AUTODESK® **AUTOCAD®**

TRUTH ABOUT TOOLSETS

5 WAYS AUTOCAD SPECIALIZED TOOLSETS CAN OPTIMIZE YOUR DESIGN WORKFLOW






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INTRODUCTION

We're all creatures of habit. Once we've done something a certain way several times over and over it becomes routine. And we all know routines are hard to break. Often times it takes a major breakthrough for you to change your routine. Let's take putting furniture together for example. Most people will assemble furniture with the tools provided such as an Allen wrench that comes with the furniture. Once you get used to working with an Allen wrench it becomes second nature. But if you learned that you could assemble the furniture in a fraction of the time by using an electric screwdriver you would, right? You'd break your routine and take the more efficient route. Keep that example in mind when reading the next several pages—the specialized toolsets included with AutoCAD® enable you to design more efficiently than ever before.

THE OFFERING

In March 2018, Autodesk made a change to the AutoCAD product offering. Now when you subscribe to AutoCAD, you gain access to seven industry-specific toolsets. The toolsets include features and intelligent objects for architecture, mechanical engineering, electrical design, and more. Here, you will learn about the various ways in which the toolsets can help optimize your design workflow.

And don't miss the end with a bonus tip about the AutoCAD mobile app and the all-new AutoCAD web app.

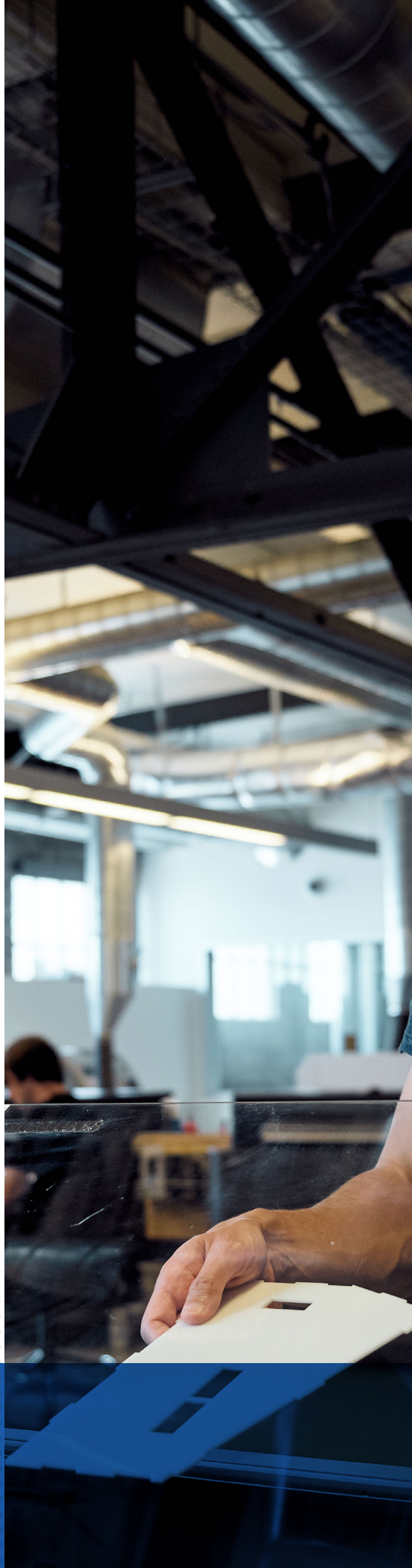
I wanted to share a recent interaction with a client of ours. While visiting with Joe, an electrical designer, he explained his dream of creating architectural floor plans for people in his small community in Arkansas. He wants to do this in his spare time, hoping to grow it into something bigger. Joe lit up when I told him about having access to both the Architecture and Electrical toolsets included in his AutoCAD subscription. He never would have been able to afford all three programs, but with included access to them, he has been able to create his new designs faster and cheaper with the tools and symbols in each. I have to admit, it was pretty cool hearing this guy talk about how AutoCAD and the toolsets are helping his dreams come true.

