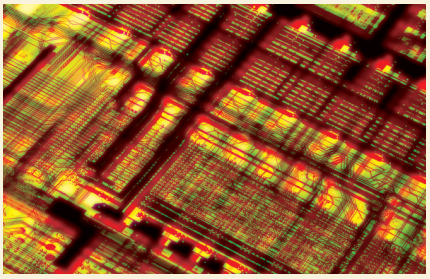
Exercise Workbook for Advanced AutoCAD 2005 continues your AutoCAD education with this companion to the "Beginning" workbook. This workbook includes 20 easy-to-follow lessons and three on-the-job type projects in Architecture, Electro-mechanical, and Mechanical fields. It includes step-by-step instructions on how to create customized borders, title blocks, page setups, Isometric drawings, DesignCenter, Xref, Attributes, Ordinate Dimensioning, Geometric Tolerances and more. 400 pages.
Industrial Press Inc.
www.industrialpress.com

Introduction to AutoCAD LT 2005 is designed to make students familiar with the basic concepts and techniques of 2D drawing in AutoCAD LT. We do not attempt to present every drawing command or editing command. However, enough key tools are covered so that the student will gain a solid grasp of how the program works and be able to create a basic 2D drawing.
ASCENT
www.ASCENTed.com

Inventor R9 Introduction to Solid Modeling introduces the concepts and techniques of 3D modeling with Autodesk Inventor. As an introductory class, it does not assume prior knowledge of any 3D modeling or CAD software.
ASCENT
www.ASCENTed.com

Mechanical Design R8 is a multimedia training course for Autodesk Inventor Release 8. A fast way to learn how to work with assemblies, iParts and iFeatures, presentations and assembly animations, and 2D drafting.
TEDCF
www.trainingtutorial.com

Sheet Metal Design R8 is a multimedia training course for Autodesk Inventor Release 8. This course shows you the details of how to use all of Autodesk Inventor's sheet-metal commands. You'll become an expert at creating custom punches, unfolding flat patterns, working with bend tables and k-factors, and more.
TEDCF
www.trainingtutorial.com



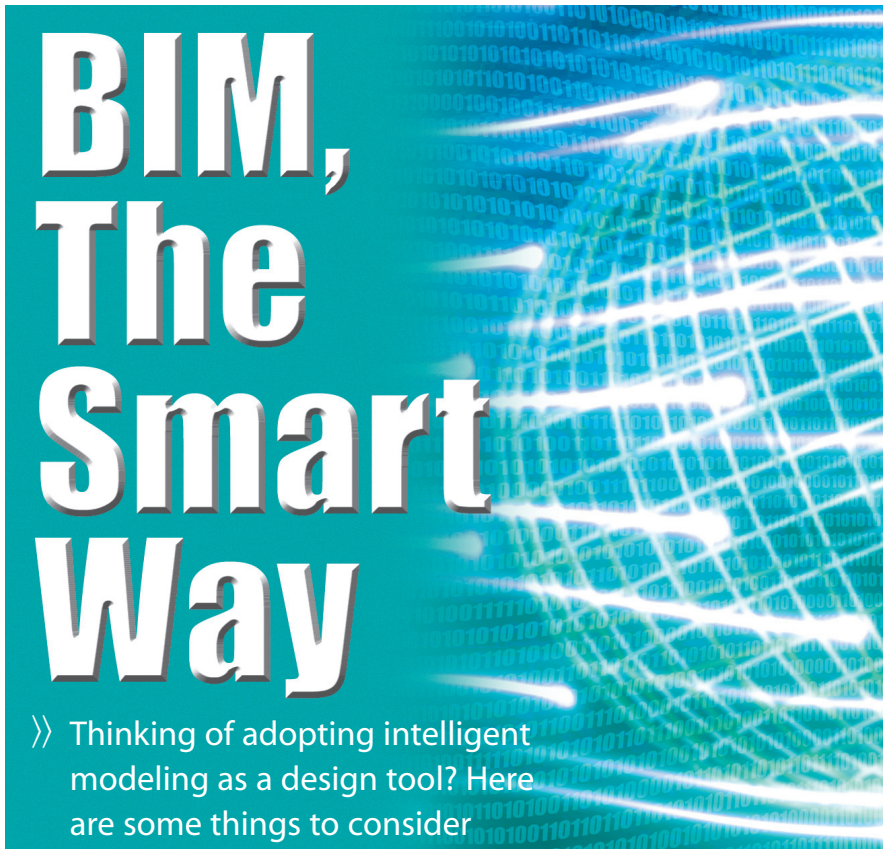
Hardware

The **LPX-1200 3D** laser scanner is ideal for all popular CAD, CAM, and animation applications. The LPX-1200 can scan a mobile phone to design blister packaging and/or accessories, a hand-sculpted alien for feature animation or an ear canal mold for custom hearing aid manufacturing. It uses an advanced non-contact laser sensor to quickly scan 3D objects with a 0.0039 inch scanning resolution.
Roland DGA
www.roland3d.com

Matrox QID Pro features quad analog or digital output from a single-chip, 256 MB of DDR memory and a PCI interface for workstation expandability, the QID Pro graphics card brings unprecedented multi-display capabilities to mission-critical environments such as military data walls, simulation and public safety answering points.
Matrox Graphics Inc.
www.matroxcad.com

Millennium P650 low-profile PCI has a compact, 5.2-inch long board design and offers tangible productivity gains through its advanced dual-RGB and dual-DVI capabilities and robust drivers. Featuring fully-symmetric dual-display outputs, 64 MB of DDR memory, and a PCI interface, it is a suitable graphics card for laptop docking stations and small form factor PCs.
Matrox Graphics Inc.
www.matroxcad.com

BIM, The Smart Way



〉〉 Thinking of adopting intelligent modeling as a design tool? Here are some things to consider

Looking for "better ways to do what we do" was part of the motivation behind the adoption of Autodesk® Revit® by Wimberly Allison Tong & Goo, a worldwide architecture, design, planning, and consulting firm. WATG had been looking at various intelligent modeling solutions for about seven years prior to choosing Revit, says James Balding, manager of the Revit implementation. "WATG is always looking for ways of delivering better design solutions to our clients," he explains. Better design solutions, in WATG's estimation, includes choosing and using tools that are created specifically for the building industry whenever possible. Autodesk Revit is one of those tools.

Clear communications

Having used Autodesk Revit for the last three years, Balding is able to quickly point out one of the top benefits of using a tool such as Autodesk Revit for building—communication. "We can communicate our ideas more clearly to clients, consultants, and our internal team," he says.

Balding's take on the communication benefit is the one most often cited by both users and developers when discussing Building Information Modeling (BIM). If your internal team can discover design problems earlier in the process, they're easier and less expensive to address. If a client can see the design in a more comprehensive way, so much the better. But trying to resolve too many things during the early stages of design can be problematic, suggests Balding.

"Let's use a complex roof as an example," he says. "In Revit, you have to make that roof work. In AutoCAD, on the other hand, where the elevations and floor plans and roof plans are all separate, they don't have to necessarily work. In Revit, they do." Balding notes that having to work out such problems ahead of time can present issues.

One of the ways WATG deals with these issues is simply not doing full BIM during the early stages of design on some projects. "On a lot of projects, we'll wait until we get into full design development before we'll start modeling the third dimension," Balding says. "We get a lot of value out of using Revit for the development of plan views without the commitment of working out a full three dimensional model. Though, on projects with complicated sites, using a full 3D BIM during the early stages is extremely helpful in eliminating big changes down the road," he adds.

Seeing it is key

Balding's caveat aside, being able to "show" the model to a client, regardless of what stage of design, is a decided benefit. Adding nice touches of realism or "prettying" up the design, help as well. There are a number of software companies that provide the 3D content that helps clients see the design more clearly. ArchVision (www.archvision.com) is one of the companies providing 3D content. Its RPC (Rich Photorealistic Content) technology and content solutions are a means of adding realistic entourage to design visualizations.

ArchVision's RPC content is available in packaged libraries; the contents are then incorporated into the 3D models. The company offers diverse collections of trees, people, cars and other objects. In addition, product manufacturers are teaming with ArchVision to make their own product information available using RPC technology.

