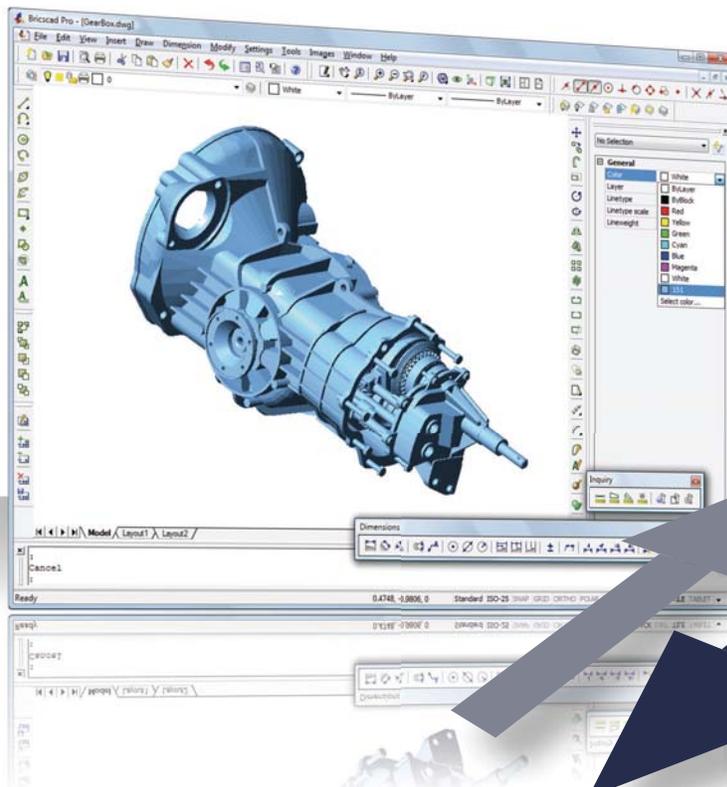# Bricscad

for AutoCAD® Users

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Table of Contents

Appendices

CHAPTER 1:
Bricscad V10 for AutoCAD Users

THIS BOOK IS designed to help you make the transition from AutoCAD® to Bricscad. In it, you will learn about the pros and the cons of using Bricscad in place of AutoCAD. You'll read about the advantages of switching to another — yet very similar — CAD package, as well as some of the pitfalls to watch out for.

The chapters in this book discuss topics such as learning about file compatibility with AutoCAD, becoming familiar with the Bricscad user interface, and customizing it. The book also includes appendices that exhaustively cross-reference commands, system variables, aliases, keystrokes, and button actions between the two CAD systems.

Bricscad for AutoCAD Users is meant for several type of CAD users:

- AutoCAD users considering switching to Bricscad
- Firms adding licenses of Bricscad to complement their AutoCAD shop
- Companies working with clients who use the other CAD package

Or perhaps you are simply wondering about the differences between the market leader AutoCAD and the aggressive up-and-comer Bricscad. This book is for you.

The Entire Bricscad Product Line

Executives at Autodesk have grown the company into a two-billion-dollar-a-year company, becoming the largest CAD software company in the history of the world. But with size comes risk.

Risky Business

Autodesk offers over a hundred software packages and bundles (at time of writing), and AutoCAD itself comes in more than twenty variations, such as the LT and OEM versions. It is also available in complex combinations with Autodesk's other software, such as the AutoCAD Revit Architecture Visualization Suite and AutoCAD Inventor Routed Systems Suite. It can be tough to choose.

Given the amount of software available from the largest CAD software company, making purchasing decisions can be risky as Autodesk fine-tunes its offerings to maximize profits. In recent months, Autodesk announced it is abandoning its facilities management software (FMdesktop); it halted further development of its construction management software, Constructware. In previous years, it orphaned its Actrix Technical diagramming software, AutoCAD-based Mechanical Desktop 3D mechanical software, StudioDesk conceptual modeling software, and other software.

Autodesk tends to price its products high. Its foundational drafting package, AutoCAD, has a list price of US$4,000 — some 4x to 8x more costly than is usual for productivity software. The high price of AutoCAD is just the start: one of its previous CEOs famously boasted to financial analysts that the company can make up to ten times more money from customers who move up from AutoCAD to its 3D modeling software.

Once customers decide on which version of AutoCAD to license, they are pressured into also purchasing annual subscriptions; for many products, however, the subscription payment is mandatory. Targeting customers who forego making annual subscription payments, Autodesk recently tripled the price of some upgrades to as much as 50% of the product's list price — $2,000 in the case of AutoCAD.

Customers must agree terms in a software license that permits Autodesk to send agents into private homes and businesses to search for unauthorized copies. It also stipulates that Autodesk software can only be used in the country in which it was purchased, making it illegal for customers to take part in today's world of globalized business.

In recent years, Autodesk has unfortunately become the most litigious of all CAD vendors, launching law suits against competitors for reasons as trivial as using the color orange for a rectangle on product packaging, and for using the generic DWG file extension in product naming.

Bricsys Business

In contrast, Bricsys makes the choice easy by offering three products:

- **Bricscad Pro** — full featured CAD
- **Bricscad Classic** — lower priced CAD
- **Vondle** — browser-based project management

Bricsys does not charge customers high prices, doesn't impose mandatory subscriptions, and doesn't sue its competitors. The software license terms allow you to use the software in any country; Bricsys does not threaten to send agents into your home.

Bricscad Pro is the full-featured version of Bricscad. The Classic version is nearly identical, but cheaper, because it leaves out features for which Bricsys pays royalties to other software companies. The Classic version excludes ACIS modeling and editing, and VBA and BRX programming.

Bricscad Classic Includes	Bricscad Pro Includes
ACIS viewing	ACIS viewing, plus ACIS modeling and editing
DRX only	DRX, plus BRX, VBA, and VBA DVB projects

Bricscad uses the highly compatible Open Design Alliance libraries to read/write DWG files.

Vondle Project Management

Bricsys offers everyone Vondle, its professional browser-based communication, collaboration, and project management system. Unlimited access is available to an unlimited number of participants through a yearly flat fee based on industry type and company size.

Vondle project management offers you:

- Speed. You can view multi-megabyte-large drawings in seconds, zooming in on a detail, and examine annotations with fly-over text that lists time stamp and author.
- Compliance management. You can follow a continuous audit trail of the entire project process. Vondle automatically maintains a log file of project activities and participants.
- Single access point. You have a repository of all actions, documents, meetings, and participants in a single location.
- No software to install. You work with an ASP (application service provider) system. The software runs on central servers with guaranteed access 24/7; you only need an Internet connection and a supported Web browser.
- Integration with Bricscad v10. Access the Vondle site directly through Bricscad's File | Vondle/eBridge command.
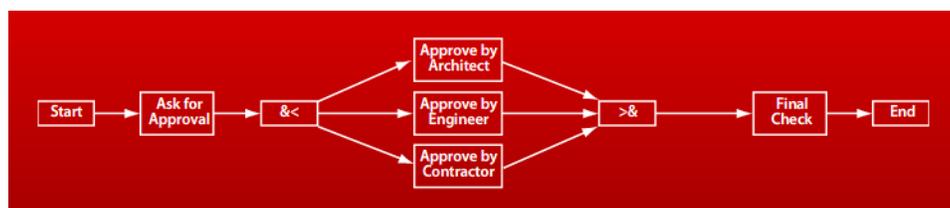
Bricsys provides these Vondle tools free to make project management easier on your computer:

VondleExplorer is a Windows shell extension for synchronizing local files and folders with Vondle. The usual Vondle operations on documents are possible in the Windows environment on your computer.

VondleTray performs offline reviewing and editing of Vondle documents. It manages the downloading of documents to your computer, and keeps track of their status.

VondleUpload (for Windows, Mac, and Linux) uploads to Vondle multiple files at once to different projects and folders.

For more information on Vondle, see www.bricsys.com/en_INTL/vondle.

The Advantages of Bricscad

Bricscad doesn't just lack the negative aspects of AutoCAD; it has its advantages. These include a nearly-identical user interface, additional commands and system variables, support for operating systems other than Windows, a no-charge developer network, and lower pricing.

Near-identical User Interface

When you launch Bricscad for the first time, you will notice that it looks very much like AutoCAD 2008 — complete with command prompt. If you do not care for the Microsoft-designed ribbon interface that Autodesk added to AutoCAD 2009, then you will love Bricscad for sticking to toolbars and menus.
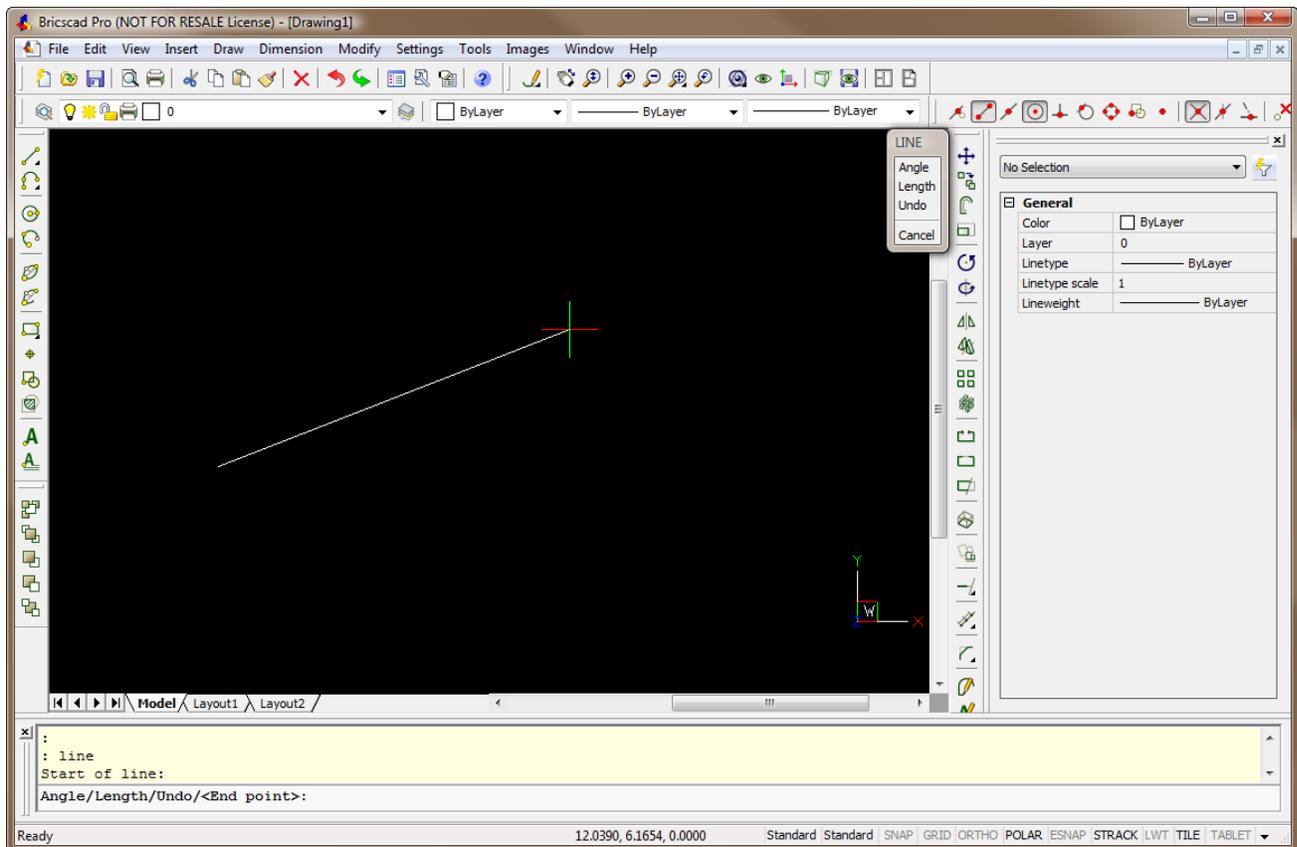
As the appendices at the back of this book amply illustrate, Bricscad uses the same names for many AutoCAD commands, system variables, aliases, and even keystroke shortcuts. Those missing are mostly commands you probably weren't using in AutoCAD anyhow, such as those for database linkages and sheetset management.

Bricscad is available in English and 12 other languages. Chapter 2 describes the user interface in greater detail.

Added Commands and System Variables

While Bricscad lacks some of AutoCAD's more than 1,300 commands and system variables, Bricscad has a number that are lacking in AutoCAD. For example, all object snaps are their own command, such as Intersection and Midpoint. Bricscad has more options for selecting objects, such as the circular and external selection sets. There are commands for manipulating extended entity data, something that is available in AutoCAD only through programming. The PdfOptions command makes exporting drawings as PDF files more convenient.

AutoCAD stores a number of user settings in locations that can be difficult to access; some are even unavailable through system variables. Bricsys has added system variables to return access to many of these settings. For example, BkgColor specifies the background color of the drawing area, and CmdLineFontName sets the name of the font used by the command bar.

All of Bricscad system variables and options are summarized in a single dialog box accessed through the Settings command.

Multiple Operation System Support

Bricsys has been rewriting the Bricscad code to make it independent of the operating system. The effort will allow the company to offer versions of Bricscad that run natively on the Linux and Mac OS X operating systems. The Windows version of Bricscad already runs on Macintoshes using Bootcamp. The company speculates that in the future Bricscad might even be able to run on operating systems meant for cell phones (mobile phones or "handis") and Web browsers, like Android or ChromeOS.

Sign up for the Bricsys Web site's RSS feed at www.bricsys.com/rss/rss.jsp?channel=bcad for breaking news on Linux and Mac.

No-charge Developer Network

Unlike most other CAD vendors, Bricsys does not charge third-party developers. You do not pay a fee to join; you do not pay an annual membership; you do not pay for support; you do not pay royalties on shipping products.

The reason is that Bricscad decided to become a successful CAD company by encouraging many add-on applications. Indeed, the tag line in the Bricscad V10 About dialog box now reads "Enabling Applications."

The company feels so strongly about third-party development that it has halted its own add-ons. It concentrates on two things only:

- Improving Bricscad
- Improving the APIs

When third-party developers request additions to the API, the new code also becomes new features in Bricscad that end-users can employ.

APIs

Bricsys is making it easier for third-party developers to adapt their AutoCAD add-ons to Bricscad — just as Bricsys is working to make it easy for AutoCAD users to learn Bricscad. For this reason, Bricscad supports almost the same list of APIs as does AutoCAD:

AutoCAD API*	Bricscad Equivalent	Notes
AutoLISP	LISP	AutoLISP code runs as-is in Bricscad, no changes needed
Diesel	Diesel	Diesel code runs as-is in Bricscad, no changes needed
DCL	DCL	DCL code runs as-is in Bricscad, no changes needed
VBA	VBA	AutoCAD VBA code runs as-is in Bricscad, no changes needed
ADS	SDS	ADS code requires only a recompile using new SDS headers
ARX	BRX DRX	ARX code requires only a recompile using new BRX headers ARX code must be checked carefully when used with DRX
COM	COM	AutoCAD COM code runs as-is in Bricscad, no changes needed
.Net (Managed wrapper classes)	DWGdirect.NET	AutoCAD .Net code will be supported by Bricscad in the future
VSTA	...	Unavailable in Bricscad

*) *API* is short for "application programming interface," and is the software link between CAD software and programming languages/compilers.

Generally, Bricscad provides a nearly identical subset of equivalent function names. In the case of non-compiled code, such as LISP and DCL, you just drop it into the Bricscad environment. For compiled code, you recompile using the headers provided by Bricsys.

Examples of Add-ons

Independent programmers have written dozens of add-ons that tailor Bricscad for specific applications in the areas of AEC, civil, data exchange, electrical, GIS, survey and mapping, general tools, HVAC, mechanical, packaging, rendering, and structural design. Here are just a few examples:
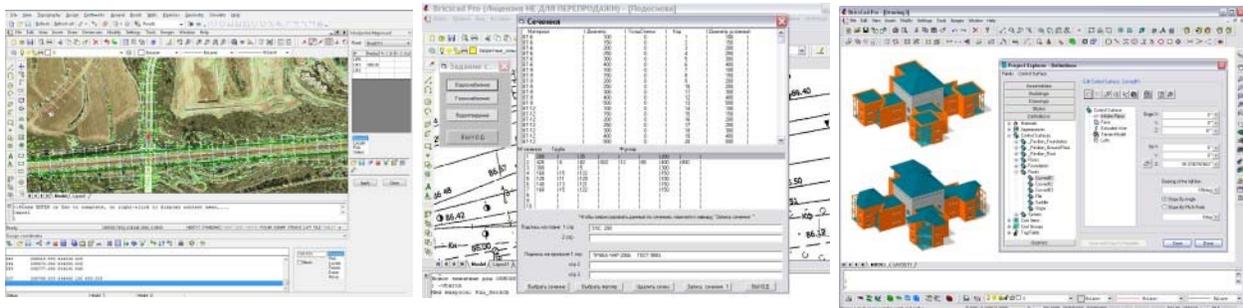
Left to right: CivilCAD2010, Engcad, and Architecturals

- **ADACX** creates and edits ADAC-standard civil infrastructure drawings for Australian Councils.
- **CivilCAD2010** provides surveying, road construction and design tools, water engineering features, land volumes calculations and realtime 3D simulation.
- **3DM Export** exports Bricscad drawings in Rhinoceros 3DM format.
- **CP-System Electrical** designs lighting systems, low-tension, power plant, aerial, alarm and other electrical installations.

- **GeoBL** creates topographic plans and includes a library with topographic symbols.
- **StrucPLUS** is a complete set of tools for preparing structural engineering drawings.

For the complete list of applications available for Bricscad, visit their Applications eStore at www.bricsys.com/common/applications/applicationlist.jsp.

Lower Purchase and Maintenance Pricing

Bricscad Pro with annual maintenance is seven times cheaper than AutoCAD. To put it another way, you can outfit seven workstations with Bricscad Pro for the price of just one with AutoCAD.

The current list prices at time of writing are as follows:

Item	AutoCAD[1]	AutoCAD LT[1]	Bricscad Pro[2]	Bricscad Classic[2]
License[3]	$3,995	$1,195	$470	$365
Maintenance	$400	$195	$155	$155

[1] USA pricing only; usually higher in other countries.
[2] International pricing (one price for all countries).
[3] Single-use license; lower pricing available for multi-seat purchases, networked versions, upgrades; taxes not included.

See https://www.bricsys.com/estore/estore.jsp for full details on pricing and Bricscad products.

It Makes More than Cents

You could ask, "Are AutoCAD's additional commands worth the $3,525 difference in price?" For some users, it makes sense to pay for the ability to manage sheetsets, generate database links, and perform 3D mesh modeling.

But another user might think: "I can get more mature 3D mesh modeling with Rhino at $1,000, and then get the Rhino->Bricscad file converter for $195) — and still be two thousand dollars ahead." For example, model a boat hull in Rhino, and then draw 2D details with annotations in Bricscad. (Rhino is available from Robert McNeel & Associates at www.rhino3d.com/download.htm; the converter is sold at the Bricsys eStore.)

Bricscad is Not IntelliCAD

Some readers may be familiar with the heritage of Bricscad, and know that it was based on IntelliCAD. "Was" is the operative word here.

The earliest versions of Bricscad were simply rebranded versions of IntelliCAD, an AutoCAD workalike programmed by the IntelliCAD Technical Consortium. Belgium-based Bricsys sold the software primarily in northern Europe.

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(A little history: In 1998, the ITC was created by Visio, now part of Microsoft, after deciding it no longer wanted to be in the CAD market. Visio had originally purchased "Project Phoenix" from SoftDesk, the largest AutoCAD third-party developer in the world in the mid-1990s. SoftDesk began coding Phoenix after executives worried that Autodesk might cut them off, as the software giant had done to another major third-party developer. When Autodesk purchased SoftDesk, the US Federal Trade Commission required it to spin off Phoenix. That was when Visio made the purchase, but then spun of the IntelliCAD code to the ITC in 1998. Today, the ITC continues to update IntelliCAD while consortium members rebrand the software with additional features for resale in their regions.)

For several years, Bricsys wrote additional code for Bricscad, contributing the code back to the ITC. Bricsys found, however, that it was writing the new code faster than the ITC could integrate it for its many members. Bricsys had to decide between "forking" the code (creating two versions, their own and an IntelliCAD-compatible one) or going their own way. They chose the latter.

With Bricscad V8 and V9, the company began replacing ITC code with their own. As of Bricscad V10, the software is entirely their own, and no longer mentions IntelliCAD or Visio in the About dialog box (as does the one for V9, illustrated above).

Code replacement is a huge undertaking, and explains why V8 and V9 didn't seem to sport very many new earth-shaking features — most of the work was going on under the hood.

What's Missing from Bricscad

Bricscad doesn't have every feature that you find in AutoCAD. Here is a list of the things I found Bricscad lacks (some are displayed and uneditable by Bricscad if found in drawings, such as tables):

Aerial view	Animations (walk and fly)	Annotation scaling	AutoPublish
CAD standards	Database links	Dynamic blocks	Geographic positioning
Lights and materials	Markups	Mesh modeling	Multilined attributes
Multilines	Multline leaders	Quick properties	Quick view thumbnails
Rendering	Sections	Sheetsets	Surface modeling
Tables	Tool palettes	Workspaces	

At first glance, other AutoCAD features also appear to be missing but they have near-equivalents in Bricscad:

AutoCAD Feature	Bricscad Equivalent	Command(s) in Bricscad
Action Recorder	Script recorder	RecScript, StopScript
Geometric Constraints	Due to be added to Bricscad v10.1	...
Dimensional Constraints	Due to be added to Bricscad v10.1	...
QLeader	Leaders	DimLeader
Ribbon	Toolbars and menus	Toolbar, Customize
VSTA	VBA	VBA

System Requirements

A further advantage to Bricscad is that it has milder hardware and operating system requirements than does AutoCAD. This is significant for two reasons:

- Bricscad can run on older computers; it is not necessary to employ high-end hardware nor to install the special display drivers as for AutoCAD.
- Bricscad has more RAM and CPU speed headroom on newer computers than does AutoCAD.

Operating Systems

Bricsys also supports Bricscad running on older releases of the Windows operating system; Autodesk no longer does. Both CAD programs operate on Windows 7, according to my informal testing.

AutoCAD	Bricscad
...	Microsoft Windows NT
...	Microsoft Windows 2000
Microsoft Windows XP SP2	Microsoft Windows XP
Microsoft Windows Vista SP1	Microsoft Windows Vista

AutoCAD also requires Internet Explorer 7 or later; Bricscad does not.

Linux and Mac OS X Support

Bricsys plans to release Bricscad running natively on Linux and Mac OS X. Autodesk supports AutoCAD running on Macintosh computers through Parallels Desktop and Windows; the company, however, has not announced plans for neither a native Mac or Linux version (at time of writing).

Recommended Hardware

Autodesk and Bricsys recommend that your computer meet the following specifications. Note that AutoCAD 2010 will not run on older CPUs lacking SSE2*.

Hardware	AutoCAD	Bricscad
CPU:	1.6GHz with SSE2* (XP) 2.0GHz dual-core SSE2 (3D modeling) 3.0GHz with SSE2 (Vista)	1GHz Pentium III-compatible CPU
Minimum RAM: Recommended RAM:	2GB	256MB, plus RAM required by OS 1GB or more
Hard Disk Space:	1GB for program files	100 MB for program files
Display:	1024x768 with true color (minimum)	1024x768 with true color (minimum)
Graphics Board:	Direct3D 128MB (minimum) workstation-class; supported brands specified at www.autodesk.com/autocad-graphicscard	Any
Pointing Device	Mouse	Mouse

*) SSE2 is short for "streaming SIMD (single instruction, multiple data) extension 2. It allows CPUs to assist with certain math functions and vector transformations of the sort used by CAD applications.

Netbook Support

Both CAD programs also operate on netbooks. The figure below illustrates low-cost Bricscad running on a low-cost netbook with Windows 7:
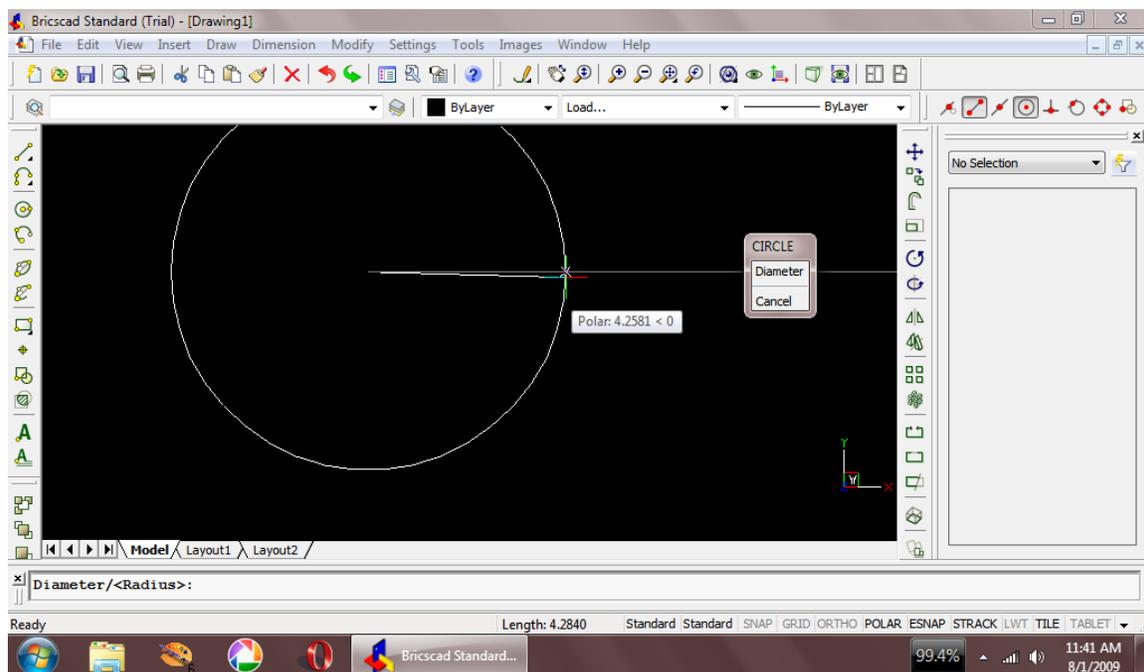
According to my informal testing, both programs need some tweaks to handle non-registering registry entries. Bricscad does not suffer from the installation problem exhibited by AutoCAD, where the netbook requires a higher-resolution external monitor. (Autodesk's installation screens are too large for the standard 1024x600-resolution screen found on netbooks.)

AutoCAD-Bricscad Dictionary

Bricscad's terms closely follow AutoCAD's jargon, but there are a few differences.

AutoCAD Term	Bricscad Equivalent
Object	Entity
Osnap	Esnap (entity snap)
Intersection	2dIntersection
Implied Intersection	3dIntersection
ADS	SDS (Software development system)
ARX	BRX (Bricscad runtime extension) DRX (Design runtime extension)
AutoLISP	LISP
DesignCenter	Explorer
Options	Settings
VisualStyle	ShadeMode
Xdata	EED (extended entity data)

IN SUMMARY, Bricscad operates a lot like AutoCAD — yet is much more economical. In the following chapters, we delve deeper into the themes sketched out by this chapter.

Just as you can try out AutoCAD free for 30 days, you can install and run Bricscad for 30 days at no charge from www.bricsys.com/open/common/download.jsp?p=BCAD. (Only Microsoft's VBA is disabled in the trial version.) The size of the Bricscad download file is 90MB, some 16x smaller than AutoCAD's 1.5GB download file.

CHAPTER 2:
Comparing User Interfaces
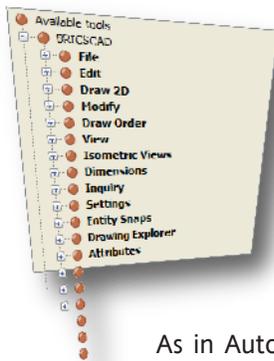
BRICSCAD LOOKS LIKE AutoCAD 2008, as well as more recent releases when the workspace is set to "AutoCAD Classic," as illustrated on the next pages. The similarities and differences are summarized by the boxed text on a later page.

As in AutoCAD, Bricscad defines aspects of its user interface through the content of CUI files (short for "customize user interface") and the settings of system variables. In general, AutoCAD has more capability in its CUI files, while Bricscad provides more control through system variables.

Bricscad V10 User Interface

Title Bar

Menu Bar

Toolbar

Entity Properties

Docked Toolbar

Cursor

Layout Tabs

Bricscad Pro beta (NOT FOR RESALE License) - [Drawing1]

File   Edit   View   Insert   Draw   Dimension   Modify   Settings   Tools   Images   Window   Help

0

ByLayer ─────── ByLayer

Model   Layout1   Layout2

: line

Start of line:

Ready

6.2661,2.9503,0.0000

Status Bar

Command Prompt

x, y, z coordinates

Window
Controls

Properties Bar
(palette)

ByLayer ▼

No Selection ▼

⊟ **General**

Color	☐ ByLayer
Layer	0
Linetype	——— ByLayer
Linetype scale	1.0000
Lineweight	——— ByLayer

Drawing Area

Vertical Scroll Bar

UCS Icon

Y

W

Z

X

Horizontal Scroll Bar

ByLayer ByLayer Standard Standard SNAP GRID ORTHO ESNAP POLAR STRACK LWT TILE TABLET

Resize
Window

Properties

Status Buttons

Summary of User Interface Elements

Bricscad and AutoCAD have similar user interface elements, although some are unique to each package.

AutoCAD	Bricscad
Customizable UI	Customizable UI
Menu bar (turned off in default workspace)	Menu bar
Toolbar (turned off in default workspace)	Toolbars
Ribbon	...
Scroll bars (turned off, by default)	Scroll bars
Command bar	Command bar
Tooltips	Tooltips
Rollover tooltips	...
Layout tabs	Layout tabs
QuickView layouts and drawings	...
Status bar	Status bar
Workspaces	...

On the Drawing Screen	
Tri-color cursor	Tri-color cursor
Aperture cursor	Aperture cursor
Pickbox cursor	Pickbox cursor
Grips	Grips
Selection highlighting	Selection highlighting
Selection previews	...
AutoSnap markers	AutoSnap markers
Autotrack vectors	Autotrack vectors
Steering Wheels	...
Navigation Cube	...
UCS icons	UCS icons
Aerial View window	...

Command Bar & Mouse	
Keyboard input	Keyboard input
Prompt (options) menus	Dynamic input
Keyboard shortcuts	Keyboard shortcuts
Double-click actions	Double-click actions
Mouse buttons	Mouse buttons
Shortcut menus	Shortcut menus

Information Centers	
DesignCenter	Explorer
Tool palettes	...
InfoCenter	...
Quick Access toolbar	...
Quick Properties palettes	...
Properties palette	Properties palette

DesignCenter vs Drawing Explorer

Bricscad's Drawing Explorer is comparable to AutoCAD's DesignCenter, but provides somewhat more information and far greater control. Indeed, Explorer centralizes what would be separate dialog boxes in AutoCAD, such as Layers, UcsMan, and ExternalReferences. (AutoCAD has begun to amalgamate commands with similar functions.)

