

ZIPCAD 3.1

For Palm OS handhelds

Manual



Edited by Heather Holub

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About this Document

ZiPCAD is a full-featured CAD program. Because it is generally a secondary CAD system for end-users, every effort has been made to make *ZiPCAD* as simple and intuitive to use as possible, resulting in a rather short manual despite its robust feature set.

The features described below are those of *ZiPCAD/Pro* – the most feature-laden version of *ZiPCAD*. A subset of these features is also applicable to other *ZiPCAD* products, such as *ZiPCAD/View*.

Documentation Revisions

This manual is available at zipcad.com/manual.pdf and is frequently updated. If you would like to be added to *ZiPCAD*'s mailing list and receive notices of manual updates and other *ZiPCAD* news, please send an empty e-mail message to addme@zipcad.com.

I. System Requirements

This chapter describes the system requirements of the device and its companion desktop computer.

Compatible Palm OS Devices

ZiPCAD will run on any Palm OS device running OS version 3.1 or higher, which includes 95% of Palm OS devices in distribution today. Device brands include Palm, Sony, iQue, Zodiac, and Fossil.

ZiPCAD will properly display on the standard screen sizes of 160x160, 320x320, and the larger format 320x480 device screens. *ZiPCAD* will run on both color and monochromatic devices.

You must have a minimum of 700K RAM available at the time of installation to install the program and support files. Drawings can be saved in RAM and on the expansion card and are typically average 10K to 100K in size.

ZiPCAD will not run on *Pocket PC*, *WindowsCE*, or *Symbian* devices.

Windows, Mac, and Linux

ZiPCAD is available bundled with a Windows-compatible conduit or without a conduit for Mac/Linux users or devices that do not Hotsync to any computer.

Windows

The Windows version is bundled with a conduit program that resides on the PC for exporting comma separated values (CSV) punchlist files and importing and exporting DXF files directly to and from the PC when performing a HotSync operation.

Mac/Linux and GoodLink™

ZiPCAD is available in a conduit-less version for users that hotsync to a Mac or Linux computer and users of devices that do not Hotsync to any computer, such as those networked with *GoodLink*. These configurations can import and export files directly to the expansion card. The ported files on the expansion card can then be uploaded and downloaded to and from the desktop computer using an inexpensive card reader, the *Palm Desktop* program bundled with the Palm OS device, or third-party programs. For more information on importing/exporting see “Chapter 5. Importing and Exporting.”

2. Installation and Registration

This chapter describes how to install trial versions and registered (purchased) versions of *ZiPCAD* products.

Windows Installations

1. Download the latest installation executable (.exe file) for Windows from zipcad.com/products.html. The downloaded file is named *ZiPCADPro.exe*. Save it to the desktop or other convenient location.
2. Run the executable *ZiPCADPro.exe* by double clicking it and follow the instructions.
3. Hotsync your Palm OS device.
4. *ZiPCAD* has a 30-day trial period, after which some features, such as saving, are disabled. To unlock the program you must register by purchasing a license.

Macintosh and GoodLink Installations

1. Download the latest installation zip file from zipcad.com/products.html. The downloaded file is named *ZiPCADPRO.zip*. Save it to the desktop or other convenient location.
2. Unzip the file to create the folder "ZiPCADPRO."
3. Install all of the .prc and .pdb files to your device using *Palm Quick Install* or third-party software such as *GoodLink*.
1. *ZiPCAD* has a 30-day trial period, after which some features, such as saving, are disabled. To unlock the program you must register by purchasing a license.

Registration

Users can install and use *ZiPCAD* for free for a limited trial period; after which, features such as opening and saving are disabled. To enable these features, you must register the software.

Beamed copies can be used for the free trial but cannot be registered. If you have a beamed copy, you must download and install a full version.

1. You must purchase *ZiPCAD* to receive a registration key. After registering, a unique key will be e-mailed to you. (If you have already downloaded and installed a demo version, you do not need to reinstall the software.)
2. Start *ZiPCAD* on your Palm OS device. Tap the menu button and go to “Settings >About ZiPCAD > Register...”
3. Enter your unique registration key.