Getting there from here

So if BIM is the wave of the future, when can we anticipate full-scale acceptance and use of products such as Autodesk Revit? "It's an evolution, not a revolution," suggests Randall Stevens, president of ArchVision. He cites four key factors that are impeding the progress toward full-scale adoption.

First, there is hardware. Simply, it takes more horsepower to efficiently process in 3D. ArchVision's Stevens notes, rightly, that this "problem" is minimized over time. "The good news is that Moore's Law remains in full effect and computing power doubles approximately every 18 months," he says.

While WATG didn't have to make significant investments in new hardware to accommodate Revit initially, as the firm upgrades hardware, it is careful to buy more powerful machines than perhaps it would otherwise to meet future needs, notes Balding.

The second factor that has held back the adoption of 3D, according to Stevens, is the core software. "The benefits of using 3D modeling techniques have to outweigh the pain of changing the current production process," he says. "As innovative software companies make the tools easier to use, more people will find enough advantages and begin making the switch."

Autodesk is rolling out new releases of Autodesk Revit about every 12 months, which is key, notes Stevens. "Autodesk understands that the software needs to evolve quickly. They are addressing the need for better tools and are getting those changes into the market on a timely basis."

Stevens notes that the availability of 3D content is the third factor that will eventu-

ally lead to a thriving 3D modeling market. His firm, ArchVision, has a vested interest in this, obviously. "We believe that if more pre-built 3D components were available to incorporate into a 3D database, you lower the barrier to entry and thus increase the number of people who could use the tools. What's the old saying? 'It's easier to be an editor than a writer.' This holds true in 3D modeling. It is much easier to edit a pre-built 3D component than it is to create it from scratch."

At WATG, most BIM content is currently designed in-house. And while Balding says that such content is fairly simple to design in Revit, he agrees that the availability of "brand name" content would be something his firm would be interested in acquiring.

ArchVision, which is developing RPC Creation tools that will enable companies to quickly build their own content, also works with manufacturers such as Steelcase, for example, to help get their 3D "branded" product content into the hands of designers.

Screenshot of Quinta do Lorde Hotel and Resort in Madeira, Portugal

Finally, according to Stevens, and maybe the most important is the need for adequate training. "Making the switch to 3D involves not just learning a new piece of software, but more importantly learning a new process."

Keys to success

Lots of experience with the Revit implementation gives WATG's Balding a solid perspective on what to do (and what not to do) when adopting BIM technology. He cites his firm's four keys to success: plan, communicate, train, and support.

"There's no substitute for good planning," Balding says. Take the time to set out what you want to accomplish, set clear, conservative goals, and try to make sure that you achieve them.

"Get an implementation plan and communicate it to everybody in your office," he says, describing the second critical success factor. Moreover, he suggests tailoring your communication in a way that is meaningful to the specific group you're addressing. "Your message to upper management is 'delivers a better product, with less expense.' Your message to project managers is 'better product, less people, more efficient product out the door.' And your message to architects is 'more fun to work on, it's easier, does a lot of the work for you, promises better coordinated sets, and so on.'"

Training is crucial and, at WATG, is performed largely by Balding himself. Currently, nearly 60 WATG employees have been trained on Revit. Balding notes that his firm now handles training on what he calls a "just-in-time" basis. When a new Revit project begins, Balding will sit down with team members, train them on some initial steps, let them apply their knowledge at the project level, then they'll sit down again and tackle some other phase of the project. He admits that it works well for them. "You can adapt the training to the project," he explains.

Balding stresses the importance of support, the fourth key to success. WATG has a global support mechanism in place, giving Revit users ample access to web-based support, internal Revit experts, Autodesk help, and others. Balding personally conducts weekly telephone calls with all WATG offices worldwide to cover training, support, and other implementation issues. He says, simply, "Make sure people have support, know where it is, and don't just sit and 'brew' when a problem arises."

More good advice

In addition to his four key success factors, Balding recommends taking other steps to help a Revit implementation proceed well.

Design Study for Tower Hotel

Management Buy-in. It's critical to have management and upper management understand the issues and lend support to the projects and users.

Partial projects. "Consider the 'horizontal' approach," Balding says. "Use Revit to design and document the plan view and scheduling while using CAD to document the vertical drawings such as sections, elevations, and perhaps the details."

Small projects with experienced users. "It may seem obvious," says Balding, "but overloading the first few small projects with experienced users works well and serves purpose down the road. The theory is that these users will gain real-world experience and confidence. The users can then go on to work with others and spread the knowledge."

If you're thinking of implementing BIM technology such as Autodesk Revit, it pays to plan your strategy ahead of time. In fact, it's imperative that you do so. Balding's advice comes from years of experience, probably a good bit of trial and error, and, perhaps, even a few missteps. He presents some of this information in a popular Autodesk University class. If you're planning to attend AU, it would serve you well to check it out.

Marilyn Law is managing editor of AUGIWorld.

What's Behind the Curtain Wall?

The basics for creating curtain walls in Autodesk Revit

We most often think of curtain walls for high-rise office buildings. But curtain walls are also used in multi-unit residential, health care, retail, and ecclesiastical projects. Even traditional, single-family residences use curtain walls for greenhouses and sunrooms.

Our purpose here is to provide a basic understanding of curtain wall creation in Autodesk® Revit®.

Curtain wall creation

The simplest way to create a curtain wall is to use the wall tool. The four-step process is easier than it sounds: 1) Create the wall; 2) Adjust grid layout to your design; 3) Modify panels as needed; and 4) Convert grid lines to mullions.

First, start from a plan view of the building model. From the Modeling-panel/Wall-tool, select Curtain Wall. Choose the type from the drop-down list in the option bar: Curtain Wall: Curtain Wall-1/Curtain Wall: Exterior Glazing/Curtain Wall: Store). The "Exterior Glazing" type has fixed distance grids of 6'x12'. The "Store" type has fixed-distance grids of 5'x8'. The "Wall-1" type has no grids allowing the greatest flexibility in design. We will discuss how to modify these default walls later in this article.

The second step is to modify (or draw) your grid layout. To add grid lines, select the Curtain Grid tool from the Modeling panel. Autodesk Revit provides tools to assist capturing the design intent. Grids snap to logical places like mid- and third-points as well as levels, reference planes, etc. The Option Bar provides additional tools, described below.

- All – draws grid across entire wall (default).
- One – draws grid across one segment.
- All Except Picked – draws grid across entire wall except user-picked segments.

To remove grid lines, click on a grid line and a button appears on the Option Bar, "Add or Remove Segments." Just click on the button and select segments to be deleted.

Step three is to modify the panels to match the design. Each of these changes is completed by selecting a panel to change, then selecting the new component from the component drop-down list. If not already loaded in the project, curtain wall doors/windows are in the respective door/window component library. To create either a solid or empty panel, select "System Panel Solid" for "System Panel Empty" from the component drop-down list.

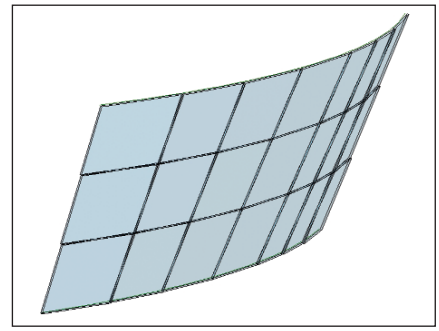


Figure 1: Ruled Curtain System

The last step is to assign mullions to grid lines. Select the Mullion tool from the Modeling panel. Then select the mullion type from the drop-down list. The Option bar provides three choices to improve productivity in assigning mullions.

- Grid Line Segment – applies mullion type to segment selected.
- Entire Grid Line (default) – applies mullion type to entire wall.
- All Empty Segments – applies mullion type to all segments without a mullion.

Unusual curtain walls

Curtain walls can be drawn to fit openings in walls, unusual placements, non-rectangular shapes, and in non-vertical planes (see Figure 1). To fit these situations takes a different approach.

First, draw model lines representing the top and bottom of the "wall." These can be curved or straight and do not have to be parallel. Next select the "Ruled Curtain System" from the Modeling menu and pick the top and bottom lines. A temporary panel is created between the lines, and it is likely it will look incorrect. Don't worry.

