

# AEC Web-based services

Internet options help you create and plot drawings. By Bill Burchard

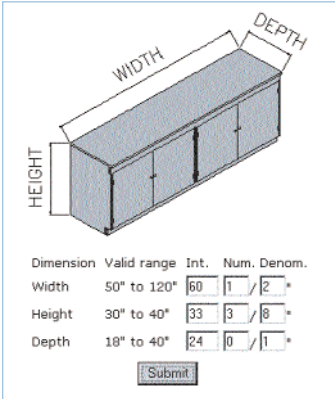
Two big tasks in any organization that uses CAD are creating and plotting drawings. This month, I review two Web-based services that make both of these tasks easier: OfficeCAD and HP Remote Printing for AEC.

OfficeCAD ([www.officecad.com](http://www.officecad.com)) provides parametric-based tools that let you instantly create custom AutoCAD drawings via the Web. Referred to as "real-time CAD," OfficeCAD's server-based approach to creating CAD drawings lets you or your customers create custom AutoCAD drawings in real time from your company's Web site. OfficeCAD's design automation features create browser-viewable drawings that you can download as 2D or 3D AutoCAD drawings. Through OfficeCAD, your company's custom CAD drawings are created and delivered in seconds via the Internet anywhere in the world, 24 hours a day.

Applications of the technology include sales and marketing of engineered-to-order products. You can provide salespeople with the means to generate CAD drawings for quotes, for example, or allow customers to generate and download CAD drawings of your products to incorporate into their designs. You can also use OfficeCAD to generate production drawings quickly and with fewer errors than creating them manually.

## PARAMETRIC DESIGN

Parametric design is a method in which a few variables control other design parameters. When you enter the variables, the software automatically calculates the remaining parameters and uses them to create a finished AutoCAD drawing. OfficeCAD uses three features to implement the parametric design—the Master Drawing, the SpecSheet, and the SPC (specification) file. The Master Drawing serves as a drawing template for the



Dimension	Valid range	Int.	Num.	Denom.
Width	50" to 120"	60	1	2
Height	30" to 40"	33	3	8
Depth	18" to 40"	24	0	1

Submit

Figure 1. OfficeCAD's Web-based parametric tools complete a design using a few variables you input through a Web page.

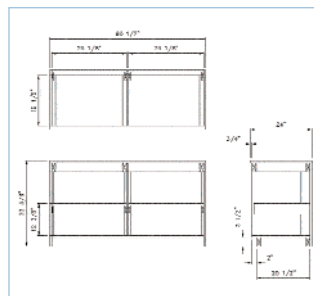


Figure 2. OfficeCAD completed the parametric design in only a few seconds.

design. The SpecSheet is used to enter the variables, which are then processed to calculate the remaining parameters for the design and saved out to the specification file. OfficeCAD uses the specification file and Master Drawing to create the new AutoCAD drawing.

Because OfficeCAD's parametric design tools are server based, users don't need to download any applications to create drawings. No CAD system or CAD experience is required. Once you enter design data from a Web page, detailed images of the design appear in seconds. You can then download the design in DWG or DXF format. New CAD drawings come complete with title block, notes, dimensions, accurate geometry, and bills of material.

The example shown in figures 1 and 2 uses OfficeCAD's parametric tools to design a cabinet. You enter the design variables (figure 1) and click the Submit button. OfficeCAD then calculates the remaining parameters and creates the drawing, displaying a preview image in your browser (figure 2). If the design meets your expectations, you can download it.

In our example, OfficeCAD produced four AutoCAD drawings. The first is a typical isometric view that displays the front, top, and side views of the cabinet. A second drawing shows all of the sheet stock parts needed to build the cabinet (plywood and hardboard pieces). A third drawing displays top and bottom views of the cabinet's framework design. The fourth drawing is the cut list, which contains the complete list of materials required for the cabinet. It took only a few seconds to design the cabinet and generate the four AutoCAD drawings.


## MODULAR APPROACH

OfficeCAD's parametric design approach is modular. You can create more complex parametric designs from multiple SpecSheets and multiple Master Drawings, which can then create one or more AutoCAD drawings. This means you can build complex designs by combining components from individual parametric drawings. Because of OfficeCAD's modular design approach, you use the same specification file with multiple SpecSheets and multiple Master Drawings to produce your AutoCAD drawings.

In productivity tests, OfficeCAD created 400 new customized AutoCAD drawings per hour. This test used a variety of designs, and OfficeCAD completed the designs at an average rate of 9 seconds per drawing, from the time the specifications were entered via a Web page to delivery of finished image in the Web browser.

Through its Web-based parametric design tools, OfficeCAD lets you, or your customers, create complex designs and quickly generate AutoCAD drawings. By applying predefined design rules to input variables, OfficeCAD automatically generates design drawings, cost

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estimates, and bills of materials via a Web interface, thereby eliminating errors and improving design accuracy. More important, OfficeCAD lets you distribute these automation benefits via the Internet, making your design tools available to project team members anywhere in the world.

OfficeCAD retails for \$1,495 per workstation and is available for Web servers for a monthly fee. OfficeCAD is provided as a complete service that includes Web server setup, training, support, upgrades, maintenance, backup, and consulting. For more information, contact OfficeCAD at 360.733.1733 or go to [www.officecad.com](http://www.officecad.com) to view examples of how OfficeCAD works for both AEC and mechanical design applications.