– Frank Mayfield,
Application Engineer at ECAD, Inc.

#1

OBJECTS, PARTS, SYMBOLS, OH MY!

Maybe you are dealing with machinery that contains hundreds or thousands of parts. Or designing a hotel with hundreds of doors and windows or a house with hundreds of fuses, switches, and terminals. It could take days, or even weeks, to draw these projects from scratch in AutoCAD. Good news is that many of the toolsets contain industry-specific content such as objects, parts, and symbols that allow you to easily add in pre-designed elements into your drawings.



These objects have the geometry needed to represent the 2-dimensional (2D) and 3-dimensional (3D) view. You can create very simple object types that rely on standard settings and add them on the fly. Or you can create complex objects with different components, materials, detailed cleanup information, and contain interferences with other objects.

ARCHITECTURE TOOLSET:

8,000+ intelligent AEC objects and styles such as walls, doors, and windows.

ELECTRICAL TOOLSET:

More than 2,000 standards-based schematic symbols and includes support for the NFPA, IEC 60617, AS, GB, IEC, JIC, and JIS standards. This includes devices such as circuit breakers, pushbuttons, PLCs, terminals, and more as well as hydraulic, pneumatic, and P&ID symbols.

MECHANICAL TOOLSET:

Over 700,000 pre-drawn standard parts and features based on 17 international standards. They include hole features; fasteners; shaft parts and features; steels shapes; and generators.

MEP TOOLSET:

10,500+ of ACE objects, including intelligent ducts, pipes, conduits, and many more.

#2 STANDARDS-BASED DESIGN

Whether you're hoping to follow international drafting standards or establish standards in your drawings, the toolsets enable you to do just that. Multiply your productivity with tools that help you and your team deliver consistent, standards-based design documentation. Adhering to a standard environment improves team communication and helps drive consistent production results.

ELECTRICAL TOOLSET:

Symbol libraries include support for the NFPA, IEC 60617, AS, GB, IEC, JIC, and JIS standards. Design the schematic drawings in accordance to the standards, using the Circuit Builder feature supported by the electrical standards database. This includes the wire sizing recommendations, energy loss calculations, and more.

MAP 3D TOOLSET:

Organize objects in your drawing by the real-world features that they represent, such as roads, parcels, cables, or pipes. When you create an object using Object Classification, it automatically takes properties and values from its object class, maintaining consistency and establishing standards in your drawing.

MECHANICAL TOOLSET:

Supports ANSI, BSI, CSN, DIN, GB, ISO, JIS, and GOST drafting environments. The toolset also includes drafting tools for creating standards-based surface texture symbols; geometric dimensioning and tolerances; datum identifiers and targets; notes; taper and slope symbols; and weld symbols.

PLANT 3D TOOLSET:

Allows you to quickly and easily draft piping and instrument diagrams with pre-defined symbols of multiple standards.

#3

MANAGING LAYERS

A very important part of designing in AutoCAD is the use of layers. They control the properties and visibility of your objects. In AutoCAD, you manually change layers based on the object type you are about to create. This also means that you must first create each layer setting, including its color, linetype, and weight.

ARCHITECTURE TOOLSET:

Allows you to easily organize, sort, and group layers using layer standards, layer key styles, and layer overrides. Layer standards define the naming of new layers according to the structure defined in the standard.

MECHANICAL TOOLSET:

Automatically creates and manages layers for you, and you can customize these mechanical layers based on your company requirements. You do not have to explicitly change layers before creating objects. As you create objects, they are placed on the appropriate layer, color, linetype, and lineweight automatically. If the appropriate layer does not exist, the toolset automatically creates it for you.

MEP TOOLSET:

The Layer Management feature lets you organize, sort, and group layers using layer standards, layer key styles, and layer overrides. The toolset includes over 14 layer key styles.