Add grids to the curtain system using the Curtain Grid tool. As vertical grid lines are added, the "wall" forms smaller panels, defining the shape. Horizontal grids can be added as well. Finally, assign mullions to the grid lines using the Mullion tool as before.

Modifying curtain walls

Curtain walls can be modified as walls. This means it is easy to switch the face, stretch the length, or change the height. Curtain walls can also be attached to floors and roofs, including curved roofs.

Probably the most common modification will be to change the mullion connections. Mullion joins can be modified by clicking on a mullion and then clicking on the appropriate icon that appear near the mullion ends. This changes the solid/cut orientation of the join (see Figures 2a and 2b).

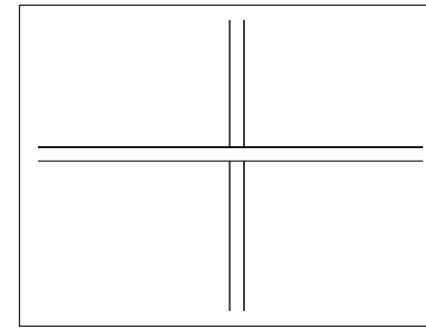


Figure 2a: Horizontal Joined Mullion

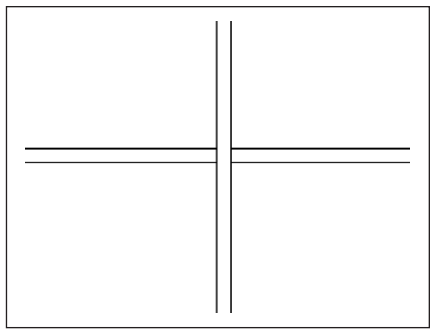


Figure 2b: Vertical Joined Mullion

As mentioned above, individual panels are modified by selecting the panel and choosing a different type from the drop-down list. Available choices for simple panel are Glazed (default), Solid, and Empty. Also, individual panels can be converted to doors or windows.

Pre-defined curtain wall doors are Single Glass, Double Glass, and Store Front Double. The only pre-defined window type is Awning. It is almost certain that a commercial project will require more options than this. If the model is intended to match a particular manufacturer's doors or windows, it is essential to create types with a similar appearance. Autodesk Revit provides a way for adding more types. Yes, it is the all-important Family Editor.

Curtain wall components

The Family Editor comes with three oddly named curtain wall component templates:

- Curtain Wall Panel
- Door – Curtain Wall
- Window – Curtain Wall

Using these special templates ensures that the components will modify themselves to fit into the established grid (with certain limitations). Autodesk Revit also provides for in-place family editing for panels, where you can add solids and voids. Details of using the family editor in this way are beyond the scope of this article.

Mullions are modified by selecting the mullion and choosing a different type from the drop-down list. Pre-defined mullion types include Circular, Square, and Rectangular. Pre-defined corner mullions are "L," "V," Trapezoid, and Quad. Mullion parameters allow modification of offset from panel center-line, thickness (or radius) of the mullion, and width (or length) of the mullion legs (see Figures 3a, 3b, 3c and 3d Corner Mullions).

For some designs, the "generic" mullion models will be sufficient for presentation images and construction documents. In other cases, matching a manufacturer-specific wall system is required. Being productive in this environment requires premade mullions matching the manufacturer's dimensions. Since mullions are system families, they cannot be added to the external family library. So how do we create a reusable library of manufacturer-specific mullions?

Corner Mullions

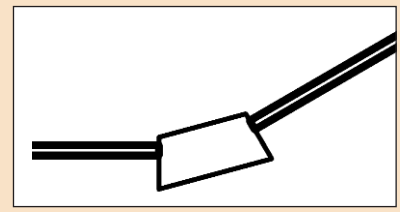


Figure 3a: Trapezoid Mullion

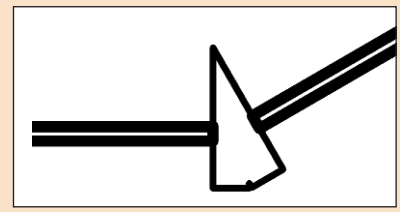


Figure 3b: V Mullion

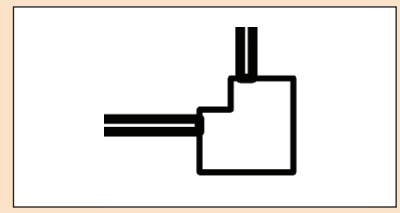


Figure 3c: L Mullion

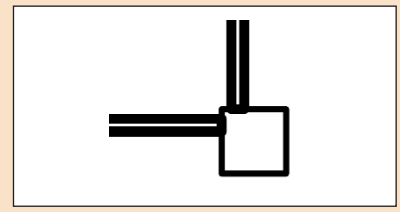


Figure 3d Quad Mullion

One way to create a "standard mullion library" is to create a "Curtain Wall Project Template." Within a new Revit project, create a sample curtain wall. Create all the mullions needed and assign all of them to a sample curtain wall. Save the project as "Curtain Wall Project Template."

When a current project requires the set of standard mullions, you can copy the mullions from the template project into the current project: 1) Open the template project; 2) Copy the curtain wall to the clipboard; 3) Paste the curtain wall into the current project; and 4) Assign mullions from the newly imported system families.

Tagging and scheduling

As with other doors and windows, it is possible to tag curtain wall windows and doors. The easiest way to add tags is to use the "Tag All Not Tagged" tool on the Drafting panel. It is also possible to tag the components individually. Select the Tag tool and hover the cursor over the appropriate panel until it highlights, then pick.

The powerful scheduling features of Revit provide many useful tools. Curtain wall windows and doors will appear on the usual window and door schedules, or filtered onto their own curtain wall schedule. The mullion schedule can tally up counts as well at lengths of various types. The panel schedule can report counts and total area for each type.

Tips & tricks

A comprehensive discussion of curtain wall tools would take a much longer article than this format allows. Let's just end with a few tips and tricks.

- To create exterior curtain walls with the correct orientation, draw the walls in a counter-clockwise direction. With this method, the glazing will be on the exterior surface.
- For single-level curtain walls, it is easiest to place corner mullions from the plan view. Visual confirmation that the correct mullion has been selected is provided by on-screen graphics.
- To select panels, hover over a grid line and tab through the available object selections.
- Delay converting grid lines into mullions until the building design is well developed. Mullions add to the model size and can affect performance. Also, making grid changes is more complicated after mullions are assigned.

Powerful element

In the world of building design and construction, curtain walls are a flexible and powerful design element. In the virtual world of Building Information Modeling, Autodesk Revit provides flexible and extensible tools for productive design and documentation.

Bruce Madsen is a project leader at aecContent (www.aecContent.com). He can be reached at 415-321-1117.

System Variables Primer

For those new to AutoCAD, this article takes System Variables from the top

My previous two articles in *AUGIWorld* have probably appealed more to experienced users of System Variables than to novices because the articles described the additions and changes to the System Variables in AutoCAD 2004. So this article is intended for the AutoCAD novice and 'system variable illiterate' operators. If you are past this stage in your education but know someone in your organization that is at this stage, please get this article to your colleague.

Instead of starting with long descriptions, I will start with a working knowledge and fill in the needed description as I proceed.

There are a few very minor assumptions in this article. That you know:

1. the location of the command line,
2. how to enter commands there, and
3. how to draw and dimension a line.

We will use two simple commands there which concern system variables: getvar and setvar. As you can probably guess by the words, getvar is the command to get the present value of a system variable while setvar is to change the present setting to a new value. As life is full of exceptions, the ones here are:

1. that setvar ? will display a list of all the variables to which that release of AutoCAD will respond and
2. that getvar also allows you to change the value.

There are more than 360 system variables, which I have divided into 25 categories in my topical index available at www.afralisp.com, but we will discuss only four in depth. Since those which concern dimensioning are probably of most interest to the novices, we will narrow our

attention to that category. We will start with DIMSAH; this variable has two options: 0 or 1. Check for its present value by entering at the command line getvar dimsah. You should receive the response of : Enter new value for DIMSAH <0> :

Caution: Remember or Record the value you find at any of the system variables during these exercises and then restore those values when finished with the exercises in this article.

If not, enter 0, and remember to restore it to 1 at the end of these exercises.