Upgrading

New versions of *ZiPCAD* are periodically available for download at www.zipcad.com or from resellers. These versions should generally be installed over existing versions of *ZiPCAD* to preserve currently settings. You generally do not need to uninstall your current version before installing a new version. (Uninstalling your current version will lose some settings; such are your registration key and general preferences.)

Major Upgrades

Registered users can purchase major releases of *ZiPCAD* at a reduced price. Major releases are denoted by an ending zero (e.g., 2.0, 3.0).

Minor Upgrades

Minor upgrades are indicated with a non-zero decimal number (e.g., 2.3, 3.1) and are free to registered users of the previous major upgrade. To install an upgrade to a registered version simply install the upgrade over the existing program.


3. Getting Started

ZiPCAD is a full-featured 2-D CAD program. Because *ZiPCAD* uses many of the standard CAD conventions found in most CAD programs, such as trimming, grouping, layers, etc., the learning curve for CAD users is quite small. However, *ZiPCAD* was not modeled after any specific CAD program, such as AutoCAD, ArchiCAD, or VectorWorks, so it will have a slight learning curve regardless of previous CAD experience. Non-CAD user's can certainly learn *ZiPCAD* quickly, but their learning curve will be slightly longer because they are learning standard CAD conventions as well as *ZiPCAD*'s interface.

ZiPCAD strictly adheres to the interface conventions of Palm OS devices. So, the techniques used for accessing menus, inputting data, quitting the application, etc, will be familiar for Palm OS users. If you are new to both *ZiPCAD* and Palm devices, please familiarize yourself with the conventions of the device before attempting to learn *ZiPCAD*.

Videos

The fastest way to get up to speed with *ZiPCAD* is to watch the free tutorial videos before reading this manual. The videos are available for download at the *ZiPCAD* website: www.zipcad.com. If you have a *ZiPCAD* CD, the videos are located in the "Videos" folder. Tools that are demonstrated in a *ZiPCAD* video are accompanied by a video icon

in this manual: 

Common Uses

Because *ZiPCAD* is a full-featured CAD program, it has countless uses. The more common applications are outlined below.

Drawing

ZiPCAD/Pro has a full suite of drawing tools for quickly drawing precise 2-D CAD drawings or freehand sketching. After activating a drawing tool (see "Draw Tools" on page 19) simply tap locations in the drawing area to create entities. With the exception of the *Sketch* tool, *do not drag the stylus when drawing*. (Dragging the stylus performs an *Anytime Window* that performs a zoom operation, which is handy for quickly zooming in on details of your drawing— see "Anytime Windowing" or page 15.) For example, to draw a line, simply activate the *Line* tool, tap the start point of the line, lift the stylus, and then tap the end point.

ZiPCAD was designed to allow users to simultaneously specify entities freehand or enter exact dimensions. As you draw with *ZiPCAD*, the coordinates of tap locations are displayed at the bottom of the screen and can be modified at any time by simply tapping

their value and entering an exact dimension. For more detail, see “Coordinates and Offsets” on page 16.

While drawing with *ZiPCAD*, the command prompt will guide you with the steps required for using the active tool. If you have a question while using *ZiPCAD*, glancing at the command prompt should clarify things.

Floor Plans

ZiPCAD/Pro is often used by design professionals to quickly and accurately document floor plans of existing buildings or other site information. A unique *Walls&Gaps* tool (patent pending) allows users to quickly draw walls, windows, and doors by tapping in the drawing and specifying exact measurements (see page 19). Dimensions can be entered manually or optionally uploaded from a laser distance meters via Bluetooth (see “Chapter 6. Linking to a Distance Meter,” page 39).

DXF Drawings

Technical drawings in the DXF file format can be imported into *ZiPCAD* for viewing and modifying. The drawings can be imported from a PC during a Hotsync operation or directly from the device’s expansion card. Drawings can also be created in *ZiPCAD* and exported to a desktop computer where they can be loaded with other CAD and DXF-compatible programs. Likewise, desktop CAD programs can export DXF drawings, where they can be loaded into *ZiPCAD* via the expansion card or a PC Hotsync operation. For more information on DXF porting, see “Chapter 5. Importing and Exporting,” page 35.