You access Drawing Explorer through the **Explorer** command, or from the menu: **Tools | Drawing Explorer**.
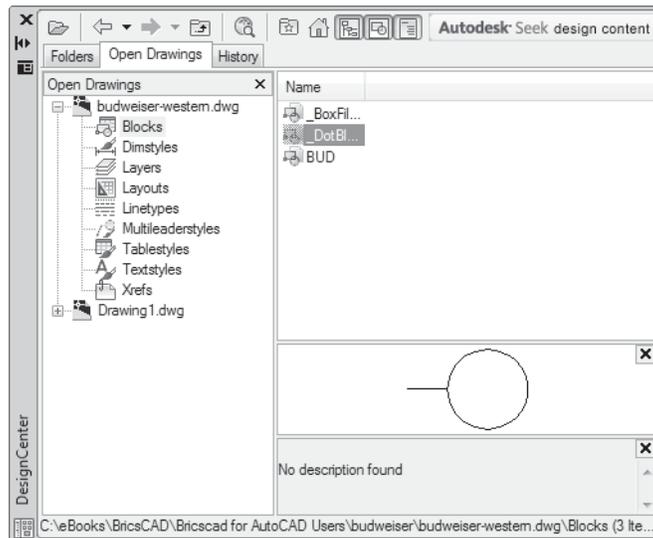
Above: *AutoCAD Design Center*
Below: *Bricscad Drawing Explorer*
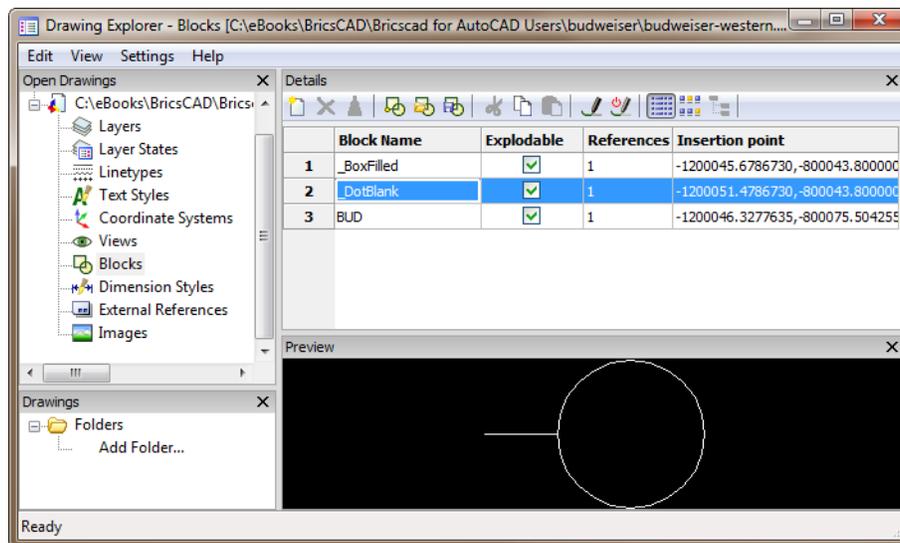
TIP   Bricscad has a number of other commands that access Drawing Explorer. These commands open Explorer, and then highlight the related node. For example, the Layers command opens Explorer at the Layers node. These commands are:

| DdUcs | ExplBlocks | ExpUcs | Image | Layer | LayerState | Linetype | Rename | View | Xref |

Drawing Explorer handles the named entities listed in the table below:

AutoCAD DesignCenter	Bricscad Drawing Explorer	Notes
Blocks	Blocks	AutoCAD controls blocks with the Insert command
...	Coordinate Systems (UCS)	AutoCAD lists UCS names with the UcsMan command
Dimstyles	Dimension Styles	AutoCAD controls dimension styles with the DimStyles command
Xrefs	External References	AutoCAD controls xrefs with the ExternalReferences command
...	Images	AutoCAD lists images with the ExternalReferences command
Layers	Layers	AutoCAD controls layers with the Layers command
...	Layer States	AutoCAD lists layer states with the LayerStates command
Layouts	...	Bricscad does not list layout names
Linetypes	Linetypes	AutoCAD controls linetypes with the Linetypes command
Multileaders	...	Bricscad does not create multileaders
Tablestyles	...	Bricscad does not create tables
...	Text Styles	AutoCAD lists text style names with the Style command
...	Views	AutoCAD lists view names with the View command

Bricscad includes settings for modifying these named entities, a benefit found lacking in AutoCAD's DesignCenter. For example, the Linetypes node lets you load additional linetypes:
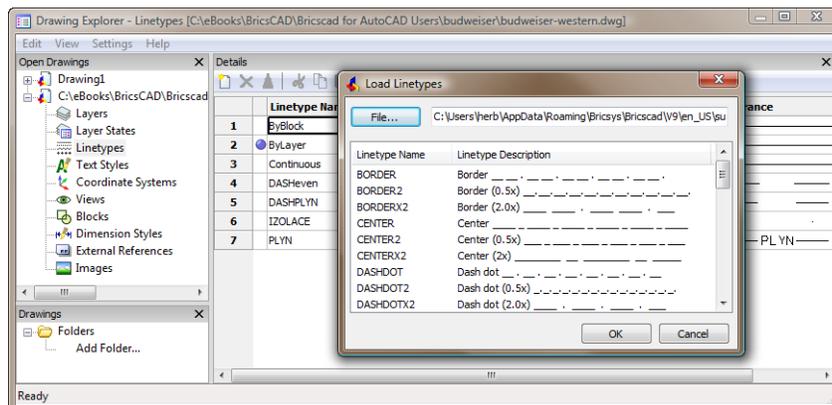
... and the Dimension Styles node lets you modify the styles:

Bricscad for AutoCAD Users
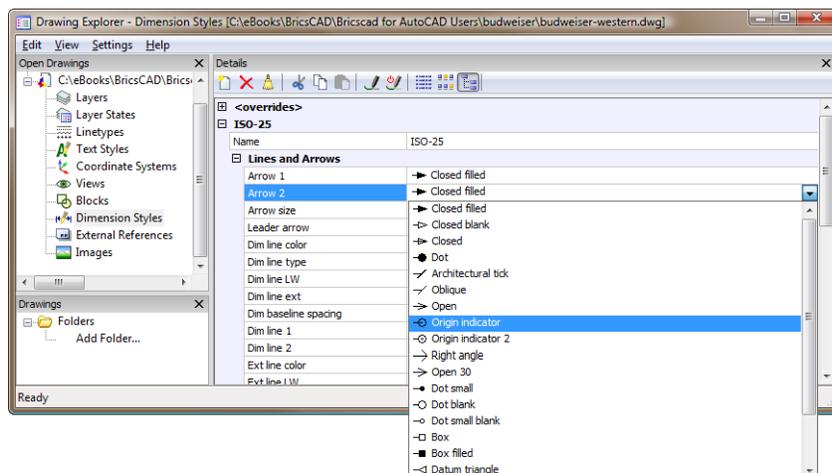
In summary, Drawing Explorer is more than DesignCenter; it centrally gathers commands for inserting and controlling named entities. The unified interface of Drawing Explorer replaces the equivalent of ten dialog boxes in AutoCAD, by my count.

Options vs Settings

Bricscad's Settings dialog box is a greatly expanded version of AutoCAD's Options dialog box. In AutoCAD, the dialog box changes the values of many system variables; Bricscad took the concept to its logical conclusion — to access *all* system variables. See Appendix B for the complete list.

Providing easy access to six hundreds system variables is a difficult problem from the standpoint of designing an interface for users. Autodesk segregates system variables into logical categories by outfitting AutoCAD's Options dialog box with 10 tabs, 16 droplists, and 31 auxiliary dialog boxes.
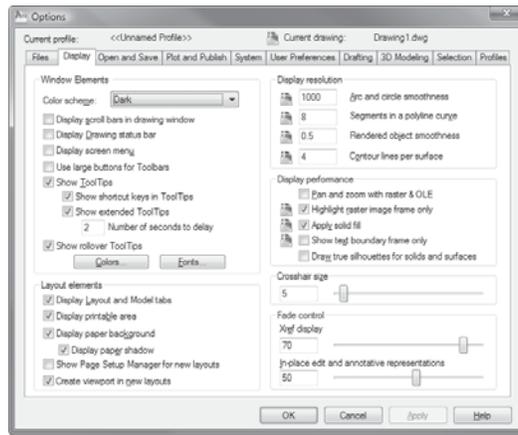
In contrast, Bricsys places all system variables in a single dialog box, and then segregates them by two methods: sorted into logical categories and by alphabetical order. The two modes are illustrated below.
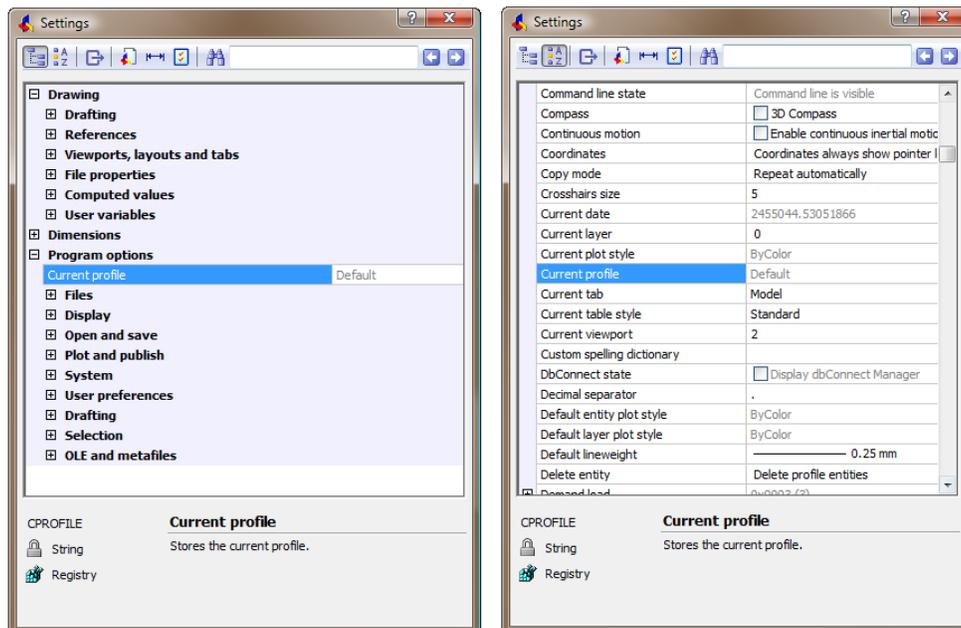
Left: Bricscad's Settings dialog box in Categorized mode...
Right: ...and in Alphabetic mode.

You access the Settings dialog box through the **Settings** command, **Options** alias, or from the menu: **Settings | Settings**.
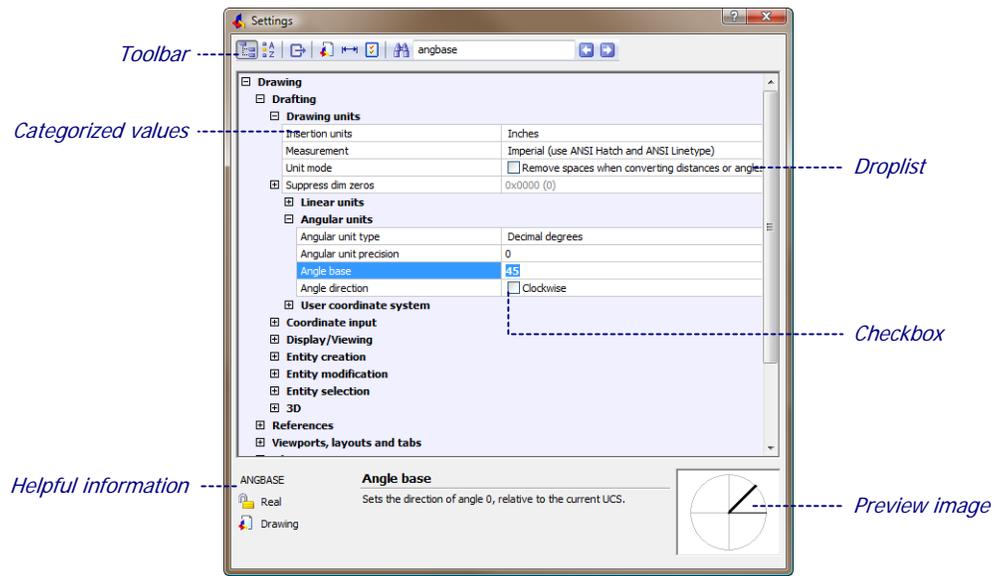
TIPS   The preview area of the Settings dialog box shows system variable names in UPPERCASE and user preferences in Mixed Case. An icon indicates settings that are unique to Bricscad.

Commands and system variables other than Settings open the dialog box at the related node:
     DdEModes   DdFilter   DdGrips   DdPType   DdSelect   DdSettings   DdSTrack   LWeight   PdfOptions
For example, the LWeight command opens Settings at the Lineweights section.

The **SetVar** command and system variables also operate at the command prompt, as you would expect them to:
          Command: **setvar**
          Variable name or ?: **pdmode**
          New current value for PDMODE <4>: *(Enter a number, and then press Enter.)*

Settings Toolbar

The toolbar in the Settings dialog box is designed to provide you with quick access to Bricscad's 487 system variables (at time of writing).

Changing Settings

To access values, use the search field described later, or else click the + boxes to open sections. (Click the - box to close sections.)

Accessing and Changing Values

The Settings dialog box lists some 487 settings in three primary categories:

- Drawing
- Dimension
- Program Options

To access values, use the Find button, or else click the + boxes to open sections.

Click to close section ......
Section ......
Click to open section ......

This dialog box allows you to change most values, like this:

1. Navigate to the value you want to change.
2. Click the value.
3. Depending on the value, you either check a box, select an option from a droplist, or type in a new value, as illustrated below. When a value is changed, it turns to **boldface** — a way of alerting you that a change took place.
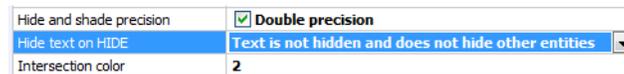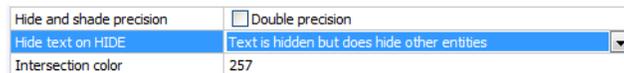
Changes are made immediately, which is why there is no Apply or OK button. To exit the dialog box, click the **x** in the upper right corner.

Realtime Search

The realtime search field lets you directly access system variables by name. As you enter the first few letters, Bricscad immediately jumps to the first name that matches. Click the ⬅ ➡ left and right arrows to move back and ahead through the matching candidates.

The search field changes color to report its status to you:
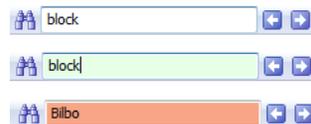
Snow — two or more names match the search phrase.

Lime — only one (or the last) name matches the search phrase.

Tangerine — no names match the search phrase.

TIP Click the ⤴ **Export** button to save the variable names and values in CSV (comma separated values) format, which can be imported into OpenOffice Calc and other spreadsheet programs.
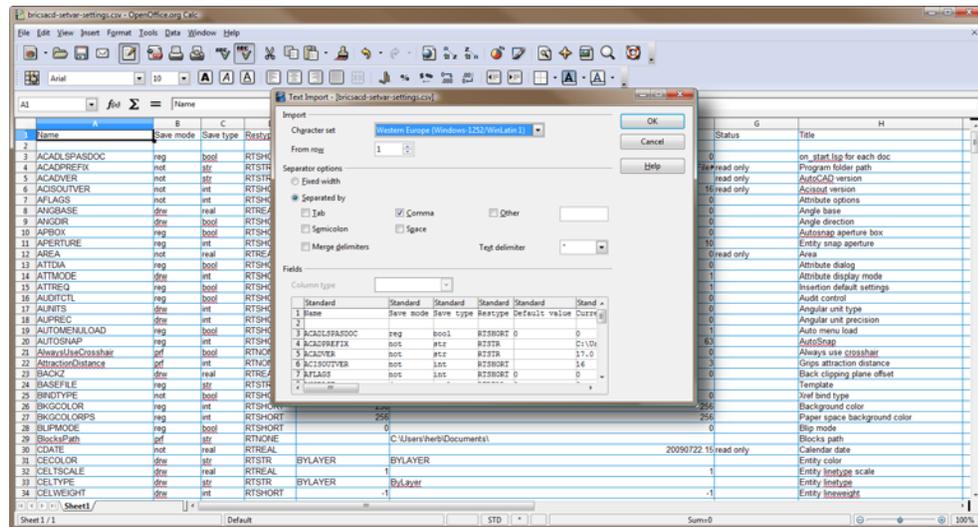
User Interface Variations

Although the user interfaces of both programs are very similar, there are some subtle differences. These include the prompt menu, the command prompt, and the variety of command options.

Prompt Menu vs Dynamic Input

The one user interface element unique to Bricscad is the *prompt menu*, a floating menu that appears whenever a command contains options. The initial prompt menu for the Circle command is illustrated below. As the prompts change, so does the content of this menu.
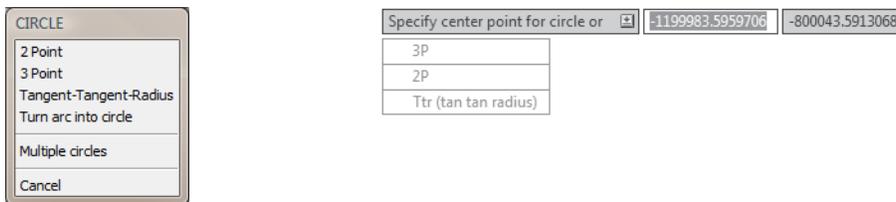
Above, left: Prompt menu in Bricscad.
Above, right: Dynamic prompt in AutoCAD.
Below: The command bar displaying equivalent options.

You can type options in the command bar, or use the mouse to choose options from the prompt menu. (The closest equivalent in AutoCAD is dynamic input.) To cancel the command, click **Cancel**.

The prompt menu does not appear when you are prompted to select objects, when commands display dialog boxes, or when it has been turned off. Bricscad also displays AutoCAD-like shortcut menus during commands, that are accessed by pressing the right mouse button.

Controlling the Prompt Menu

You can determine whether the prompt menu appears or not, as well as specify its location on the screen. Open the Settings dialog box with the **Settings** command, and then enter "prompt menu" in the search field.
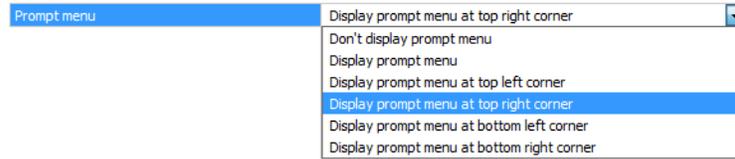
The **Don't Display** and **Display** options toggle the prompt menu; the **Corner** option displays the prompt menu in one of the four corners of the drawing area.

: vs Command:

Bricscad uses ':' as the command prompt, to indicate it is ready for you to enter a command. (AutoCAD uses 'Command:').
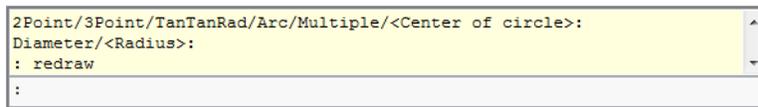
If you prefer the AutoCAD prompt wording, you can change the ':' to 'Command:' through the Settings dialog box. Search for 'prompt prefix'. Enter any text you like, even silly text:
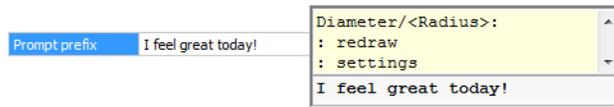
More Command Options

You may have noticed that Bricscad's Circle command contains more prompts than does that of AutoCAD. This is not uncommon in Bricscad, where many commands contain additional useful options not found in AutoCAD. The following table compares the two:

AutoCAD Circle Options	Bricscad Circle Options	Notes
Specify center point	Center of circle	Default option
2P	2Point	
3P	3Point	
Ttr	TanTanRad	
...	Arc	Converts arcs into circles
...	Multiple	Draws multiple circles

Properties Palette vs Properties Bar

When AutoCAD's user interface was organized around toolbars, users could glance at the "dashboard" of property settings, as illustrated below. In an instance, they could monitor the settings of the workspace, layer, text styles, and so on — ten properties in all.

With the redesign of AutoCAD's user interface around the ribbon, seeing properties at a glance has become more difficult. The Home tab of the 2D Drafting & Annotation ribbon shows just four properties, and none in the same tab of the 3D Modeling ribbon. The remaining properties are "hidden" in droplists and other tabs.

In contrast, Bricscad maintains the dashboard-like experience of a Properties toolbar in its default configuration.
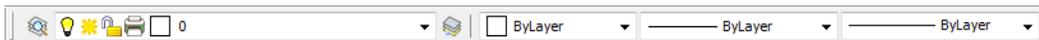
In addition, the status bar of Bricscad reports some properties and allows you to modify them. Both CAD packages share a similar Properties palette, but Bricscad calls it the "Property bar."

Properties Bar

The Bricscad Properties Bar operates just like the equivalent Properties Palette in AutoCAD. That is, it presents properties in three states:

- No entities selected — reports the current state of global properties; default properties can be changed.
- One entity selected — reports the state of the entity's properties; properties can be changed.
- Two or more entities selected — reports the state of properties common to the selected entities; properties can be changed.
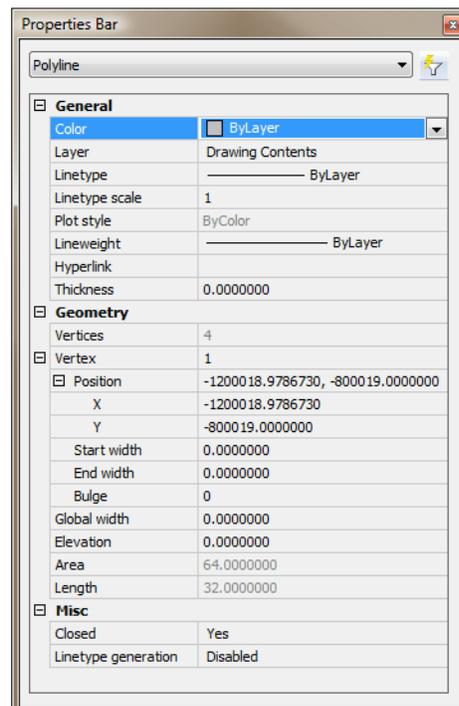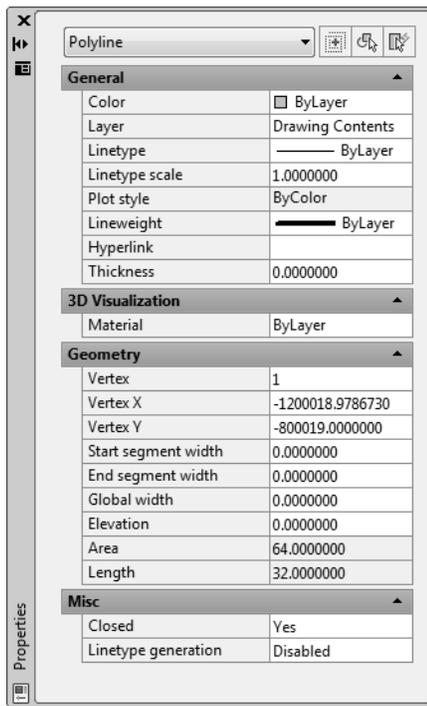
Left: *Properties palette in AutoCAD.*
Right: *Properties bar in Bricscad.*

As with the Settings dialog box, the Properties bar is used where AutoCAD might have numerous other dialog boxes. AutoCAD's HatchEdit command, for example, opens the Hatch Edit dialog box; the same command in Bricscad opens the Properties bar.

You access the Properties bar through the **Properties** command, or from the menu: **Modify| Properties**. It appears automatically when you double-click specific entities in drawings.

TIP   These Bricscad commands also access the Properties bar: **HatchEdit**   **MtEdit**   **MtProp**   **SplinEdit**

Status Bar

In addition, the status bar in Bricscad reports the properties of text and dimension styles:
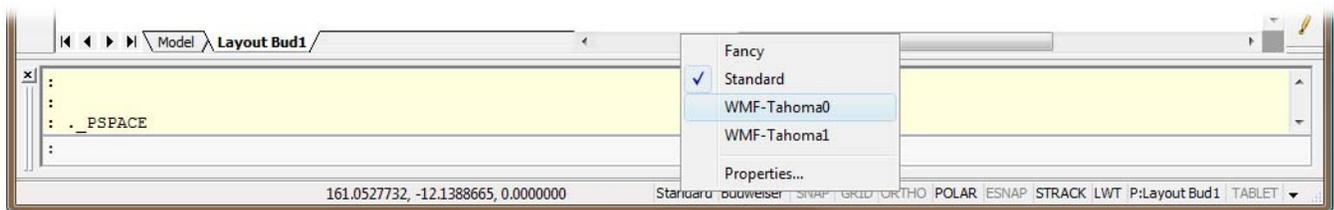
To change a text or dimension style, right-click the current name, and then choose a different one from the shortcut menu.

(The status bar does double duty: when the command bar is turned, off, prompts appear on the status bar.)

TIP   Right-click the coordinates on the Bricscad status bar to change drawing units quickly:
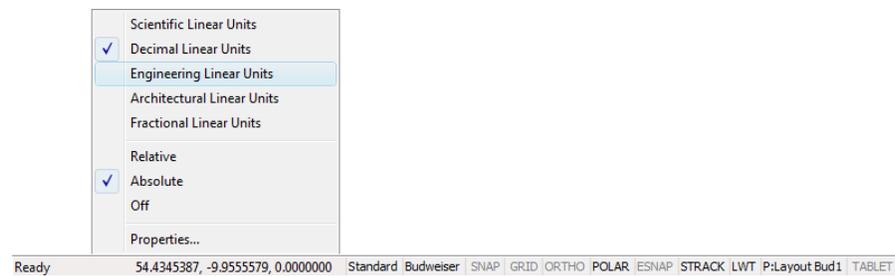
Mouse Buttons

Buttons on the mouse operate the same way in Bricscad as they do in AutoCAD:

- **Left** — pick
- **Right** — context-sensitive shortcut menu
    - **Shift+Right** — Entity snap shortcut menu
- **Center** — realtime pan
- **Rollerwheel** — realtime zoom in and out

Holding down the **Ctrl** key together with a mouse button lets you change the view in real time, as follows:

- • **Ctrl + Left** — rotates the viewpoint (2D rotation)
- • **Ctrl + Right** — orbits the viewpoint (3D rotation)

Let go of the mouse button to stop the real time rotation.

Unlike AutoCAD, the mouse buttons cannot be customized by Bricscad. As of Bricscad v9.1.3, Bricscad fully supports an AutoCAD-like menu overlay system and customizable buttons for digitizing tablets.

Selection Sets

As in AutoCAD, you can create complex selection sets through entity location (pick, Window, Crossing, etc) and through entity properties (color, linetype, and so on). Press **Ctrl+A** to select all entities in the drawing. Below, the prompt menu lists the names of all of the **Select** command's options. (Recall that AutoCAD's Select command displays no options at all.)
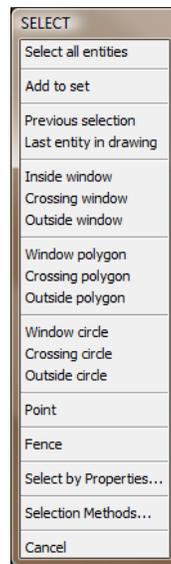
Bricscad has these additional selection modes:

- • **Outside window** — selects all entities fully outside of a rectangular window.
- • **Outside polygon** — selects all entities fully outside of an irregular polygon.

- • **Window circle** — selects all entities fully within a circle.
- • **Crossing circle** — selects all entities within and crossing a circle.
- • **Outside circle** — selects all entities fully outside of a circle.

THIS CHAPTER HIGHLIGHTED the (few) differences between the user interfaces of Bricscad and AutoCAD. The next chapter examines how both programs display and edit entities in drawing files.

CHAPTER 3:

Drawing File Compatibility
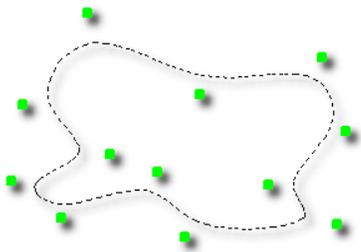
BRICSCAD READS AND writes drawing files compatible with the DWG and DXF files created by AutoCAD 2009 and earlier.

Whereas AutoCAD reads and writes drawing files as old as DWG Release 14, Bricscad goes all the way back to DWG v2.5, the equivalent of DWG "Release 7." (AutoCAD can export drawings to Release 12 format, but only by translating them to DXF.)

Bricscad, however, does not support DWG 2010 (at time of writing); Bricsys plans to add support with Bricscad v10.1. Therefore, there is currently no support for 3D mesh objects and PDF underlays.

This chapter summarizes how well Bricscad reads entities created by AutoCAD 2009. Most entities, as we will see, are correctly read, created, edited, and written by Bricscad.

DWG Compatibility

Bricscad displays all entities in drawings created by AutoCAD 2009.

How Entities Are Tested

To test Bricscad's compatibility with AutoCAD entities, I employed the following procedure:

1. Each entity was drawn in AutoCAD 2009, and then saved as a DWG file.

    (Entities specific to AutoCAD 2010 were drawn in AutoCAD 2010, and then saved as a DWG 2007/8/9 file.)
2. The DWG file was opened in Bricscad v10.
3. Entities were examined for the following characteristics:
    *   Translation: did the entity appear in Bricscad?
    *   Visual accuracy: did the entity look the same in Bricscad as in AutoCAD?
    *   Editability: could Bricscad edit the entity?
    *   Constructability: does Bricscad have a command for creating the entity?
4. Screen grabs were made of each entity.
5. Limitations were recorded, if any.

The results of this testing are presented on the following pages. Entities are segregated into the following categories:

*   2D entities
    Entity properties
*   Text entities
    Text styles
    Table styles
*   Dimension entities
    Dimension styles
    Leader styles
    Mleader styles
*   Complex 2D entities
    Multiline styles
*   3D entities

Problem Entities

Those AutoCAD entities that are not fully supported by Bricscad sport the following legend:

Entity Name   *READ / CREATE / EDIT*

Read — Bricscad reads the entity and displays it correctly.

Create — Bricscad can create the entity.

Edit — Bricscad can edit the entity.

Any entity that Bricscad can read, create, and/or edit, it can also write.

For example, Bricscad can read and edit multilines, but cannot create them, and so multilines are tagged with this version of the legend:

Multlines	AutoCAD	Bricscad *	READ / — / EDIT

*) A footnote details limitations, if any.

Here is a summary of problem entities:

Broken Dimensions

Bricscad displays broken dimensions, but cannot create or edit them.

Dimensional Constraints 2010

Bricscad cannot display or create dimensional constraints (new to AutoCAD 2010); Bricsys plans to support them in v10.1.

Dynamic Blocks

Bricscad treats dynamic blocks as regular blocks.

Geographic Location

Bricscad does not display, create, or edit geographic location markers.

Helix

Bricscad displays helixes, but cannot create them; helixes cannot be edited, except for moving, erasing, and modifying basic properties (color, linetype, and so on).

Inspection Dimensions

Bricscad displays inspection dimensions, but cannot edit or create them.

Jogged Dimensions

Bricscad displays and edits jogged dimensions, but cannot create them.

Lights

Bricscad displays light objects and can modify their basic properties; it cannot create lights, nor does it use AutoCAD lights in renderings.

Live Sections

Bricscad displays section planes, but objects are not sectioned; section planes cannot be edited, except for moving, erasing, and modifying basic properties (color, linetype, and so on).

Multilines

Bricscad cannot create multilines, but can edit them with the Properties bar.

Multiline Leaders

Bricscad can neither create nor edit mleaders, but can edit their basic properties, such as color and layer; text and arrowheads cannot be edited. Bricscad does not support multiline leader styles.

Proxies

Bricscad displays proxy objects, but cannot edit them, except for their basic properties (color, linetype, and so on). Bricscad does not support object enablers.

Subdivision Surfaces (3D mesh objects) 2010

Bricscad displays 3D mesh objects as proxies when AutoCAD 2010 drawings are saved in DWG 2007 format; the proxies cannot be edited, except for their basic properties (color, linetype, and so on).

Surfaces

Bricscad recognizes surface objects created by AutoCAD, but cannot create surfaces. The surface objects cannot be edited, except for their basic properties (color, linetype, and so on). Bricscad's Extrude and Revolve commands work only with closed objects, and so cannot create surfaces; Bricscad does not have the Loft and Sweep commands.

Tables

Bricscad cannot create tables, but can edit some aspects of them with the Properties bar; text cannot be edited.

Underlays

Bricscad does not display DGN, DWF, or PDF underlays.

Viewports

Bricscad cannot invert clipped viewports.

Newly Supported in Bricscad V10

Bricscad V10 now supports the following entities that were not supported in V9:

- New **DimArc** command dimensions the lengths of arc.
- New **Field** command creates and edits field text; the MText command now supports fields. New UpdateField command forces updates of field data.

DWG Object Support

To read, view, edit, and write DWG files, Bricscad uses the DWGdirect library from Open Design Alliance. As the ODA adds support for entities, Bricsys is able to add them to Bricscad.

2D Entities Supported

Bricscad accurately displays the following 2D entities created in AutoCAD 2009:

Arcs	AutoCAD	Bricscad
Arc		

Circles	AutoCAD	Bricscad
Circle		
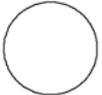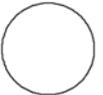
Ellipses	AutoCAD	Bricscad
Ellipse		
Elliptical arc		

Hatches	AutoCAD	Bricscad
Patterned		
Solid filled		
Gradient filled		
Islands		
Text detection		
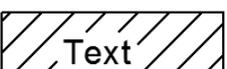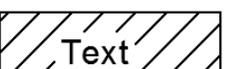
Lines	AutoCAD	Bricscad
Line		
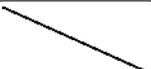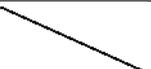
Points	AutoCAD	Bricscad
PdMode 0		
PdMode 98		

Polylines	AutoCAD	Bricscad
Segments		
Arcs		
Variable width		
Fit-curved		
Splined		
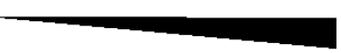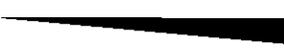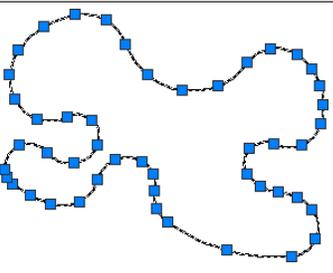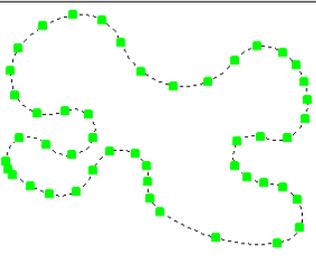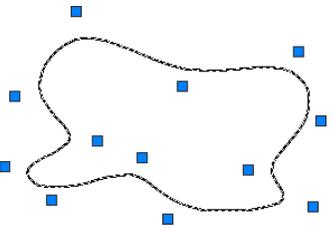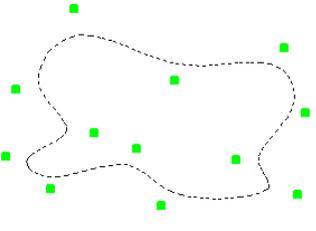
Rays	AutoCAD	Bricscad
Rays		

Solids (2D)	AutoCAD	Bricscad
3-sided		
4-sided		

Splines	AutoCAD	Bricscad
Closed		
Open		
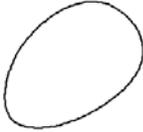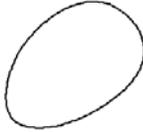
Traces	AutoCAD	Bricscad
Tracewid 50		

Xlines	AutoCAD	Bricscad
Xlines		

Basic Properties for Entities

Bricscad and AutoCAD support the same basic set of entity properties: color, layer, linetype, linetype scale, and lineweight. Although it is not listed in its Properties bar, Bricscad also supports thickness.
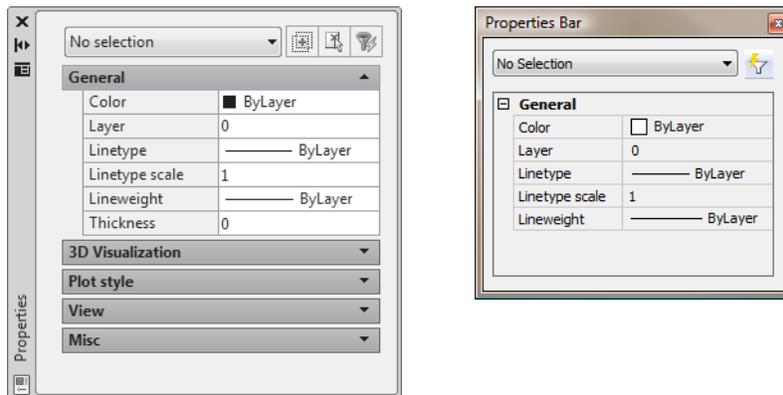
Left: *AutoCAD's Properties palette.*
Right: *Bricscad's Properties bar.*

Bricscad supports ACI colors and True Colors, but not color books. All AutoCAD linetypes and lineweights are supported. Other properties supported in common include elevation and plot style. Bricscad does not support materials or shadows per entity.