As you know a dimension line is usually terminated in arrows at both ends. However, the line may be terminated in many other ways; even with different terminations at the two ends or left unterminated at both ends. Option 0 for DIMSAH will produce the same termination at both ends! So press the enter button since that is the present value as indicated by the <0>.

Now lets examine the variable DIMBLK; this has several different options but for now we would like to keep the default of filled arrows. So use getvar command to find the present value. As you will recall from the previous example, the present value is displayed within the < > brackets. In this case you will probably see <" ">; if not record the value and remember to restore that value at the end of these exercises! Regardless of the value you see between the brackets, enter a period (.) and press the enter key.

Now draw a horizontal line and use the command DIMLINEAR to dimension it. The terminations at both ends should look like Figure 1.

Our next task will be to change the terminations at both ends. We will change this to the architectural tick next. So this time when you enter getvar dimblk,

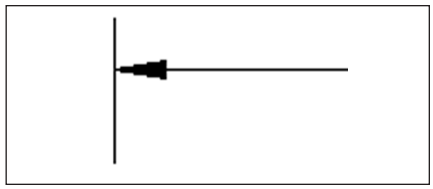


Figure 1: Filled Arrow

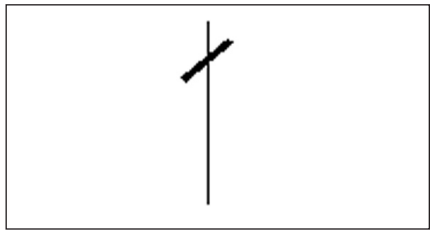


Figure 2: Tick Arrow

instead of entering the period, you should enter the string "_archtick" (don't forget the quotes) and this should produce the architectural tick as shown in Figure 2 at both ends.

By this time you should feel more comfortable with system variables, so you should be able to do an exercise on your own. Can you put a filled arrow at one end and an arch tick at the other? Start by setting the DIMSAH to the value of 1, which means that the two ends will be different. Now you will need two different values, so we will use DIMBLK1 and DIMBLK2 instead of DIMBLK; DIMBLK1 for one end and DIMBLK2 for the other end. If you prefer you can use no termination instead of the architectural tick by using the string "_NONE" for either DIMBLK1 or DIMBLK2.

Does your result look like this?

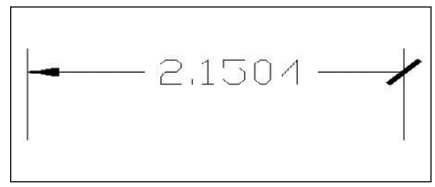


Figure 3: Two differeint terminations

Challenge

Can you dimension a line without a termination at both ends?

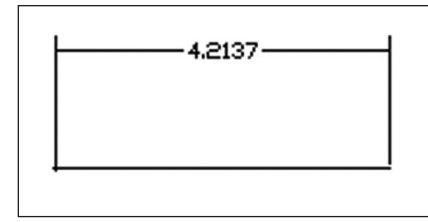


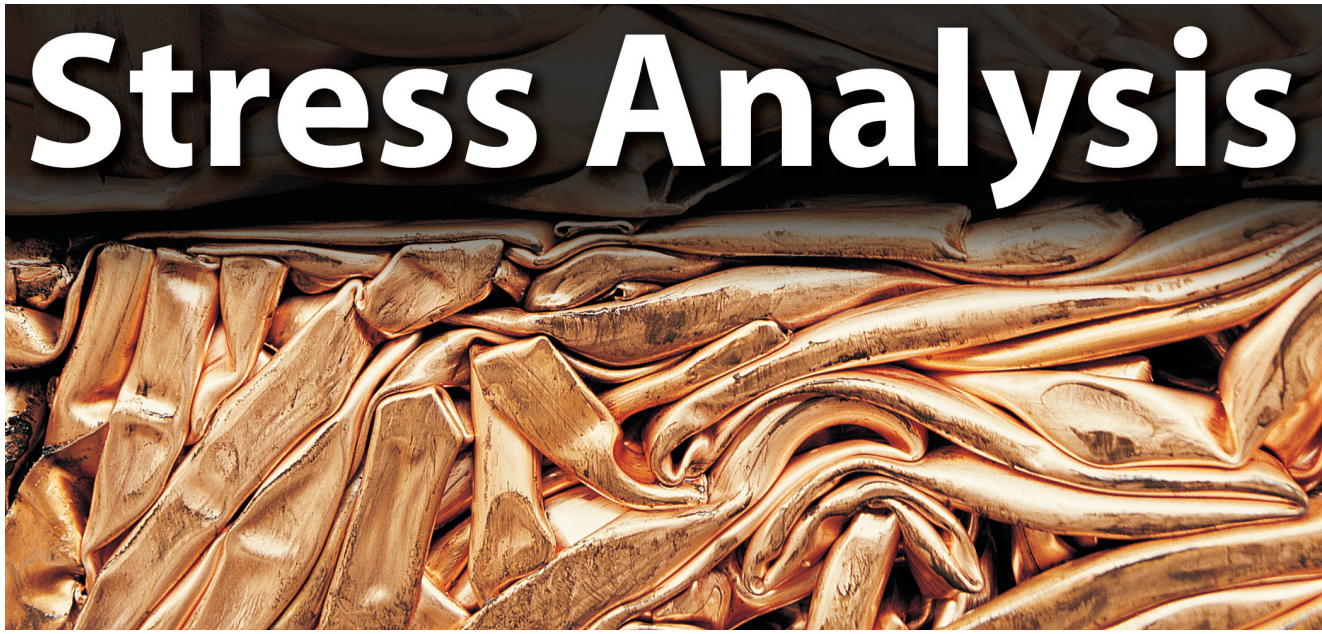
Figure 4: With no terminations

Caution: Remember to Restore the values you found in the system variables before you started the exercises in this article so that management will not be unhappy.

Would you like to explore system variables further? If so, let me hear from you!

Gil Hoellerich is a former telephone company professional and teacher. He frequently writes about AutoCAD and related topics. Gil can be reached at ghoellerich@NC.RR.com.

Autodesk Inventor Professional 9



Autodesk Inventor Professional or AIP is a powerful software application that significantly extends the core Autodesk Inventor® capabilities. In its latest release, AIP 9 offers four powerful features: IDF board data translator, tube and piping, cable and harness, and stress analysis. The latter is new to AIP 9.

AIP is an extended version of Autodesk Inventor that is fully compatible with the core Inventor software. When you start AIP you encounter an interface similar to Autodesk Inventor. This makes your job easier. You may even view models created with AIP in the core Inventor and vice versa. Just like Autodesk Inventor, AIP package is accompanied by AutoCAD Mechanical and Mechanical Desktop. In this article, we will focus on the new stress analysis feature.

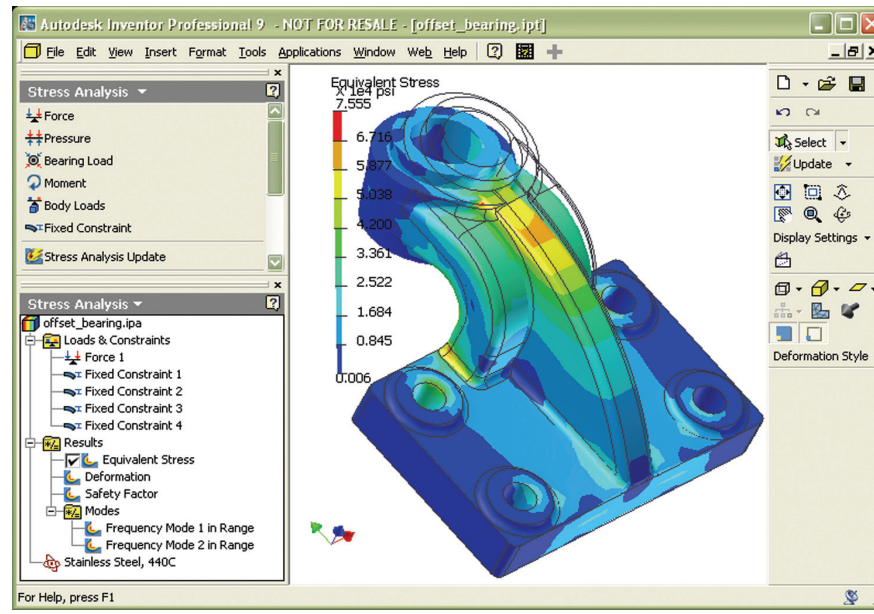


Figure 1

The analysis

The stress analysis feature, powered by ANSYS technology, enables the user to analyze Inventor parts from different