Punchlists

Punchlists are lists of outstanding project ‘to do’ items which be created quickly with *ZiPCAD*’s preset punchlist menus (see “Draw Tools,” page 19). Punchlists are exported as a spreadsheet in comma separated format (CSV), which is compatible with most spreadsheet programs, including *Microsoft Excel* and *WordPerfect*. The location of punchlist items are specified the drawing, which can be exported in a DXF drawing and cross-referenced with the punchlist spreadsheet, creating powerful punchlist reports. Multiple punchlists can be merged into a single punchlist with the “File > Import...” menu option, allowing several people to modify punchlist individually and then merge then merge them into a single punchlist (see “Importing punchlist CSV files,” page 37).

Interface



ZiPCAD’s interface is depicted in Figure 1. All tools are activated from the Toolbar in the lower-left portion of the screen. After starting a tool, the user is instructed on what to do by the *Command Prompt*. If the “i” button is present, tapping it will give more explicit information or tips.

As you use *ZiPCAD*, input *fields* are often displayed at the bottom of the screen. These fields show current values and settings for the active tool. Tapping on these values invokes popup keypads and other input dialogs. The Graffiti Area at the bottom of the screen is for entering values and shortcuts (see section *Shortcuts* p.13). Devices with physical keypads can enter values directly through the keypad.