Text Entities Supported

Bricscad accurately displays the following text entities created in AutoCAD 2009:

Attribute Defs	AutoCAD	Bricscad
Text	TAG	TAG

Attribute Refs	AutoCAD	Bricscad
Attribute Refs	Default	Default
Multiline text	Muliple lines of default text	Muliple lines of default text

MText	AutoCAD	Bricscad
Mtext	**bricscad reads and** *writes drawing files* compatible with DWG and DXF files created by AutoCAD² $\frac{2009}{2}$ and earlier.	**bricscad reads and** *writes drawing files* compatible with DWG and DXF files created by AutoCAD² $\frac{2009}{2}$ and earlier.

Tables	AutoCAD	Bricscad * *READ / — / PARTIAL EDIT*
Tables	Table Header / Column 1 / Column w / Row 1 A B / Row B A B	Table Header / Column 1 / Column w / Row 1 A B / Row B A B

*) Bricscad cannot create tables, but can edit some aspects of them with the Properties bar; text cannot be edited.

Text	AutoCAD	Bricscad *READ / — / PARTIAL EDIT*
Text	text	text
Fields	Wednesday, August 05, 2009 BYLAYER 76320	Wednesday, August 05, 2009 BYLAYER 76320

Tolerance	AutoCAD *	Bricscad

Tolerance

⊕ | ⌀.25 Ⓜ | ⌀1.00 Ⓛ
⎓ | ⌀.001 Ⓢ
1.25 Ⓟ
0.00

⊕ | ⌀.25 Ⓜ | ⌀1.00 Ⓛ
⎓ | ⌀.001 Ⓢ
1.25 Ⓟ
0.00

*) AutoCAD does not fully edit tolerance objects.

Text Styles

Bricscad supports all text style options with the exception of annotative scaling.
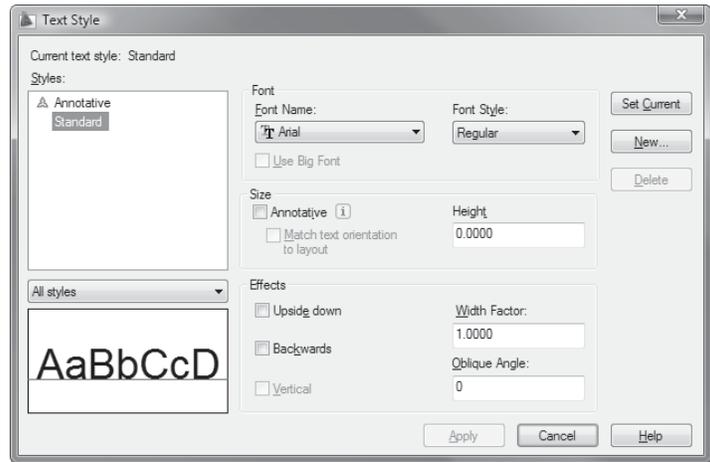
Above: *AutoCAD's Style dialog box.*
Below: *Bricscad's Explorer for text styles.*
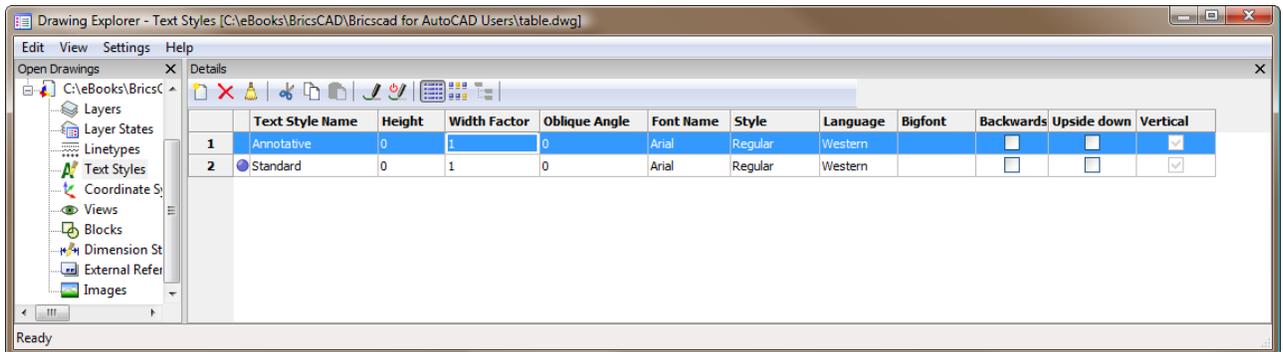
MText Styles

Bricscad supports many of AutoCAD's mtext style options, but in a floating window that is less confusing than AutoCAD's ribbon.
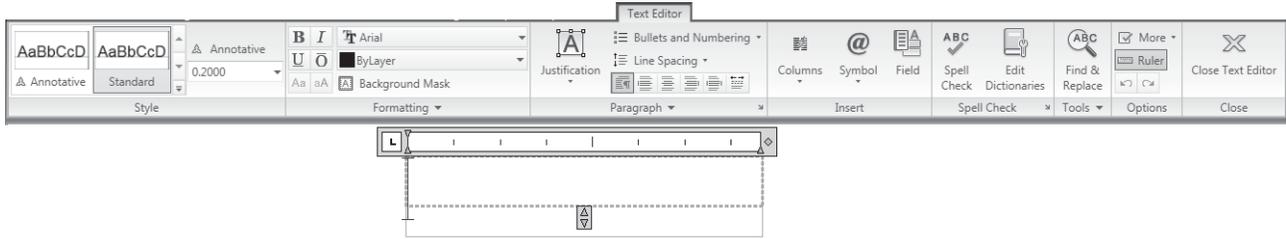
Above: *AutoCAD's mtext editor.*
Below: *Bricscad's mtext editor.*
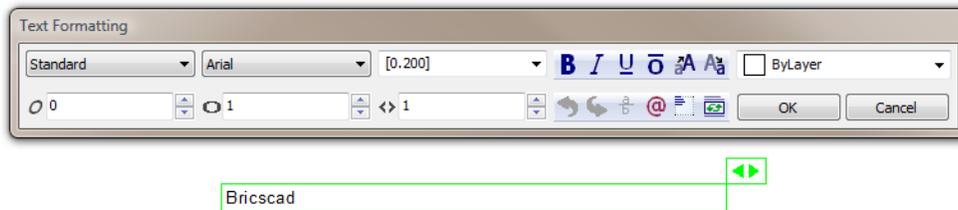
Table Styles

Bricscad supports the display and selection of styles for tables found in drawing files created in AutoCAD, but cannot create or edit table styles. For instance, if the drawing has multiple table styles, you can change a table from one style to another. The Properties bar illustrated below lists the limited properties of tables that Bricscad can edit (white fields).
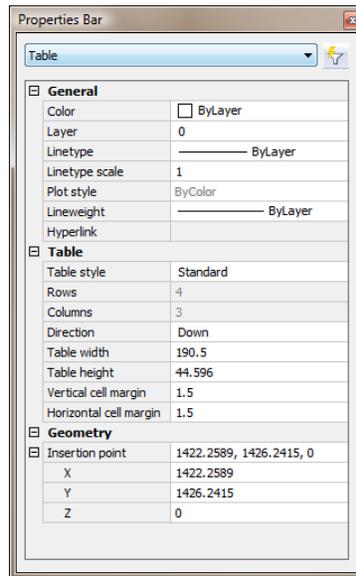
Tolerance Editing

Bricscad supports all tolerance options. When it comes time to edit, however, AutoCAD displays the Properties palette for limited editing, while Bricscad opens the Tolerance dialog box for complete editing.
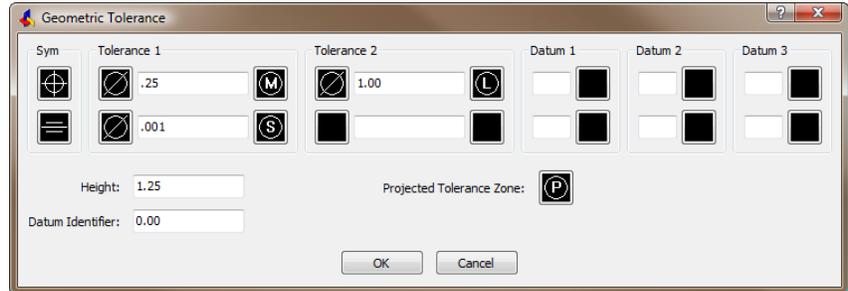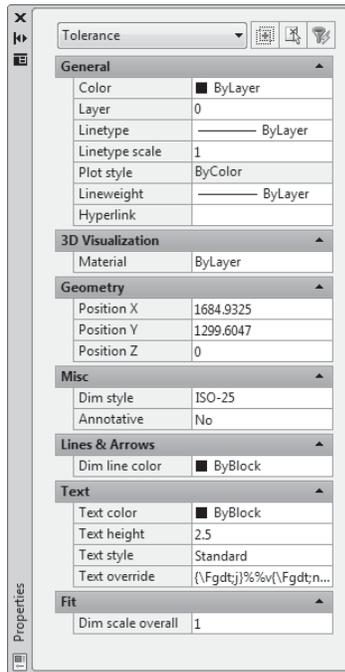
Left: AutoCAD's Properties palette for editing tolerance objects.
Right: *Bricscad's Tolerance dialog box.*

Dimension Entities Supported

Bricscad supports all of AutoCAD's dimension entities, except for the dimensional constraint.

Aligned	AutoCAD	Bricscad
Aligned	55,43	55,43
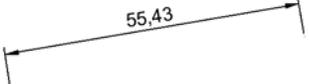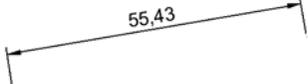
Angular	AutoCAD	Bricscad
Angular	163°	163°
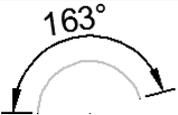
Arc Length	AutoCAD	Bricscad *READ / — / —*
Arc length	15,75	15,75
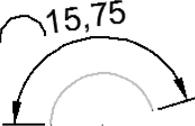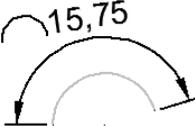
Diameter	AutoCAD	Bricscad
Diameter	Ø15,34	Ø15,34
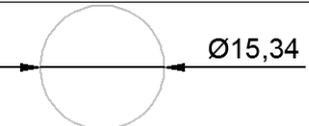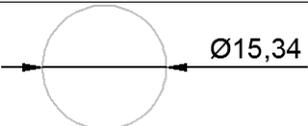
DimBreak	AutoCAD	Bricscad * *READ / — / —*
Break	26,12	26,12

*) Bricscad displays broken dimensions, but cannot edit or create them.
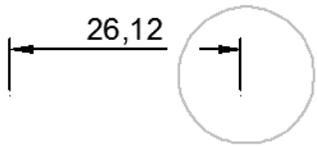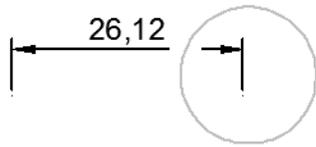
DimConstraint	AutoCAD 2010	Bricscad * — / — / —
Constraint	d1=9.9542	**NOT SUPPORTED**
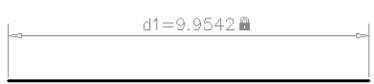
*) Bricscad cannot display or create dimensional constraints; Bricsys plans to support them in v10.1.

DimInspect   **AutoCAD**   **Bricscad ***   *READ* / — / —

Inspect   (DimInspect|52,1|100%)   (DimInspect|52,1|100%)
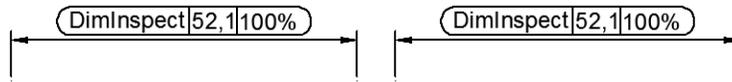
*)   Bricscad displays inspection dimensions, but cannot edit or create them.

DimJogged   **AutoCAD**   **Bricscad ***   *READ* / — / *EDIT*

Jogged   R52,98   R52,98

*)   Bricscad displays and edits jogged dimensions, but cannot create them.

Ordinate   **AutoCAD**   **Bricscad**

X ordinate   2013235,08   2013235,08

Y ordinate   284147,12   284147,12
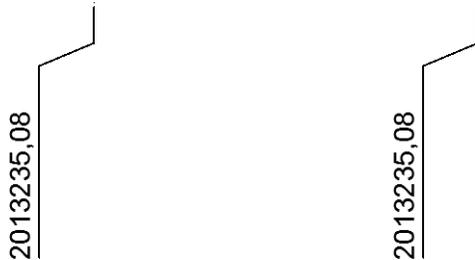
Radial   **AutoCAD**   **Bricscad**

Radial   R7,67   R7,67

Leaders   **AutoCAD**   **Bricscad**

Leader   Leader   Leader
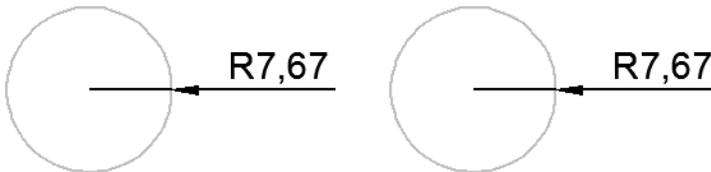
Multileaders	AutoCAD	Bricscad *	*READ* / — / —
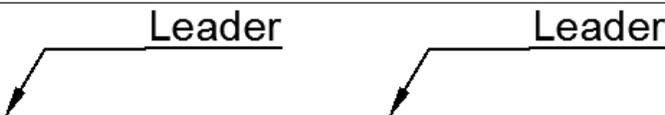
MLeaders

*) Bricscad can neither create nor edit mleaders, but can edit their basic properties bar, such as color and layer; text and arrowheads cannot be edited. Bricscad does not support multiline leader styles.

Dimension Styles

Bricscad supports all of AutoCAD's dimension styles and variables, with the exception of annotative scaling and text direction.
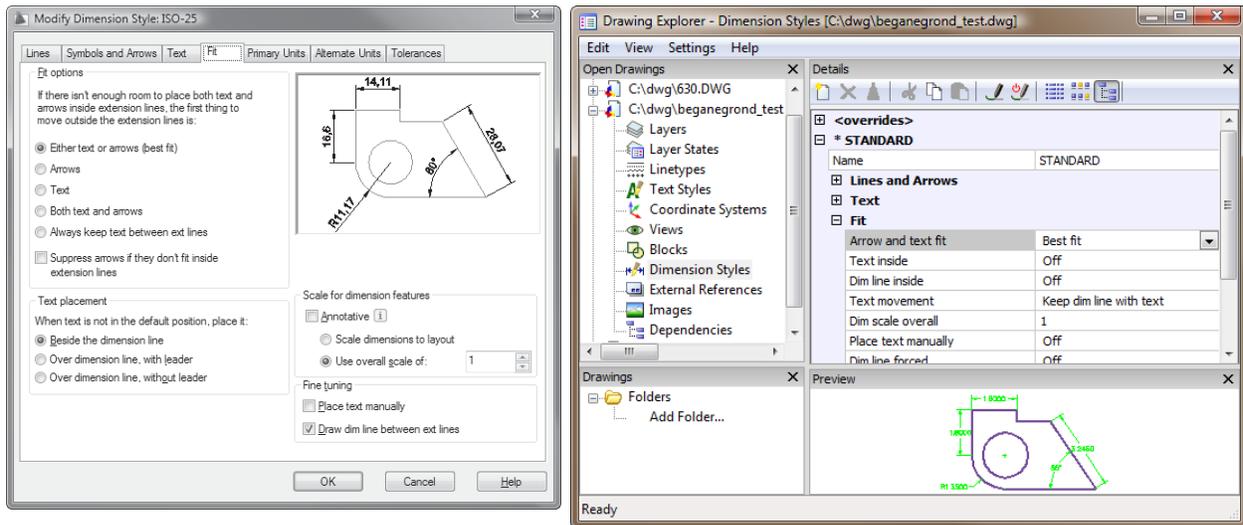
Left: *AutoCAD's DimStyle dialog box.*
Right: *Bricscad's Explorer for dimensions.*

Leader Styles

Bricscad's support for leader styles is not as extensive as AutoCAD's.
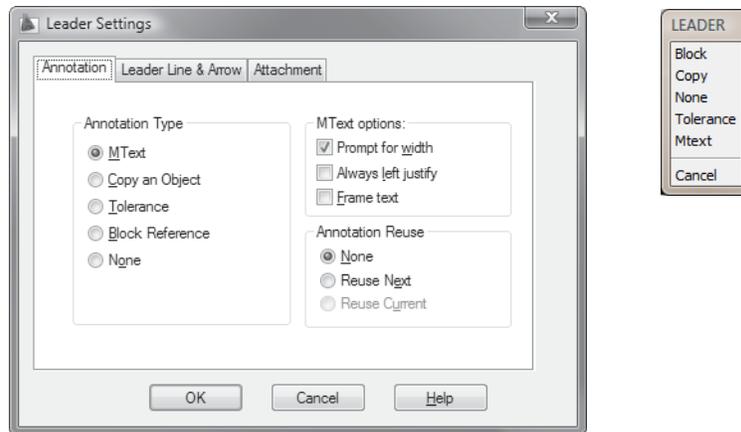
Left: *AutoCAD's QLeader command's Settings dialog box.*
Right: *Bricscad's Leader command's options.*

Complex 2D Entities Supported

Block Refs	AutoCAD	Bricscad
Insert	Faucet	Faucet
Dynamic *		
MInsert		
Mirrored	Faucet	Faucet
Unequal Scale	Faucet	Faucet
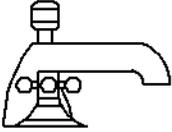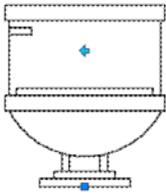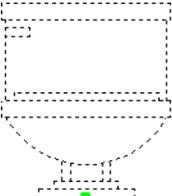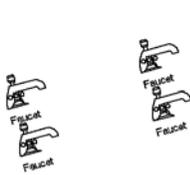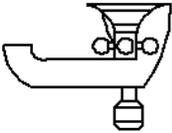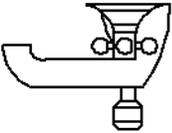
*) Bricscad treats dynamic blocks as regular blocks.

Geographic	AutoCAD	Bricscad * —/—/—
Location		NOT SUPPORTED

*) Bricscad does not display, create, or edit geographic location markers.

Images	AutoCAD	Bricscad

Images

Clipped

Wipeouts
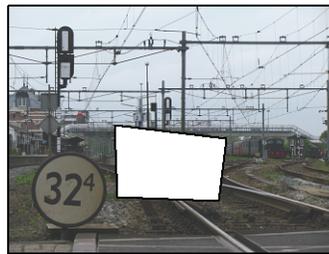
Lights	AutoCAD	Bricscad * *READ / — / —*

Light

*) Bricscad displays light objects and can modify their basic properties; it cannot create lights, nor can it use AutoCAD lights in renderings.

MLines	AutoCAD	Bricscad* *READ / — / EDIT*

Mlines
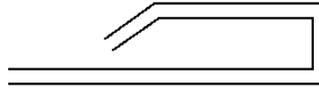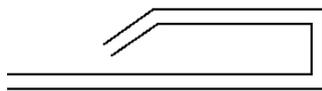
*) Bricscad cannot create multilines, but can edit them with the Properties bar.

OleFrames	AutoCAD	Bricscad

OleFrame

Regions	AutoCAD	Bricscad

Region

Shapes	AutoCAD	Bricscad
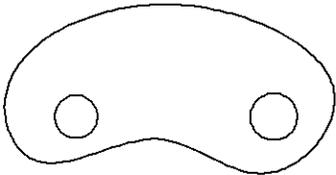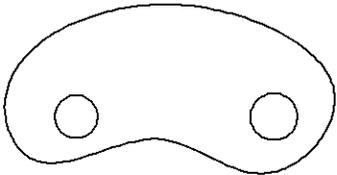
Shape
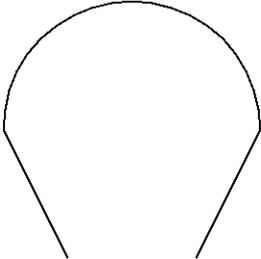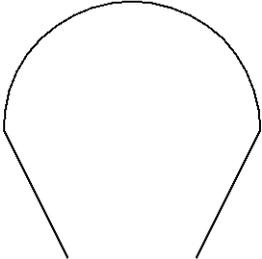
Underlays	AutoCAD	Bricscad *

DGN
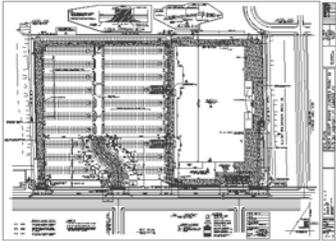
Missing or invalid reference
File: C:\dwg\dgn-sample.dgn
Sheet: Default

DWF
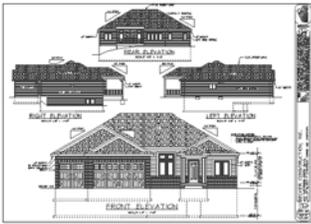
Missing or invalid reference
File: C:\dwg\DWF 3D\sample_dwf.dwf
Sheet: 1

PDF

NOT SUPPORTED

*) Bricscad does not display DGN, DWF, or PDF underlays. DGN image courtesy of Axiom Conversion Services; DWF image courtesy of Residential Drafting Services.
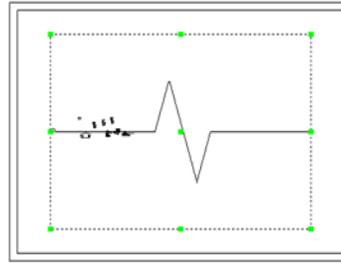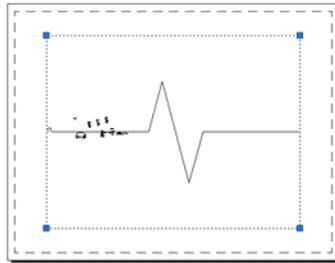
Viewports	AutoCAD	Bricscad
Viewport		
Clipped		
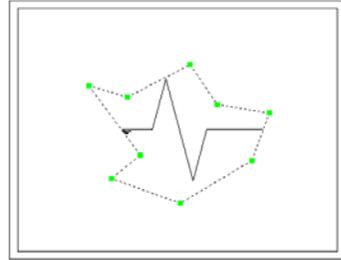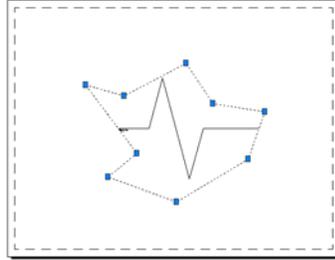
Multiline Styles

Bricscad supports the display and selection of styles for multilines in drawings created in AutoCAD, but cannot create or edit multiline styles. You can change a multiline from one style to another, if the drawing has more than one multline style.

3D Entities Supported

Bricscad accurately displays the following 3D entities created in AutoCAD 2009:

3D Faces	AutoCAD	Bricscad
3D face		
Invisible edge		
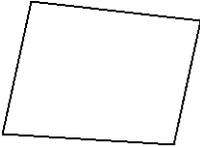
Helixes	AutoCAD	Bricscad *	READ / — / —
Helix			
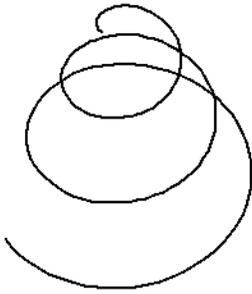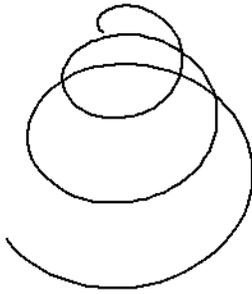
*) Bricscad displays helixes, but cannot create them; helixes cannot be edited, except for moving, erasing, and modifying basic properties (color, linetype, and so on).

3D Polylines	AutoCAD	Bricscad
3D polyline		

Polyface Meshes	AutoCAD	Bricscad
Mesh		
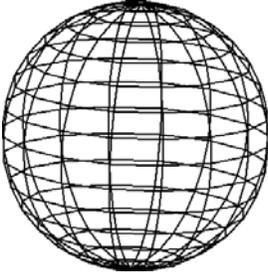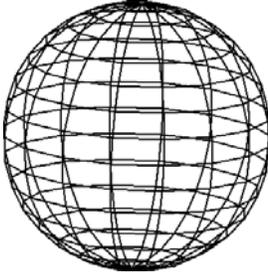
Proxy
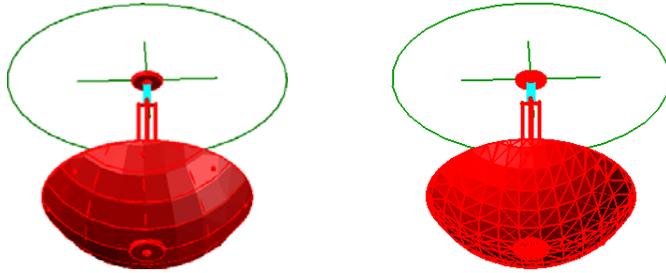
*) Bricscad displays proxy objects, but cannot edit them, except for their basic properties (color, linetype, and so on).
Bricscad does not support object enablers.

Sections   **AutoCAD**   **Bricscad ***   *READ / — / —*

Live Section
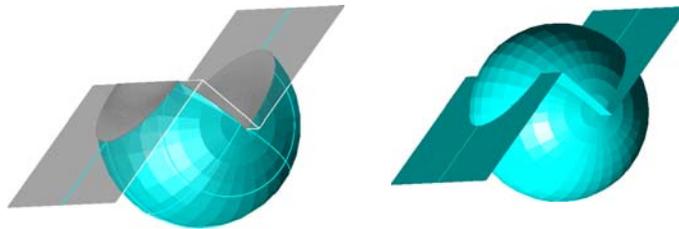
*) Bricscad displays section planes, but objects are not sectioned; section planes cannot be edited, except for moving, erasing, and modifying basic properties (color, linetype, and so on).

3D Solids   **AutoCAD**   **Bricscad**

Body
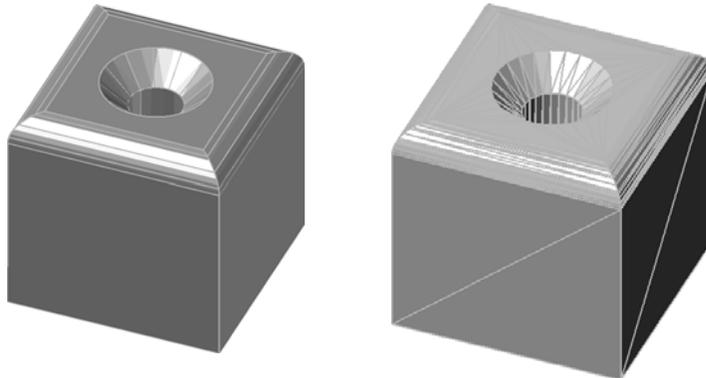
Sweep
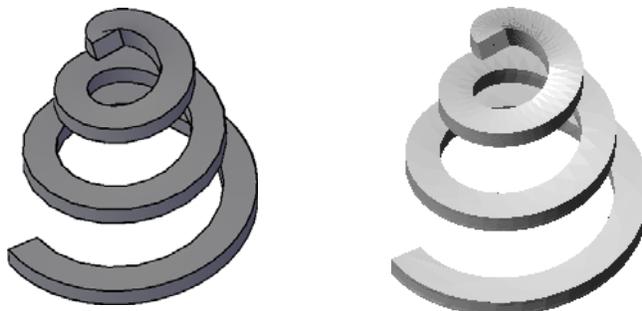
Box
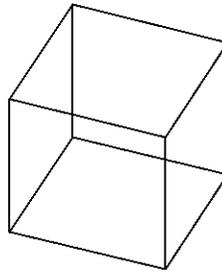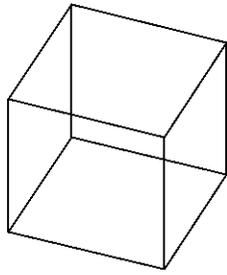
Cone
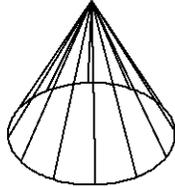
Cylinder
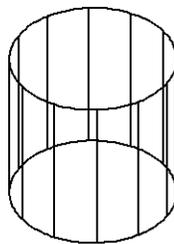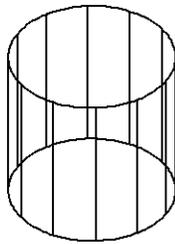
Pyramid

Sphere

Torus

Wedge

Subdivisions	AutoCAD 2010	Bricscad *	*READ* / — / —
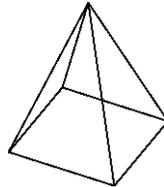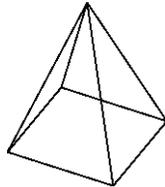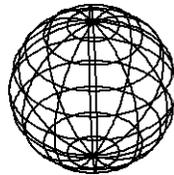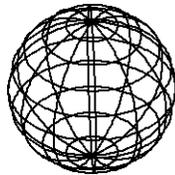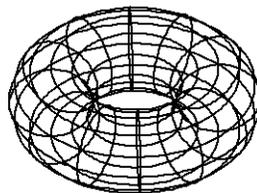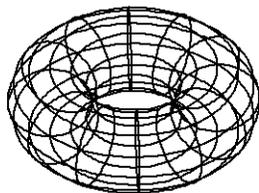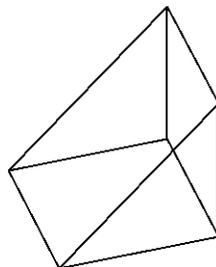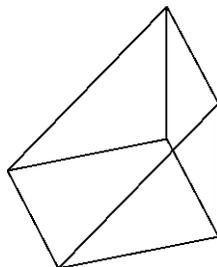
3D meshes

*) Bricscad displays 3D mesh objects as proxies when AutoCAD 2010 drawings are saved in DWG 2007 format; the proxies cannot be edited, except for their basic properties (color, linetype, and so on). Bricscad does not support object enablers.

Surfaces	AutoCAD	Bricscad	*READ* / — / —

Extrude
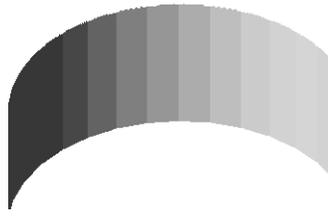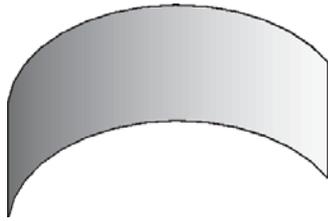
Loft*

Revolve

Sweep *
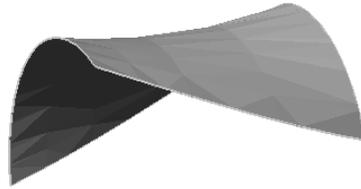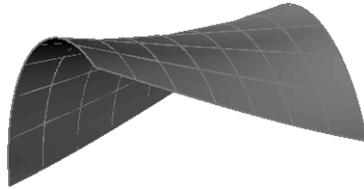
*) Bricscad recognizes surface objects created by AutoCAD, but cannot create surfaces. The surface objects cannot be edited, except for their basic properties (color, linetype, and so on). Bricscad's Extrude and Revolve commands work only with closed objects, and so cannot create surfaces; Bricscad does not have the Loft and Sweep commands.

CHAPTER 4:

Customizing and Programming Bricscad

WHEREAS MOST OF AutoCAD's customization takes place with the Cui and Options commands, in Bricscad the activity takes place in the equivalent Customize and Settings commands.

This chapter provides an overview of customizing and programming Bricscad; see the *Customizing Bricscad* ebook for complete details on the topic (www.bricscad.com/estore).

For detailed information on programming Bricscad, refer to the online developer reference, available free at www.bricsys.com/bricscad/help/en_US/V10/DevRef/index.html.

Cui vs Customize

The Bricscad equivalent to AutoCAD's Cui command is **Customize**. It displays a dialog box that centralizes customization of the following user interface elements:

- Menus
- Context menus (shortcut menus)
- Toolbars
- Keyboard shortcuts
- Tablet overlay menus and buttons

Areas of Customization

Both AutoCAD and Bricscad provide a variety of customizing methods, centered primarily in the Options/ Settings and Cui/Customize commands:

Area of Customization	AutoCAD Command	Bricscad Command
Aliases	...[1]	Customize
Command bar	Options	Settings
Cursor	Options	Settings
Double-click actions	Cui	...[2]
File paths	Options	Settings
Grips	Options	Settings
Hatch Patterns	...[1]	...[1]
Keyboard shortcuts	Cui	Customize
Linetypes	...[1]	Explorer
Menu bar	Cui	Customize
Mouse buttons	Cui	...
Plot Styles	PlotStyle	PlotStyle
Quick Access toolbar	Right-click, Cui	...[3]
Quick Properties palettes	Cui	...[3]
Ribbon	Cui	...[3]
Rollover tooltips	Cui	...[3]
Selection previews	Options	...[3]
Shell commands	...[1]	Customize
Shortcut/Context menus	Cui	Customize
Status bar	Right-click, Diesel	Right-click, Diesel
Tablet	Cui	Customize
Tool palettes	Customize	...[3]
Toolbars	Cui	Customize
UCS icon	Options	Settings
Workspaces	Cui	...[3]

Notes:
[1]   Edit using Notepad.
[2]   Double-clicking entities opens the Properties palette (bar) in Bricscad.
[3]   Not available in Bricscad.

- Command Aliases
- Shell Commands

The process for customizing most of these elements is identical. Learn the system for one element, such as menus, and you can then handle any other, such as context menus, toolbars, shortcut keystrokes, and tablet menus. Since the Bricscad method differs from AutoCAD's, I show you below how to customize Bricscad by using menus as the example.

