AUTODESK. UNIVERSITY

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Road Dogs: Mobile Apps for Designers and Drafters

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Learning Objectives

- Learn how to download and set up AutoCAD mobile for cloud access
- Learn how to open and modify native DWG files
- Consider additional apps to help your mobile workflow
- Explore collaboration with users who are not proficient in AutoCAD desktop

Description

Tablets and smartphones are no longer futuristic concepts. These devices are ubiquitous and extremely powerful, in both in our daily lives and our professional workflows. But how can we use them in our CAD lives? The AutoCAD mobile app lets us use the copious amounts of data we include in our DWG™ files anywhere we are. Whether in the coffee shop, on the factory floor, or in the middle of a field (cell signal notwithstanding), you can get to your DWG files in the cloud, make changes to the native geometry, and share your changes with others. Other apps can help you complete your workflow, from marking up prints to sharing designs. This class will go through the basics of adding cloud access to AutoCAD mobile, drawing new geometry, and modifying existing work, as well as pulling information such as dimensions and areas from your drawings. We will also cover best practices and access for non-AutoCAD users, as well as some additional apps that can be useful in the field.

Speaker(s)

Jim LaPier is the owner of IMPACT Designs, LLC, a consulting and design firm based in Maryland. Jim has worked with AutoCAD software for 20 years in varying disciplines, including commercial and residential architectural design, mechanical engineering, materials handling, and telecommunications. He is skilled in customization, efficiency, and speed, and he is adept in information technology. Eventually Jim became an Expert Elite member thanks to his contributions to AutoCAD for Mac. Previously Jim worked as a genius at an Apple Inc. Retail Store, becoming a certified Apple technician. Jim combines paper-and-pencil drafting knowledge with his love of advanced technology, both Mac and PC-based. Jim currently travels around the country giving workshops and classes on AutoCAD for Mac software and using Apple computers in today's design offices.

My goal with this handout (and the class) is to not necessarily answer every question or tell you exactly what software to use and which hardware to purchase. I'll show you what I use in my practice and what my clients use. I'll explain why I chose certain products and most importantly what questions you should ask yourself before deciding what products to use. Hopefully, if you have asked the right questions and understand the benefits and drawbacks of each product, you can make an informed decision for you and your company.

Accounts

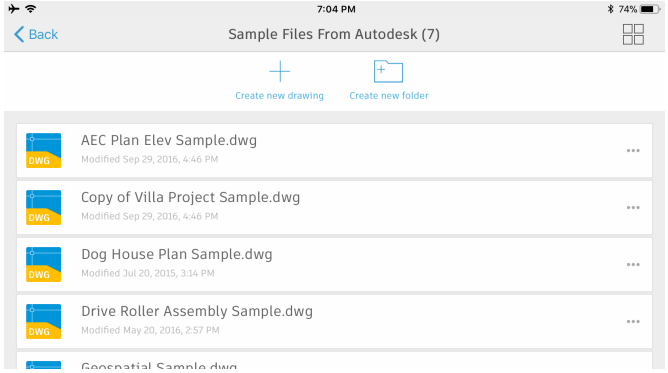
Currently, there are 3 levels of AutoCAD mobile accounts; Free, Premium and Ultimate. I'm including a chart below to show the differences between the 3 levels, but please check back to it periodically as Autodesk tends to change the levels and access occasionally. Also, if you are on subscription, you are given Premium level access, provided you sign in using the same email as your subscription.

As of this publication, the Free users can only view and measure drawings, Premium users can view and measure as well as have access to all of the drawing and editing tools. Ultimate users get access to everything the Premium users have, as well as additional storage space and larger file sizes.

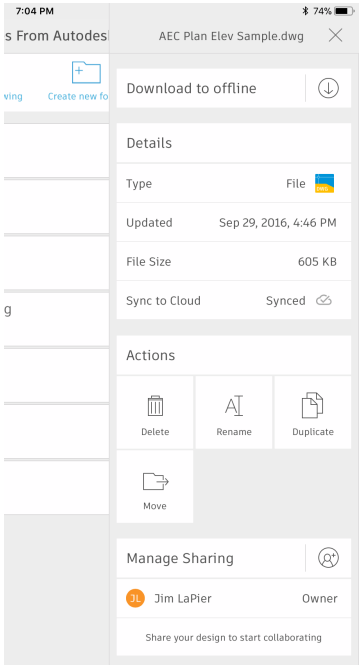
Products	AutoCAD mobile app Free Download now	AutoCAD mobile app Premium Subscribe	AutoCAD mobile app Ultimate Subscribe
Upload and view drawings	✓	✓	✓
Measuring tools	✓	✓	✓
Connect to cloud storage	✓	✓	✓
GPS tools	✓	✓	✓
Share and plot data	✓	✓	✓
Drawing and editing tools		✓	✓
Create new drawings		✓	✓
Annotation tools		✓	✓
Manage layers		✓	✓
Object properties		✓	✓
Blocks		✓	✓
Priority support		✓	✓

Home Screen

The Home Screen is the file management hub for AutoCAD mobile. It allows you to move, copy, rename and delete dwg files, create folders, as well as see information about the dwg files like size and status.