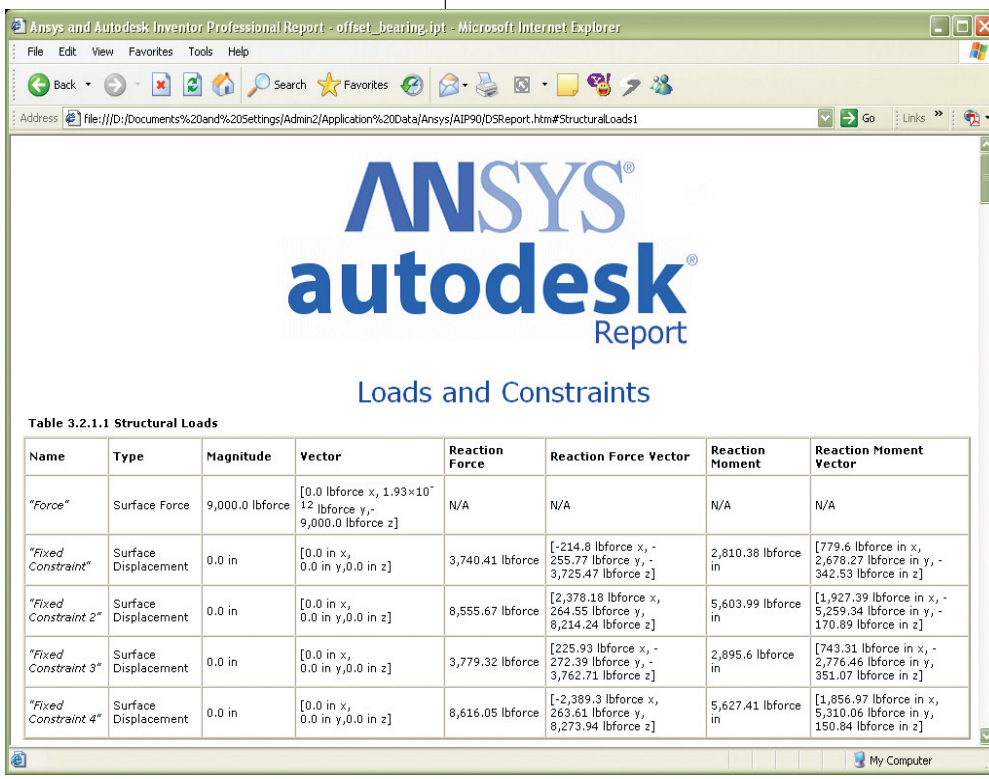


Figure 2

aspects. In general you can analyze stress, displacement, and factor of safety. You may also view different frequency modes.

The approach to solving problems is really easy. You need to follow some simple steps to apply proper loads to the part and start analysis. Inventor allows you to apply force, pressure, bearing load, moment, and body loads. You can also define fixed constraints. Inventor builds Finite Element Analysis (FEA) meshes automatically and calculates stress, displacement, and factor of safety throughout the part. Figure 1 displays a sample analysis on an offset bearing. As shown in the figure, a graphical representation of the part accompanied by a color bar makes the analysis result clear.

AIP not only shows stress distribution throughout the part but also displays the location of minimum and maximum stress. The value of maximum stress appears on screen as well.

Stress distribution is useful to know more about the behavior of the part under specific loads. However, you usually need to know about displacement, or rather, deformation values. Fortunately, AIP 9 provides you with such information. A graphical representation of displacements along with the maximum displacement value helps you to have a better understanding of the effect of loads on the part.

Factor of safety is an important parameter in such an analysis. AIP calculates factor of safety throughout the part based on the part material. The minimum value appears on screen to ensure that part does not fail under existing loads. You can easily change the part material and recalculate factor of safety.

If you wish, AIP creates graphical presentations of one or more resonance modes. The relevant frequency to each mode appears on screen.

AIP 9 stress analysis feature is so easy to use that you can initiate analysis in a few minutes

The report

Analysis without proper reports does not seem to be very useful. AIP can create a useful report including graphical presentation of stress, displacement, factor of safety, and frequency modes. Some tables provide information about part, material, stress, strain, frequency modes, and so on.

The report is in HTML format and a table of contents introduces the name of relevant images files to locate and distribute them if necessary. The following figure displays a screen capture of a sample report. Figure 2 shows the report title and a sample table.

Interaction with ANSYS

ANSYS DesignSpace is a Computer Aided Engineering (CAE) application that enables users to analyze parts and assemblies. Since the AIP 9 stress analysis feature is powered by ANSYS technology, you can easily export analysis data from Autodesk Inventor to an ANSYS DSDB file. You can import such files in ANSYS DesignSpace for further analysis such as heat transfer and thermal/stress results.

Benefits

AIP 9 stress analysis feature is so easy to use that you can initiate analysis in a few minutes. However, depending on the complexity of the part and loads and computer calculation speed, it may take some time to get the results. For the part shown in this article, it takes a couple of minutes to get the analysis result with a Pentium 4, 2.66 MHz processor.

On the other hand, AIP 9 stress analysis feature is easy to learn. If you are familiar with Autodesk Inventor, you can learn this feature in a few minutes.