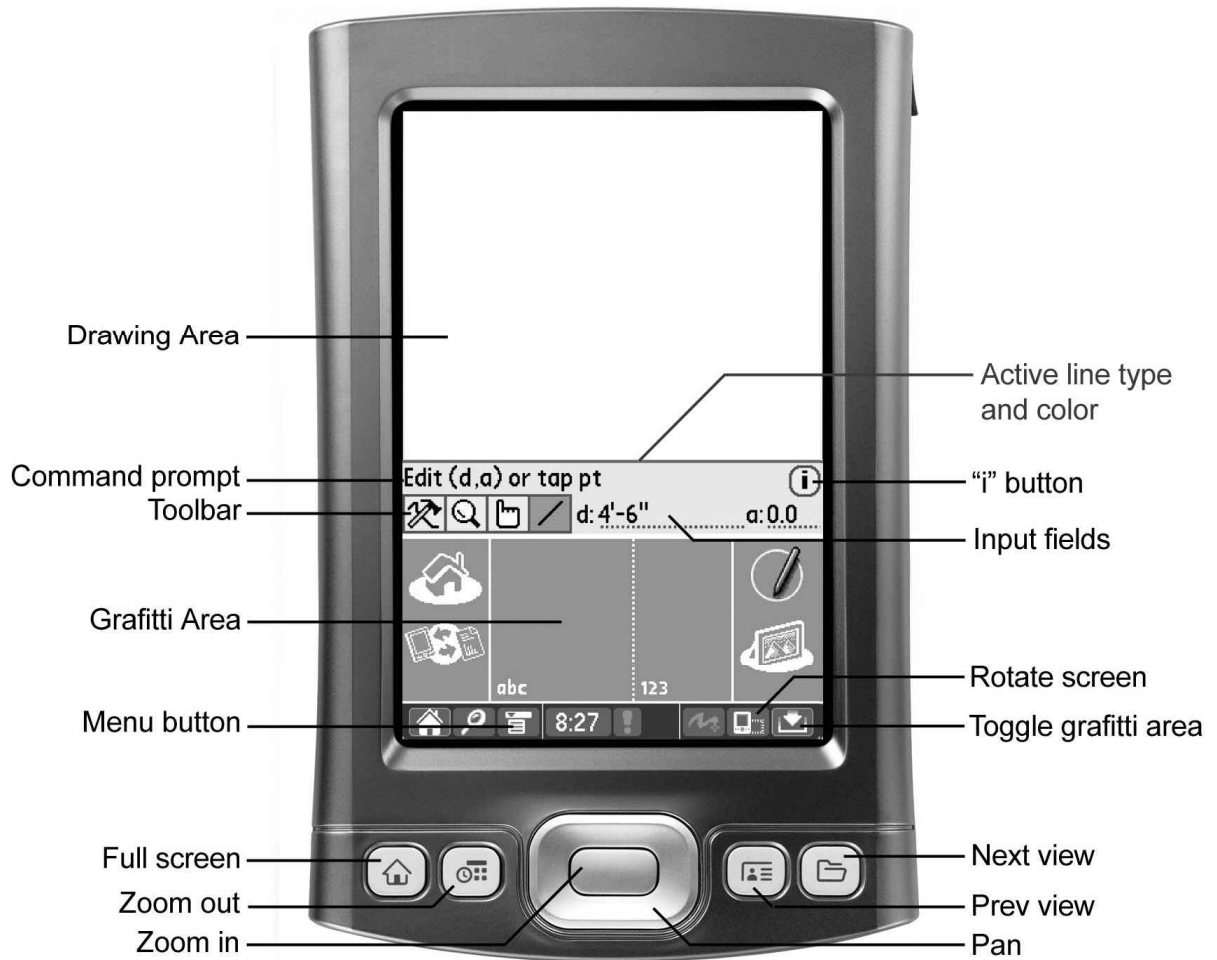


Figure 1 - The ZiPCAD interface

Toolbar

Tools are accessible from the toolbar on the lower left corner of the screen. Pressing a toolbar button activates a popup menu. Each tool in the popup has an icon associated with it, a tool name, and a shortcut letter (see Figure 2).

Command Prompt

The Command Prompt guides the user through the steps necessary for using the active tool (see Figure 1). For example, after starting the *Line* tool, the user is prompted with the instruction “Tap start pt.” After tapping a start point, the user is prompted with “Edit pt’s (x,y) or tap pt” indicating that the user can edit the coordinates of the start point’s coordinates in the bottom-right portion of the screen, or simply tap the next point on the line.

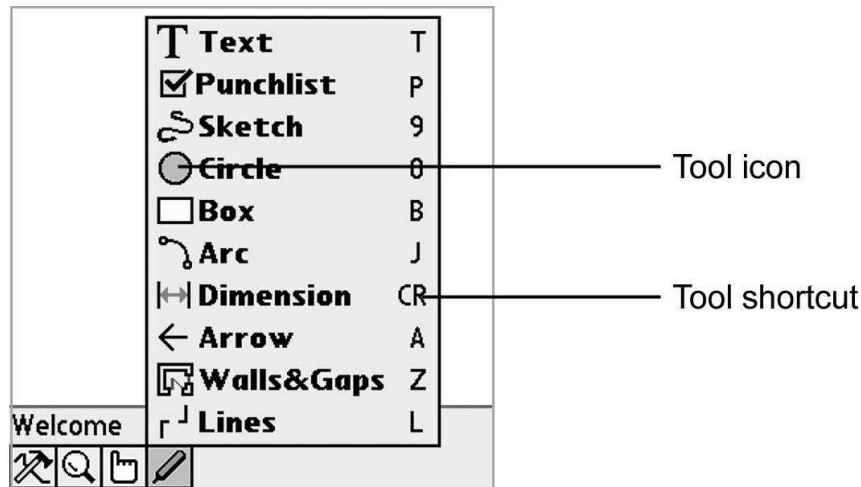


Figure 2 - Toolbar popup

Input Fields

As the user draws, relative information, such as the coordinates of the current point, is listed in the bottom-right portion of the screen. Tapping an input field will cause a *ZiPCAD* keypad to pop-up (see Figure 3) which allows the user to modify the values in the input fields. Keypads allow users to quickly enter precise dimensions and angles. When in Imperial Mode (see page 33, “General Preferences”), fractional inches can be entered by pressing the fraction keys one or more times resulting in a value equal to the cumulative sum of the keys pressed – e.g., 3/4" is entered by tapping the “1/4” key three times.

Users can specify the coordinate system as *Cartesian* (x, y) or *Polar* (distance, angle), the units metric or imperial, and other settings by tapping the menu button and going to “Settings > General Preferences” (see Figure 4). These settings apply to the current drawing and subsequent drawings.