#4 AUTOMATIC REPORTS

Make the most of your time in AutoCAD by taking advantage of reports, schedules, Bills of Materials (BOMs), and more that can be generated automatically based on the information contained in your designs.

ARCHITECTURE TOOLSET:

Create schedules as you lay out your design, and see the schedule populate automatically, saving time. Schedules are automatically updated as the design changes, helping to reduce errors.

ELECTRICAL TOOLSET:

Drastically reduce the time required to manually generate and update reports, while removing associated errors. Report generation is simple with a variety of automatic reports, including BOMs, cable lists, terminal reports, from/to wire lists, and many more. The report function gives you the option of generating multiple reports with a single command and includes flexible export options.

MECHANICAL TOOLSET:

Create automated and associative part lists and BOMs that are specifically developed for manufacturing and that automatically update as the design changes. There is support for multiple parts lists for each drawing, collapsible assemblies, automatic recognition of standard parts, and customizable options so that features can be revised to match current company practices. Change a design once and updates ripple throughout the entire drawing to keep everyone on schedule, reducing costly stops in production from incorrect part counting, identification, and ordering. Export or link BOM data to MRP, Enterprise Resource Planning (ERP), or other data management systems.

#5

WHERE IN THE WORLD

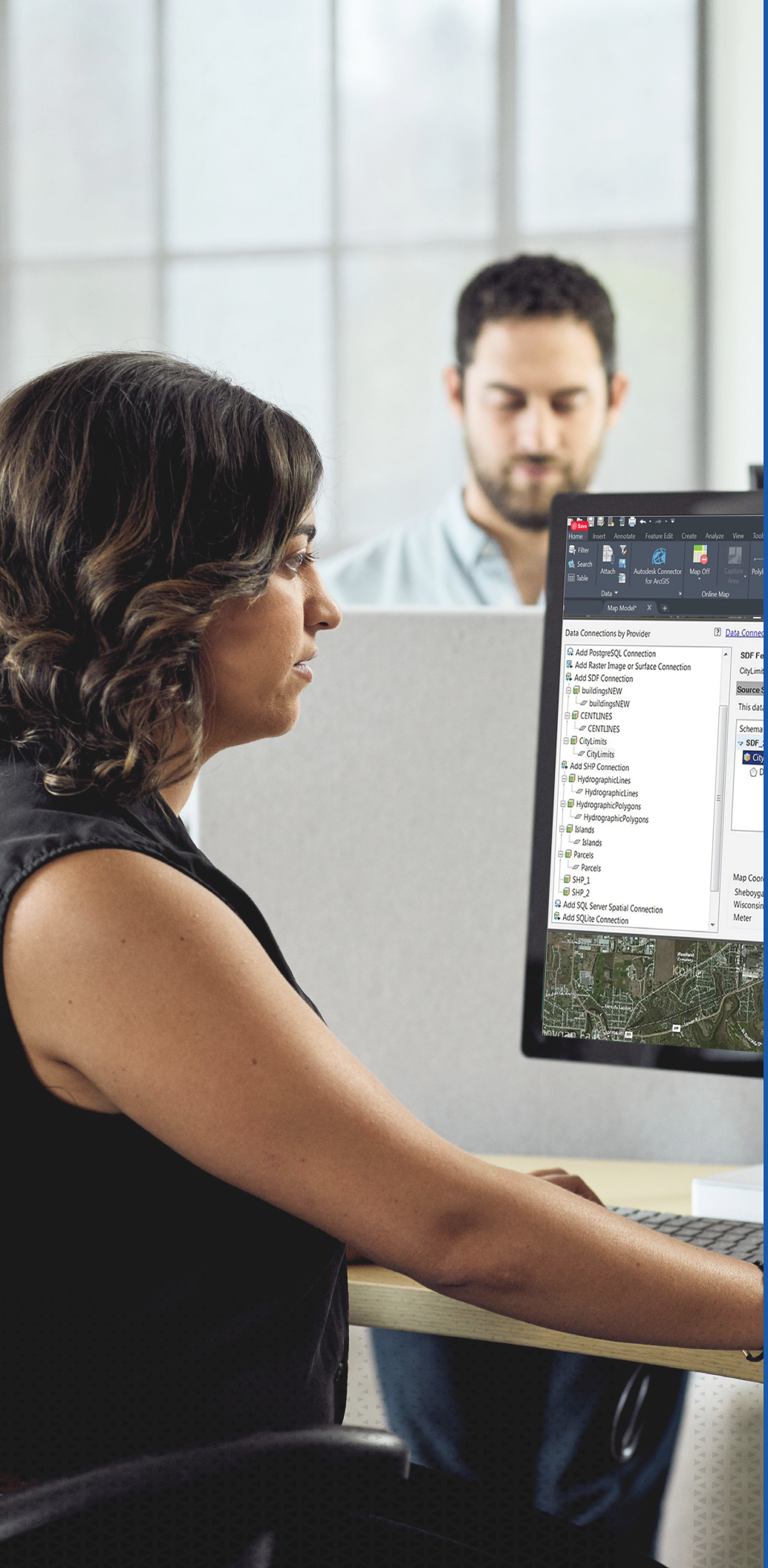
When you need to create maps or give your designs real-world context in a clear, effective way, the Map 3D toolset allows you to do just that.