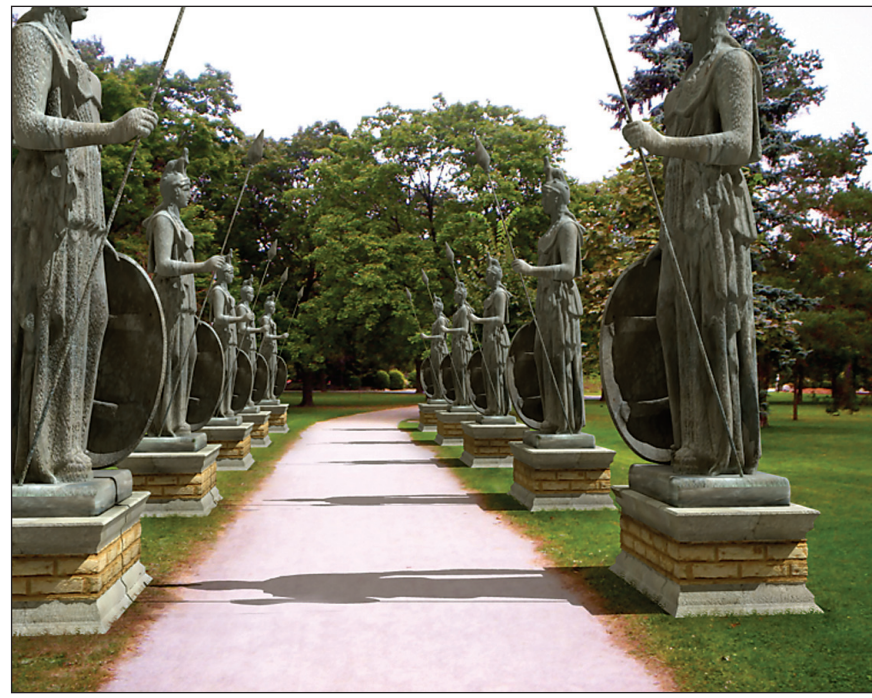
More information

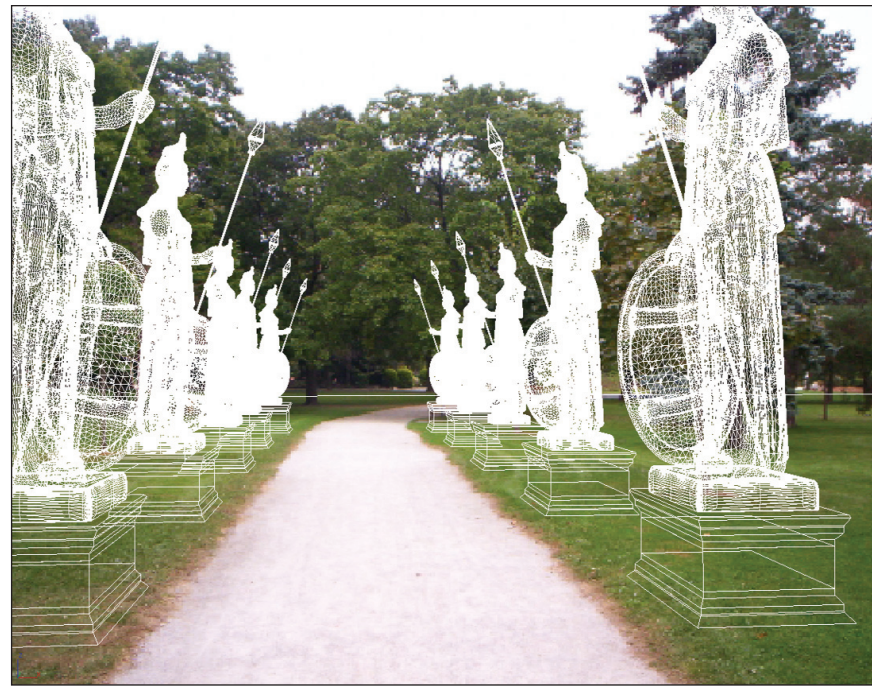
For more information about AIP 9, visit www.autodesk.com/inventorpro. You can also find more information about ANSYS and Inventor Professional at www.ansys.com/autodesk.

Alireza Parsai, founder of www.cadpanel.com, is a mechanical engineer with more than 13 years of AutoCAD experience, an author, and an instructor. He can be reached at info@cadpanel.com.

Realism with Photo Textures

When your computer-generated images have to become seamless with the real world, photo textures will help you bridge the gap. Photorealism in computer-generated images is, at its core, about believability. It's about creating an image that suspends our disbelief and allows us to process what we are seeing as real





Photos and post process

There are two key elements to obtaining believable photo textures. The first element is taking good photos with consistent lighting and minimal signs of perspective. This means shooting surfaces as close to perpendicular to the camera as you can manage. The second element is post processing the photos in a paint program, such as Adobe Photoshop, for color correction and other useful image editing such as generating other important types of surface maps besides the diffuse channel. Bump maps, displacement maps, and specular maps all add an amazing amount of detail to the final image. Post processing also allows you to remove blemishes and other unwanted things in the image such as specular highlights that may not match the lighting scheme in your scene.

Texture map placement

Texture map placement is one of the trickiest parts of creating photorealistic images. There are tools built into the core of 3ds max and there are also many third-party plug-ins, which all essentially do the same thing…unwrap the UVW coordinates into a flat 2D representation of the 3D object. This 2D representation can be used as a guide for editing the UV coordinates into place, but can also be exported as a raster image for importing into a paint program for direct image placement and additional painting.

Measure and verify

There are a few methods we can use, inside 3ds max, to verify that our photo textures are at the right scale for our scene. First, we can draw a spline shape or import one from AutoCAD that represents the actual dimensions of the object in the texture map. For example, a rectangle shape could be created for a brick or pavers stone, and so on. In one of the orthogonal views, with textures turned on in the viewports, you can place the spline shape next to the surface to do a visual check between the two. Second, you could use the tape helper objects to snap to the surface and measure the object in the texture directly. Third, the measure distance tool can be used to obtain distance measurements simply by clicking a beginning and end point from within the viewport with the result printed to the Maxscript mini listener at the bottom left of the screen. Fourth, when attempting to scale photo textures such as basic concrete or stucco, which isn't always easy, it is generally a good idea to take physical measurements before you take the photos so that you can reference them later. Lastly, you can use one of the best tools of them all…your eyes. If it looks like the scale is off, it probably is. Correct scaling is essential to creating photorealistic images.

Suggestions

Although there are many great texture libraries available on the Internet, creating a custom, photoreal, texture library of your own is essential. It's not practical to shoot every texture for every object in your scene but you should customize the images from the commercial libraries to make them more unique. It loosely requires you to be a photographer, but with practice, images taken for texture maps becomes pretty easy. A high-resolution-capable digital camera is an integral part of this process and is an indispensable tool. It really speeds up the workflow if you keep the pipeline all completely digital. You can use a 35mm film camera, but then you will need to do all the added work of scanning.

The end game

In the end it really depends on your end goal for the images. Whether you are integrating 3D with a live-action plate or creating architectural visualizations or even creating virtual set extensions, photorealistic textures will help you get that much closer to believability. The challenge is to take something that was computer-generated and make it look as though it weren't. Good luck.

Dwayne D. Ellis is the lead 3d computer animator at Hrycay Consulting Engineers, a firm specializing in motor vehicle accident reconstruction. He is also the founder of Lifeseyes Studios and can be reached at dwayne_ellis@yahoo.com.

Wall Styles and Display Reps

What is the display system?

The Autodesk® Architectural Desktop display system is the key to a flexibility that allows the designer to use the same objects for preliminary design, presentation design, construction document floor plans, and reflected ceiling plans and renderings.

The display system is organized into configurations, sets, and representations by object. Drawing display defaults can be inspected and changed by using the AECDisplayManager command (Format -> Display Manager).

A configuration is a collection of sets. If a configuration contains more than one set, it is "view dependent." For example, in Figure 1, Medium Detail is "view dependent," whereas Diagnostic is not. The current configuration is bold and has a unique icon. The current configuration also appears on the status line.

A set is a collection of representations for individual objects for a single view direction category and level of detail. Sets that are used have a check mark on their icon. (See Figure 2). When a particular set is selected, the right pane displays a matrix schedule, which indicates the display reps with which each ADT object is displayed. See Figure. 3.

The Representations by Object folder offers a version of this matrix schedule. Each ADT object has its own set