You access the Customize dialog box through the **Customize** command, the **Cui** alias, or from the menu: **Tools | Customize**. Alternatively, right-click any toolbar and then select **Customize**.
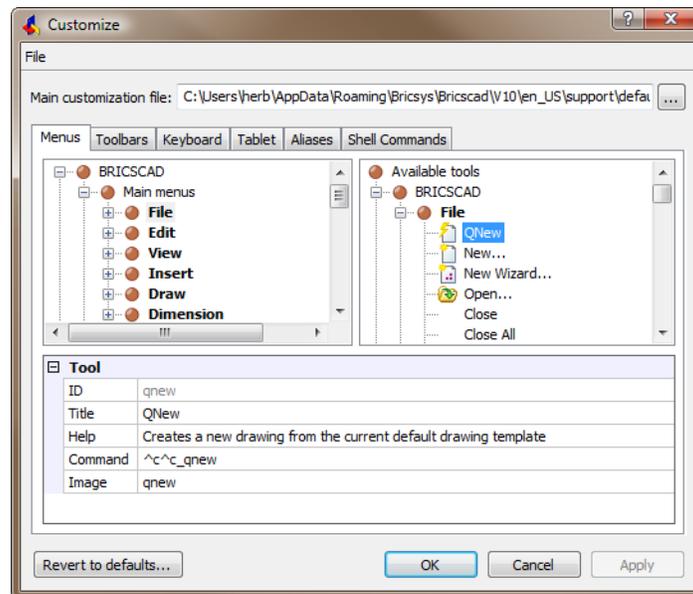
A couple of items to note:

Red dots prefix some menu items, as shown above. The dots indicate "container" items:

- **BRICSCAD** — names the menu group. This group includes Main Menus (items seen on the menu bar) and

---

Importing AutoCAD Menus

Bricscad's Customize dialog box's **File | Load** item imports three kinds of menu files:
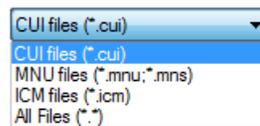
CUI — standard menu files used by AutoCAD (since release 2007) and Bricscad (since version 8).
MNU or **MNS** — legacy menu files used by AutoCAD and AutoCAD LT prior to release 2008.
ICM — IntelliCAD menu files used by Bricscad prior to version 8, as well as other CAD systems based on IntelliCAD.

Careful: Although Bricscad imports AutoCAD menu files effortlessly, menu picks sometimes do not work, because AutoCAD macros can contain macro code and metacharacters not supported by Bricscad.

Context Menus (shortcut menus that appear when you right-click entities).

- **Main Menus** — names the items appearing on the menu bar.
  - **File** — names the first menu appearing along the menu bar.

The rows of dashes "-----" indicate separator bars, the gray lines that separate groups of menu items.

Menus

Menus are customized in the Menu tab of the Customize dialog box. You can add, edit, and remove items to and from menus. All you do is right-click an existing menu item, and then choose an option from the shortcut menu. You can create new menus, add commands and sub-menus to existing menus, and add separator bars.

In this tutorial, you add the CloseAll command to the File menu after the Close item. (The CloseAll command closes all open drawings.) To change the menu, follow these steps:

TIP   Messed up the customization of Bricscad? Get everything back to the out-of-the-box look by clicking the **Revert to Defaults** button at the bottom of the Customize dialog box.

---

1. Enter the **Customize** command to open the Customize dialog box.
2. In the dialog box, click the **Menus** tab.
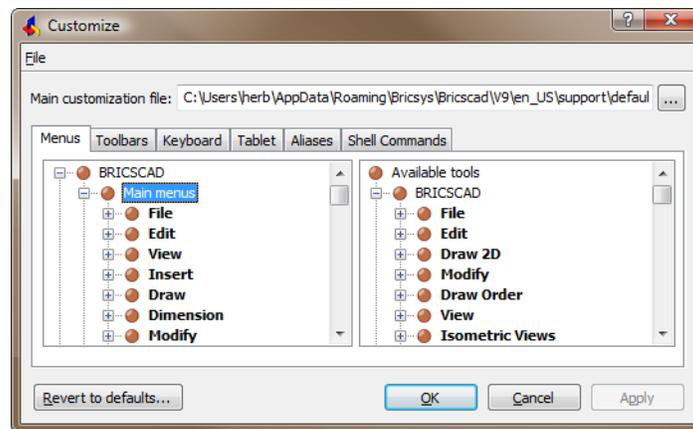
About Copying Files

Autodesk permits the copying of support files, since the corporation understands that drawings are disabled when DWG files are sent to clients without crucial support files. Support files that are coded in ASCII contain the following notice from Autodesk:

> Permission to use, copy, modify, and distribute this software for any purpose and without fee is hereby granted, provided that the above copyright notice appears in all copies and that both that copyright notice and the limited warranty and restricted rights notice below appear in all supporting documentation.

By copying files in whole, you include the notices that Autodesk asks you to preserve.

TrueType Fonts

There is one exception. Some TrueType fonts (*.ttf*) are commercial products, and cannot be copied without payment to the copyright holder. The good news, however, is that all TrueType fonts provided with Windows and AutoCAD maybe copied freely. If a drawing contains copyrighted TrueType fonts, you can often find one that look similar but cost nothing from font sites.

3. The **Main Menus** node defines the structure of the currently-loaded menu. The names in the dialog box, like **File**, **Edit**, and so on, match the names on Bricscad's menu bar.
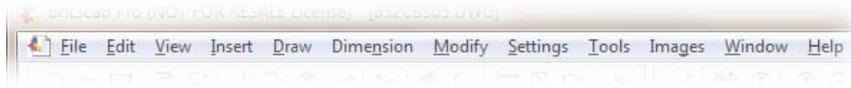
4. Click the **+** next to **File** to reveal the items in the File dropdown menu, as illustrated below.
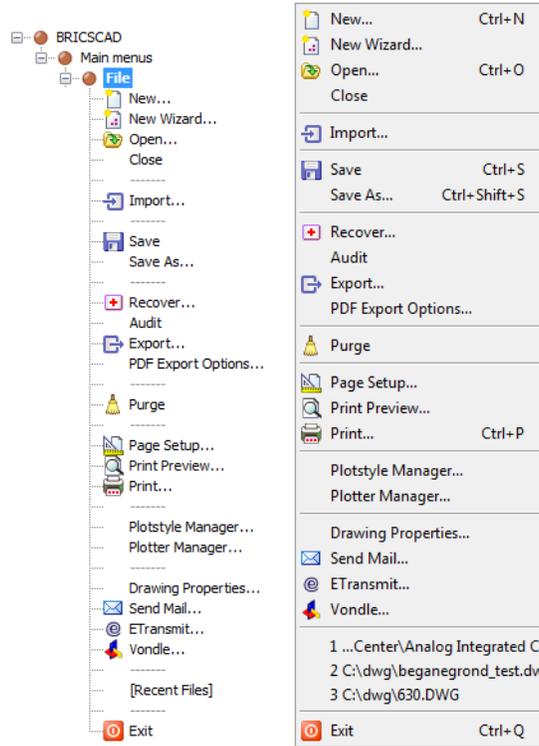
Left: File menu tree in Customize dialog box.
Right: Menu items under the File menu.

5. Right-click the **-----** (separator) item below Close. Notice that Bricscad displays a shortcut menu.
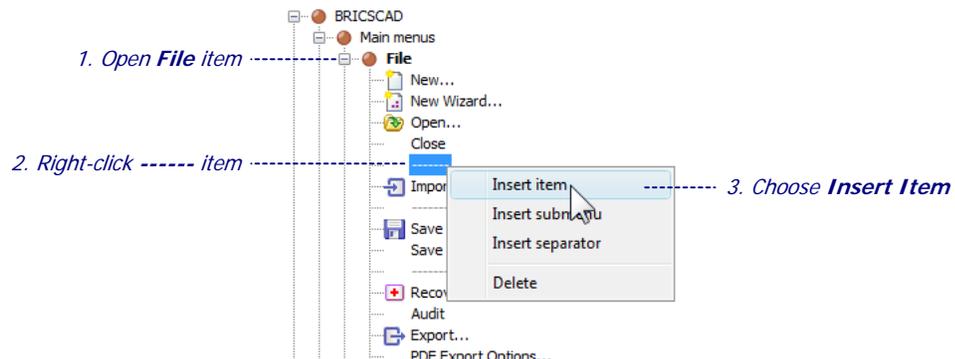
6. Choose **Insert Item**. This adds the new item *above* the currently-selected one, ------.

TIP   The Append Item and Insert Item options seem similar; here's how they differ:
Append Item — adds the new item *at the end* of the File container.
Insert Item — adds the new item *before* the currently selected item.

---

7. Notice that Bricscad opens the Add Menu Item dialog box. It lists all of the commands available in Bricscad. You can select an existing command or create a new one.

    (Alternatively, you could have right-clicked **File** and then chosen **Append Item**. The drawback to this approach is that the CloseAll command is added to the *end* of the File menu, which leads to the extra step of moving CloseAll into position under Close.)
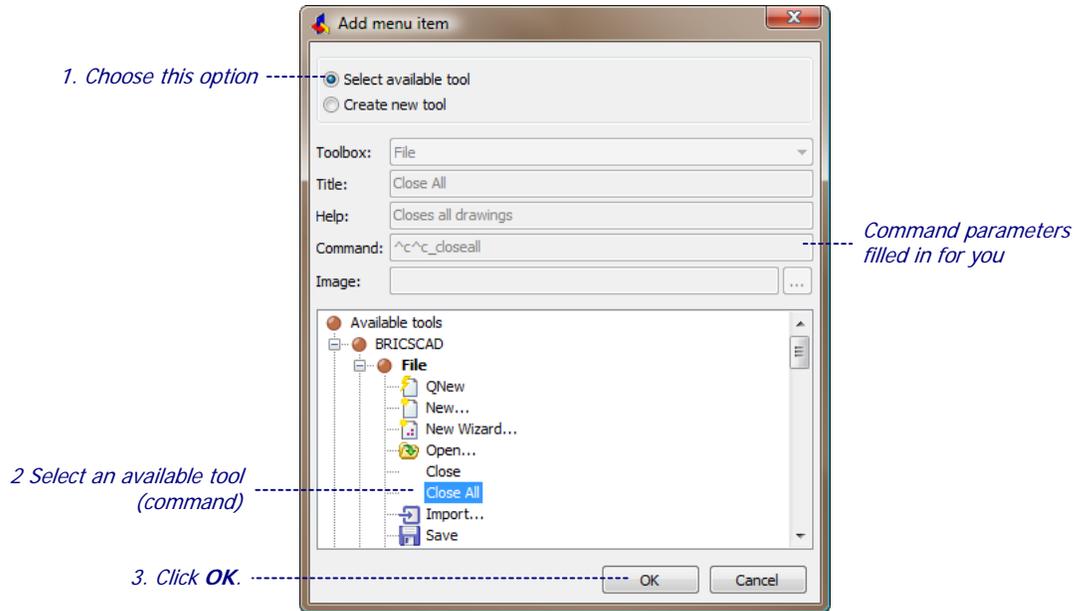
a. In the Add Menu Item dialog box, choose the **Select Available Tool** option. This allows you to pick one of Bricscad's built-in commands. (The other option, Create New Tool, is for creating new commands.)

b. Under the list of Available Tools, open the **File** item, and then choose **Close All**. Notice that most of the parameters are filled in for you, such as Title, Help, and so on.

c. Click **OK**.

Notice that the Close All command is added to the list under Close.
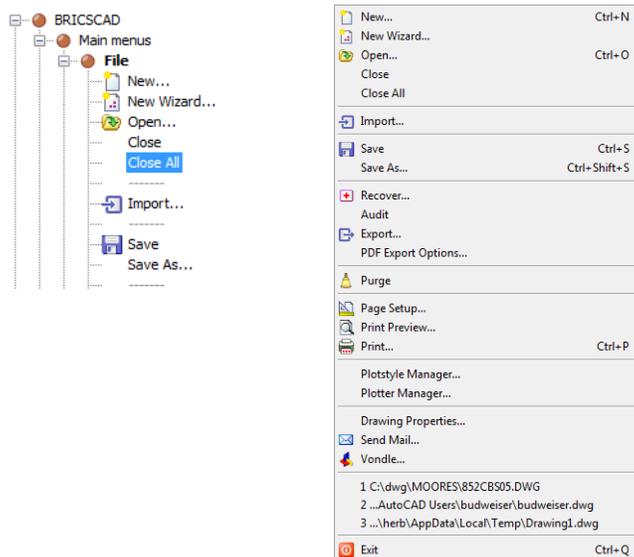
Left: CloseAll added to menu tree.
Right: Close All appearing in File Menu.

Bricscad for AutoCAD Users

8. To ensure the new command works, follow these steps:

    a. Close the Customize dialog box by clicking **OK**.

    b. Choose the **File** menu. Notice that the Close All item has been added.

    c. Click **Close All**. Does it work correctly? (It should prompt you to save all open drawings that have changed since being loaded.)

TIPS   Not sure which commands can be added to menus? Peruse the list found under **Available Tools** in the Customize dialog box. It lists all the commands found in Bricscad, sorted by menu order.

The Available Tools listing allows you to add your own commands, which can be constructed from other commands and LISP routines.

Creating New Menu Items

You can add new commands and macros to Bricscad, which it calls "tools." The following tutorial shows you how this is done in Bricscad. The tutorial creates a tool that consists of a macro for saving the current drawing and then starting the Plot command. The macro will be named "Save'n Print" and looks like this:

```
^C^C_qsave;_plot
```

1. Open the Customize dialog box with the **Customize** command. (Alternatively, you can enter its alias, **Cui**.)

2. In the Menus tab's File item, right-click **Print**, and then choose **Insert Item** from the shortcut menu.
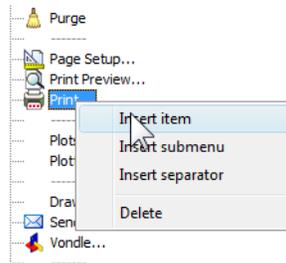
3. Notice the Add New Item dialog box. Select the **Create New Tool** option.
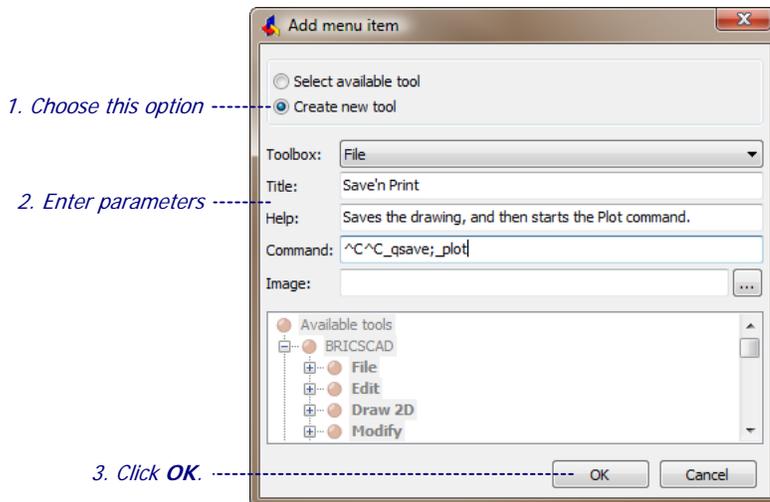
4. Fill in the parameters listed below:

Parameter	Entry	Notes
Toolbox	File	Adds the new command to the File category of available tools.
Title	Save'n Print	Specifies the name that appears in the File menu.
Help	Saves the drawing, and then starts the Plot command.	Specifies the Help text that appears on the status bar.
Command	^C^C_qsave;_plot	Specifies the macro that cancels the current command, saves the drawing, and then starts the Plot command.
Image	*(leave blank)*	Specifies the icon; none are required for menus.

5. Click **OK** to exit the Add Menu Item dialog box.

   Notice that the new tool is added to the File menu (on the left), as well as to the list of Available Tools (on the right). In addition, its parameters are shown in the Menu Item pane at the bottom of the dialog box. (You can edit the parameters here, just as with regular commands.)
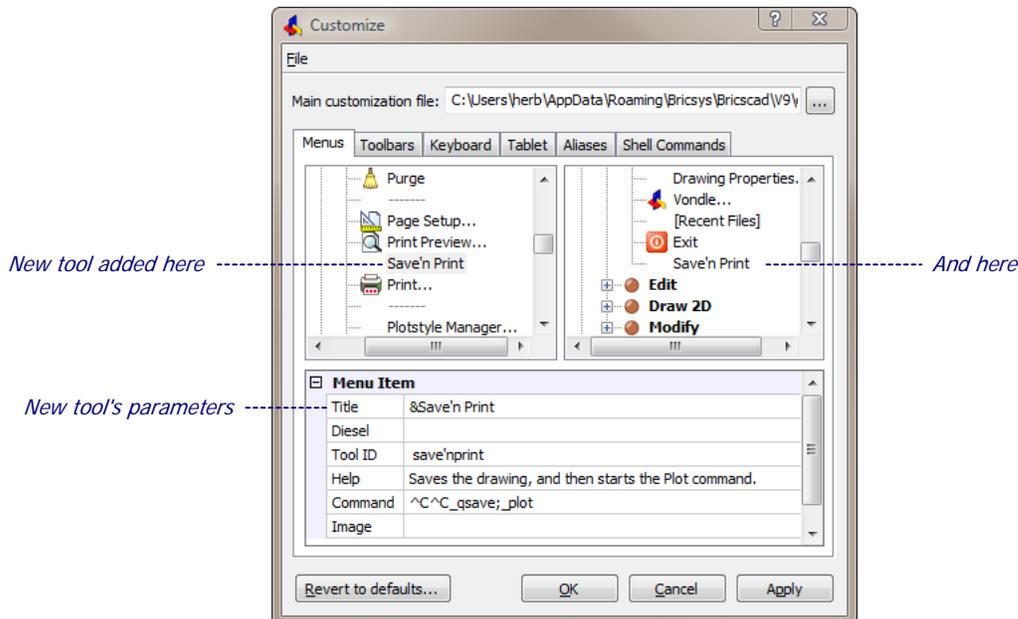
6. Click **OK** to exit the Customize dialog box.
7. Test the new item by selecting **Save'n Print** from the **File** menu.

Macro Metacharacters

Menu items execute macros, which can contain metacharacters. Bricscad and AutoCAD use many of the same metacharacters. Since they are so similar, I'll list them briefly:

Metacharacter	Notes
^C	Cancels the current command.
'	Executes the command transparently.
_	Internationalizes the command.
;	Executes Enter.
\	Pauses the macro.

Menu Design Conventions

Bricscad and AutoCAD use many of the same conventions for designing menus, as summarized below:

    & — designates shortcut keystrokes for accessing menu items with the Alt key.

    ... — indicates the menu item will display a dialog box.

Diesel

AutoCAD and Bricscad can employ same Diesel in menu macros and LISP routines.

Context Menus

Bricscad called shortcut menus "context menus," because they change their content depending on the context. Context menus are found in the Menus tab, just past the Main Menus section. The screengrab (below) lists the context menus provided by default in Bricscad.
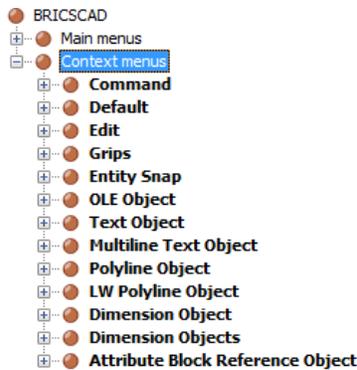
Right-clicking a selected entity displays the default context menu ("Edit" in the list above). The Bricscad version is shown with that of AutoCAD for comparison:
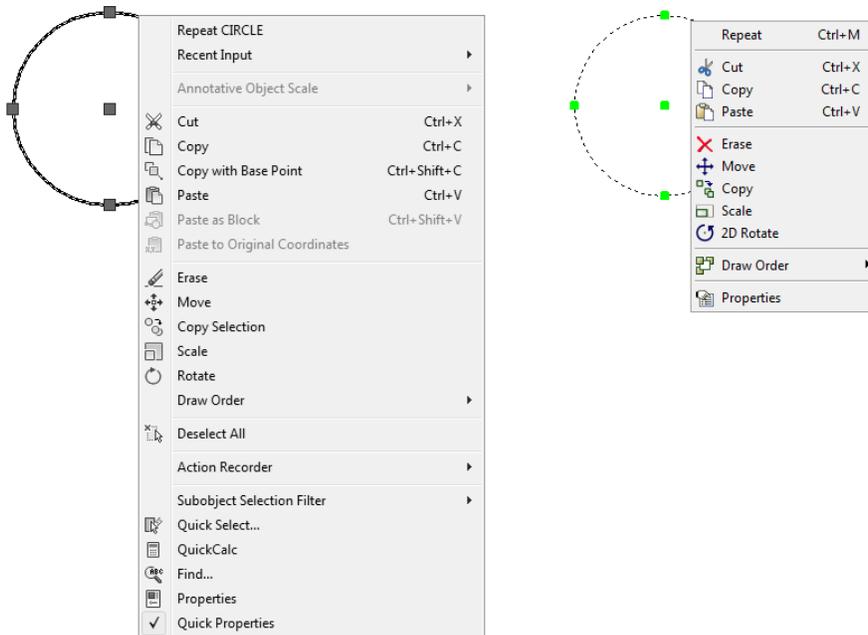
Left: *AutoCAD's default shortcut menu for editing objects.*
Right: *Bricscad's equivalent context menu.*

The matching of menu items to customization nodes is straightforward:
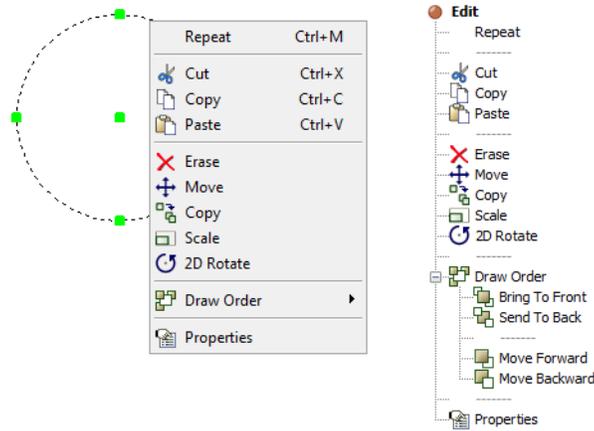
Left: *Bricscad's Edit context menu.*
Right: *Defining the menu in the Customize dialog box.*

Toolbars

Toolbars are customized in the Toolbar tab. The screengrab (below) lists the names of toolbars provided by Bricscad.
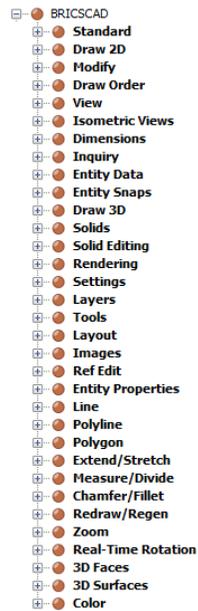
The Bricscad version of the Standard toolbar is shown with that of AutoCAD for comparison:

Top: *AutoCAD's Standard toolbar.*
Above: *Bricscad's equivalent toolbar.*

Customizing toolbars is identical to customizing menus, with two exceptions: *submenus* are called "flyouts," and toolbars can contain *controls*, another name for droplists. The figure below shows how the Standard tree matches the Standard toolbar.
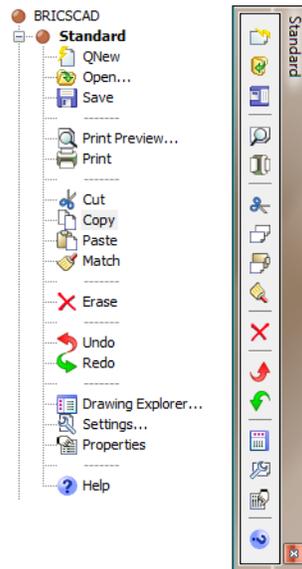
Left: *Content of the Standard tree in Bricscad.*
Right: *Icons of the Standard toolbar.*

As in AutoCAD, you can specify the initial location of toolbars:
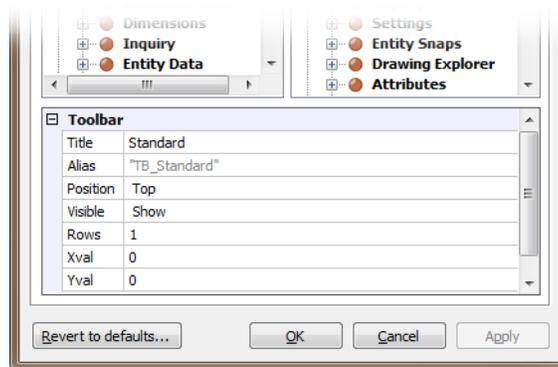
Keyboard Shortcuts

Keyboard shortcuts are customized in the Keyboard tab, as illustrated by the screengrab below. Bricscad has many of the same shortcuts as AutoCAD. Appendix D contains a useful cross-reference of shortcuts for both programs.
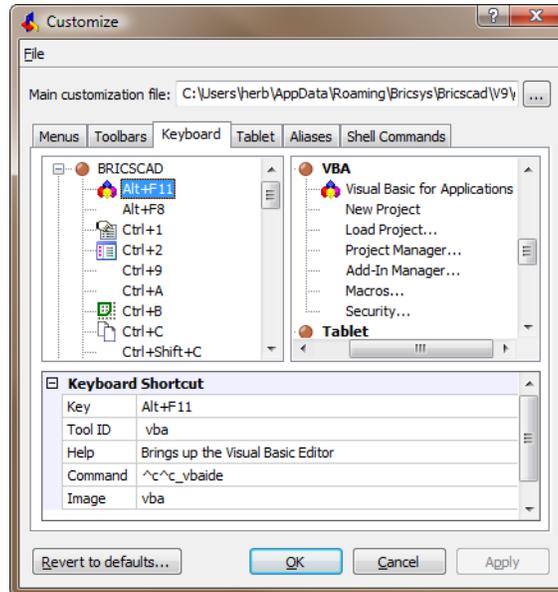
Tablet Buttons and Menus

Tablet overlay menus and digitizer buttons are customized in the Tablet tab, as illustrated below.
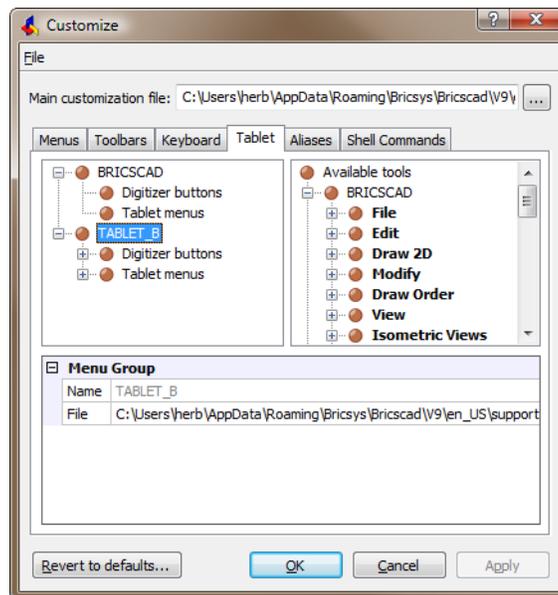
Bricscad provides an overlay menu layout that is similar to that of AutoCAD.

Unlike for mouse buttons, digitizer buttons can be customized by Bricscad, as illustrated below.
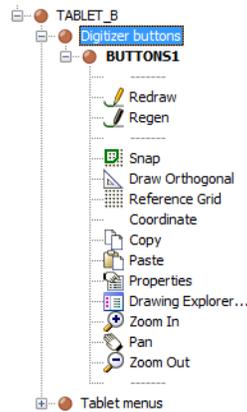
As in AutoCAD, the first button cannot be changed, because it must always be the pick button.

Aliases and Shell Commands

Command aliases are customized in the Aliases tab, as illustrated below. Bricscad has many of the same aliases as AutoCAD. Appendix C contains a useful cross-reference of aliases for both programs.
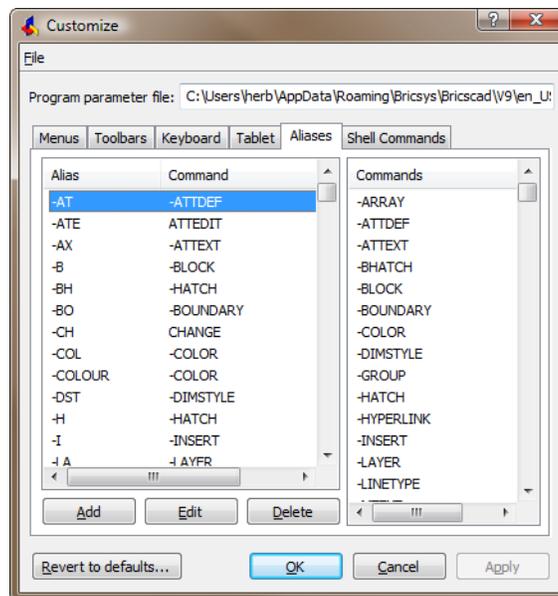
Bricscad and AutoCAD both use the *.pgp* file for storing command aliases and shell commands.

CAD Program	Default PGP File	Default Path
AutoCAD	acad.pgp	C:\Users\<login>\appdata\roaming\autodesk\autocad 2010\r18.0\enu\support
Bricscad	default.pgp	C:\Users\<login>\AppData\Roaming\Bricsys\Bricscad\V10\en_US\support

If you have customized your *acad.pgp* file, you can load it into Bricscad.

Program Parameter File — allows you to load the *acad.pgp* file provided with AutoCAD (found in *C:\Users\<login>\appdata\roaming\autodesk\autocad 2010\r18.0\enu\support*).

Add — adds a new shell command; Bricscad uses the same format AutoCAD.
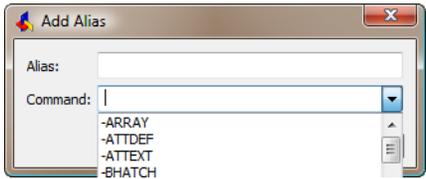
Edit — edits the selected shell command.

Delete — erases the selected shell command.

Shell Commands

Shell commands are customized in the Shell Commands tab, as illustrated below.

Add — adds a new shell command; Bricscad uses the same format AutoCAD.
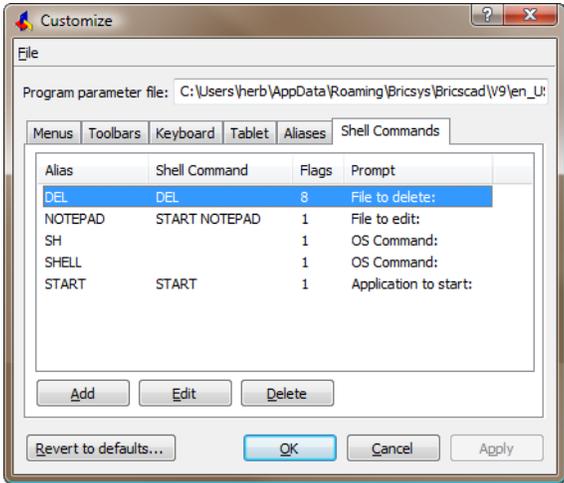
Bricscad for AutoCAD Users
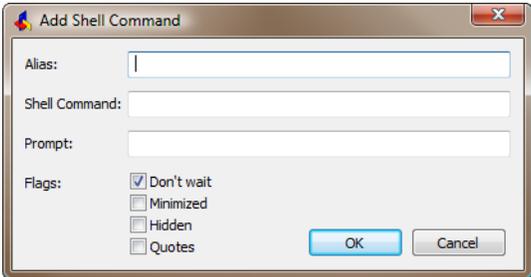
Other Customizations

Fonts

AutoCAD and Bricscad use the same font files: TrueType (*.ttf*) and compiled shapes (*.shx*). AutoCAD also supports PostScript (*.pfb*) fonts indirectly through the Compile command, which converts PostScript fonts to SHX format; Bricscad does not work with PostScript fonts.

This means Bricscad can use any font that you've employed in your AutoCAD drawings. Since Windows controls TrueType fonts, there is no need to copy any *.ttf* files to Bricscad; they are all stored in the *\windows\fonts* folder for use by all Windows programs.

AutoCAD keeps its SHX fonts in the *\Program Files\AutoCAD 2010\Fonts* folder. To use them with Bricscad, you can copy the files between folders.

Font Mapping

Bricscad and AutoCAD support font mapping, handy when fonts are missing from your drawing. Both use the same two system variables:

FontAlt — specifies the name of the font to use when the correct one cannot be found. Both CAD systems use *simplex.shx* as the default replacement font.