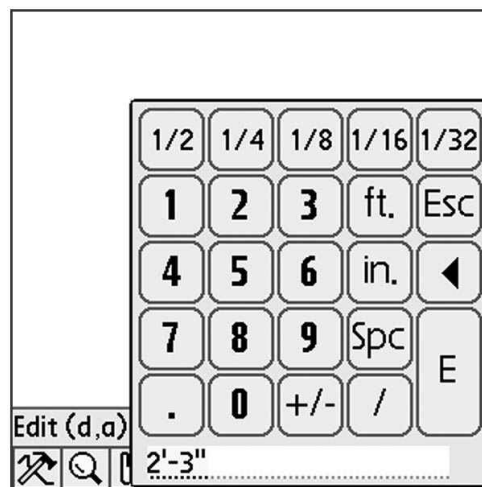


Figure 3 - Popup distance keypad

The “i” Button

Some tools have powerful features that may not be immediately obvious to users. Such tools display an “i” button (see Figure 1) that gives information pertinent to the current tool. E.g., the informational tip for the *Door* tool tells the user that he or she can modify the newly created door by changing the settings under “Settings > Windows and Doors.” It is recommended that new users tap on the “i” button whenever it appears to ensure that they are taking advantage of the full range of *ZiPCAD*’s many powerful features.

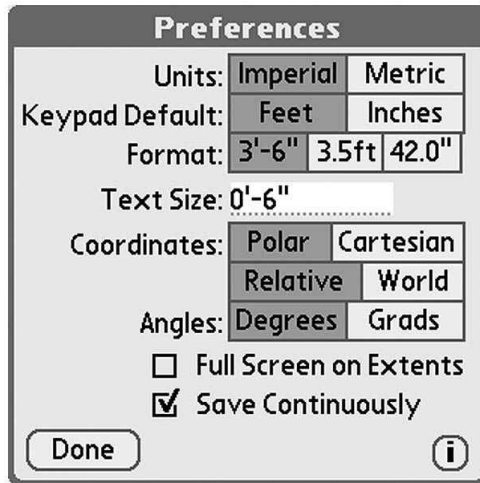


Figure 4 - General Preferences

Menus

‘Hidden’ pull-down menus provide several powerful commands and setting options. They are accessible by tapping the *Menu Button* (see Figure 5). These menus contain commands common to most desktop office and CAD programs and are described in detail in the “Chapter 4. Features” on page 19.

Shortcuts

To increase drawing speed, shortcuts are provided for most *ZiPCAD* tools. There are four types of shortcuts: *Command Bar*, *Slash*, *Single-letter*, and *Toolbar Double Taps*.

Command Bar Shortcuts

Commands located in the *Edit* menu are frequently used and are accessible by performing an upward ‘slash’ in the Graffiti Area (see Figure 6). After performing an *upward* slash, the command bar is shown at the bottom of the screen with icons representing the active tools of the *Edit* menu. (Note that the slash must be done with an upward motion from the lower left to the upper right.) Only the Edit tools that are currently applicable are listed. For example, the *delete* icon will only be shown when entities are selected in the drawing. (See page 32, “Edit Menu,” for more information.)

To determine the function of each icon in the command bar, simply place and hold the stylus on the symbol. Text will appear that describes the function. For example, after drawing a line, invoking the command bar and tapping and holding the undo arrow will

display the text “Line Undo” to the left of the arrow. Drag the stylus off the icon before releasing to cancel the operation.

Menu Shortcuts

Tools found in the hidden pull-down menus are accessible by performing a slash followed by writing the tool’s shortcut letter in the Graffiti Area. The shortcuts for the menu tools are listed next to their name (see Figure 5). For example, to create a new drawing, write “/N” in the Graffiti Area.