Work with more than 4,000 real-world coordinate systems or define your own custom coordinate system. Easily create stylized maps that highlight specific features, such as service areas; zoning districts; land usage; pipe and cable installation dates and diameters; and more. Then combine your CAD design information with geospatial vector data and satellite imagery or integrate your CAD data with your organization's GIS.

Your design data has real-world context, enabling you to quickly integrate data from a variety of sources to create accurate drawings, designs, and maps that can be used by field personnel, other departments, and other geospatial software applications.

For me as a civil designer, the Map 3D toolset is invaluable. Having the ability to quickly and easily create connections to large data sets like cadastral linework or even georeferenced orthoimagery from the Task Pane is a game changer when it comes to creating high-quality maps from within AutoCAD. Not only does it help keep my data organized and easy to navigate and adds to my drawing, but it also keeps my drawings running smoothly when working with otherwise resource heavy data.

–Brandon Loehr, *Civil Designer and Founder of CADIntentions.com*



From wetland and floodplain delineations to base map information such as roads and parcels, GIS data is integral to many aspects of civil design—especially preliminary planning. With the Map 3D toolset, I gain the ability to incorporate GIS data from a variety of formats (including SHP) into projects. GIS data is critical for many aspects of civil design, especially preliminary project planning and analysis. Likewise, the Feature Buffer and Feature Overlay tools allow me to analyze designs for project impacts such as right-of-way acquisition studies.

– Donnie Gladfelter

Technical Product and Online Manager at CADD Microsystems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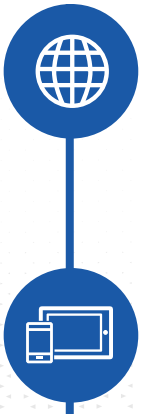
BONUS TIP

ANYTIME, ANYWHERE ACCESS

The specialized toolsets included with a subscription to AutoCAD aren't the only ways that you can be more efficient with your time. The AutoCAD mobile app and the new AutoCAD web app are also included when you subscribe to AutoCAD.

No need to carry printed drawings with you. Cut down communication time and bring design teams together to review and edit CAD drawings in real time, whether you're meeting with a client or at a job site.

Both apps allow you to use the core drafting tools and commands you're accustomed to using so you can quickly get to work.



The AutoCAD web app runs online in your web browser with no need to have AutoCAD installed on your machine. Simply visit web.autocad.com and sign in to start working.

The AutoCAD mobile app includes an easy-to-use interface and tools to upload, open, create, and edit DWG™ drawings from your mobile device. Available on iOS, Android, Windows 10 devices, and Surface Hub – download it today.

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Learn more about AutoCAD including specialized toolsets at autocad.com