FontMap — specifies the file name of the file to map alternative font names:

CAD System	FontMap	Default Folder
AutoCAD	acad.fmp	C:\Users\<login>\AppData\Roaming\Autodesk\AutoCAD 2010\R18.0\enu\Support
Bricscad	default.fmp	C:\Users\<login>\AppData\Roaming\Bricsys\Bricscad\V10\en_US\support

Both CAD systems use the same format of font mapping file, so you can copy it from AutoCAD. Here are the first five mappings from *default.fmp*:

```
ic-comp;complex.shx
ic-complex;complex.shx
ic-gdt;gdt.shx
ic-ital;italic.shx
ic-italc;italicc.shx
```

Linetypes and Hatch Patterns

Bricscad and AutoCAD use the same definitions for linetypes and hatch patterns. Both simple and complex linetypes are defined by *.lin* files, while hatch patterns are defined by *.pat* files. The default names are as follows:

File Type	AutoCAD Default	Bricscad Default	Notes
Linetypes	acad.lin	default.lin	
	acadiso.lin	iso.lin	ISO-standard linetypes
Hatch patterns	acad.pat	default.pat	
	acadiso.pat	iso.pat	ISO-standard hatch patterns

This means that in Bricscad you can use linetypes and hatch patterns customized for AutoCAD. Copy the files from AutoCAD's support folder:

```
C:\Users\<login>\AppData\Roaming\Autodesk\AutoCAD 2010\R18.0\enu\Support
```

to the Bricscad support folder:

```
C:\Users\<login>\AppData\Roaming\Bricsys\Bricscad\V10\en_US/Support
```

Or, use Bricscad to access the AutoCAD linetype files, as follows:

1. Use the **Linetype** command to open the Explorer window at the Linetypes node.
2. Click the **New** button to display the Load Linetypes dialog box.
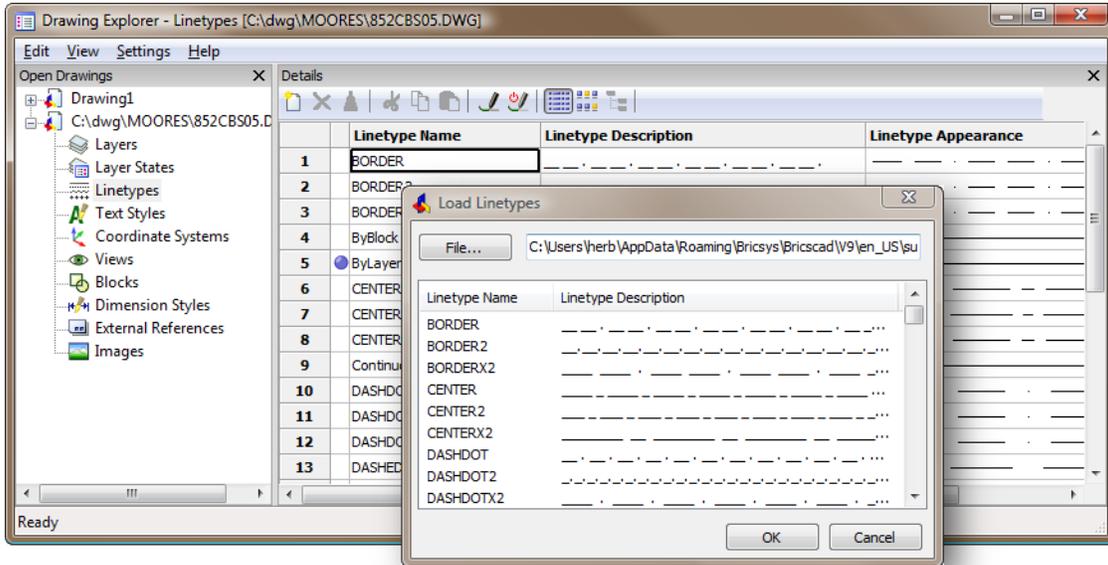
3. Click **File** to access another *.lin* file, such as *acad.lin*.
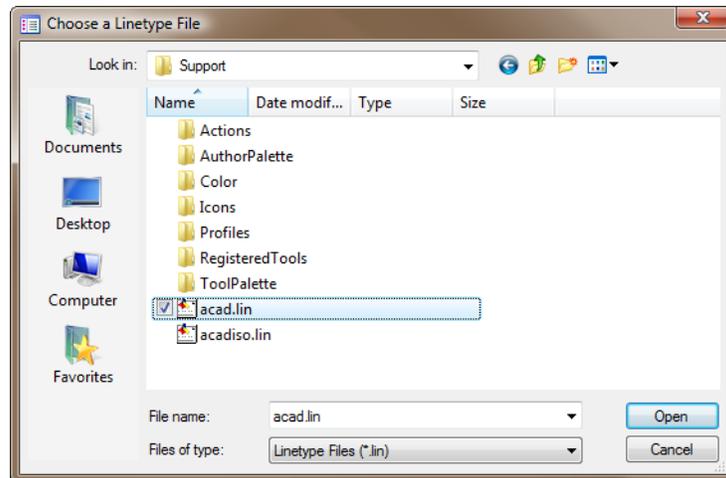
4. Navigate to *C:\Users\<login>\AppData\Roaming\Autodesk\AutoCAD 2010\R18.0\enu\Support*, and then choose the *.lin* file you wish to open. Replace *<login>* with your Windows login name.
5. Click **Open**.

Plot Styles

Bricscad and AutoCAD support both color-based and style-based plot styles, which allows entities to look different when plotted.

Plot Style File	Notes
STB	Style-based plot style table (newer style)
CTB	Color-based plot style table (older style)

To create and edit plot styles in Bricscad, choose **Plotstyle Manager** from the File menu, or enter the **PlotStyle** command. The figures below show that style-based plot style tables of both CAD programs are almost identical:
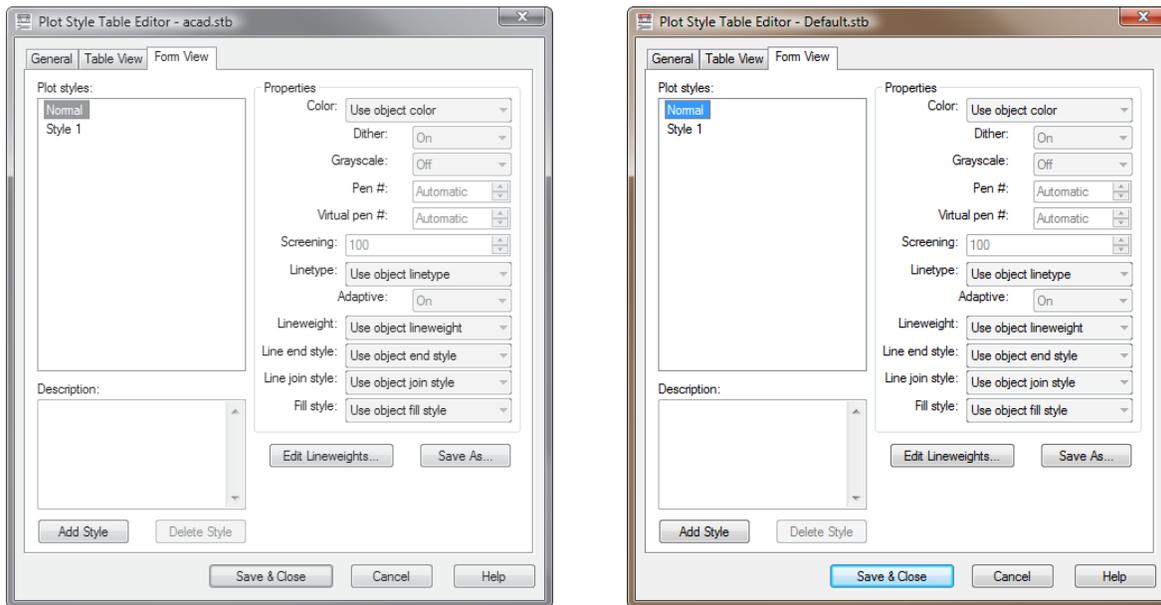
Left: *AutoCAD's STB table.*
Right: *Bricscad's STB table.*

The sole difference is the name of default style table files. AutoCAD's default is *acad.stb*, while Bricscad's default is *default.stb*. This means Bricscad can use STB and CTB files created in AutoCAD.

Plotter Manager

Bricscad and AutoCAD both support PC3 plotter manager files, which allow users to customize plotter options. Thus, Bricscad can use PC3 files created in AutoCAD.

To create and edit plotters in Bricscad, choose **Plotter Manager** from the **File** menu, or enter the **PlotterManager** command. The figures below show that the plotter configuration editors of both CAD programs are similar:
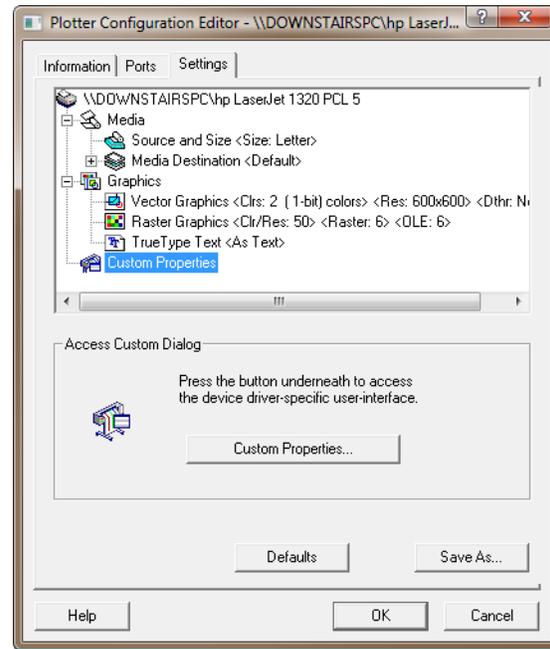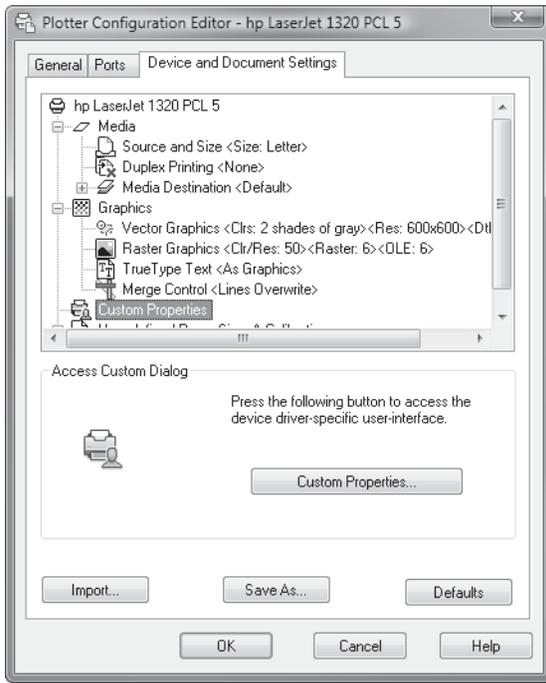
Left: AutoCAD's plotter editor.
Right: Bricscad's plotter editor.

Options vs Settings

Bricscad and AutoCAD provide extensive options for controlling the CAD drafting environment, from modifying the look of the user interface to specifying the names of project folders. These settings are mostly stored in system variables; some are also stored in data files, environment variables, and the Windows registry.

AutoCAD's primary interface for program settings is the dialog box displayed by the Options command, which provides users with access to many — but not all — system variables. The equivalent in Bricscad is the Settings command's dialog box; in contrast to AutoCAD, it provides you with access to *all* system variables. See Chapter 2 for details on using the Settings dialog box.

Both CAD programs also employ the command-line-oriented SetVar command for direct access to system variables.

File Paths

In addition to the core DWG drawing file, Bricscad and AutoCAD use many support files. In older, simpler times, support files were simply stored in a folder named \Support. But as Microsoft made Windows more complex, support files became scattered throughout computer hard drives — and sometimes not even on the computer you use.

The complexity stems from networking. Different support files need to be handled differently:

> **Local files** — stored on the computer you use; these files are specific to each user and each CAD program, such as DWG drawing files and local customization files.
> **Common files** — stored on the computer you use; these files are common to many programs, such as fonts and printer drivers.
> **Temporary files** — stored "anywhere," locally or on the network; these files are created by CAD programs for the duration of the editing session, such as automatic backup files.

Roaming files — stored on any computer; these files are specific to you, and that can be accessed from any networked computer, such as linetypes and hatch patterns. See Roamable Profiles later in this chapter.

Network files — stored on the network and accessible to everyone; these files are meant to be shared by everyone, such as blocks and templates.

Both CAD programs let you specify the paths to these folders. In AutoCAD, paths are specified in the Files tab of the Options dialog box. In Bricscad, paths are specified in the Program Options section of the Settings dialog box.
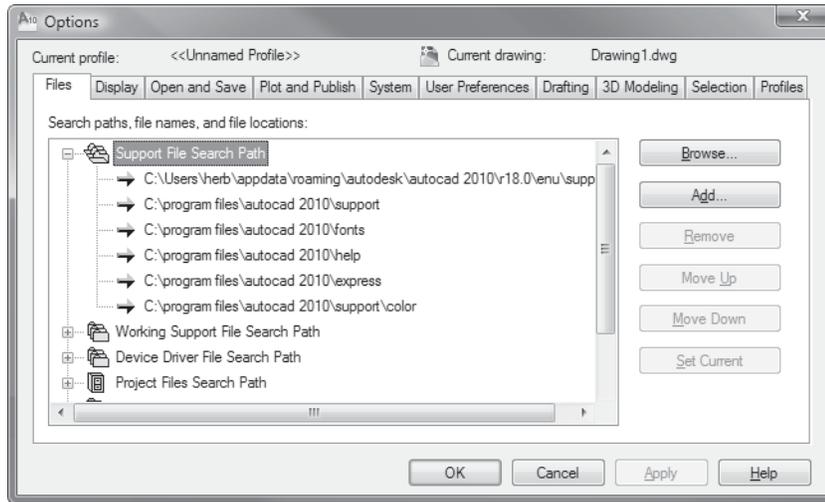
Above: AutoCAD's Files tab.
Below: Bricscad's Files nodes.
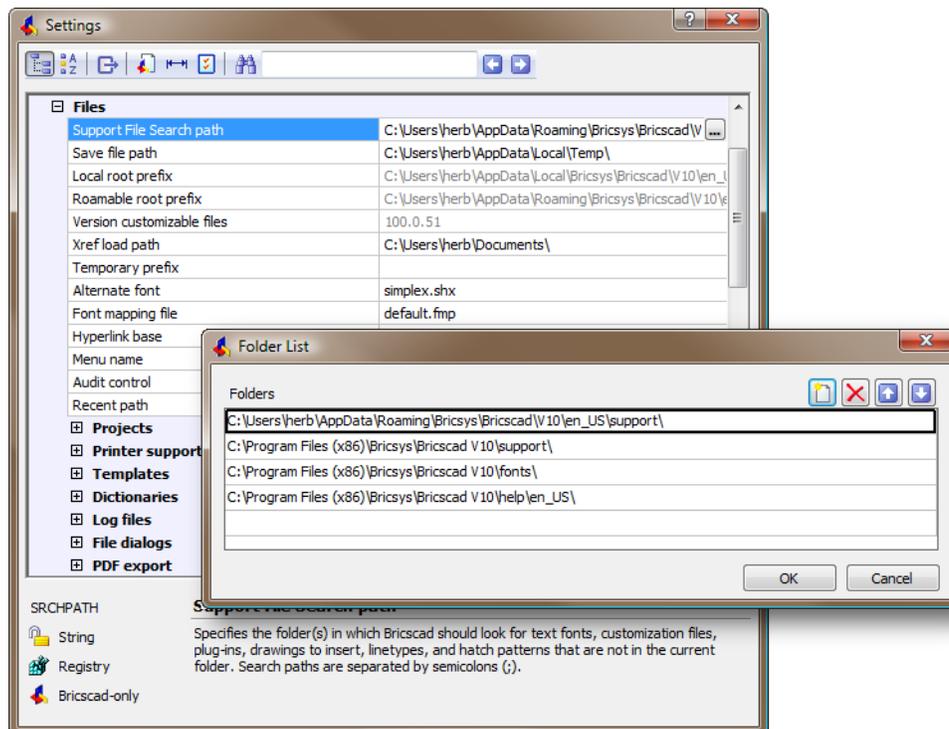
User Profiles

Bricscad and AutoCAD support *user profiles*, which store your customization settings for each CAD program. After changing settings with the Options (AutoCAD) or Settings (Bricscad) commands, you can save them to an *.arg* user profile file. This allows you to create multiple profiles, each for a different user or different project.

You can launch Bricscad with a user profile by adding the **/P** switch to its desktop shortcut. (Right-click the shortcut icon on the desktop, and then choose Properties from the shortcut menu.) Edit the Target text like this:

```
"C:\Program Files\Bricsys\Bricscad V10\bricscad.exe" /P <UserProfileName>
```

In AutoCAD, user profiles are created and accessed through the Profiles tab of the Options dialog box. In Bricscad, user profiles are generated through a separate application, *UserProfileManager.exe*.
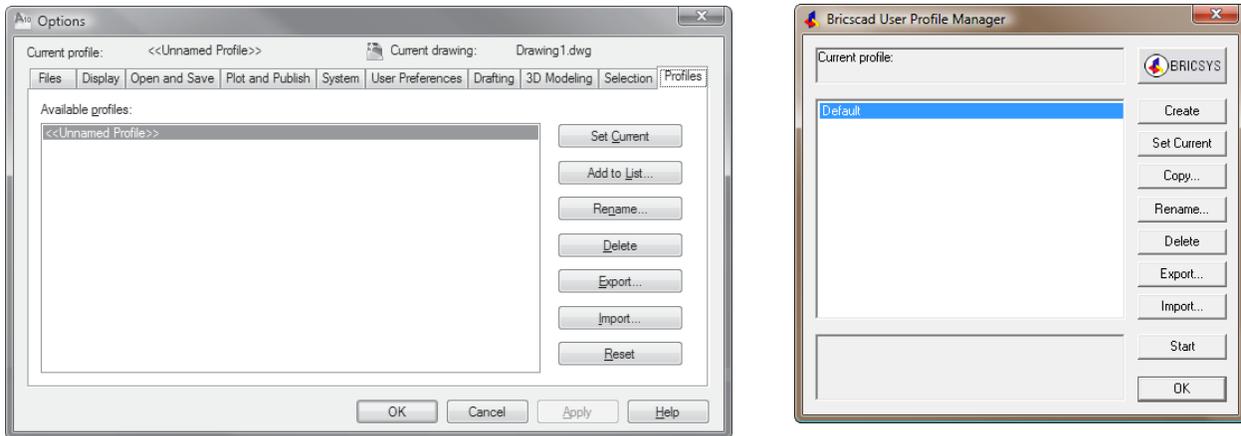
Left: *AutoCAD's user profiles facility*
Right: *Bricscad's user profiles application.*

Because both programs use the same *.arg* file format, you can import AutoCAD-generated profiles into Bricscad by following these steps.

In AutoCAD:

1. In AutoCAD, enter the **Options** command, and then click on the **Profiles** tab. See figure above.
2. Choose a profile from the list, and then click **Export**.
3. Select a folder in which to save the profile file, and change the file name, if you wish. Click **Save**.
4. Click **OK** to exit the dialog box.

In Bricscad:

1. In Bricscad, from the **Tools** menu, choose **User Profile Manager**. See figure above.
2. In the User Profile Manager, click **Import**.
3. Choose the *.arg* file exported from AutoCAD, and then click **Open**.
4. To apply the profile, click **Set Current**.
5. Click **OK** to exit the program.

Roaming Profiles

Bricscad and AutoCAD support *roaming profiles*, which let you "roam" about the office and use the CAD software (customized with your settings) on any computer connected to the office network. Your settings are identified automatically by your login name, which you enter when you access a computer.

Not all CAD-related files are roamable; some remain local, such as DWG drawings and CUI. Roamable and nonroamable files are kept in different folders, whose names vary depending on the variant of Windows running on your computer. For Vista, these are:

AutoCAD's roamable files:

```
C:\Users\<login>\AppData\Roaming\Autodesk\AutoCAD 2010\R18.0\enu
```

- Data links
- Language packs
- Migration
- Plot styles (CTB, STB), plotter parameters (PMP), and plotter configurations (PC3)
- Support files (CUIX, FMP, LIN, MLN, MNL, PAT, PGP, PSF, UNT, and so on).

AutoCAD's nonroamable files:

```
C:\Users\<login>\AppData\Local\Autodesk\AutoCAD 2010\R18.0\enu
```

- Template files (DWT, DST, DGN)
- Web Services

Bricscad's roamable files:

```
C:\Users\<login>\AppData\Roaming\Bricsys\Bricscad\V10\en_US
```

- Plot styles (CTB, STB), and plotter configurations (PC3)
- Support files (CUI, FMP, LIN, PAT, PGP, PSF, UNT, and TXT).

Bricscad's nonroamable files:

```
C:\Users\<login>\AppData\Local\Bricsys\Bricscad\V10\en_US
```

- Template files (DWT)

TIP   You can change the path to the local and roamable folders with the related system variables **LocalRootPrefix** and **RoamableRootPrefix**.

Accessing Hidden Folders

The local and roaming folders can be difficult to find, because they are typically hidden by Windows, unfortunately. Here are some ways to access hidden folders:

- Make *all* hidden folders visible through **Start | Control Panel | Folder Options | View** tab **| Show Hidden Files and Folders**. (You can also access the dialog box through the Tools menu, if menus are turned on for Explorer.)
- Or, copy (**Ctrl+C**) the folder path from this book, and then paste it (**Ctrl+V**) into the address bar of Explorer.
- Or, create shortcuts on your computer's desktop to the hidden folders: hold down **Ctrl+Alt** while dragging the folder name from Explorer onto the desktop.

Supported Files

In addition to DWG drawing files, Bricscad and AutoCAD employ many additional files. The following tables cross-reference supported files by extension between the two CAD packages.

AutoCAD File	Bricscad File	Notes
Drawing Files		
.adt	.adt	Audit log files
.bak	.bak	Backup drawing files
.dwf	.dwf	Design Web format files
.dwfx	...	XPS compatible version of DWF files
.dwg	.dwg	Drawing files
.dws	...	CAD standards files
.dwt	.dwt	Drawing template files
.dxb	...	Binary drawing interchange files for CAD/camera
.dxf	.dxf	Drawing interchange files, ASCII and binary
.sv$	.sv$	Autosaved drawing files
.xlg	.xlg	Xref log files
.$$$	...	Emergency backup files
.$ac	...	Temporary files created by AutoCAD
.$a	...	Temporary files
Support Files		
.acb	...	AutoCAD color book files
.acl	...	Autocorrect list files
.arg	.arg	User profile files
.atc	...	AutoCAD tool catalog files
.aws	...	AutoCAD workspace files
.blk	...	Block template files
.cfg	.cfg	Configuration files
.chm	chm	Compiled HTML format help files
.chx	...	Standards check files
.css	...	Cascading style sheet files
.cui	.cui	Customize User Interface files
.cuix	...	Customization container files
.cus	.cus	Custom dictionary files
.dbq	...	Database query files
.dbt	...	Database template files
.dbx	...	Database extension files
.dct	.dic	Dictionary files
.dsd	...	Drawing set description files
.dst	...	Sheet set data files
.err	...	Error log files

AutoCAD File	Bricscad File	Notes
.fdc	...	Field catalog files
.fmp	.fmp	Font mapping files
.hdi	...	Heidi device interface files
.hlp	.hlp	Windows-format help files
.htm, .html	.htm, .html	Hypertext markup language files
...	.icm	IntelliCAD menu files
.ies	...	Illumination distribution data files
.ini	...	Configuration (initialization) files
.lin	.lin	Linetype definition files
.log	.log	Log files created by the LogFileOn command
...	.lwi	Base material files
.mli	...	Material library files for rendering
.mln	...	Multiline style files
.mnc	...	Compiled menu files (deprecated as of AutoCAD 2006)
.mnd	...	Uncompiled menu files containing macros (deprecated)
.mnl	...	AutoLISP routines used by AutoCAD menus (deprecated)
.mnr	...	Menu resource files
.mns	.mns	AutoCAD-generated menu source files (deprecated)
.mnu	.mnu	Menu source files (deprecated as of AutoCAD 2006)
.nfl	...	Filter list files
.pat	.pat	Hatch pattern definition files
.ptw	...	Publish to Web settings files
.pwt	...	Publish to Web template files
.rml	...	Redline markup files (obsolete)
.shp	...	Shape and font definition files
.shx	.shx	Compiled shape and AutoCAD font files
.slg	...	Status log files
.ttf	.ttf	Microsoft font files
.txt	.txt	Text message files
.udl	...	Microsoft data link files
.xml	...	Extended markup language files
.xmx	...	External message files
.xpg	...	XML-format tool palette group files

Plotting Support Files

AutoCAD File	Bricscad File	Notes
.ctb	.ctb	Color-table based plot parameter files
.pc2	...	Plot configuration parameters files for AutoCAD 2000 (deprecated)
.pc3	.pc3	Plot configuration parameters files since AutoCAD 2000i
.pcp	...	Plot configuration parameters files for AutoCAD R14 (deprecated)
.plt	.plt	Plot files
.pmp	.pmp	Plotter model configuration files
.pss	...	Plot stamp settings files
.stb	.stb	Style-table based plot parameter files

AutoCAD File	Bricscad File	Notes
Import-Export Files		
.3ds	...	3D Studio files
.bmp	.bmp	Windows raster files (device-independent bitmap)
.cdf	.cdf	Comma delimited files
.dgn	...	MicroStation V8 and V7 design files
.dxe	...	Data extraction files created by DataExtraction command
.dxx	...	DXF files created by AttExt command
...	.emf	Enhanced metaformat files
.eps	...	Encapsulated PostScript files
.fax	...	Fax raster plot files
.fit	...	FIT raster plot files
.gif	.gif	CompuServe image files
.jpg, .jpeg	.jpg, .jpeg	Joint photographic expert group files
...	.jp2	JPEG 2000 files
.kml	...	Google Earth files (keyhole markup language)
.kmx	...	Compressed KML files
.pcx	.pcx	Raster format files
.pdf	.pdf	Portable document format files
.png	.png	Portable Network Graphics raster files
.sat	.sat	ACIS solid object files (short for "Save As Text") files
.sdf	.sdf	Space-delimited files
...	.sid	MrSID geospatial imagery format from LizardTech
.slb	.slb	Slide library files
.sld	.sld	Slide files
.stl	...	Solid object stereo-lithography files
.tga	.tga	Raster format (Targa) files
.tif	.tif	Raster format (Tagged image file format) files
.txt	.txt	Space delimited files
.wmf	.wmf	Windows metaformat files
.xls	...	Excel spreadsheet files
API and Programming Files		
.actm	...	Active macro source code files
.arx	...	AutoCAD runtime extension files
...	.brx	Bricsys runtime extension files
.cpp	.cpp	ObjectARX source code files
.dce	.dce	Dialog error log files
.dcl	.dcl	Dialog control language descriptions of dialog boxes
...	.drx	Design runtime extension files
.dll	.dll	Dynamic link libraries
.dvb	.dvb	Visual Basic for Applications program files
.fas	...	AutoLISP fast load programs files

AutoCAD File	Bricscad File	Notes
.h	.h	ADS/SDS and ARX/BRX/DRX function definition files
.lib	.lib	ARX BRX/DRX function library files
.lsp	.lsp	AutoLISP/LISP program files
...	.mcr	Macro files
.pgp	.pgp	Program parameters files (external commands and aliases)
.rx	...	Lists of ARX applications that load automatically
.scr	.scr	Script files
.unt	unt	Unit definition files
...	.vbi	VBA project files prior to Bricscad V8
.vlx	...	Compiled Visual LISP files

Programming Considerations

Bricsys makes it easy for you to transfer your AutoCAD add-ons to Bricscad by supporting almost the same list of programming languages and APIs as does AutoCAD:

AutoCAD API	Bricscad Equivalent	Notes
Programming Languages		
AutoLISP	LISP	AutoLISP code runs as-is in Bricscad; check (command statements)
Diesel	Diesel	Diesel code runs as-is in Bricscad, no changes needed
VBA	VBA	AutoCAD VBA code runs as-is in Bricscad, no changes needed
VSTA	...	Unavailable in Bricscad
APIs		
DCL	DCL	DCL code runs as-is in Bricscad, no changes needed
ADS	SDS	ADS code requires only a recompile using SDS headers
ARX	BRX	ARX code requires only a recompile using BRX headers
	DRX	DRX requires careful checking of the ARX code.
COM	COM	AutoCAD COM code runs as-is in Bricscad, no changes needed
.Net (Managed wrapper classes)	DWGdirect.NET	.Net will be supported by Bricscad in a future release

Generally Bricscad provides a nearly identical subset of equivalent function names. In the case of non-compiled code, such as LISP and DCL, you just drop it into the Bricscad environment. For compiled code, you recompile using the headers provided by Bricsys.

API is short for "application programming interface," and is the software link between Bricscad and programming languages/compilers.

> **TIP** Detailed information is freely available from the Bricsys online developer reference at www.bricsys.com/bricscad/help/en_US/V9/DevRef.

Porting AutoLISP to LISP

Most AutoLISP routines work directly in Bricscad. Its LISP engine supports VL, VLA functions, and LISP reactors; it does not support compiling to FAS (compiled LISP) files.

You may experience the following issues:

*   Bricscad's command line input can vary slightly from AutoCAD. The solution is to verify the content of all (command) functions. Or avoid the use of (command) altogether.
*   Bricscad does not implement a few AutoLISP functions. The solution is to rewrite the code, or adapt external libraries.

DOSLib works with Bricscad Pro. It is a free library of LISP-callable functions not found in regular LISP. See en.wiki.mcneel.com/default.aspx/McNeel/DOSLib.html.

Porting DCL to Bricscad

Most DCL routines work directly in Bricscad. OpenDCL support is in alpha testing (at time of writing).

Porting Diesel to Bricscad

Most Diesel routines work directly in Bricscad.

Porting VBA to Bricscad

AutoCAD and Bricscad both use DVB files for VBA projects. Releases of Bricscad older than V8 use VBI files, which can be converted to VBA. Refer to the VBA conversion tool at www.bricsys.com/common/vbaconversion.

Porting ADS to SDS

To make ADS programs work with SDS in Bricscad, follow these steps:

- Replace the **Ads_** prefixes of function names by **Sds_**.
- Replace **AdsLib.h** with **Sds.h** as the include file.
- Visual C projects should be set up to produce DLLs. (These are loaded into Bricscad with the **XLload** command or through **Tools | Load LISP or SDS Application**.)

Since ADS/SDS were developed nearly 20 years ago, Bricsys considers SDS deprecated, meaning developers should no longer use it.

Porting ARX to BRX

The BRX SDK (Bricscad runtime extension software development kit) is code-compatible with ARX (AutoCAD runtime extension), so there is no need to convert your code. Your application must be compiled with Visual Studio 2005 SP1, or any higher version compatible with version 8.0 of Microsoft's CRT and MFC libraries.

Porting ARX to DRX

Bricsys recommends that you use its own BRX SDK, rather than the DRX SDK (DwgDirect runtime extension) from the Open Design Alliance, because

- BRX does not require any code conversion.
- BRX supports advanced topics, such as custom objects and entities.

DRX has the following differences from ARX:

DRX enforces the use of smart pointers in client code.

DRX's method of constructing and destructing objects is different from that of ARX.

DRX's control flow of error handling is different from that of ARX applications.

DRX SDK contains a subset of ARX functionality; editor-related ARX interfaces are missing.

DRX has minor differences in the class hierarchy of objects.

DRX is available to members of the OpenDesign Alliance at www.opendesign.com.

Porting COM to Bricscad

COM (Common Object Model) is available in both the Standard and Pro versions of Bricscad. (Only VBA is not found in the Standard version.) The COM object model is accessed through programming languages like VB, VBA, and C++.

Though Bricscad object model is quite similar to AutoCAD's, it is not identical. Most VB/VBA code written for AutoCAD should work directly under Bricscad. When you find a required element missing from the object model, the Bricscad developer support team is open to creating a priority build that adds the functions you require.

Bricscad does not support VSTA (Visual Studio Tools for Applications).

Units

Bricscad and AutoCAD share the same units conversion file, which is used by LISP, SDS, and other functions. Bricscad calls its file *default.unt,* while AutoCAD's is *acad.unt.*

Loading Applications into Bricscad

Bricscad and AutoCAD both use the AppLoad command to load applications.
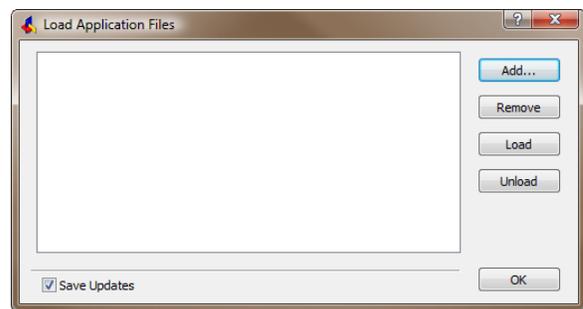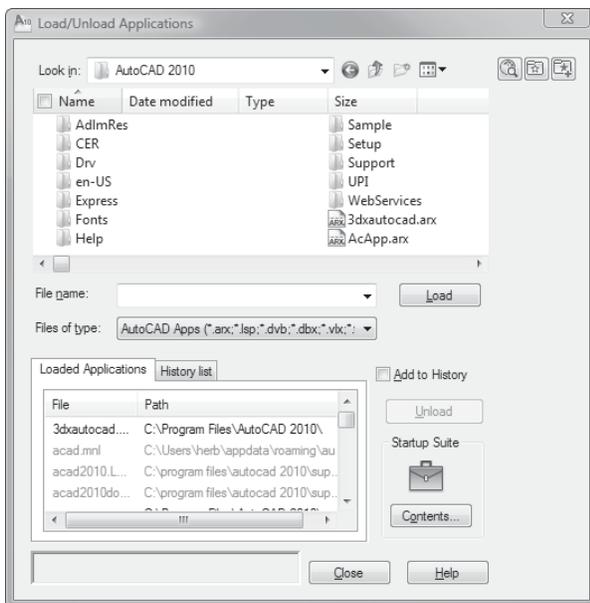
Left: *AutoCAD's application loader.*
Right: *Bricscad's application loader.*

TIP   The **RecScript** command (script recorder) in Bricscad produces *.scr* files that can be edited, which makes it more useful than the Action Recorder in AutoCAD.

Bricscad for AutoCAD Users

Third-party Developer Support

Bricsys notes that "There is day to day support for application developers who need assistance porting applications to Bricscad V9 or V10, or simply require technical information about the porting process and the possibilities. The Bricsys development team has an extended section with dedicated developers for the different development environments (LISP, COM, ADS, ARX)."

TIP   Bricsys does not charge third-party developers, unlike CAD vendors. There is no fee to join, no annual membership, no charge for support, and no royalties on shipping products. Visit www.bricscad.com/en_INTL/home/developers.jsp for more information and to register as a third-party developer.

When third-party developers request an addition to the API, it also becomes a new feature in Bricscad that end-users can employ.