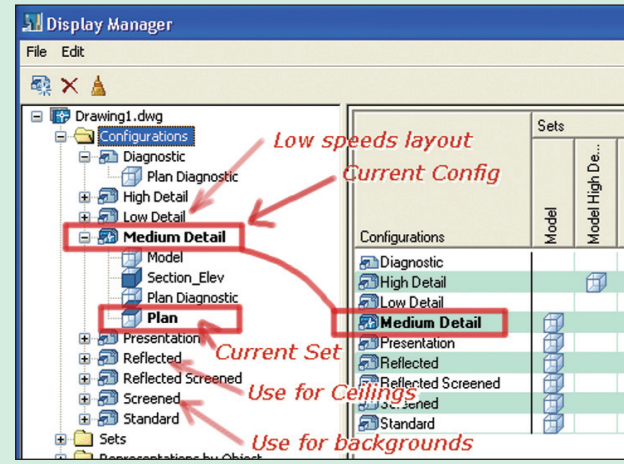


Figure 1 Display Configurations

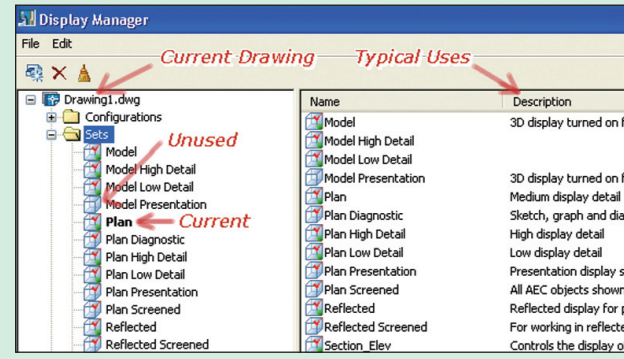


Figure 2 Display Set Descriptions

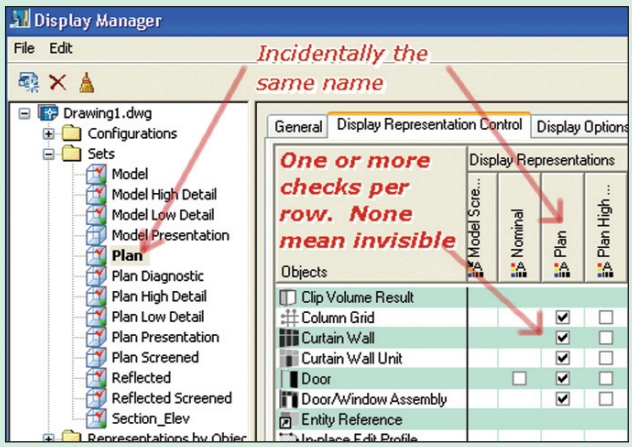


Figure 3 Display Set Matrix Format

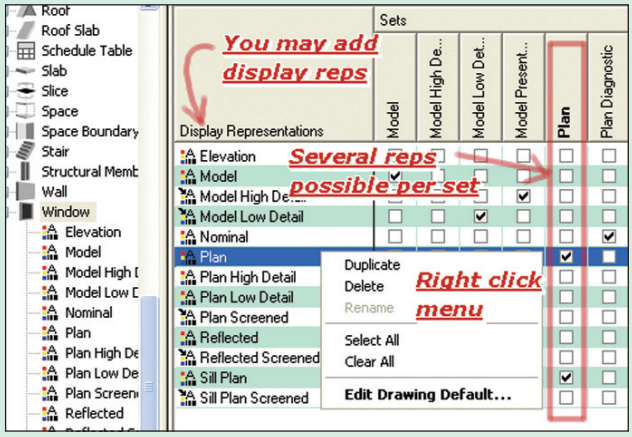


Figure 4 Representations by Object Can Be Added

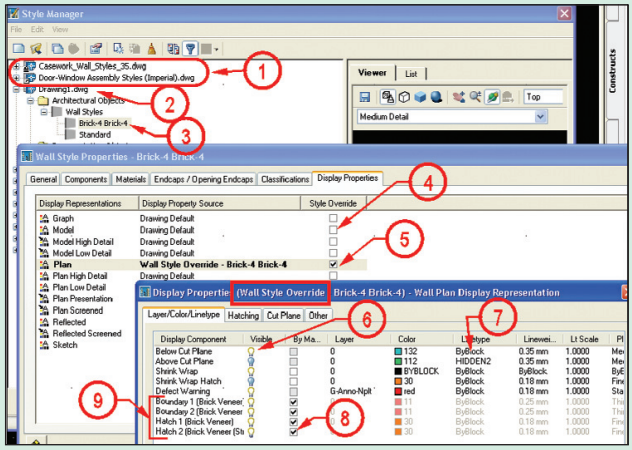


Figure 5: Wall Style Orientation

Figure 5 Notes

1 Wall styles opened via the style manager
2 The current, as yet unnamed drawing.
3 A wall style dragged from the stock tool palette. Double click here for wall style properties.
4 An example of an unoverridden display rep that is not current
5 Checking this box sets a style override for the current display REP and launches a dialog.
6 The below cut plane component is visible. Notice that it can't be controlled by material.
7 For the foundation wall, set the linetype to hidden. This will affect the footing
8 Hatch is usually best left with material definition controlling.
9 This wall has two components. For some views, one or more of the components is best hidden.

of display representations (See Figure 4). To add a representation, right click on a representation row that you wish to edit or duplicate.

Why adjust display representations?

Display reps are built into all of the OOTB ADT objects but sometimes individual objects, need their display representations tweaked to serve particular purposes. Cut planes for example may need to be adjusted. Changes made in the display manager affect the drawing defaults for generic AEC styles.

Where are display settings stored?

Display system settings are saved in the current drawing. To be available for new drawings they should be exported to template drawing files. Project template files may be a good place to store settings unique to a project. New object styles should be saved in style drawings in the content\styles\imperial or content\styles\metric directories. Object styles placed on tool palettes can come from any saved drawing however.

How can display settings be imported?

Right clicking on the configurations folder of the display manager allows one to import or export display settings from or to other drawings. It is possible to overwrite configurations with the same name.

What objects must be controlled by display manager

Since there is no style control for openings, the display of openings display is controlled by the display manager. The display manager also controls any other objects that don't have styles, such as anchors and layout curves.

How can wall display representations be controlled?

First, consider whether the changes affect all wall styles. If so, then use the display manager to edit the drawing defaults. If the change should affect a particular wall style, use style overrides (right click on wall and choose "edit wall style"). If the change should affect only a few walls, then add an object override (shortcut menu "Edit Object Display"). If possible delay object overrides until the project nears completion.

Developing a foundation wall style

To get used to the display system for walls, let's make a new foundation wall style and adjust the display settings.

Use "Wall Style" to launch the style manager and set focus to walls. See Figure 5.

When should layers be used?

Use layers whenever you would like to control the display of an individual component by layering. It is debatable whether layering is better or worse than adding a display representation. Notice that most of the components shown in Figure 5 are drawn on layer 0. This makes it possible to turn off all of the wall components by turning off the layer of the parent wall object. The sole exception is the Defect Warning, which should never be plotted. This is the recommended method.

Finishing up the foundation wall

The resulting foundation wall shown in plan view in Figure 8 has a dashed footing. Number 1 shows the footing; number 2 shows the shrink-wrap, which happens at the cut plane; and number 3 shows the hatch. The final step is to adjust the cut plane for the wall style. Since residential crawl spaces rarely exceed three feet high, the cut plane should be set to 18-24" high.

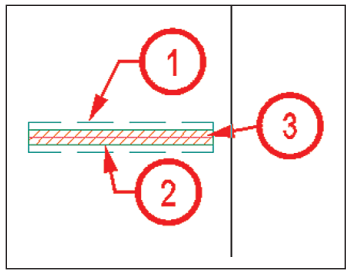


Figure 8 Resulting Foundation Wall Style

Cycle through each display configuration and look at each standard view to inspect the results before assuming the wall style definition is finished. Do not rely on the object viewer in the style manager to inspect the results. In some cases, the object viewer gives a false rendering of the wall display.

Best practice

Use the style manager to control the display of objects that have styles. Set style overrides when there is something unique about a style. Set object overrides only when necessary to meet exceptional conditions. Walls that have object display overrides, for example, will ignore any later changes made to the display of a wall style.

Control the display of objects that do not have styles with the display manager.

Adjust drawing defaults for ADT styles either with the style manager or with the display manager. Affecting a particular style is only possible with the style manager.

Import materials definitions and use standard wall components whenever available.

Save display settings to templates if they are to be reused. Import or export display settings by right clicking on the display manager configurations folder.

Save drawings before adding wall styles to the tool palettes. Consider adding the new definitions to one of the wall style drawings.

Save archival copies of the OOTB style drawings before changing to allow for reversion to those styles.

Caution!

- Changing the display system has serious implications.
- Consult with those in authority in your office and coordinate with others working on the project prior to making changes to the display system. Document changes made.
- Test your new styles thoroughly before assuming they are ready for distribution.

Doug Broad is a registered architect and instructor at Nash Community College. He has used AutoCAD since v2.6 and currently uses Architectural Desktop and does customization in AutoLISP and VBA. He can be reached at dbroad@earthlink.net.

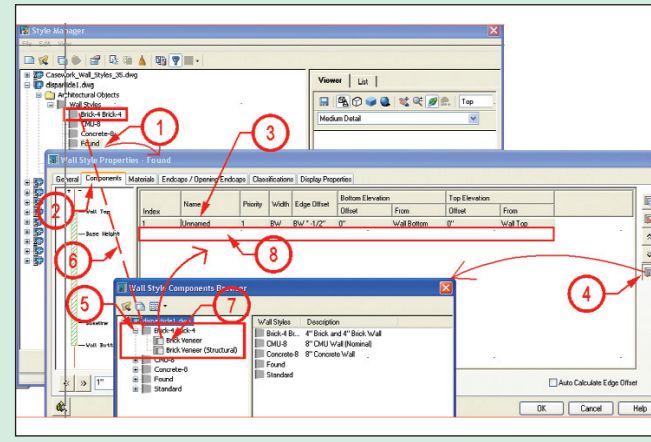


Figure 6 Creating a Wall Style by Dragging Components

Figure 6 Notes

1 The new foundation wall created the upper left "new" button. Then name it and double click.
2 All the action here is on the components tab.
3 Wall styles must have at least one component, here unnamed. It will be deleted later.
4 A most important button, "browse wall styles". Use this whenever possible to preserve standard component priorities and material and display settings.
5 A source wall style (must exist in current document).
6 Shows relationship between browser window and main style manager window.
7 Components to be dragged into new wall style.
8 Location where source wall component settings is copied.