Home Screen (cont.)



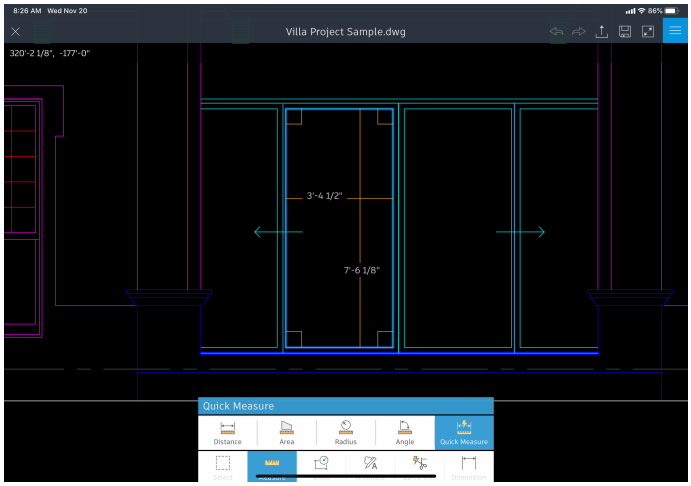
To manage an individual file, simply click the 3 dots in the lower right corner of the thumbnail. From here, we can view the option to download an offline copy, as well as information like the filetype, date the file was last updated, its size, and whether the file has been synced with the cloud. We can also delete, rename, duplicate or move a file to another folder.

The last item we have access to from the home screen is the ability to use your own cloud storage service to host your files. Currently, Dropbox, Google Drive and personal OneDrive accounts are all supported. Simply click on the “Use your own storage” icon on the home screen and enter your credentials for your desired service.

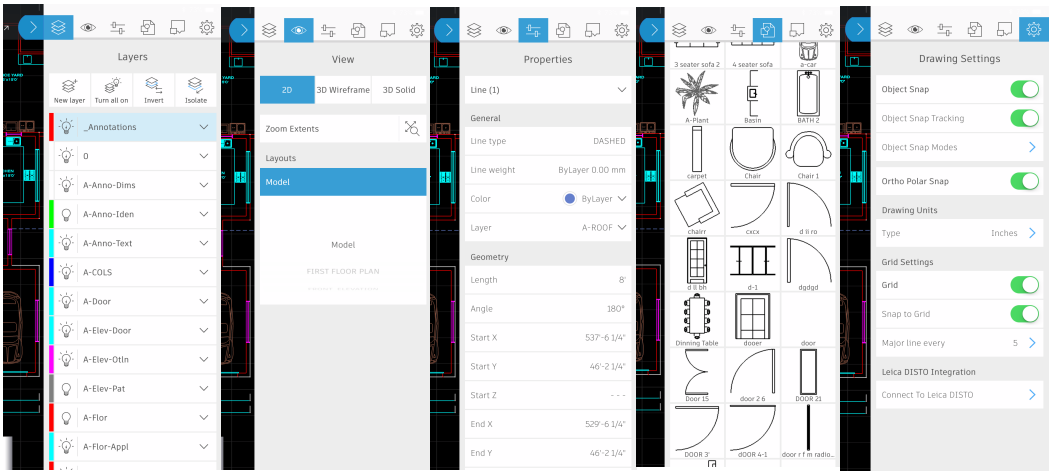
Interface

The interface is broken up into a few main areas of interest: the tool bar across the top of the screen, the visor, which swipes in from the right side of the screen to show some additional palettes, the tool dock across the bottom of the screen, and of course the drafting area in the middle of the screen.

Across the tool bar, we see the undo / redo icons, the option to tun off the grid, the share icon, where we can share a file either with a reviewer or collaborator, but we can also open the plot dialog and create a pdf we can share.



Interface (cont)



The last item along the top toolbar is the visor. This is a slide out palette that actually holds 6 different palettes, including Layers, Views, Properties, Blocks, Reference Manager and Drawing Settings. Layers is just what it sounds like; turning layers on / off, as well as locking, renaming and deleting layers. There are also options for adding new layers and isolating layers.

View is where you can control things like wireframe and 3D views, as well as navigating between model space and layouts. Properties is just like the properties palette on the desktop. Blocks allows you to insert any blocks stored in the drawing file. Lastly drawing settings allows you to control object snaps and drawing units.

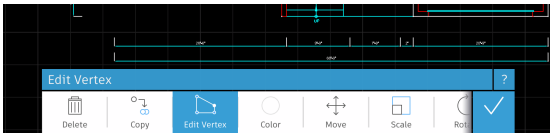
Across the bottom of the screen is what I refer to as the tool dock. The Quick Trim is a way of selecting all geometry as a cutting edge, allowing you to select just the parts of the geometry you'd like to remove. The Draw icon expands 5 options from it, including line, polyline, rectangle, circle and arc. Likewise, Annotate expands 2 tools, namely Text & Cloud. Distance, Area, Radius, Angle and the powerful quick measure tool are all found in Measure. The Dimension toolset includes Aligned dimensions only at the moment.