Bricscad Object Model

Application

Documents

Document

- ModelSpace
- PaperSpace
  - PViewport
- Blocks
  - Block
- Dictionaries
  - Dictionary
- DimensionStyles
  - DimensionStyle
- FileDependencies
  - FileDependency
- Groups
  - Group
- Layers
  - Layer
- Layouts
  - Layout
- LineTypes
  - LineType
- PlotConfigurations
  - PlotConfiguration
- RegisteredApplications
  - RegisteredApplication
- TextStyles
  - TextStyle
- UserCoordSystems
  - UserCoordSystem
- Views
  - View
- Viewports
  - Viewport
- SelectionSets
  - SelectionSet
- DatabasePreferences
- Plot
- SummaryInfo
- Utility

Preferences

MenuBar
- PopupMenu

MenuGroups
MenuGroup
- PopupMenus
  - PopupMenu
    - PopupMenuItem
- Toolbars
  - Toolbar
    - ToolbarItem

| 3DFace |
| 3DPoly |
| 3DSolid |
| Arc |
| Attribute |
| AttributeRef |
| BlockRef |
| Circle |
| Dim3PointAngular |
| DimAligned |
| DimAngular |
| DimDiametric |
| Dimension |
| DimOrdinate |
| DimRadial |
| DimRotated |
| Ellipse |
| ExternalReference |
| Hatch |
| Leader |
| Line |
| LWPolyline |
| MText |
| Point |
| PolyfaceMesh |
| PolygonMesh |
| Polyline |
| Raster |
| Ray |
| Region |
| Shape |
| Solid |
| Spline |
| Text |
| Tolerance |
| Trace |
| XLine |

Hyperlinks
Hyperlink

PreferencesDisplay
PreferencesDrafting
PreferencesFiles
PreferencesOpenSave
PreferencesOutput
PreferencesProfiles
PreferencesSelection
PreferencesSystem
PreferencesUser

Collection
Objet — Non-database resident

Collection
Objet — Database resident

APPENDIX A:

AutoCAD-Bricscad Command Cross-reference
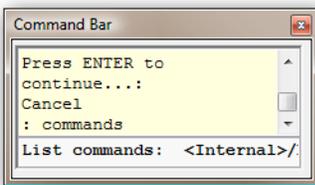
THIS APPENDIX LISTS the commands found in AutoCAD 2010 and Bricscad V10. The list is sorted alphabetically by command name. Not included are un-documented commands, hardwired aliases, or deprecated commands.

[2010] indicates the command is new to AutoCAD 2010

[V10] indicates the command is new to Bricscad V10

AutoCAD Command	Bricscad Command	Notes
A		
About	About	
AcisIn	AcisIn	
AcisOut	AcisOut	
[2010] ActBasepoint	...	
[2010] ActManager	...	
ActRecord	...	Equivalent Bricscad command: **RecScript**
ActStop	...	Equivalent Bricscad command: **RecScript**
ActUserInput	...	
ActUserMessage	...	
AdCenter	...	Equivalent Bricscad: **Explorer**
AdcClose	...	
AdcNavigate	...	
	AddInMan	Bricscad VBA COM Add-In Manager
[2010] Adjust	...	Equivalent Bricscad: **ImageAdjust**
Ai_Box	Ai_Box	
Ai_Cone	Ai_Cone	
Ai_Dish	Ai_Dish	
Ai_Dome	Ai_Dome	
Ai_Mesh	...	Equivalent Bricscad: **Mesh**
Ai_Pyramid	Ai_Pyramid	
Ai_Sphere	Ai_Sphere	
Ai_Torus	Ai_Torus	
Ai_Wedge	Ai_Wedge	
Align	Align	
AllPlay	...	
AmeConvert	...	
AniPath	...	
AnnoReset	...	
AnnoUpdate	...	
Aperture	Aperture	
...	Apparent	AutoCAD equivalent: **-Osnap Apparent**
AppLoad	AppLoad	
Arc	Arc	
Archive	...	
Area	Area	
Array	Array	
Arx	...	Equivalent Bricscad: **AppLoad**
[2010] Attach	...	Equivalent Bricscad: **ImageAttach**, **Xref**
AttachURL	...	Equivalent Bricscad: **Hyperlink**
AttDef	AttDef	
AttDisp	AttDisp	
AttEdit	AttEdit	
AttExt	AttExt	

AutoCAD Command	Bricscad Command	Notes
AttIPedit	...	
AttRedef	...	
AttSync	...	
Audit	Audit	
[2010] AutoConstrain	...	
AutoPublish	...	

B

Base	Base	
BAttMan	...	
BEdit	...	
[2010] BESettings	...	
BHatch	BHatch	
Blipmode	Blipmode	
Block	Block	
BlockIcon	...	Required by AutoCAD for old drawings
BmpOut	BmpOut	
Boundary	Boundary	
Box	Box	
Break	Break	
BRep	...	
Browser	Browser	

C

Cal	Cal	Bricscad displays Windows Calculator
Camera	...	
...	Center	AutoCAD equivalent: **-Osnap Center**
Chamfer	Chamfer	
Change	Change	
CheckStandards	...	
ChProp	ChProp	
ChSpace	...	
Circle	Circle	
ClassicImage	...	Equivalent Bricscad: **Image**
ClassicLayer	...	Equivalent Bricscad: **Layer**
ClassicXref	...	Equivalent Bricscad: **Xref**
CleanScreenOn	...	
CleanScreenOff	...	
[2010] Clip	...	Equivalent Bricscad: **XClip**, **ImageClip**
Close	Close	
CloseAll	CloseAll	
Color	Color	
CommandLine	CommandLine	

AutoCAD Command	Bricscad Command	Notes
CommandLineHide	CommandLineHide	
Compile	...	Required only for converting PostScript font files
Cone	Cone	
2010 ConstraintBar	...	
2010 ConstraintSettings	...	
Convert	...	Required only for old AutoCAD drawings
ConvertCTB	ConvertCTB	
ConvertOldLights	...	Required only for old AutoCAD drawings
ConvertOldMaterials	...	Required only for old AutoCAD drawings
ConvertPStyles	...	
ConvToSolid	...	
ConvToSurface	...	
Copy	Copy	
CopyBase	CopyBase	
CopyClip	CopyClip	
...	CopyEData	Copies xdata between entities
CopyHist	CopyHist	
CopyLink	...	
CopyToLayer	...	
CUI	...	Equivalent Bricscad: **Customize**
CuiExport	...	
CuiImport	...	
CuiLoad	CuiLoad	
CuiUnload	CuiUnload	
CustomerInvolvementProgram	...	
Customize	Customize	Bricscad equivalent to CUI command.
CutClip	CutClip	
Cylinder	Cylinder	

D

AutoCAD Command	Bricscad Command	Notes
DataExtraction	...	
DataLink	...	
DataLinkUpdate	...	
DbConnect	...	
DbClose	...	
DbList	DbList	
...	DdAttE	AutoCAD equivalent: **AttEdit**
...	DdEdit	Renamed **EditText** in AutoCAD 2010
...	DdEModes	Bricscad displays Settings dialog box
...	DdFilter	Bricscad displays Settings dialog box
...	DdGrips	Bricscad displays Settings dialog box
DdPtype	DdPtype	Bricscad displays Settings dialog box
...	DdSelect	Bricscad displays Settings dialog box
	DdSettings	Bricscad displays Settings dialog box

AutoCAD Command	Bricscad Command	Notes
...	DdSTrack	Bricscad displays Settings dialog box
DdVPoint	DdVPoint	
DdUcs	DdUcs	Bricscad displays Explorer for named UCSs
Delay	Delay	
²⁰¹⁰ DelConstraint	...	
...	DelEData	Bricscad erases xdata from entities
DetachURL	...	
DgnAdjust	...	
DgnAttach	...	
DgnClip	...	
DgnImport	...	
DgnExport	...	
DgnLayers	...	
DgnMapping	...	
Dim	Dim	
Dim1	Dim1	
DimAligned	DimAligned	
DimAngular	DimAngular	
DimArc	ⱽ¹⁰ DimArc	
DimBreak	...	
DimBaseline	DimBaseline	
DimCenter	DimCenter	
²⁰¹⁰ DimConstraint	...	
DimContinue	DimContinue	
DimDiameter	DimDiameter	
DimDisassociate	ⱽ¹⁰ DimDisassociate	
DimEdit	DimEdit	
DimHorizontal	...	
DimInspect	...	
DimJogged	...	
DimJogLine	...	
...	DimLeader	Same as Bricscad's Leader command
DimLinear	DimLinear	
DimOrdinate	DimOrdinate	
DimOverride	DimOverride	
DimRadius	DimRadius	
DimReassociate	...	
DimRegen	DimRegen	
DimRotated	...	
DimSpace	...	
DimStyle	DimStyle	
DimTEdit	DimTEdit	
DimVertical	...	
...	Dish	Bricscad draws 3D solid model dishes

AutoCAD Command	Bricscad Command	Notes
Dist	Dist	
Divide	Divide	
...	Dome	Bricscad draws 3D solid model domes
Donut	Donut	
Dragmode	Dragmode	
DrawingRecovery	...	Bricscad equivalent: **Recover**
DrawingRecoveryHide	...	
DrawOrder	DrawOrder	
...	DrawOrderByLayer	Bricscad controls draworder through layer names
DSettings	DSettings	
DsViewer	...	
DView	DView	
DwfAdjust	...	
DwfAttach	...	
DwfClip	...	
DwfFormat	...	
DwfLayers	...	
...	DwgCodePage	System variable in AutoCAD
DwgProps	DwgProps	
DxbIn	...	Required only for CAD\camera support
DxfIn	DxfIn	
DxfOut	DxfOut	

E

AutoCAD Command	Bricscad Command	Notes
EAttEdit	EAttEdit	
Edge	...	
EdgeSurf	EdgeSurf	
...	EditEData	Edits xdata
Elev	Elev	
Ellipse	Ellipse	
...	Endpoint	AutoCAD equivalent: **-Osnap Endpoint**
Erase	Erase	
eTransmit	[V10] eTransmit	
ExAcReload		
...	ExpBlocks	AutoCAD equivalent: **AdCenter**
Explode	Explode	
...	Explorer	AutoCAD equivalent: **AdCenter**
Export	Export	
[2010] ExportDWF	...	
[2010] ExportDWFx	...	
ExportLayout	...	
[2010] ExportPDF	....	
[2010] ExportSettings		
-ExportToAutocad		

AutoCAD Command	Bricscad Command	Notes
...	ExpUcs	Bricscad displays Explorer
Extend	Extend	
...	Extension	AutoCAD equivalent: -Osnap Extension
ExternalReferences	...	Equivalent Bricscad command: **Xref**
ExternalReferencesClose	...	
Extrude	Extrude	

F

AutoCAD Command	Bricscad Command	Notes
...	Files	Bricscad displays Windows File Explorer
Field	V10 Field	
Fill	Fill	
Fillet	Fillet	
Filter	...	
Find	Find	
FlatShot	...	Bricscad equivalent: **Flatten**
...	Flatten	Bricscad flattens 3D objects with thickness
Freespot	...	Variation on the Light command
Freeweb	...	Variation on the Light command

G

AutoCAD Command	Bricscad Command	Notes
GeographicLocation	...	
2010 GeomConstraint	...	
GotoUrl	...	Bricscad equivalent: OnWeb
Gradient	V10 Gradient	
GraphScr	GraphScr	
Grid	Grid	
Group	Group	

H

AutoCAD Command	Bricscad Command	Notes
Handles	Handles	Inoperative in AutoCAD
Hatch	Hatch	
HatchEdit	...	Bricscad equivalent: **Properties**
Helix	...	
Help	Help	
Hide	Hide	Wireframe mode only in AutoCAD
HidePalettes	...	
Hyperlink	Hyperlink	
HyperlinkOptions	HyperlinkOptions	

I

AutoCAD Command	Bricscad Command	Notes
Id	Id	
-Image	Image	Opens Explorer in Bricscad
ImageAdjust	ImageAdjust	Opens Properties in Bricscad

AutoCAD Command	Bricscad Command	Notes
ImageAttach	ImageAttach	
ImageClip	ImageClip	
...	ImageFrame	System variable in AutoCAD
ImageQuality	ImageQuality	
Import	Import	
Imprint	...	
Insert	Insert	
InsertObj	InsertObj	
Interfere	Interfere	
Intersect	Intersect	
...	Intersection	AutoCAD equivalent: **-Osnap Intersection**
Isoplane	Isoplane	

J

AutoCAD Command	Bricscad Command	Notes
Join	Join	
JpgOut	...	
JustifyText	...	

L

AutoCAD Command	Bricscad Command	Notes
LayCur	...	
LayDel	...	
Layer	Layer	Bricscad displays Explorer for layers.
LayerClose	...	
LayerP	...	
LayerPalette	...	Bircscad equivalent: **Layer**
LayerPMode	...	
LayerState	LayerState	Bricscad displays Explorer for layer states.
LayFrz	LayFrz	
LayIso	LayIso	
LayLck	LayLck	
LayMch	...	
LayMCur	LayMCur	
LayMrg	...	
LayOff	LayOff	
LayOn	LayOn	
-Layout	Layout	
LayoutWizard		
LayThw	LayThw	
LayTrans		
LayULk	LayULk	
LayUnIso	...	
LayVpi	...	
LayWalk	...	
Leader	Leader	

AutoCAD Command	Bricscad Command	Notes
Lengthen	Lengthen	
...	LicEnterKey	Enters Bricscad license Key
...	LicProperties	Bricscad displays license information
Light	...	
LightList	...	
LightListClose	...	
Limits	Limits	
Line	Line	
Linetype	Linetype	Bricscad displays Explorer for linetypes.
List	List	
LiveSection	...	
Load	Load	
Loft	...	
LogFileOn	LogFileOn	
LogFileOff	LogFileOff	
LtScale	LtScale	
LWeight	LWeight	Bricscad displays Settings

M

AutoCAD Command	Bricscad Command	Notes
Markup	...	
MarkupClose	...	
MassProp	MassProp	
MatchCell	...	
MatchProp	MatchProp	
MaterialAttach	...	
MaterialMap	...	
Materials	...	
MaterialsClose	...	
Measure	Measure	
[2010] MeasureGeom	...	Bricscad equivalent: **Area**, **Dist**, **MassProp**
Menu	Menu	
...	MenuLoad	AutoCAD equivalent: **CuiLoad**
...	MenuUnload	AutoCAD equivalent: **CuiUnload**
[2010] Mesh	...	
[2010] MeshCrease	...	
[2010] MeshUncrease	...	
[2010] MeshOptions	...	
[2010] MeshPrimitiveOptions	...	
[2010] MeshRefine	...	
[2010] MeshSmooth	...	
[2010] MeshSmoothLess	...	
[2010] MeshSmoothMore	...	
[2010] MeshSplit	...	
...	Midpoint	AutoCAD equivalent: **-OSnap Midpoint**

AutoCAD Command	Bricscad Command	Notes
MInsert	MInsert	
Mirror	Mirror	
Mirror3d	Mirror3d	
MLeader	...	
MLeaderAlign	...	
MLeaderCollect	...	
MLeaderEdit	...	
MLeaderStyle	...	
MlEdit	...	
MLine	...	
MlStyle	...	
Model	...	Bricscad equivalent: click Model tab
Move	Move	
...	MoveEData	Bricscad moves xdata between entities
MRedo		
MSlide	MSlide	
MSpace	MSpace	
MtEdit	...	Bricscad equivalent: **Properties**
MText	MText	
MtProp	...	Bricscad equivalent: **Properties**
Multiple	Multiple	
MView	MView	
MvSetup	...	

N

AutoCAD Command	Bricscad Command	Notes
NavSMotion	...	
NavSMotionClose	...	
NavSWheel	...	
NavVCube	...	
...	Nearest	AutoCAD equivalent: **-Osnap Nearest**
NetLoad	...	
New	New	
NewSheetset	...	
NewShot	...	
NewView	...	
...	NewWiz	Bricscad begins new drawings with wizard
...	Node	AutoCAD equivalent: **-Osnap Node**
...	None	AutoCAD equivalent: **-Osnap None**

O

AutoCAD Command	Bricscad Command	Notes
ObjectScale	...	
Offset	Offset	
OleConvert	...	
OleLinks	OleLinks	

AutoCAD Command	Bricscad Command	Notes
OleOpen	OleOpen	
OleReset	...	
OleScale	...	
...	OnWeb	Opens Bricsys.com home page
Oops	Oops	
Open	Open	
OpenDwfMarkup	...	
OpenSheetset	...	
Options	Options	
Ortho	Orthogonal	
-OSnap	OSnap	

P

AutoCAD Command	Bricscad Command	Notes
PageSetup	PageSetup	
Pan	Pan	
[2010] Parameters	...	
[2010] ParametersClose	...	
PartiaLoad	...	
-PartialOpen	...	
PasteAsHyperlink	...	
PasteBlock	PasteBlock	
PasteClip	PasteClip	
PasteOrig	[V10] PasteOrig	
PasteSpec	PasteSpec	
PcInWizard	...	
[2010] PdfAdjust	...	
[2010] PdfAttach	...	
[2010] PdfClip	...	
[2010] PdfLayers	...	
...	PdfOptions	Bricscad displays Settings dialog box
PEdit	PEdit	
...	Perpendicular	Bricscad object snap
PFace	PFace	
Plan	Plan	
PlaneSurf	...	
PLine	PLine	
Plot	Plot	Operates like AutoCAD's **-Plot** command
PlotStamp	...	Bricscad equivalent: **Print** command's Plot Stamp
PlotStyle	PlotStyle	
PlotterManager	PlotterManager	
PngOut	...	
Point	Point	
PointLight	...	Variation on the Light command
Polygon	Polygon	

AutoCAD Command	Bricscad Command	Notes
PolySolid	...	
PressPull	...	
Preview	Preview	
...	Print	Operates like AutoCAD's **Plot** command
Properties	Properties	
PropertiesClose	PropertiesClose	
PSetupIn	...	
PSpace	PSpace	
Publish	...	
PublishToWeb	...	
Purge	Purge	
Pyramid	Pyramid	

Q

AutoCAD Command	Bricscad Command	Notes
QcClose	...	
QDim	...	
QLeader	...	Bricscad equivalent: **Leader**
QNew	QNew	
...	QPrint	Bricscad plots directly
QSave	QSave	
QSelect	...	
QText	QText	
QuickCalc	...	Bricscad equivalent: Calc
...	Quadrant	AutoCAD equivalent: **-Osnap Quadrant**
....	Quick	AutoCAD equivalent: **-Osnap Quick**
QuickCui	...	
QuickProperties	...	
Quit	Quit	
QvDrawing	...	
QvDrawingClose	...	
QvLayout	...	
QvLayoutClose	...	

R

AutoCAD Command	Bricscad Command	Notes
Ray	Ray	
Recover	Recover	
...	ReassocApp	Bricscad reassociates apps with xdata
RecoverAll	...	Bricscad equivalent: Recover
...	RecScript	Bricscad begins recording for script file
Rectang	Rectang	
Redefine	Redefine	
Redo	Redo	
Redraw	Redraw	
RedrawAll	RedrawAll	

AutoCAD Command	Bricscad Command	Notes
RefClose	RefClose	
RefEdit	RefEdit	
RefSet	RefSet	
Regen	Regen	
RegenAll	RegenAll	
RegenAuto	RegenAuto	
Region	Region	
Reinit	Reinit	
Rename	Rename	Bricscad displays Explorer
Render	...	
RenderCrop	...	
RenderEnvironment	...	
RenderExposure	...	
-RenderOutputSize		
RenderPresets	...	
RenderWin	...	
ResetBlock	...	
Resume	Resume	
RevCloud	RevCloud	
[2010] Reverse	...	
Revolve	Revolve	
RevSurf	RevSurf	
Ribbon	...	
RibbonClose	...	
Rotate	Rotate	
Rotate3D	Rotate3D	
RPref	...	
RPrefClose	...	
RScript	RScript	
...	RtPan	AutoCAD equivalent: **3dPan**
...	RtRot	AutoCAD equivalent: **3dOrbit**
...	RtRotX	AutoCAD equivalent: **3dOrbit**
...	RtRotY	AutoCAD equivalent: **3dOrbit**
...	RtRotZ	AutoCAD equivalent: **3dOrbit**
...	RtZoom	AutoCAD equivalent: **3dZoom**
RuleSurf	RuleSurf	

S

AutoCAD Command	Bricscad Command	Notes
Save	Save	
...	SaveAll	Bricscad saves all open drawings
SaveAs	SaveAs	
...	SaveAsR12	Bricscad saves drawings in R12 DWG format
SaveImg	...	Bricscad equivalents: **Export**, **MSlide**
Scale	Scale	

AutoCAD Command	Bricscad Command	Notes
ScaleListEdit	...	
ScaleText	...	
Script	Script	
Section	Section	
SectionPlane	...	
[2010] SectionPlaneJog	...	
[2010] SectionPlaneSettings	...	
[2010] SectionPlaneToBlock	...	
SecurityOptions	[V10] SecurityOptions	
[2010] Seek	...	
Select	Select	
SelectURL	...	Bricscad equivalent: **Hyperlink**
...	SelGrips	AutoCAD equivalent: **Ai_SelAll**
SequencePlay	...	
SetByLayer	...	
SetIDropHandler	...	
SetVar	SetVar	
...	Shade	AutoCAD equivalent: **VsCurrent**
-ShadeMode	ShadeMode	
Shape	Shape	
[2010] ShareWithSeek	...	
Sheetset	...	
SheetsetHide	...	
Shell	Shell	
ShowPalettes	...	
SigValidate	...	
...	Singleton	AutoCAD equivalent: **SDI** system variable
Sketch	Sketch	
Slice	Slice	
Snap	Snap	
SolDraw	...	
Solid	Solid	
SolidEdit	SolidEdit	
SolProf	...	
SolView	...	
SpaceTrans	...	
Spell	Spell	
Sphere	Sphere	
Spline	Spline	
SplinEdit	...	Bricscad equivalent: **Properties**
Standards	...	
...	Start	Bricscad starts application
...	StatBar	AutoCAD equivalent: **Statbar** system variable
Status	Status	

AutoCAD Command	Bricscad Command	Notes
StlOut	...	
...	StopScript	Bricscad stops recording to script file
Stretch	Stretch	
Style	Style	Bricscad displays Explorer for styles
StylesManager	StylesManager	
Subtract	Subtract	
SunProperties	...	
SunPropertiesClose	...	
Sweep	...	
SysWindows	SysWindows	

T

AutoCAD Command	Bricscad Command	Notes
Table	...	
TablEdit	...	
TableExport	...	
TableStyle	...	
Tablet	Tablet	
TabSurf	TabSurf	
...	Tangent	AutoCAD equivalent: **-Osnap Tangent**
Text	Text	
[2010] TextEdit	....	Bricscad equivalent: **DdEdit**
TextScr	TextScr	
TextToFront	...	Bricscad equivalent: **DrawOrderByLayer**
Thicken	...	
TifOut	...	
Time	Time	
TInsert	...	
	TipOfDay	Displays tip for using Bricscad
Tolerance	Tolerance	
-Toolbar	Toolbar	
ToolPalettes	...	
ToolPalettesClose	...	
Torus	Torus	
TpNavigate	...	
Trace	...	
Transparency	Transparency	
TraySettings	...	
TreeStat	...	
Trim	Trim	
	TxtExp	Bricscad explodes text\

U

AutoCAD Command	Bricscad Command	Notes
U	U	
Ucs	Ucs	

AutoCAD Command	Bricscad Command	Notes
UcsIcon	UcsIcon	
UcsMan	UcsMan	
[2010] ULayers	...	Bricscad equivalent: **Layer**
Undefine	Undefine	
Undo	Undo	
Union	Union	
Units	Units	
UpdateField	[V10] UpdateField	
UpdateThumbsNow	...	
	Url	AutoCAD equivalent: **Browser**

V

AutoCAD Command	Bricscad Command	Notes
VbaIde	VbaIde	
VbaLoad	VbaLoad	
VbaUnload	VbaUnload	
VbaMan	VbaMan	
VbaRun	VbaRun	
VbaStmt	...	
View	View	Bricscad displays Explorer
ViewPlay	...	
ViewPlotDetails	...	
ViewRes	ViewRes	
VisualStyles	...	Bricscad equivalent: **Shade**
VisualStylesClose	...	
VLisp	...	
...	VmlOut	Bricscad exports drawings in VML format
VpClip	VpClip	
VpLayer	VpLayer	
VpMax	...	
VpMin	...	
VPoint	VPoint	
VPorts	VPorts	
VsCurrent	...	Bricscad equivalent: **ShadeMode**
VSlide	VSlide	
VsSave	...	
VTOptions	...	

W

AutoCAD Command	Bricscad Command	Notes
WalkFlySettings	...	
WBlock	WBlock	
Wedge	Wedge	
WhoHas	...	
WipeOut	WipeOut	
WmfIn	...	

AutoCAD Command	Bricscad Command	Notes
WmfOpts	...	
WmfOut	WmfOut	
WorkSpace	...	
WsSave	...	
WsSettings	...	

X

XAttach	XAttach	
XBind	...	
XClip	XClip	
XEdges	...	
XLine	XLine	
XOpen	...	
Xplode	Xplode	
-XRef	XRef	Bricscad displays Explorer

Z

Zoom	Zoom	

2

...	2dIntersection	AutoCAD equivalent: **-Osnap Intersection**

3

3D	3D	
3dAlign	...	
3dArray	3dArray	
3dClip	...	
3dCOrbit	...	Bricscad equivalent: **RtRot**
3dConfig	...	
...	3dConvert	Bricscad converts ACIS to polyface meshes
3dDistance		
3dDwf	...	
3dFace	...	
3dFly	...	
3dFOrbit	...	Bricscad equivalent: **RtRot**
...	3dIntersection	AutoCAD equivalent: **-Osnap Intersection**
3dMesh	3dMesh	
3dMove	...	
3dOrbit	...	Bricscad equivalent: **RtRot**
3dOrbitCtr	...	
3dPan	...	Bricscad equivalent: **RtPan**
3dPoly	3dPoly	

AutoCAD Command	Bricscad Command	Notes
[2010] 3dPrint	...	
3dRotate	...	
[2010] 3dScale	...	
3dsIn	...	
3dSwivel	...	
3dWalk	...	
3dZoom	...	Bricscad equivalent: **RtZoom**

APPENDIX B:
AutoCAD-Bricscad System Variable Cross-reference
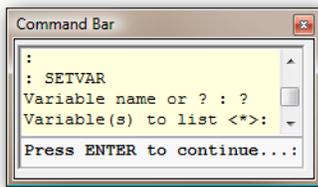
THIS APPENDIX COMPARES the names and values of documented system variables found in AutoCAD 2010 and Bricscad V10. The variables are sorted alphabetically.

Both CAD programs can change the values of system variables through the **SetVar** command at the command line and through dialog boxes accessed by these commands:

- **AutoCAD** — enter the **SysVDlg** command.
- **Bricscad** — enter the **Settings** command.

Bricscad also supports *preference variables*, additional settings that are controlled by the Settings dialog box only.

2010 indicates system variables new in AutoCAD 2010.

V10 indicates system variables new in Bricscad V10.

PV indicates preference variables in Bricscad; changed through Settings dialog box only.

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
A				
3dConversionMode	1	...		
3dDdwfPrec	2	...		
3dSelectionMode	1	...		
AcadLspAsDoc	0	0	**AcadLspAsDoc**	on_start.lsp for each doc
AcadPrefix	c:\users\...	C:\Users\...	**AcadPrefix**	Program folder path
AcadVer	18.0s (lms tech)	17.0 Bricscad	**AcadVer**	AutoCAD version
AcisOutVer	70	70	**AcisOutVer**	Acisout version
ActPath		...		
ActRecorderState	0	...		
ActRecPath	c:\users\...	...		
ActUi	6	...		
AeceipInProgress	off	...		
AFlags	16	0	**AFlags**	Attribute options
AngBase	0	0	**AngBase**	Angle base
AngDir	0	0	**AngDir**	Angle direction
AnnoAllVisible	1	...		
AnnoAutoScale	-4	...		
AnnotativeDwg	0	...		
ApBox	0	0	**ApBox**	Autosnap aperture box
Aperture	2010	2010	**Aperture**	Entity snap aperture
[2010] **AppFrameResources**	pack://application...	...		
Area	0	0	**Area**	Area
AttDia	0	0	**AttDia**	Attribute dialog
AttIpe	0	...		
AttMode	1	1	**AttMode**	Attribute display mode
AttMulti	1	...		
AttReq	1	1	**AttReq**	Insertion default settings
AuditCtl	0	0	**AuditCtl**	Audit control
AUnits	0	0	**AUnits**	Angular unit type
AuPrec	0	0	**AuPrec**	Angular unit precision
AutoDwfPublish	0	...		
[2010] **AutomaticPub**	0	...		
	...	1	**AutoMenuLoad**	Auto menu load
AutoSnap	63	63	**AutoSnap**	AutoSnap
	...	3	**AttractionDistance** [PV]	Grips attraction distance
	...	252	**AutoTrackingVecColor** [PV]	Color of tracking vector
	...	1	[V10] **AutosaveChecksOnlyFirstBitDBMOS** [PV]	
B				
BackgroundPlot	2	...		
BackZ	0	0	**BackZ**	Back clipping plane offset

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
[2010] BActionBarMode	1	...		
BActionColor	7	...		
	...	""	BaseFile	Template
[2010] BConStatusMode	0	...		
BDependencyHighlight	1	...		
BGripObjColor	141	...		
BGripObjSize	8	...		
BindType	0	0	BindType	Xref bind type
	...	256	BkgColor	Background color
	...	256	BkgColorPs	Paper space background color
BlipMode	0	0	Blipmode	Blip mode
BlockEditLock	0	...		
BlockEditor	0	...		
	...	C:\Users\...	BlocksPath [PV]	Blocks path
[2010] BlockTestWindow	0	...		
BParameterColor	170	...		
BParameterFont	simplex.shx	...		
BParameterSize	12	...		
[2010] BpTextHorizontal	1	...		
BtMarkDisplay	1	...		
BvMode	0	...		