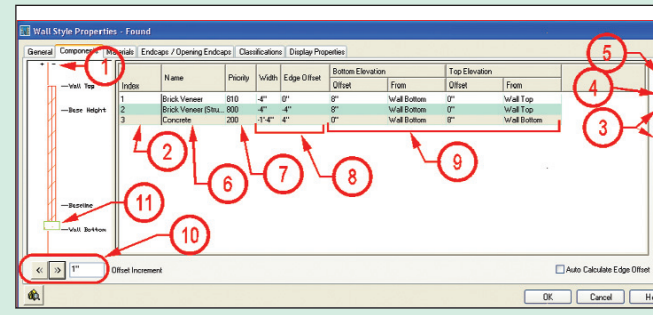


Figure 7 Component Tab of Wall Style Properties

Figure 7 Notes

1 Object viewer window showing positive and negative direction. This display changes as components are added, deleted, or moved. Notice the left face of the wall is on the baseline. This is best for foundations.
2 Index number is not important, but when associating endcaps it is best to organize them left to right. Put special components last.
3 These buttons can be used to change a components index number.
4 Use this button to delete a component.
5 Use this button only as a last resort. All display, priority, and material settings must be manually entered. Use standard components whenever possible.
6 Component names. Change concrete to footing to be more descriptive.
7 Standard priorities are important. Lower numbers represent higher priorities. High priority components cut through lower ones.
8 AEC dimensions do not use negative component widths. Unless you want the AEC dimensions to work on individual components, use negative widths.
9 Notice the start and end settings for the various components.
10 A convenient way to slide components left(-) or right(+).

Foundation Wall Component Settings

					Bottom Elevation		Top Elevation	
Index	Name	Priority	Width	Edge Offset	Offset	From	Offset	From
1	Brick Veneer	810	-4	0	8	Wall Bottom	0	Wall Top
2	Brk.Vnr. Struct.	800	-4	-4	8	Wall Bottom	0	Wall Top
3	Footing	200	-16	4	0	Wall Bottom	8	Wall Bottom

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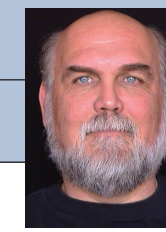

David Kingsley

I'll Enter a Defense of Temporary Insanity

In my previous column I stated that this would be my final On the Back Page column. In the ensuing weeks I reconsidered this and have decided to continue writing the Back Page. Thanks for your feedback and support. I promise this is not just a cheap election-year ploy.

My third and final term on the AUGI Board will end, per the bylaws, at the end of 2004, but all my official business will be wrapped up at the end of Autodesk University. A lot of water has flowed under the bridge in six years, so I'll give you my brief personal perspective on that here.

My first AUGI board meeting

I attended my first AUGI Board meeting at Autodesk's San Rafael headquarters in January 1999. I had seen the address 111 McInnis so many times, and here I was, signing in at the front desk! To me this place embodied the heart of the product that had driven my professional life for so many years. I was 47 years old at the time, so I had been around the block a few times. I must admit that my heart fluttered as I passed through the big glass doors leading to the Executive Briefing Center of the fourth largest software company in the world. Then Lynn Allen walked in.

And on that subject…

You all need to know that Lynn is the all-time champion of AUGI. When we incorporated, she could no longer officially serve on the AUGI Board, but we all agreed that she needed to maintain a title. Her official title is "AUGI Sweetheart," which she will hold forever. I cannot begin to list here all the things she does for the Board. She counsels us, covers for us, pairs us with the right Autodesk execs for meetings, works the Autodesk system for us, makes sure we have cookies and coffee and pizza, cooks us big dinners, takes us out to nice restaurants (and lets me select the wine). Without her leadership, AUGI would be only half of what it is today. I sincerely thank you, Lynn.

It is a tradition that the president of AUGI has a private meeting with Carol Bartz at every Board meeting held in San Rafael. Carol also joins the Board for lunch whenever our schedules match up. There is no doubt in my mind that AUGI has her unwavering support. Over the years she also has counseled, scolded, funded, and inspired us. I thank her for her continuing and future support of AUGI.

Let's get back to the meeting

I had come to know a few of the AUGI folks through my NAAUG and AU experiences, so I wasn't in a room full of strangers. Strange people yes, but not strangers. We went through the meeting ritual of going around the table and introducing ourselves. I said that I had been married for 23 years, and Lynn said, "Wow, that's wonderful." I said, "Well, there were seven different women, but it adds up to 23 years" (Henny Youngman, circa 1956). The next day we were at our executive luncheon, the one Carol Bartz attends, and once again doing the introduction ritual. I was a little nervous, yes. I thought I was through it, but Lynn chimed in with… "Dave, how long have you been married?"

David Harrington was presiding over his first meeting as president. dave espinosa-aguilar was present as LUG Representative, as was yours truly as the Mechanical Group Chair Person. Three Daves (or two Daves and a lower-case dave), three beards, and one head of hair. At one point, someone called "Dave," then reconsidered and said, "the bald Dave" (in case you've lost track, we've eliminated only one Dave). Then they thought again and said, "the *old* bald Dave." Fortunately that moniker didn't stick for too long.

That meeting is when dave e-a proposed the first AUGI website. To put things in perspective, the first commercially available web browser, Mosaic, became available about 1994, so in 1999 the Internet wave was (and is) still building. For small organizations, building a website was still a relatively complex, expensive, and leading-edge proposition. The initial budget was $25,000. We approved it within minutes.

How many of you remember our first augi.com home page that took five minutes to load? We quickly learned about "lightweight" web graphics. Most people still had 28K modems and wanted a 56K connection. For you who have known only broadband, that is 56K in contrast to today's widely available 1,544K connections. Technology marches on.

As you can see, this article would run very long if I tried to cover everything, so I advise you to read dave espinosa-aguilar's excellent and detailed AUGI History on the website by clicking "About AUGI >> History."

To sum it up

There are two things that I consider to be my AUGI legacy. I introduced the concept and politicked heavily to implement the Forums. I did not perform the selection, installation, and configuration of the software, but as administrator, I laid out the user interface structure of both the pre-and-post-worm versions. There was some serious opposition to change involved in that transition, but I think that now most AUGI members can see the power of the technology and the diversity of subjects that can be cataloged and retrieved. Just go to "Coffee Without CAD" and search on any old word; chances are good you will get a hit.

The other legacy item is the design of the new ATP. When I learned the administration capabilities of the forums, I quickly saw how we could meld the structure of the old ATP paradigm with the technology of the new forums. I wrote a spec calling for the ATP Course Catalog, a one-click registration, and the My ATP page to let users manage their own class registrations. I think we have developed a powerful training medium that will only improve with maturity.

A lot of people have donated a lot of their time to make AUGI what it is today. Just look in dave e-a's AUGI history at the people who have served on the AUGI Board, and note how many of them are still serving today. They all deserve your support.

All in all, I'd say it has been a great six years. It has enriched my life professionally and provided a lot of fond memories and friends for life. I would advise anyone who is so inclined to step up to the plate and serve on the AUGI Board. You won't regret it.

I'll see you at AU.

David Kingsley served from 1999-2004 on the AUGI Board of Directors and is the Director of Electrons at CADPlayer Web Courseware. He can be reached at david.kingsley@cadplayer.com.

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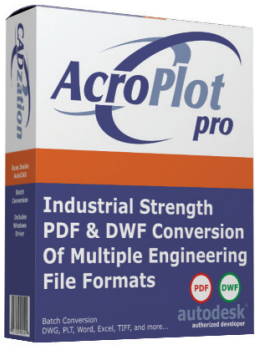

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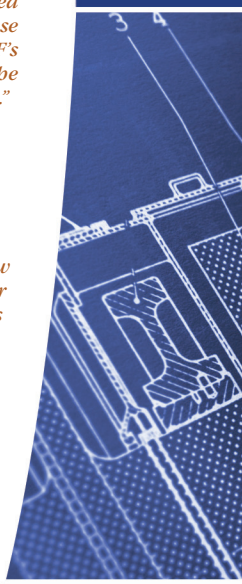

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