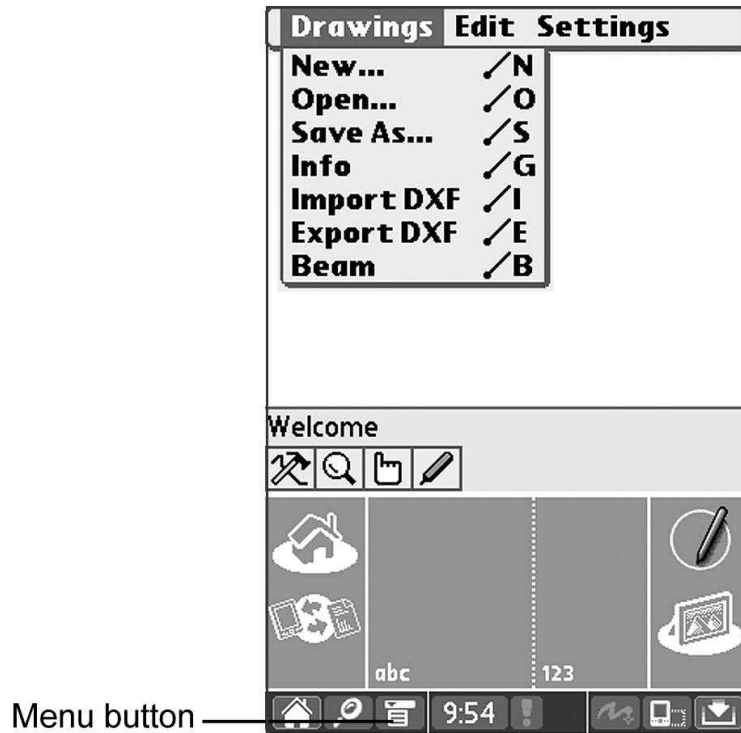


Figure 5 - Menus accessible by tapping the *Menu Button*

Devices that have a physical keyboard, instead of a Graffiti Area, access menu shortcuts by pressing the menu button (instead of slashing) followed by the letter associated with the menu options. For example, for accessing the *General Preferences*, press the menu button followed by the letter ‘f’.

Single-Letter Shortcuts

Tools accessible from the main toolbar can be activated by simply writing the tool’s shortcut letter in the Graffiti Area *without* a preceding slash. (Users of devices with physical keyboards need only to press the appropriate key.) The shortcut letters are listed adjacent to their corresponding tool name in the popup (see Figure 2). E.g., to activate the *Line* tool, simply write “L” in the Graffiti Area (or press the ‘L’ button on physical keyboards). Single-letter shortcuts can be customized by going to “Settings > Custom Shortcuts.”

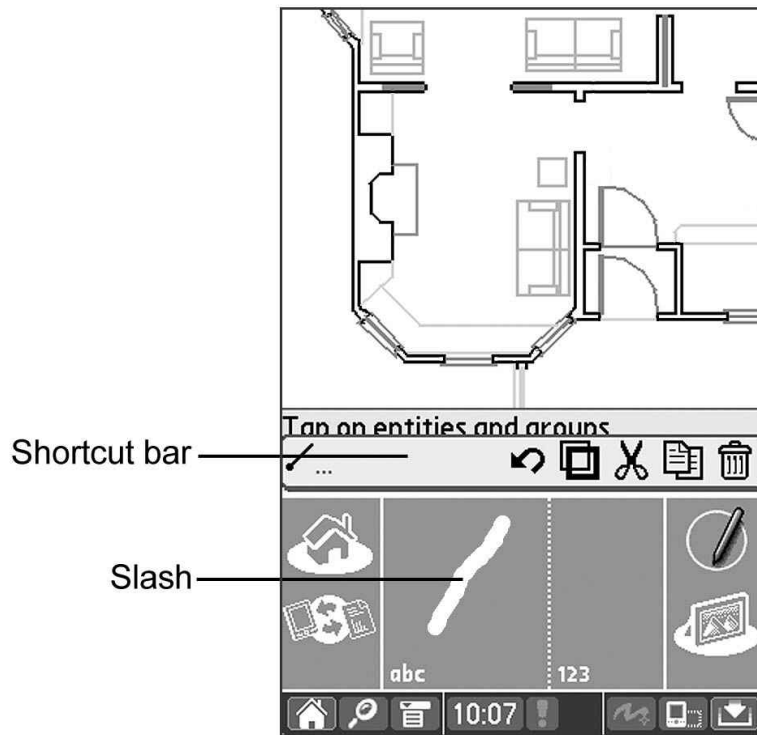


Figure 6 - Command bar shortcuts accessible by 'slashing' in the Graffiti Area

Toolbar Double-Tap

Tapping one of the four toolbar buttons shows its corresponding popup. Tapping the same main toolbar button again will activate the previously active tool from that group. For example, if the *Line* tool is active (accessible from the right-most of the four toolbar buttons) and the user subsequently activates a *Corner* tool (accessible from the left-most button), double-tapping the right-most toolbar button will reactivate the *Line* tool.