C

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
CalcInput	1	...		
CameraDisplay	0	...		
CameraHeight	0	...		
CAnnoScale	01:01:00 AM	...		
CAnnoScaleValue	1	...		
CaptureThumbnails	1	...		
[2010] CBarTransparency	50	...		
[2010] CConstraintForm	0	...		
CDate	20090722.2	20090722.15	CDate	Calendar date
CDynDisplayMode	0	...		
CeColor	bylayer	BYLAYER	CeColor	Entity color
CeLtscale	1	1	CeLtScale	Entity linetype scale
CeLtype	bylayer	BYLAYER	CeLtype	Entity linetype
CeLweight	-1	-1	CeLweight	Entity lineweight
CenterMt	0	...		
ChamferA	0	0.5	ChamferA	Chamfer first distance
ChamferB	0	0.5	ChamferB	Chamfer second distance
ChamferC	0	1	ChamferC	Chamfer length
ChamferD	0	0	ChamferD	Chamfer angle
ChamMode	0	0	ChamMode	Chamfer mode

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
CipMode	0	...		
CircleRad	0	0	CircleRad	Circle radius
CLayer	0	0	CLayer	Current layer
CleanScreenState	0	...		
	...	1	CliState	Command line state
	...	1	V10 CloseChecksOnlyFirstBitDBMOD PV	
CMaterial	bylayer	...		
CmdActive	1	1	CmdActive	Active command
CmdDia	1	1	CmddDa	Command dialogs
CmdEcho	1	1	CmdEcho	Command echo
	...	:	CmdLnText	Prompt prefix
CmdInputHistoryMax	20	...		
CmdNames	setvar	Options	CmdNames	Active Command Name
CMleaderStyle	standard	...		
CMlJust	0	0	CmlJust	Multiline justification
CMlScale	1	1	CmlScale	Multiline scale
CMlStyle	standard	STANDARD	CmlStyle	Multiline style
	...	1	ColorX	X axis color
	...	3	ColorY	Y axis color
	...	5	ColorZ	Z axis color
	...	0	ComAcadCompatibility PV	COM Acad compatibility
Compass	0	0	Compass	Compass
2010 ConstraintBarDisplay	1	...		
2010 ConstraintBarMode	4095	...		
2010 ConstraintNameFormat	2	...		
2010 ConstraintRelax	0	...		
2010 ConstraintSolveMode	1	...		
Coords	1	1	Coords	Coordinates
CopyMode	0	0	CopyMode	Copy mode
CPlotStyle	bycolor	ByColor	CPlotStyle	Current plot style
CProfile	<<unnamed profile>>	DEFAULT	CProfile	Current profile
CrossingAreaColor	20100	...		
CShadow	casts and receives shadows	...		
CTab	model	Model	CTab	Current tab
CTableStyle	standard	STANDARD	CTableStyle	Current table style
	...	1	CtrlMouse	Mouse shortcuts
CursorSize	5	5	CursorSize	Crosshairs size
CVPort	2	2	CvPort	Current viewport
	...	#f8f8f8	CmdLineEditBgColor PV	Command line edit background color
	...	#000000	CmdLineEditBgColor PV	Command line edit foreground color
	...	Courier New	CmdLineFontName PV	Command line font name
	...	2010	CmdLineFontSize PV	Command line font size
	...	#ffffdd	CmdLineListBgColor PV	Command line list background color

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
	...	#000000	**CmdLineListFgColor** PV	Command line list foreground color
	...	0	**ContinuousMotion** PV	Continuous motion

D

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
DataLinkNotify	2	...		
Date	2455035.85	2455035.63	**Date**	Current date
	...	0	**DbcState**	DbConnect state
DblClkEdit	on	1	V10 **DblClkEdit**	
DbMod	5	0	**DbMod**	Modification status
DctCust	c:\users\...	""	**DctCust**	Custom spelling dictionary
DctMain	enu	en_US.dic	**DctMain**	Main spelling dictionary
2010 **DefaultGizmo**	0	...		
2010 **DefaultIndex**	0	...		
DefaultILghting	1	...		
DefaultLightingType	1	...		
DeflPlStyle	bycolor	ByColor	**Deflplstyle**	Default layer plot style
DefPlStyle	bycolor	ByColor	**DefPstyle**	Default entity plot style
DelObj	1	1	**DelObj**	Delete entity
DemandLoad	3	3	**DemandLoad**	Demand load
DgnFrame	0	...		
DgnImportMax	2010000000	...		
DgnMappingPath	c:\users\...	...		
DgnOsnap	1	...		
DiaStat	1	1	**DiaStat**	Dialog state
DimADec	0	0	**DimADec**	Dim angle precision
DimAlt	off	0	**DimAlt**	Alt units
DimAltD	2	2	**DimAltD**	Alt precision
DimAltF	25.4	25.4	**DimAltF**	Alt multiplier
DimAltRnd	0	0	**DimAltRnd**	Alt roundoff
DimAltTd	2	2	**DimAltTd**	Alt tolerance precision
DimAltTz	0	0	**DimAltTz**	Alt tolerance suppress zeros
DimAltU	2	2	**DimAltU**	Alt unit type
DimAltZ	0	0	**DimAltZ**	Alt suppress zeros
DimAnno	0	...		
DimAPost	""	""	**DimAPost**	Alt units prefix/suffix
DimArcSym	0	0	**DimArcSym**	Arc symbol
DimAssoc	2	2	**DimAssoc**	Associativity
DimASz	0.18	0.18	**DimASz**	Arrow size
DimAtFit	3	3	**DimAtFit**	Arrow and text fit
DimAUnit	0	0	**DimAUnit**	Dim angle units
DimAZin	0	0	**DimAZin**	Suppress angle zeros
DimBlk	""	""	**DimBlk**	Arrow
DimBlk1	""	""	**DimBlk1**	Arrow 1

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
DimBlk2	""	""	DimBlk2	Arrow 2
DimCen	0.09	0.09	DimCen	Center mark
DimClrD	0	0	DimClrD	Dim line color
DimClrE	0	0	DimClrE	Ext line color
DimClrT	0	0	DimClrT	Text color
[2010] DimConstraintIcon	3	...		
DimDec	4	4	DimDec	Dim precision
DimDle	0	0	DimDle	Dim line ext
DimDli	0.38	0.38	DimDli	Dim baseline spacing
DimDsep	.	.	DimDsep	Decimal separator
DimExe	0.18	0.18	DimExe	Ext line ext
DimExo	0.06	0.06	DimExo	Ext line offset
DimFit	3	3	DimFit	Fit text
DimFrac	0	0	DimFrac	Fractional type
DimFxl	1	1	DimFxl	Ext line fixed length
DimFxLon	off	0	DimFxLon	Ext line fixed
DimGap	0.09	0.09	DimGap	Text offset
DimJogAng	45	45	DimJogAng	Jogged angle
DimJust	0	0	DimJust	Text pos hor
DimLdrBlk	""	""	DimLdrBlk	Leader arrow
DimLfac	1	1	DimLfac	Dim scale linear
DimLim	off	0	DimLim	Tolerance method
DimLtEx1	""	""	DimLtEx1	Ext line 1 linetype
DimLtEx2	""	""	DimLtEx2	Ext line 2 linetype
DimLtype	""	""	DimLtype	Dim line linetype
DimLUnit	2	2	DimLUnit	Dim units
DimLwD	-2	-1	DimLwD	Dim line LW
DimLwE	-2	-1	DimLwE	Ext line LW
DimPost	""	""	DimPost	Dim prefix/suffix
DimRnd	0	0	DimRnd	Dim round
DimSah	off	0	DimSah	Arrowheads
DimScale	1	1	DimScale	Dim scale overall
DimSd1	off	0	DimSd1	Dim line ext 1
DimSd2	off	0	DimSd2	Dim line 2
DimSe1	off	0	DimSe1	Ext line ext 1
DimSe2	off	0	DimSe2	Ext line ext 2
DimSho	on	on	DimSho	
DimSoxd	off	0	DimSoxd	Dim line inside
DimStyle	standard	STANDARD	DimStyle	Dimension style
DimTad	0	0	DimTad	Text pos vert
DimTDec	4	4	DimTDec	Tolerance precision
DimTFac	1	1	DimTFac	Tolerance text height
DimTFill	0	0	DimTFill	Text fill

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
DimTFillClr	0	BYBLOCK	DimTFillClr	Text fill color
DimTih	on	1	DimTih	Text inside align
DimTix	off	0	DimTix	Text inside
DimTm	0	0	DimTm	Tolerance limit lower
DimTMove	0	0	DimTMove	Text movement
DimTofl	off	0	DimTofl	Dim line forced
DimToh	on	1	DimToh	Text outside align
DimTol	off	0	DimTol	Tolerance display
DimTolj	1	1	DimTolj	Tolerance pos vert
DimTp	0	0	DimTp	Tolerance limit upper
DimTSz	0	0	DimTSz	Dim tick size
DimTVp	0	0	DimTVp	Text offset vert
DimTxSty	standard	STANDARD	DimTxSty	Text style
DimTxt	0.18	0.18	DimTxt	Text height
[2010] DimTxtDirection	off	...		
DimTzin	0	0	DimTZin	Tolerance suppress zeros
DimUnit	2	2	DimUnit	
DimUpt	off	0	DimUpt	Place text manually
DimZin	0	0	DimZin	Suppress dim zeros
	...	1	DisplaySnapMarker [PV]	Snap marker
	...	0	DisplaySnapMarkerInAllViews [PV]	Snap marker in all views
	...	1	DisplayTooltips [PV]	Snap tooltips
DispSilh	0	0	DispSilh	Display silhouette curves
	...	1	DispPaperBkg	Display paper background
	...	1	DispPaperMargins	Display paper margins
Distance	0	0	Distance	Distance
[2010] DivMeshBoxHeight	3	...		
[2010] DivMeshBoxLength	3	...		
[2010] DivMeshBoxWidth	3	...		
[2010] DivMeshConeAxis	8	...		
[2010] DivMeshConeBase	3	...		
[2010] DivMeshConeHeight	3	...		
[2010] DivMeshCylAxis	8	...		
[2010] DivMeshCylBase	3	...		
[2010] DivMeshCylHeight	3	...		
[2010] DivMeshPyrBase	3	...		
[2010] DivMeshPyrHeight	3	...		
[2010] DivMeshPyrLength	3	...		
[2010] DivMeshSphereAxis	12	...		
[2010] DivMeshSphereHeight	6	...		
[2010] DivMeshTorusPath	8	...		
[2010] DivMeshTorusSection	8	...		
[2010] DivMeshWedgeBase	3	...		

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
[2010] DivMeshWedgeHeight	3	...		
[2010] DivMeshWedgeLength	4	...		
[2010] DivMeshWedgeSlope	3	...		
[2010] DivMeshWedgeWidth	3	...		
DonutId	0.5	0.5	DonutId	Donut inside diameter
DonutOd	1	1	DonutOd	Donut outside diameter
DragMode	2	2	DragMode	Entity dragging
	...	1	DragOpen	Drag open
DragP1	2010	2010	DragP1	Regen-drag rate
DragP2	25	25	DragP2	Fast-drag rate
DragVs	""	...		
DrawOrderCtl	3	3	DrawOrderCtl	Draworder control
DTextEd	2	...		
DwfFrame	2	...		
DwfOsnap	1	...		
DwgCheck	1	0	DwgCheck	Drawing check
DwgCodepage	ansi_1252	ANSI_1252	DwgCodepage	Drawing codepage
DwgName	drawing1.dwg	Drawing1.dwg	DwgName	Drawing name
DwgPrefix	c:\users\...	C:\Users\...	DwgPrefix	Drawing prefix
DwgTitled	0	0	DwgTitled	Drawing titled
	...	C:\Users\...	DrawingPath [PV]	Drawings path
DxEval	12	...		
[2010] DynConstraintDisplay	1	...		
[2010] DynConstraintMode	1	...		
DynDiGrip	31	...		
DynDiVis	1	...		
DynMode	-3	...		
DynPiCoords	0	...		
DynPiFormat	0	...		
DynPiVis	1	...		
DynPrompt	1	...		
DynTooltips	1	...		

E

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
EdgeMode	0	0	EdgeMode	Edge mode
Elevation	0	0	Elevation	Elevation
	...	0	EnableAttraction [PV]	Enable grips attraction
	...	1	EnableFlyOver [PV]	Snap flyover
	...	1	EnableHyperlinkMenu [PV]	Hyperlink menu
	...	0	EnableHyperlinkTooltip [PV]	Hyperlink tooltip
EnterpriseMenu	.	...		
	...	0	ErrNo	Error number
Expert	0	0	Expert	Expert

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
ExplMode	1	1	**ExplMode**	Explode mode
[2010] **ExportEplotFormat**	2	...		
[2010] **ExportModelSpace**	0	...		
[2010] **ExportPageSetup**	0	...		
[2010] **ExportPaperSpace**	0	...		
ExtMax	-1e+20,-1e+20,-1e+20	-1e+20,-1e+20,-1e+20	**ExtMax**	Extents maximum
ExtMin	1e+20,1e+20,1e+20	1e+20,1e+20,1e+20	**ExtMin**	Extents minimum
	...	1	**ExtNames**	Extend names
ExtNames	1	...		

F

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
[2010] **FacetErDevNormal**	40	...		
[2010] **FacetErDevSurface**	0	...		
[2010] **FacetErGridRatio**	0	...		
[2010] **FacetErMaxEdgeLength**	0	...		
[2010] **FacetErMaxGrid**	4096	...		
[2010] **FacetErMeshType**	0	...		
[2010] **FacetErMinUGrid**	0	...		
[2010] **FacetErMinVGrid**	0	...		
[2010] **FacetErPrimitiveMode**	1	...		
[2010] **FacetErSmoothlev**	1	...		
FacetRatio	0	0	**FacetRatio**	Faceting aspect ratio
FacetRes	0.5	0.5	**FacetRes**	Facet resolution
FieldDisplay	1	...		
FieldEval	31	31	**FieldEval**	Field update mode
FileDia	1	1	**FileDia**	File dialog
FilletRad	0	0	**FilletRad**	Fillet radius
FillMode	1	1	**FillMode**	Fill mode
FontAlt	simplex.shx	simplex.shx	**FontAlt**	Alternate font
FontMap	c:\users...	default.fmp	**FontMap**	Font mapping file
[2010] **Frame**	3	...		
FrontZ	0	0	**FrontZ**	Front clipping plane offset
FullOpen	1	1	**FullOpen**	Full open
FullPlotPath	1	...		

G

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
GeoLatLongFormat	0	...		
GeoMarkerVisibility	1	...		
GfAng	0	...		
GfClr1	rgb:000,000,255	...		
GfClr2	rgb:255,255,153	...		
GfClrLum	1	...		

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
GfClrState	1	...		
GfName	1	...		
GfShift	0	...		
GridDisplay	2	...		
GridMajor	5	...		
GridMode	0	0	GridMode	Grid mode
GridUnit	0.5000,0.5000	0.5;0.5	GridUnit	Grid unit
GripBlock	0	0	GripBlock	Grips in blocks
GripColor	150	160	GripColor	Grip color
GripDynColor	140	...		
GripHot	12	1	[V10] GripHot	
GripHover	11	3	[V10] GripHover	
GripObjLimit	20100	20100	GripObjLimit	Grip object limit
Grips	1	1	Grips	Grips
GripSize	5	5	GripSize	Grip size
[2010] GripSubobjMode	1	...		
GripTips	1	...		
	...	0	[V10] GouraudAsPhong	
	...	0	GsDeviceType [PV]	Graphic system device
GtAuto	1	...		
GtDefault	0	...		
GtLocation	1	...		

H

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
HaloGap	0	0	HaloGap	Halo gap
Handles	1	1	Handles	Publish Handles
	...	25	HandSeed	Handle seed
HidePrecision	0	0	HidePrecision	Hide and shade precision
HideText	on	1	HideText	Hide text on HIDE
HideXrefScales	1	...		
Highlight	1	1	Highlight	Highlight
HpAng	0	0	HpAng	Hatch pattern angle
HpAssoc	1	1	[V10] HpAssoc	
HpBound	1	1	HpBound	Hatch pattern boundary
HpDouble	0	0	HpDouble	Hatch pattern doubling
HpDrawOrder	3	3	HpDraworder	Hatch pattern draw order
HpGapTol	0	0	HpGapTol	Hatch boundary gap size
HpInherit	0	...		
HpMaxLines	201000000	...		
HpName	ansi31	ANSI31	HpName	Hatch pattern name
HpObjWarning	2010000	10000	[V10] HpObjWarning	
HpOrigin	0.0000,0.0000	0;0	HpOrigin	Hatch pattern origin
HpOriginMode	0	...		

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
HpScale	1	1	HpScale	Hatch pattern scale
HpSeparate	0	...		
HpSpace	1	1	HpSpace	Hatch pattern spacing
	...	0	HpStyle	Hatch pattern style
HyperlinkBase	.	.	HyperlinkBase	Hyperlink base

I

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
ImageFrame	1	...		
ImageHlt	0	0	ImageHlt	Image highlight
Impliedface	1	...		
IndexCtl	0	0	IndexCtl	Index control
InetLocation	http://www.autodesk.com	http://www.bricsys.com	InetLocation	Internet location
InputHistoryMode	15	...		
InsBase	0.0,0.0,0.0	0;0;0	InsBase	Insertion base point
InsName	.	.	InsName	Insertion name
InsUnits	1	1	InsUnits	Insertion units
InsUnitsdefSource	1	1	InsUnitsDefSource	Insertion units default source
InsUnitsdefTarget	1	1	InsUnitsDefTarget	Insertion units default target
IntelligentUpdate	20	...		
InterfereColor	1	...		
InterfereObjVs	realistic	...		
InterfereVpVs	3d wireframe	...		
IntersectionColor	257	257	IntersectionColor	Intersection color
IntersectionDisplay	off	0	IntersectionDisplay	Intersection display
ISaveBak	1	1	ISaveBak	Incremental save backup
ISavePercent	50	50	ISavePercent	Save percent
Isolines	4	4	Isolines	Isolines

L

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
[2010] LargeObjectSupport	0	...		
LastAngle	0	0	LastAngle	Last angle
LastPoint	5.7,13.5,0.0	0;0;0	LastPoint	Last point
LastPrompt	lastangle	: options	LastPrompt	Last prompt
Latitude	37.8	...		
LayerDlgMode	1	...		
LayerEval	0	...		
LayerEvalCtl	1	...		
LayerFilterAlert	2	...		
LayerNotify	0	...		
LayLockFadeCtl	50	...		
LayoutRegenCtl	2	2	LayoutRegenCtl	Layout regeneration control
LegacyCtrlPick	0	...		

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
LensLength	50	50	LensLength	Lens length
	...	0	LicFlags	Licensed components
LightGlyphDisplay	1	...		
LightingUnits	2	...		
LightsInBlocks	1	...		
LimCheck	0	0	LimCheck	Limits check
LimMax	12.0000,9.0000	12;9	LimMax	Limits maximum
LimMin	0.0000,0.0000	0;0	LimMin	Limits minimum
LinearBrightness	0	...		
LinearContrast	0	...		
	...	1	LispInit	LISP init
Locale	enu	enu	Locale	Locale
LocalRootPrefix	c:\users\...	c:\users\...	LocalRootPrefix	Local root prefix
LockUi	0	...		
LoftAng1	90	...		
LoftAng2	90	...		
LoftMag1	0	...		
LoftMag2	0	...		
LoftNormals	1	...		
LoftParam	7	...		
LogExpBrightness	65	...		
LogExpContrast	50	...		
LogExpDaylight	2	...		
LogExpMidtones	1	...		
LogExpPhysicalScale	1500			
LogFileMode	0	0	LogFileMode	Log file mode
LogFileName	c:\users\...	""	LogFileName	Log file name
LogFilePath	c:\users\...	c:\users\...	LogFilePath	Log file path
LogInName	<login>	Bricscad user	LogInName	Login name
Longitude	-122.39	...		
LtScale	1	1	LtScale	Linetype scale
LUnits	2	2	LUnits	Linear unit type
LuPrec	4	4	LuPrec	Linear unit precision
LwDefault	211	25	LwDefault	Default lineweight
LwDisplay	off	0	LwDisplay	Lineweight display
	...	0.55	LwDispScale	Lineweight display scale
LwUnits	1	1	LwUnits	Lineweight units

M

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
	...	0	MacroRec	Macro recording
MaxActVp	64	64	MaxActVp	Maximum active viewports
	...	20100000	MaxHatch	Maximum hatch dashes
MaxSort	201000	201000	MaxSort	Maximum sort

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
MButtonPan	1	1	MButtonPan	Middle button pan
MeasureInit	0	1	MeasureInit	Measurement initial
Measurement	0	1	Measurement	Measurement
MenuBar	0	...		
MenuCtl	1	1	MenuCtl	Menu control
MenuEcho	0	0	MenuEcho	Menu echo
MenuName	c:\users\...	default	MenuName	Menu name
2010 MeshType	1	...		
MirrText	0	0	MirrText	Mirror text
MLeaderScale	1	...		
ModeMacro	""	""	ModeMacro	Mode macro
MsOleScale	1	1	MsOleScale	Model space OLE scale
MsLtScale	1	...		
MTextColumn	2	...		
MTextEd	internal	Internal	MTextEd	Multiline text editor
MTextFixed	2	...		
MTextToolbar	2	...		
MTJigString	abc	...		
MyDocumentsPrefix	c:\users\...	...		

N

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
NavsWheelMode	2	...		
NavsWheelOpacityBig	50	...		
NavsWheelOpacityMini	50	...		
NavsWheelSizeBig	1	...		
NavsWheelSizeMini	1	...		
NavvCubeDisplay	1	...		
NavvCubeLocation	0	...		
NavvCubeOpacity	50	...		
NavvCubeOrient	1	...		
NavvCubeSize	4	...		
	...	4	NFileList	Recent file list
NoMutt	0	0	NoMutt	No muttering
NorthDirection	0	...		

O

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
Obscuredcolor	257	257	ObscuredColor	Obscured color
ObscuredItype	0	0	ObscuredLtype	Obscured linetype
Offsetdist	-1	1	OffsetDist	Offset distance
Offsetgaptype	0	0	Offsetgaptype	Offset type
Oleframe	2	...		
Olehide	0	0	OleHide	OLE hide

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
OleQuality	3	3	OleQuality	OLE quality
OleStartup	0	0	OleStartup	OLE startup
OpenPartial	1	1	OpmState	Properties bar state
OrthoMode	0	0	OrthoMode	Orthogonal mode
OsMode	4133	4133	OsMode	Entity snap mode
OsnapCoord	2	2	OsnapCoord	Entity snap coordinates
OsnapHatch	0	...		
OsnapZ	0	...		
OsOptions	3	...		

P

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
PaletteOpaque	2	...		
...		1	[V10] PanBuffer	
PaperUpdate	0	0	PaperUpdate	Paper update
[2010] ParameterCopyMode	1	...		
[2010] ParameterStatus	0	...		
...		1	PdfEmbeddedTtf [PV]	Pdf embedded fonts
[2010] PdfFrame	1	...		
...		1	PdfLayersSetting [PV]	Pdf layer support
...		0	PdfLayoutsToExport [PV]	Pdf layouts to export
[2010] PdfOsnap	1	...		
...		297	PdfPaperHeight [PV]	Pdf overridden paper height
...		0	PdfPaperSizeOverride [PV]	Pdf papersize override
...		210	PdfPaperWidth [PV]	Pdf overridden paper width
...		0	PdfShxTextAsGeometry [PV]	Pdf SHX text as geometry
...		1	PdfSimpleGeomOptimization [PV]	Pdf simple geometry optimization
...		0	PdfTtfTextAsGeometry [PV]	Pdf TTF text as geometry
...		1	[V10] PdfUsePlotStyles [PV]	
...		1	PdfZoomToExtentsMode [PV]	Pdf zoom to extents mode
PdMode	0	0	PdMode	Point display mode
PdSize	0	0	PdSize	Point display size
PeditAccept	0	...		
PEllipse	0	0	PEllipse	Polyline ellipse
Perimeter	0	0	Perimeter	Last perimeter
Perspective	0	...		
PerspectiveClip	5	...		
PfacevMax	4	4	PFaceVMax	Polyface mesh maximum vertices
PickAdd	1	1	PickAdd	Pick add
PickAuto	1	1	PickAuto	Pick automatic
PickBox	3	3	PickBox	Pick box
PickDrag	0	0	PickDrag	Pick drag
PickFirst	1	1	PickFirst	Pick first
PickStyle	0	1	PickStyle	Pick style

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
Platform	*varies*	*varies*	Platform	Platform
[2010] PlineConvertMode	0	...		
PlineGen	0	0	PlineGen	Polyline generation
PlineType	2	2	PlineType	Polyline type
PlineWid	0	0	PlineWid	Polyline width
	...	c:\users\...	PlotCfgPath [PV]	Plotter configuration path
PlotOffset	0	...		
	...	c:\program files...	PlotOutputPath [PV]	Plot output path
PlotRotMode	2	...		
	...	c:\users\...	PlotStylePath [PV]	Plot styles path
PlQuiet	0	0	PlQuiet	Plot quiet
PolarAddAng	.	.	PolarAddAng	Polar add angles
PolarAng	90	90	PolarAng	Polar angle
PolarDist	0	0	PolarDist	Polar distance
PolarMode	0	0	PolarMode	Polar mode
PolySides	4	4	PolySides	Polygon sides
Popups	1	1	Popups	Popups
PreviewEffect	2	2	PreviewEffect	Selection preview effect
PreviewFilter	7	7	PreviewFilter	Selection preview filter
PreviewType	0	...		
	...	1	PreviewWndInOpenDlg [PV]	Preview window in open dialog
	...	""	ProjectSearchPaths [PV]	Project search paths
	...	3	PromptMenu	Prompt menu
	...	0	PromptMenuFlags [PV]	Prompt menu flags
	...	Bricscad	Product	Product
	...	1	ProgBar	Progress bar
	...	Bricscad	Program	Program
ProjectName	.	.	ProjectName	Project name
ProjMode	1	1	ProjMode	Projection mode
ProxyGraphics	1	1	ProxyGraphics	Proxy graphics
ProxyNotice	1	1	ProxyNotice	Proxy notice
ProxyShow	1	1	ProxyShow	Proxy show
ProxyWebSearch	0	1	ProxyWebSearch	Proxy web search
PsLtScale	1	1	PsLtScale	Paper space linetype scale
PsolHeight	4	...		
PsolWidth	0.25	...		
PsProlog	.	...		
PsQuality	75	...		
PStyleMode	1	1	PStyleMode	Plot style mode
PStylePolicy	1	1	PStylePolicy	Plot style policy
PsVpScale	0	0	PsVpScale	Paper space viewport scale
PublishAllSheets	1	...		
PublishCollate	1	...		

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
PublishHatch	1	...		
PUcsBase	.	.	PUcsBase	Paper space UCS base

Q

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
QpLocation	0	...		
QpMode	1	...		
	...	0	QaFlags	Quality Assurance flags
QtextMode	0	0	QtextMode	Quick text mode
QvDrawingPin	0	...		
QvLayoutPin	0	...		

R

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
RasterDpi	300	...		
RasterPercent	20	...		
RasterPreview	1	1	RasterPreview	Raster preview
RasterThreshold	20	...		
	...	5	RealtimeSpeedup PV	Realtime speedup
	...	C:\Users\...	RecentPath PV	Recent path
RecoveryMode	2	...		
	...	0	RefEditLockNotInWorkset PV	Refedit lock
RefEditName	""	""	RefEditName	Refedit name
RegenMode	1	1	RegenMode	Regeneration mode
RememberFolders	1	1	RememberFolders	Remember folders
	...	0	Re_init	Reinitialize Aliases
RenderQuality	1	...		
RenderUserLights	1	...		
ReportError	1	...		
	...	0	RevCloudArcStyle PV	Revision cloud default arc style
	...	0.38	RevCloudMaxArcLength PV	Revision cloud default max arc length
	...	0.38	RevCloudMinArcLength PV	Revision cloud default min arc length
[2010] RibbonContextSelect	1	...		
[2010] RibbonContextSelLim	2500	...		
[2010] RibbonDockedHeight	0	...		
[2010] RibbonSelectMode	1	...		
RibbonState	1	...		
Roamablerootprefix	c:\users\...	c:\users\...	RoamableRootPrefix	Roamable root prefix
RolloverTips	1	...		
RtDisplay	1	1	RtDisplay	Realtime display

S

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
	...	1	SaveChangeToLayout PV	Save changes to layout
SaveFidelity	1	...		

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
SaveFile	c:\users\...	""	SaveFile	Save file name
SaveFilePath	c:\users\...	C:\Users\...	SaveFilePath	Save file path
	...	1	SaveFormat PV	Save format
SaveName	Drawing1.dwg	Drawing1.dwg	SaveName	Saved drawing name
SaveTime	2010	2010	SaveTime	Save time interval
ScreenBoxes	0	26	ScreenBoxes	Screen menu boxes
ScreenMode	3	1	ScreenMode	Screen mode
ScreenSize	1366.0,499.0	784.0;506.0	ScreenSize	Screen size
	...	256	ScrlHist	Scroll history
	...	0	Sdi	Single-document interface
SelectionAnnoDisplay	1	...		
SelectionArea	1	...		
SelectionAreaOpacity	25	...		
SelectionPreview	3	3	SelectionPreview	Selection preview display
SetByLayerMode	127	...		
ShadEdge	3	3	ShadEdge	Shading edges
ShadeDif	70	70	ShadeDif	Shading diffusion
ShadowPlaneLocation	0	...		
ShortcutMenu	11	2	ShortcutMenu	Shortcut menus
	...	0	ShowFullPathInTitle PV	Display full path in title
ShowHist	1	...		
ShowLayerUsage	0	...		
ShowmotionPin	1	...		
ShpName	""	""	ShpName	Shape name
SigWarn	1	...		
SketchInc	0.1	0.1	SketchInc	Sketch increment
SkPoly	0	0	SkPoly	Sketch poly
SkyStatus	0	...		
	...	0	SingletonMode PV	Singleton mode
[2010] SmoothMeshConvert	0	...		
[2010] SmoothMeshGrid	3	...		
[2010] SmoothMeshMaxFace	838300	...		
[2010] SmoothMeshMaxLev	4	...		
SnapAng	0	0	SnapAng	Snap angle
SnapBase	0.0000,0.0000	0;0	SnapBase	Snap base
SnapIsoPair	0	0	SnapIsoPair	Snap isometric pair
	...	2	SnapMarkerColor PV	Snap marker color
	...	6	SnapMarkerSize PV	Snap marker size
	...	2	SnapMarkerThickness PV	Snap marker thickness
SnapMode	0	0	SnapMode	Snap mode
SnapStyl	0	0	SnapStyl	Snap style
SnapType	0	0	SnapType	Snap type
SnapUnit	0.5000,0.5000	0.5;0.5	SnapUnit	Snap unit

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
SolidCheck	1	1	SolidCheck	Solid check
SolidHist	1	...		
SortEnts	127	96	SortEnts	Sort entities
SplFrame	0	0	SplFrame	Spline frame
SplineSegs	8	8	SplineSegs	Spline segments
SplineType	6	6	SplineType	Spline type
	...	c:\users\...	SrchPath	Support File Search path
SsFound	""	...		
SsLocate	1	...		
SsmAutoOpen	1	...		
SsmPollTime	60	...		
SsmSheetStatus	2	...		
StandardsViolation	2	...		
Startup	0	0	Startup	Startup
StatusBar	1	...		
StepSize	6	...		
StepsPerSec	2	...		
2010 SubobjSelectionMode	0	...		
SunStatus	0	...		
SurfTab1	6	6	Surftab1	Surface tabulation 1
SurfTab2	6	6	Surftab2	Surface tabulation 2
SurfType	6	6	SurfType	Surface-fitting type
SurfU	6	6	SurfU	Surface U
SurfV	6	6	SurfV	Surface V
SyscodePage	ansi_1252	ANSI_1252	SysCodePage	System code page

T

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
TableIndicator	1	...		
TableToolbar	2	...		
TabMode	0	0	TabMode	Tablet mode
Target	0.0,0.0,0.0	0.0;0.0;0.0	Target	Target
TdCreate	2455034.61	2455035.58	TdCreate	Time/Date create
TdInDwg	1.24	1.16E-008	TdInDwg	Time/Date in drawing
TduCreate	2455034.9	2455035.88	TduCreate	Time/Date universal create
TdUpdate	2455034.61	2455035.58	TdUpdate	Time/Date update
TdUsrTimer	1.24	1.16E-008	TdUsrTimer	Time/Date user timer
TduUpdate	2455034.9	2455035.88	TduUpdate	Time/Date universal update
	...	c:\users\...	TemplatePath PV	Path to templates folder
TempOverrides	1	...		
TempPrefix	c:\users\...	""	TempPrefix	Temporary prefix
	...	0	TextAngle	Text angle
2010 TextEditor	0	...		
TextEval	0	0	TextEval	Text evaluation

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
TextFill	1	1	TextFill	Text fill
TextOutputFileFormat	0	...		
TextQlty	50	50	TextQlty	Text quality
TextSize	0.2	0.2	TextSize	Text size
TextStyle	standard	STANDARD	TextStyle	Text style
Thickness	0	0	Thickness	Thickness
ThumbSize	1	...		
TileMode	1	1	TileMode	Tile mode
TimeZone	-8000	...		
ToolTipMerge	0	...		
Tooltips	1	...		
*_ToolPalettePath	C:\Users\...			
TraceWid	0.05	0.05	TraceWid	Trace width
TrackPath	0	0	TrackPath	Track path
TrayIcons	1	...		
TrayNotify	1	...		
TrayTimeout	0	...		
TreeDepth	3020	3020	TreeDepth	Tree depth
TreeMax	2010000000	2010000000	TreeMax	Tree maximum
TrimMode	1	1	TrimMode	Trim mode
TSpaceFac	1	1	TSpaceFac	Text space factor
TSpaceType	1	1	TSpaceType	Text space type
TStackAlign	1	2	TStackAlign	Text stack align
TStackSize	70	70	TStackSize	Text stack size
	...	c:\users\...	TemplatePath	Template path

U

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
UcsAxisAng	90	90	UcsAxisAng	UCS axis angle
UcsBase	WORLD	""	UcsBase	UCS base
UcsDetect	1	...		
UcsFollow	0	0	UcsFollow	UCS follow
UcsIcon	3	3	UcsIcon	UCS icon
	...	0	UcsIconPos	UCS icon position
UcsName	""	""	UcsName	UCS name
UcsOrg	0.0,0.0,0.0	0;0;0	UcsOrg	UCS origin
UcsOrtho	1	...		
UcsView	1	...		
UcsVp	1	1	UcsVp	UCS viewports
UcsXDir	1.0,0.0,0.0	1;0;0	UcsXDir	UCS X direction
UcsYDir	0.0,1.0,0.0	0;1;0	UcsYDir	UCS Y direction
UndoCtl	53	1	UndoCtl	Undo control
UndoMarks	0	5	UndoMarks	Undo marks
UnitMode	0	0	UnitMode	Unit mode

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
[2010] **UOsnap**	1	...		
UpdateThumbnail	15	...		
	...	1	**UseOutputFolder** [PV]	Use output folder
	...	0	**UseRegistryValues** [PV]	Reuse previous print settings
UserI1	0	0	**UserI1**	User integer 1
UserI2	0	0	**UserI2**	User integer 2
UserI3	0	0	**UserI3**	User integer 3
UserI4	0	0	**UserI4**	User integer 4
UserI5	0	0	**UserI5**	User integer 5
UserR1	0	0	**UserR1**	User real 1
UserR2	0	0	**UserR2**	User real 2
UserR3	0	0	**UserR3**	User real 3
UserR4	0	0	**UserR4**	User real 4
UserR5	0	0	**UserR5**	User real 5
UserS1	""	""	**UserS1**	User string 1
UserS2	""	""	**UserS2**	User string 2
UserS3	""	""	**UserS3**	User string 3
UserS4	""	""	**UserS4**	User string 4
UserS5	""	""	**UserS5**	User string 5
	...	0	**UseStandardOpenFileDialog** [PV]	Use standard open file dialog

V

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
	...	Bricsys	**_VendorName**	Vendor name
	...	9.2.16 (UNICODE)	**_VerNum**	Version number
	...	20100.0.38	**VersionCustomizableFiles** [PV]	Version customizable files
ViewCtr	18.9,8.7,0.0	18.9,8.7,0.0	**ViewCtr**	View center
ViewDir	0.0,0.0,1.0	2010.4;4.5;0.0	**ViewDir**	View direction
ViewMode	0	0.0;0.0;1.0	**ViewMode**	View mode
ViewSize	14.65	16	**ViewSize**	View size
ViewTwist	0	0	**ViewTwist**	View twist
VisRetain	1	1	**VisRetain**	Visibility retain
VpLayerOverrides	0	...		
VpLayerOverridesMode	1	...		
VpMaximizedState	0	...		
[2010] **VpRotateAssoc**	1	...		
VsBackgrounds	1	...		
VsEdgecolor	byentity	...		
VsEdgejitter	-2	...		
VsEdgeoverhang	-6	...		
VsEdges	1	...		
VsEdgesmooth	1	...		
VsFacecolormode	0	...		

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
VsFacehighlight	-30	...		
VsFaceopacity	-60	...		
VsFacestyle	0	...		
VsHalogap	0	...		
VsHideprecision	0	...		
VsIntersectionColor	white	...		
VsIntersectionEdges	0	...		
VsIntersectionLtype	1	...		
VsIsoOnTop	0	...		
VsLightingQuality	1	...		
VsMaterialMode	0	...		
VsMax	119.3,59.5,0.0	...	VsMax	Virtual screen maximum
VsMin	-81.3,-42.1,0.0	...	VsMin	Virtual screen minimum
VsMonoColor	rgb:255,255,255	...		
VsObscuredColor	byentity	...		
VsObscuredEdges	1	...		
VsObscuredlLype	1	...		
VsShadows	0	...		
VsSilhEdges	0	...		
VsSilhWidth	5	...		
VtDuration	750	...		
VtEnable	3	...		
VtFps	7	...		

W

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
WhipArc	0	0	WhipArc	Whip arcs
WhipThread	1	3	WhipThread	Whip threads
WindowAreaColor	150	...		
WmfBkgnd	off	0	WmfBkGnd	Windows Meta File background
WmfForegnd	off	0	WmfForeGnd	Windows Meta File foreground
	...	2	WndlMain	Main window state
	...	2	WndlMdi	MDI windows state
	...	0	WndlScrl	Window scrollbars
	...	1	WndlStat	Window status bar
	...	1	WndlTabs	Layout and model tabs
	...	0	WndlText	Text window state
	...	2162.0;202.0	WndpMain	Main window top left
	...	40.0;40.0	WndpText	Text window top left
	...	1160.0;760.0	WndsMain	Main window size
	...	1120.0;720.0	WndsText	Text window size
WorldUcs	1	1	WorldUcs	World UCS
WorldView	1	1	Worldview	World view
	...	1	WorkSpaceSecurity [PV]	Enable macros

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
WriteStat	1	..		
WsCurrent	2D drafting & annotation	...		