Drawing

Well, with the interface stuff out of the way let's get down to some drawing. The commands are very straightforward, especially if you have AutoCAD desktop experience. With each command, simply tap the tool then tap on the screen to start drawing. With the line tool for example, you can tap and drag to draw your line, lifting your finger to set the endpoint, or you can tap for both the start point and endpoint. Either way, after establishing the two points of the line, you will see both the length and angle displayed on screen. This is typical of most drawing tools in AutoCAD mobile, as is the fact that you can tap on either measurement to specific a more precise value, or enter them in manually in the number pad popup that appears at the bottom of the screen. Just enter your measurements and tap done.

We can also use object snaps to help create geometry. The trick with object snaps is to place your finger near the snap point and hold for a moment. A small zoom loupe will appear above your finger to show you precisely where your finger is on the screen. You can then rock your finger back and forth gently to connect with the specific point you are looking for. Once it is displayed on screen, simply lift your finger. It takes a little practice, but is quite simple once you get the hang of it. And of course, the closer you are zoomed in the better.

Editing



If you've noticed, when reviewing the interface, I never mentioned editing. Unlike AutoCAD for the desktop, AutoCAD mobile only shows the editing tools after an object or group of objects has been selected. The editing tools are contextual, so you won't see offset when selecting a block, and so on.

So if I select a line, I have options to delete, copy, move, scale, rotate, offset. For offset, you will pick a point on the side to offset, then you can tap on the measurement to specify an accurate distance to offset.

Annotating / Markups / Measuring

By far most people will be using AutoCAD mobile as a way of marking up their drawings or pulling measurements in the field. Fortunately AutoCAD mobile has a bunch of tools to help with this. Most of the measuring tools are self explanatory and are used just like the drawing tools, however the star of the show is the quick measure tool. Simply tap the tool and then place your finger anywhere on the screen. You can tap for the vertical and horizontal distance between the closest objects, or drag your finger around the screen for live measurements.

For annotating, we can add text objects or revision clouds with just a few taps.

Last up are the dimension tools, namely only aligned dimensions. These are created using the same object snaps we've already discussed.

Best Practices / Tips

These are just a few quick tips I've used over the years as AutoCAD mobile has progressed.

First, use templates. Now, this may be confusing, as AutoCAD mobile doesn't currently support template files, but that doesn't mean you can't use templates. Create a new dwg from each of your current templates and store it in the cloud. Make sure you include the geometry, layers and blocks you will need in the field. Every time you need a new drawing, simply duplicate and rename the file before adding your geometry. It is not as convenient as a proper template, but it is a workaround that provides you all of your blocks, layers and layouts to get started.

Accessories

To really use your tablet in the field, there are a few handy accessories that will help you focus on your work.

First thing is always a case. Aside from the obvious factors to consider like ruggedness and port protection, make sure your other accessories will work with whatever case you are choosing. Are you carrying a stylus? Does the case have a loop to store the stylus conveniently? Are the port coverings so tight it is difficult to use a 3rd party charging cable? And very importantly, is there a hand strap to help balance the tablet in one hand while making edits? I use a strap over my case; if your case does not have a strap consider additional solutions.

Are going to be typing a lot of text or emails on your tablet? You may want to consider a keyboard. There are a few considerations: Does the keyboard have its own battery or draw power from the tablet? Does the keyboard use the same connector to charge the tablet? Will the keyboard work in conjunction with the case you've chosen, or does the keyboard have it's own case?

If you are going to be marking up drawings, pdf's or images I recommend a stylus. Try to find one with a clip for easier storage. Most bluetooth styluses are more accurate and have pressure sensitivity to give you a more natural writing experience. Also keep in mind wrist suppression; you can't get a comfortable or accurate experience hovering your hand above the screen while you draw or write. In my opinion, currently, the iPad Pro and Apple Pencil offer the smoothest, most natural experience while also providing near perfect wrist suppression.

If you are going to spend a significant amount of time in the field, I'd recommend a portable backup battery. I'd recommend looking for a battery with enough mAh to charge your device at least once over, if not twice. Also look for a battery that ideally has the same charger port / connector type as your tablet, so you have less cable types to worry with. For the iPad, for example, they have batteries that charge from a lightning cable, in addition to the standard USB output to charge your iPad. The newest iPads use USB-C ports, so this increases your options tremendously.

Last but not least, a laser tape measure can be incredibly useful in the field. Most are accurate to within 1/16" and can measure distances from inches to hundreds of feet. Leica makes specific units with bluetooth connectivity. Now why would we need a tape measure with bluetooth connectivity? Well, for our tablet of course! Leica Disto supports connecting with Leica laser tape measures so we can draw basic plans with the app and export them to AutoCAD later.