The Drawing Area

The largest portion of the device's screen is dedicated to the drawing area. With the exception of the *Sketch* tool, all interaction with the drawing and its entities is done with single taps – *do not drag the stylus* on the screen when creating objects. For example, when creating a line, tap the starting point of the line, lift the stylus, and tap the ending point of the line. There are only two operations or tools that require the stylus to be dragged: the *Sketch* tool and when *Anytime Windowing*.

Anytime Windowing and Device-key Viewing

In addition to the *View* tools available from the main toolbar, two *View* tools for navigating the drawing are always active: *Anytime Windowing* and *Device-key Viewing*.

Anytime Windowing allows the user to zoom and window to a portion of the drawing at anytime by dragging the stylus across the screen. The most recent ten windows specified are stored and can be reviewed by the *Prev Window* and *Next Window* view tools. Note that you can perform this operation at anytime, regardless of the active tool.

You can pan-and-zoom in the drawing at anytime using the device keys at the bottom of the device (Calendar, Addresses, etc.). See Figure 1 for the mapping of a typical device with a navigator. Some devices have fewer buttons and, consequently, a slightly different mapping. For the mapping on your particular device, tap the menu button and go to “Settings > Help.” The key mapping for your particular device will be listed there.

Coordinates and Offsets

As you draw, *ZiPCAD* shows the coordinates of the current tap point in the input fields at the bottom of the screen. When in *World* coordinates mode (see page 33, “General Preferences”) the reference point is the fixed origin of the drawing. When in *Relative* coordinates mode, the reference point is continually reset by *ZiPCAD* to a recently tapped point, generally to the previously tapped point.

You can exploit the *Relative* mode to offset drawn objects a specified amount. Figure 7 shows a 1’-0” radius circle with its center offset 4’-0” at a zero-degree angle from a corner intersection. To perform this operation, follow the steps below. (Before following this example go to “Settings > General Preferences” and change your current settings to “Imperial,” “Feet,” “3’-6”,” “Polar,” “Relative,” and “Degrees.” Tap “Done” to return to drawing.)

1. Select the *Circle* tool.
2. Tap the intersection point of two lines. The input fields at the bottom of the screen appear with $d=0$ which indicates that the current point is at the reference point just tapped. (For convenience the angle field, “a” is set to match the angle of the line tapped, if any, when specifying the snap point. This can greatly simplify offsetting when working with angled lines and walls.)
3. Edit the input fields to the desired relative location. Tap the “d” (distance) input field and in the pop-up keypad tap [4] [ft] [Enter]; then tap the “a” (angle) input field and in the pop-up keypad tap [0] [Enter].
4. Tap an approximate location of a point on the circle. The circle is then drawn and the input fields update to show the location of the point relative to the center of the circle.
5. Edit the input fields to the desired radius by tapping the “d” input field and in the popup keypad and tapping [1] [Enter]. (Note that it is not necessary to tap [ft] because *Feet* was set as the default keypad unit prior to Step 1.)

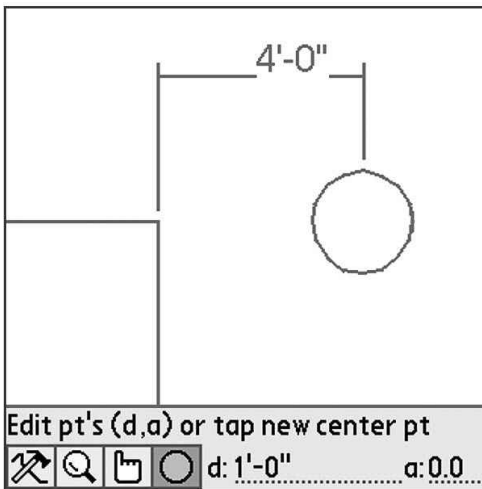


Figure 7 - A circle of radius 1'-0" is drawn centered 4'-0" from the intersection of two lines

Modifying Line Type and Color

As entities are created, their line color, type, and layer, are determined by the settings in the *Line Type/Color* menu and the *Layers* menu. The active line color and type are displayed in *ZiPCAD*'s interface (see Figure 1).