X

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
XClipFrame	2	0	XClipFrame	Xref clipping frame
[2010] XDwgFadeCtl	70	...		
XEdit	1	1	XEdit	Xref editable
XFadeCtl	50	50	XFadeCtl	Xref fade control
XLoadCtl	2	2	XLoadCtl	Xref load control
XLoadPath	c:\users\...	C:\Users\...	XLoadPath	Xref load path
XRefCtl	0	0	XRefCtl	Xref control
XRefNotify	2	...		
XRefType	0	...		

Z

AutoCAD System Variable	AutoCAD Default Value	Bricscad Default Value	Bricscad System Variable	Notes
ZoomFactor	60	60	ZoomFactor	Zoom factor
ZoomWheel	0	...		

APPENDIX C:

AutoCAD-Bricscad Alias Cross-reference
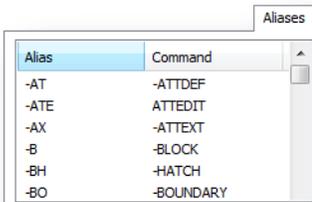
THIS APPENDIX COMPARES the default command aliases defined by AutoCAD and Bricscad. The list is sorted alphabetically by command name.

Both CAD programs can define new aliases and modify existing ones. To customize aliases in

- **AutoCAD** — use the **Command Aliases** button on the ribbon's **Express Tool** tab's **Tools** panel.
- **Bricscad** — use the **Customize** command's **Keyboard Shortcuts** node.

*) Aliases marked with an asterisk are included by Bricscad for compatibility with IntelliCAD.

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
A			
ActRecord	arr	...	
-ActStop	-ars	...	
ActStop	ars	...	
ActUserInput	aru	...	
-ActUserMessage	-arm	...	
Actusermessage	arm	...	
Adcenter	adc,content,dc,dcenter		
Align	al	al	Align
AllPlay	aplay	...	
...		ap	Aperture
...		planviewint*	Apparent
AppLoad	ap	...	
Arc	a	a	Arc
Area	aa	aa	Area
-Array	-ar	...	
Array	ar	ar	Array
-AttDef	-att	-at	-AttDef
AttDef	att,ddattdef	at,ddattdef	AttDef
...		ad	AttDisp
-AttEdit	-ate,atte	-ax,ax,ddattext	-AttExt
AttEdit	ate,ddatte,ddattext	-ate	AttEdit
AttIpEdit	ati	...	
B			
...		backgrounds*	Background
BAction	ac	...	
...		ba	Base
BClose	bc		
BcParameter	cparam		
BEdit	be		
...		bm	Blipmode
-Block	-b	-b	-Block
Block	b,acadblockdialog, bmake,bmod	...	
-Boundary	-bo	-bo	-Boundary
Boundary	bo,bpoly	bo,bpoly	Boundary
BParameter	param	...	
Break	br	br	Break
BSave	bs	...	
BvState	bvs	...	

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
C			
Camera	cam	...	
Chamfer	cha	cha	Chamfer
Change	-ch	-ch	Change
CheckStandards	chk	...	
Circle	c,col,colour,ddcolor	c	Circle
CommandLine	cli	...	
ConstraintBar	cbar	...	
ConstraintSettings	csettings	...	
-Color	-col,-colour	-col,-colour	-Color
Color	col,colour,ddcolor, ddcolour	col,colour,ddcolor, ddcolour,setcolor*	Color
Copy	co,cp	co,cp	Copy
...		cl	CopyLink
...		cui	Customize
CTableStyle	ct	...	
Cylinder	cyl	cyl	Cylinder
D			
DataExtraction	dx	...	
DataLink	dl	...	
DataLinkUpdate	dlu	...	
DbConnect	dbc	...	
DdEdit	ed	ed	DdEdit
DdGrips	gr	gr	DdGrips
...		se	DdSelect
DdVpoint	vp	vp,setvpoint*,viewctl	DdVpoint
DelConstraint	delcon	...	
...		dimension	Dim
DimAligned	dal,dimali	dal,dimali	DimAligned
DimAngular	dan,dimang	dan,dimang	DimAngular
Dimarc	dar	...	
DimBaseline	dba,dimbase	dba,dimbase	DimBaseline
DimCenter	dce	dce	Dimcenter
DimConstraint	dcon	...	
Dimcontinue	dco,dimcont	dco,dimcont	DimContinue
DimDiameter	ddi,dimdia	ddi,dimdia	DimDiameter
DimDisassociate	dda	...	
DimEdit	ded,dimed	ded,dimed	DimEdit
DimJogged	jog,djo	...	
DimJogline	djl	...	
DimLinear	dli,dimlin,dimhorizontal, dimrotated,dimvertical	dli,dimlin,dimvertical dimhorizontal, dimrotated	DimLinear

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
DimOrdinate	dor,dimord	dor,dimord	DimOrdinate
DimOverride	dov,dimover	dov,dimover	DimOverride
DimRadius	dra,dimrad	dra,dimrad	DimRadius
DimReassociate	dre	...	
...		-dst	-Dimstyle
DimStyle	d,dst,dimsty,ddim	d,ddim,dimsty,ds, dst DimStyle expdimstyles,setdim*	
DimTedit	dimted	dimted	DimTedit
Dist	di	di	Dist
Divide	div	div	Divide
Donut	do,doughnut	do,doughnut	Donut
DrawingRecovery	drm	...	
DrawOrder	dr	dr	DrawOrder
DSettings	ds,ddrmodes,se	ddrmodes,rm	DSettings
DsViewer	av	...	
DView	dv	dv	DView

E

EditShot	eshot	...	
...		ate	EAttEdit
Ellipse	el	el	Ellipse
Erase	e	e,delete	Erase
...		b,xb	ExpBlocks
Explode	x	x	Explode
-Export	-qpub	...	
Export	exp	exp,dwfout	Export
ExportDwf	edwf	...	
ExportDwfx	edwfx	...	
ExportPdf	epdf	...	
-ExportToAutocad	aectoacad	...	
...		uc,dducs	ExpUcs
Extend	ex	ex	Extend
ExternalReferences	er	...	
Extrude	ext	ext	Extrude

F

Fillet	f	f	Fillet
Filter	fi	fi	Filter
FlatShot	fshot		

G

GeographicLocation	geo,north,northdir		
GeomConstraint	gcon		

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
Gradient	gd	...	
...		g	Grid
-Group	-g	...	
Group	g	...	

H

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
-Hatch	-h	-h,-bh	-Hatch
Hatch	h,bh	h,bh	Hatch
HatchEdit	he	he	HatchEdit
Hide	hi	hi	Hide
HidePalettes	poff	...	

I

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
...		idpoint*	Id
-Image	-im	...	
Image	im	im,expimages*	Image
ImageAdjust	iad	iad	ImageAdjust
ImageAttach	iat	iat	ImageAttach
ImageClip	icl	icl	ImageClip
Import	imp	imp	Import
-Insert	-i	-i	-Insert
Insert	i,ddinsert,inserturl	i,ddinsert	Insert
...		insal	InsertAligned
InsertObj	io	io	InsertObj
Interfere	inf	inf	Interfere
Intersect	in	in	Intersect
...		is	Isoplane

J

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
Join	j	...	

L

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
-Layer	-la	-la	-Layer
Layer	la,ddlmodes	la,ddlmodes ,explayers*	Layer
LayerState	las,lman	las	LayerState
...		setlayer*	LayMcur
-Layout	lo	...	
Leader	lead	le,lead	Leader
Lengthen	len	len,editlen*	Lengthen
...		lighting	Light
Line	l	l,3dline	Line

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
-Linetype	-lt,-ltype	-lt	-Linetype
Linetype	lt,ltype,ddltype	lt,ddltype,expltypes*	Linetype
List	li,ls,showmat	li,ls	List
Ltscale	lts	lts	LtScale
Lweight	lw,lineweight	...	

M

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
Markup	msm	...	
MatchProp	ma,painter	ma	MatchProp
MaterialMap	setuv	setuv	MaterialMap
Materials	mat,rmat,finish	mat,finish,rmat	Materials
Measure	me	...	
MeasureGeom	mea	...	
MeshCrease	crease	...	
MeshRefine	refine	...	
MeshSmooth	smooth	...	
MeshSmoothLess	less	...	
MeshSmoothMore	more	...	
MeshSplit	split	...	
MeshUncrease	uncrease	...	
Mirror	mi	mi	Mirror
Mirror3d	3dmirror	3m,3dmirror	Mirror3d
MLeader	mld	...	
MLeaderAlign	mla	...	
MLeaderCollect	mlc	...	
MLeaderEdit	mle	...	
MLeaderStyle	mls	...	
MLine	ml	...	
Move	m	m	Move
...		msnapshot*	MSlide
MSpace	ms	ms	MSpace
-MText	-t	...	
MText	mt,t	mt,t	MText
MView	mv	mv	MView

N

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
NavSMotion	motion	...	
NavSMotionClose	motioncls	...	
NavSWheel	wheel	...	
NavVCube	cube	...	
NewShot	nshot	...	
NewView	nview	...	
...		ddnew	NewWiz

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
O			
Offset	o	o	Offset
...		undelete,unerase	Oops
Open	openurl,dxfin	op	Open
Options	op,preferences	cfg,config,prefs, preferences	Options
...		ortho,or	Orthogonal
-Osnap	-os	-os,esnap	-OSnap
Osnap	os,ddosnap	os,ddosnap, ddesnap,setesnap*	Osnap
P			
-Pan	-p	...	
Pan	p	p, -p	Pan
-Parameters	-par	...	
Parameters	par	...	
-PartialOpen	partialopen		
PasteSpec	pa	pa	PasteSpec
PEdit	pe	pe,editpline*	PEdit
PLine	pl	pl,polyline*	Pline
Plot	print,dwfout	...	
PlotStamp	ddplotstamp	...	
Point	po	po	Point
PointLight	freepoint	...	
Polygon	pol	pol	Polygon
PolySolid	psolid	...	
Preview	pr,pre	pre,ppreview*	Preview
Properties	props,ch,mo,ddchprop, ddmodify	pr,props,ch,mo, ddchprop,ddmodify	Properties
PropertiesClose	prclose	prc	PropertiesClose
PSpace	ps	ps	PSpace
PublishToWeb	ptw	...	
-Purge	-pu	-pu	-Purge
Purge	pu	pu	Purge
Pyramid	pyr	pyr	Pyramid
Q			
QLeader	le	...	
...		n	QNew
...		qt	QText
QuickCalc	qc	...	
QuickCui	qcui	...	
Quit	exit	exit	Quit

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
QvDrawing	qvd	...	
QvDrawingClose	qvdc	...	
QvLayout	qvl	...	
QvLayoutClose	qvlc		

R

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
Rectang	rec,rectangle	rec,rect,rectangle	Rectang
Redraw	r	r	Redraw
RedrawAll	ra	ra	RedrawAll
Regen	re	re	Regen
RegenAll	rea	rea	RegenAll
Region	reg	reg	Region
...		ri	Reinit
-Rename	-ren	-ren	-Rename
Rename	ren	ren,ddrename	Rename
Render	rr	rr	Render
RenderCrop	rc	...	
RenderEnvironment	fog	fog	RenderEnvironment
RenderPresets	rp,rfileopt	roptions	RenderPresets
RenderWin	rw,rendscr	rendscr	RenderWin
Revolve	rev	rev	Revolve
Ribbon	dashboard	...	
RibbonClose	dashboardclose	...	
Rotate	ro	ro	Rotate
...		3r,3drotate	Rotate3d
RPref	rpr	setrender	RPref

S

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
Save	saveurl	sa	Save
SaveAs	dxfout	...	
Scale	sc	sc	Scale
Script	scr	scr	Script
Section	sec	sec	Section
...		selgrip	SelGrips
SectionPlane	splane	...	
SectionPlaneJog	jogsection	...	
SectionPlaneToBlock	generatesection	...	
SequencePlay	splay	...	
...		ucp,dducsp	SetUcs
SetVar	set	set	SetVar
...		sha	Shade
ShadeMode	sha,shade	vscurrent	ShadeMode
SheetSet	ssm	...	

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
ShowPalettes	pon	...	
...		freehand*	Sketch
Slice	sl	sl	Slice
Snap	sn	sn	Snap
Solid	so	so,plane*	Solid
Spell	sp	sp	Spell
Spline	spl	spl	Spline
SplinEdit	spe	spe	SplinEdit
Standards	sta	...	
Stretch	s	s	Stretch
...		font*	-Style
Style	st,ddstyle	st,ddstyle,expfonts*, expstyle,expstyles	Style
Subtract	su	su	Subtract

T

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
Table	tb	...	
TableStyle	ts	...	
Tablet	ta	ta	Tablet
...		-t	-Text
Text	dt,dtext	tx	Text
TextEdit	tedit	...	
Thickness	th	th	Thickness
TileMode	ti,tm	...	
...		ti	Time
Tolerance	tol	tol	Tolerance
Toolbar	to	...	
ToolPalettes	tp	...	
Torus	tor	tor	Torus
Trim	tr	tr	Trim

U

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
Ucs	dducs	...	
UcsMan	uc,dducs,dducsp	...	
Union	uni	uni	Union
-Units	-un	-un	-Units
Units	un,ddunits	un, ddunits	Units

V

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
...		vba	VbaIde
-View	-v	-v	-View
View	v,ddview	v,ddview,expviews*	View
ViewGo	vgo	...	

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
ViewPlay	vplay	...	
-VisualStyles	-vsm	...	
VisualStyles	vs,vsm	...	
...		vl	VpLayer
VPoint	-vp	viewpoint*,-vpoint, -viewpoint,vscurrent	VPoint
VPorts	viewports	vw,vport,viewports	VPorts
...		vs,vsnapshot*	VSlide

W

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
-WBlock	-w	...	
WBlock	w,acadwblockdialog	w	WBlock
...		closeall	WClosAall
Wedge	we	we	Wedge
...		wi	WmfIn
...		wo	WmfOut

X

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
XAttach	xa	xa	XAttach
-XBind	-xb	...	
XBind	xb	-xb	XBind
XClip	xc	clip	XClip
XLine	xl	xl, infline*	XLine
-XRef	-xr	-xr	-Xref
XRef	xr	xr,expxrefs*	Xref

Z

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
Zoom	z	z	Zoom

3

AutoCAD Command	AutoCAD Alias	BricsCAD Alias	BricsCAD Command
3dAlign	3al	...	
3dArray	3a	3a,array3d	3dArray
3dFace	3f	face,3dprint	3dFace
...		mesh	3dMesh
3dMove	3m	...	
3dOrbit	3do,orbit	...	
3dPoly	3p	3p	3dPoly
3dPrint	3dp,3dplot, rapidprototype	...	
3dRotate	3r	...	
3dSale	3s	...	
3dWalk	3dnavigate,3dw	...	

APPENDIX D:

AutoCAD-Bricscad Keystroke and Button Cross-reference
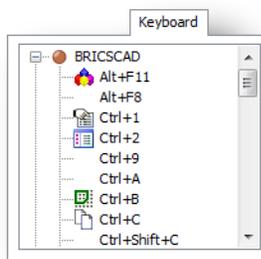
THIS APPENDIX COMPARES the default shortcut keystrokes and buttons defined by AutoCAD and Bricscad. The comparison lists are sorted into these groups:

Drawing Area

Function keys

Ctrl keys

Shift keys

Other keys

Text Window and Command Bar

Ctrl and other keys

Shortcuts Sorted by AutoCAD Commands

Mouse and Tablet Buttons

Mouse buttons

Tablet buttons

Both CAD programs can define new shortcuts and buttons, and modify existing ones. Keystroke shortcuts are customized in the following ways:

- **AutoCAD** — use the **Cui** command's **Keyboard Shortcuts** node.
- **Bricscad** — use the **Customize** command's **Keyboard** tab.

To learn how to customize Bricscad, see the *Customizing Bricscad* ebook available for purchase from the www.Bricsys.com Web site.

Keyboard Shortcuts: Drawing Area

Function Keys

AutoCAD Action	AutoCAD Command	Keystroke	Bricscad Command	Bricscad Action
Displays the Help dialog box	Help	F1	Help	Displays the Help dialog box
Toggles between Text and Graphics windows	TextScr GraphScr	F2	TextScr GraphScr	Toggles between Text and Graphics windows
...	...	Shift+F2	CommandLine	Toggles the command bar
Toggles object Snap Mode	-Osnap	F3	Osnap T	Toggles object snap mode; "T" is the Toggle option in Bricscad.
...	...	Shift+F3	StatBar	Toggles the status bar
Toggles tablet mode	Tablet	F4	Tablet T	Toggles tablet mode
...	...	Shift+F4	ScrollBar	Toggles the scroll bars
Closes the current drawing	Close	Ctrl+F4	WClose	Closes the current drawing
Closes all drawings and AutoCAD	Quit	Alt+F4	Quit	Closes all drawings and Bricscad
Cycles through isoplanes	Isoplane	F5	Isoplane	Cycles through isoplanes
Toggles dynamic UCS mode	UcsDetect	F6	Coordinate T	Cycles through coordinate display modes
Switches to the next drawing	(Windows)	Ctrl+F6	(Windows)	Switches to the next drawing; this function provided by Windows.
Toggles display of the grid	GridMode	F7	Grid T	Toggles the display of the grid
Toggles orthogonal mode	OrthoMode	F8	Orthogonal T	Toggles orthogonal mode
Runs VBA macros	VbaRun	Alt+F8	VbaRun	Displays Run Bricscad VBA Macro dialog box
Toggles snap mode	SnapMode	F9	Snap T	Toggles snap mode
Toggles polar tracking	SnapType	F10	SnapType	Toggles polar tracking
Toggles object snap tracking	PolarMode	F11	PolarMode	Toggles object snap tracking
Opens the VBA editor, not included with 2010	Vbalde	Alt+F11	VBA	Opens the Visual Basic Editor
Toggles dynamic input	DynMode	F12	...	

Ctrl Keys

AutoCAD Action	AutoCAD Command	Keystroke	Bricscad Command	Bricscad Action	Notes
Overrides LockUI; Selects subobjects	...	Ctrl	...		
Toggles Properties palette	Properties / PropertiesOff	Ctrl+1	Properties / PropertiesOff	Toggles Properties bar	
Toggles DesignCenter palette	AdCenter / AdcClose	Ctrl+2	Explorer	Displays Drawing Explorer	
Toggles Tool palette	ToolPalettes / ToolPalettesOff	Ctrl+3	...		
Toggles Sheet Set Manager palette	SheetSet / SheetSetHide	Ctrl+4	...		
Toggles dbConnect palette	dbConnect / dbClose	Ctrl+6	...		
Toggles Markup Set Manager palette	Markup / MarkupClose	Ctrl+7	...		
Toggles QuickCalc palette	QuickCalc / QcClose	Ctrl+8	...		
Toggles Command Line palette	CommandLine / CommandLineHide	Ctrl+9	CommandLine / CommandLineHide	Toggles command bar	
Toggles CleanScreen mode	CleanScreenOn / CleanScreenOff	Ctrl+0	...		
Selects all non-frozen objects	(ai_SelAll) *	Ctrl+A	SelGrips All	Selects all non-frozen objects	*) AutoCAD uses an AutoLISP routine.
Toggles group mode	**	Ctrl+Shift+A	...		**) AutoCAD uses an undocumented command.
Toggles snap mode	SnapMode	Ctrl+B	Snap T	Toggles snap mode	
Copies selected objects to Clipboard	CopyClip	Ctrl+C	CopyClip	Copies selected objects to Clipboard	
Copies selected objects with basepoint	CopyBase	Ctrl+Shift+C	CopyBase	Copies selected objects with basepoint	
Toggles Dynamic UCS	UcsDetect	Ctrl+D	Coordinate T	Cycles through coordinate display modes	
Switches to the next isoplane	Isoplane	Ctrl+E	Isoplane	Switches to next isoplane	
Toggles object snap mode	OsMode	Ctrl+F	-Osnap T	Toggles entity snap mode	
Toggles display of the grid	GridMode	Ctrl+G	Grid T	Toggles display of the grid	
Toggles pick style	PickStyle	Ctrl+H	PickStyle	Toggles pick style	
Toggle display of open palettes	HidePalettes	Ctrl+Shift+H	...		
Cycles through coordinate display modes	Coords	Ctrl+I	Coords	Cycles through coordinate display modes	
...	...	Ctrl+J	...		
Displays the Hyperlink dialog box	Hyperlink	Ctrl+K	...		

Description	Command	Keyboard	AutoCAD	Description
Toggles orthographic mode	OrthoMode	Ctrl+L	OrthoMode T	Toggles orthographic mode
	...	Ctrl+M	...	
Display Select Template dialog box	New	Ctrl+N	New	Opens the New Drawing dialog box
Displays the Select File dialog box	Open	Ctrl+O	Open	Opens the Open Drawing dialog box
Displays the Plot dialog box	Plot	Ctrl+P	Print	Displays the Print dialog box
Toggles Quick Properties palette	QuickProperties	Ctrl+Shift+P	...	
Closes drawings and AutoCAD	Quit	Ctrl+Q	Quit	Closes drawings and Bricsad.
Switches to the next viewport	^V *	Ctrl+R	...	(*) AutoCAD uses an undocumented command.
Saves the current drawing	Qsave	Ctrl+S	QSave	Saves the current drawing
Displays the Save Drawing As dialog box	SaveAs	Ctrl+Shift+S	SaveAs	Displays the Save Drawing As dialog box
Toggles tablet mode	Tablet	Ctrl+T	Tablet T	Toggles tablet mode
Toggles polar tracking	SnapType	Ctrl+U	...	
Pastes objects from Clipboard	PasteClip	Ctrl+V	PasteClip	Pastes entities from Clipboard
Pastes objects from Clipboard as a block	PasteBlock	Ctrl+Shift+V	PasteBlock	Pastes entities from Clipboard as a block
	...	Ctrl+W	...	
Cuts selected objects to Clipboard	CutCut	Ctrl+X	CutClip	Cuts selected entities to Clipboard.
Redoes the last undo	Redo	Ctrl+Y	Redo	Redoes the last undo
Undoes the last command	U	Ctrl+Z	U	Undoes the last command
Displays layout tab to the left of the current one	Layout Set	Ctrl+PageUp	...	
Displays layout tab to the right of the current one	Layout Set	Ctrl+PageDown	...	
Cancels current command	Esc	Ctrl+[	...	
Cancels current command	Esc	Ctrl+\	...	

Shift Keys

Note: Shift keys are temporary overrides in AutoCAD

AutoCAD Action	AutoCAD Command	Keystroke	Bricscad Command	Bricscad Action	Notes
Toggles orthogonal mode	Ortho	**Shift**	…		
Toggles object snap mode	OsMode	**Shift+A**	…		
	…	**Shift+B**	…		
Overrides object snap: Center	-OSnap Cen	**Shift+C**	…		
Disables all snapping and tracking	-OSnap Non	**Shift+D**	…		
Overrides object snap: Endpoint	-Osnap End	**Shift+E**	…		
	…	**Shift+F**	…		
	…	**Shift+G**	…		
	…	**Shift+H**	…		
	…	**Shift+I**	…		
	…	**Shift+J**	…		
	…	**Shift+K**	…		
Disables all snapping and tracking	Orthomode Osmode Snapmode Autosnap	**Shift+L**	…		
Overrides object snap: Midpoint	-OSnap Mid	**Shift+M**	…		
	…	**Shift+N**	…		
	…	**Shift+O**	…		
Overrides object snap: Endpoint	-OSnap End	**Shift+P**	…		
Toggles object snap tracking mode	PolarMode	**Shift+Q**	…		
	…	**Shift+R**	…		
Enables object snap enforcement	OsnapOverride	**Shift+S**	…		
	…	**Shift+T**	…		
	…	**Shift+U**	…		
Overrides object snap: Midpoint	-OSnap Mid	**Shift+V**	…		
Toggles navigation wheel	NavSWheel	**Shift+W**	…		
Toggles polar mode	AutoSnap	**Shift+X**	…		
Toggles dynamic UCS mode	UcsDetect	**Shift+Z**	…		
Overrides object snap: Center	-OSnap Cen	**Shift+,**	…		
Enables object snap enforcement	OsnapOverride	**Shift+;**	…		
Toggles polar mode	AutoSnap	**Shift+.**	…		
Toggles object snap mode	-OSnap Off	**Shift+'**	…		
Toggles object snap tracking mode	PolarMode	**Shift+]**	…		
Toggles dynamic UCS mode	UcsDetect	**Shift+/**	…		

AutoCAD Action	AutoCAD Command	Keystroke	Bricscad Command	Bricscad Action
Erase selected objects	Erase	**Del**	Erase	Erases selected objects.
	...	**PageUp**	Pan PgU	Pans up.
	...	**PageDown**	Pan PgD	Pans down.
	...	**Shift+Left**	Pan PgL	Pans left.
	...	**Shift+Right**	Pan PgR	Pans right.
	...	**Shift+Up**	Pan PgU	Pans up.
	...	**Shift_Down**	Pan PgD	Pans down.

Keyboard Shortcuts: Text Window and Command Bar

AutoCAD Action	Keystroke	Bricscad Action
Executes the command or option	**Enter** or **Spacebar**	Executes the command or option.
Repeats the previous command	**Enter** or **Spacebar**	Repeats the previous command.
Cancels the command or option	**Esc**	Cancels the command or option.
Displays previous command	**Up**	Displays previous command.
Displays next command in command history	**Down**	Displays next command in command history.
Moves cursor to the left	**Left**	Moves cursor to the left.
Moves cursor to the right	**Right**	Moves cursor to the right.
Moves cursor to the start of the command line	**Home**	Moves cursor to the start of the command line.
Moves cursor to the end of the command line	**End**	Moves cursor to the end of the command line.
Toggles between insertion and overwrite mode	**Ins**	...
Deletes characters to the right of the cursor	**Del**	...
	Backspace	Deletes characters to the left of the cursor.
Selects all text in Text window	**Ctrl+A**	(Right-click, and then choose **Select All** from shortcut menu.)
Copies selected text to Clipboard	**Ctrl+C**	(Right-click selected text, and then choose **Copy** from the shortcut menu.)
Pastes text from the Clipboard to the command line	**Ctrl+P**	(Right-click, and then choose **Paste** from the shortcut menu.)
Cuts selected text to the Clipboard	**Ctrl+X**	...

Shortcuts by AutoCAD Commands

AutoCAD Command	Keystroke	Equivalent Bricscad Command	Bricscad Action
A			
AdCenter AdcClose	Ctrl+2	...	
AutoSnap	Shift+X	...	
AutoSnap	Shift+.	...	
C			
CleanScreenOn CleanScreenOff	Ctrl+0	...	
Close	Ctrl+F4	**WClose**	Closes the current drawing
CommandLine CommandLineHide	Ctrl+9	...	
Coords	Ctrl+I	...	
CopyBase	Ctrl+Shift+C	**CopyBase**	Copies selected objects with basepoint
CopyClip	Ctrl+C	**CopyClip**	Copies selected objects to Clipboard
CutCut	Ctrl+X	**CutClip**	Cuts selected entities to Clipboard
D			
dbConnect dbClose	Ctrl+6	...	
DynMode	F12	...	
E			
Erase	Del	**Erase**	Erases selected objects
Esc	Ctrl+[Ctrl+\	...	
G			
GridMode	F7 Ctrl+G	**Grid T**	Toggles the display of the grid
H			
Help	F1	**Help**	Displays the Help dialog box
HidePalettes	Ctrl+Shift+H	...	
Hyperlink	Ctrl+K	...	

AutoCAD Command	Keystroke	Equivalent Bricscad Command	Bricscad Action
I			
Isoplane	F5 Ctrl+E	**Isoplane**	Cycles through isoplanes
L			
Layout Set	Ctrl+PageUp Ctrl+PageDown	...	
M			
Markup	Ctrl+7	...	
MarkupClose	Ctrl+7	...	
N			
NavSWheel	Shift+W	...	
New	Ctrl+N	**New**	Opens the New Drawing dialog box
O			
Open	Ctrl+O	**Open**	Opens the Open Drawing dialog box
Ortho	Shift	...	
OrthoMode	F8 Ctrl+L Shift+L	**Orthogonal T**	Toggles orthogonal mode
OsMode	Ctrl+F Shift+A	...	
-Osnap	F3	**Osnap T**	Toggles object snap mode
-OSnap Cen	Shift+C Shift+,	...	
-Osnap End	Shift+E Shift+P	...	
-OSnap Mid	Shift+M Shift+V	...	
-OSnap Non	Shift+D	...	
-OSnap Off	Shift+'	...	
OsnapOverride	Shift+S Shift+;	...	

AutoCAD Command	Keystroke	Equivalent Bricscad Command	Bricscad Action
P			
PasteBlock	Ctrl+Shift+V	**PasteBlock**	Pastes entities from Clipboard as a block
PasteClip	Ctrl+V	**PasteClip**	Paste entities from Clipboard
PickStyle	Ctrl+H	...	
Plot	Ctrl+P	**Print**	Displays the Print dialog box
PolarMode	F11 Shift+Q Shift+]	**AddInMan**	Displays the VBA Add-In Manager dialog box
Properties PropertiesOff	Ctrl+1	...	
Q			
Qsave	Ctrl+S	**QSave**	Saves the current drawing
QuickCalc QcClose	Ctrl+8	...	
QuickProperties	Ctrl+Shift+P	...	
Quit	Ctrl+Q	...	
R			
Redo	Ctrl+Y	**Redo**	Redoes the last undo
S			
SaveAs	Ctrl+Shift+S	...	
SheetSet SheetSetHide	Ctrl+4	...	
SnapMode	F9 Ctrl+B	**Snap T**	Toggles snap mode
SnapType	F10 Ctrl+U	**StatBar**	Toggles the display of the status bar
T			
Tablet	F4 Ctrl+T	**Tablet T**	Toggles tablet mode
TextScr	F2	**PmtHist**	Toggles between Text and Graphics windows
ToolPalettes ToolPalettesOff	Ctrl+3 Ctrl+3	... ...	

AutoCAD Command	Keystroke	Equivalent Bricscad Command	Bricscad Action
U			
U	Ctrl+Z	**U**	Undoes the last command
UcsDetect	F6 Ctrl+D Shift+Z Shift+/	**Coordinate T**	Cycles through coordinate display modes
V			
Vbalde	Alt+F11	**VBA**	Opens the Visual Basic Editor
VbaRun	Alt+F8	...	
^V (*)	Ctrl+R	...	(*) AutoCAD uses an undocumented command
Other			
(*)	Ctrl+Shift+A	...	(*) AutoCAD uses an undocumented command
(ai_SelAll) (*)	Ctrl+A	**SelGrips All**	Select all non-frozen objects
(Windows)	Ctrl+F6	*(Windows)*	Switches to the next drawing

Mouse and Tablet Buttons

The following tables compare the actions of mouse and tablet buttons in AutoCAD and Bricscad.

Mouse Buttons

AutoCAD customizes the definitions of mouse buttons in the Mouse Buttons and Double-click Actions nodes of its Customize User Interface dialog box. Bricscad does not customize its mouse buttons.
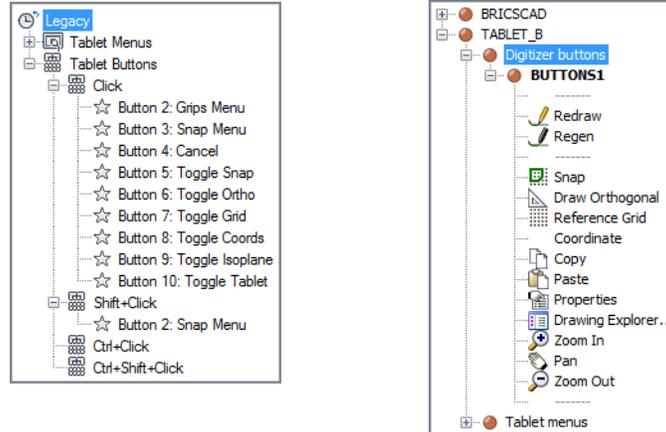
Mouse Button	AutoCAD Action	Bricscad Action
1 (left)	Picks objects*	Picks objects
2 (right)	Displays grips shortcut menu	Displays context-sensitive shortcut menu
3 (center)	Displays object snap shortcut menu	Pans in real time
4	Cancels the current command	...
5	Toggles snap mode	...
6	Toggles ortho mode	...
7	Toggles grid display	...
8	Changes the coordinate display	...
9	Switches to the next isoplane	...
10	Toggles tablet mode	...
Wheel	Zooms in real time *	Zooms in real time
Double-click 1 (left)	Edits selected object(s)	Edits selected object(s)
Shift+2 (right)	Displays object snap shortcut menu	...
Shift+3 (center)	Rotates viewpoint in 3D	...
Ctrl+1 (left)	...	Rotates viewpoint in 2D
Ctrl+2 (right)	Displays object snap shortcut menu	Rotates viewpoint in 3D
Ctrl+3 (middle)	Swivels viewpoint in 3D	...
Ctrl+4	Zooms viewpoint in 3D	...

Note:
*) The actions of the pick button (#1) and wheel cannot be customized by AutoCAD.

Tablet Buttons

AutoCAD customizes the definitions of stylus and puck buttons in the Tablet Buttons node of its Customize User Interface dialog box's Legacy section. Bricscad customize buttons in the Digitizer Buttons node of the Customize dialog box's Tablet tab. The action of Button 1 cannot be changed.

Left: Tablet button definitions in AutoCAD's CUI dialog box.
Right: Tablet button definitions in Bricscad's Customize dialog box.

Tablet Button	AutoCAD Action	Bricscad Action
1	Picks objects Picks objects	
2	Displays grips shortcut menu	Redraws the drawing
3	Displays object snap shortcut menu	Regenerates the drawing
4	Cancels the current command	Cancels the current command
5	Toggles snap mode	Toggles snap mode
6	Toggles ortho mode	Toggles ortho mode
7	Toggles grid display	Toggles grid display
8	Changes the coordinate display	Changes the coordinate display
9	Switches to the next isoplane	Copies selected objects to the Clipboard
10	Toggles tablet mode	Pastes objects from the Pasteboard
11	...	Opens the Properties Bar
12	...	Opens the Drawing Explorer
13	...	Zooms into the drawing
14	...	Pans the drawing
15	...	Zooms out of the drawing
16	...	...
Shift+2	Displays object snap shortcut menu	...