To modify the color and line type of one or more objects, select all of the objects to modify, tap the menu button and "Settings > Line Type/Color," select the desired attributes, and click "Done." The attributes of the selected entities and subsequent new entities will be set to the new attributes.

Modifying Layers

Layers can be added, renamed, and deleted in the "Settings > Layers" dialog. Entities in the drawing can be moved from one layer to another by cutting the entities to the clipboard and pasting them to the desired layer. To do this, select the desired entities, select "Edit > Cut," change the active layer in the "Settings > Layers" menu, and paste the entities into the drawings by selecting "Edit > Paste."

The "Match" Button

The current settings for line type, color, and active layer, can be modified to 'match' an entity in the drawing. To do this, activate the *Pick* tool (see "Select Tools," pg. 28) and tap on the entity in the drawing with the desired line type, color, and layer. The "Match" and "Edit" buttons appear at the bottom of the screen. Tapping the "Match" button changes the current line attributes and active layer to match the selected entity. The new active layer is temporarily flashed in the *Command Prompt* and the active line type and color is updated and displayed in the interface (see Figure 1).

The "Edit" Button

To modify the geometry of an object, such as the length of a line or the radius of a circle, activate the *Pick* tool and tap on the entity to modify. The "Match" and "Edit" buttons

appear at the bottom of the screen. Tap the “Edit” button to display an editor for modifying the entity’s attributes.

If more than one entity is selected, tapping the “Edit” button presents the user with an editor for modifying the color, line type, and/or active layer of the selected entities. Selecting one or more of these options and tap “Done” to change the corresponding values of the selected entities to match the active settings.

When only one entity is selected, tapping “Edit” displays a geometry editor, as described above. At the bottom of each editor is a “More...” button. Tap it to close the geometry editor and open the color, line type, and layer editor.

A common operation is to change the layer and line attributes of several entities in the drawing to match those of an existing entity in the drawing. To do this, simply activate the *Pick* tool, tap the entity with the desired attributes and tap the “Match” button. Then select the entities to modify, tap “Edit,” select the attributes to modify, and tap “Done.”

4. Features

ZiPCAD's interface is optimized to provide a full set of features while dedicating the largest amount of the device's screen to the drawing area. All of *ZiPCAD*'s features are accessible from its main toolbar or its hidden pull-down menus.

Toolbar Tools

The main toolbar on the lower left portion of the screen has four buttons (see Figure 1). Some tools are modal and their icon will be displayed in the toolbar while the tool is active. Other tools, such as the *Extents* tool, simply perform their operation and then return control back to the previously active tool.

Draw Tools

The right-most button of the toolbar contains the *Draw* tools. These tools allow the user to create lines, shapes, text, etc., in the drawing.



Line: After activation, this tool displays a checkbox at the bottom of the screen titled "Continuous." The behavior of the tool depends on this setting.

Continuous (checked): Draws continuous line segments end-to-end. If a series of taps falls on the same line, alternating lines and gaps will be drawn (patent pending). Gaps are helpful for rectilinear drawings with openings, such as floor plans, allowing the user to draw walls and openings without switching tools. Note that turning on "Settings > Snap Preferences > Snap Angle" increases efficiency of drawing shapes with regular angles.

Continuous (unchecked): Draws a line as defined by two points. After each line is created, a new line is started.



Walls & Gaps (patent pending): Draws walls, windows and doors without requiring a tool change. Each time the tool is activated, the input fields at the bottom of the screen specify the current wall width and one of three types of wall specification lines ("Inside," "Outside," or "Center"). When drawing, if the direction of the wall changes (e.g., the corner of a room) wall segments are continuously drawn. However, if you specify the next point in the same line direction as the preceding wall segment, a 'gap' is drawn. The gap will be filled with a window, cased opening, inswing left-hand door, inswing right-hand door, outswing left-hand-door, or outswing right-hand door as specified by the pop-up menu at the bottom of the screen. After adding the door or window, and before starting the next wall segment, changing the popup gap menu setting will change the current window or door. The attributes of the window or door are modified by the settings in the "Settings > Windows and Doors" menu. The door/window style can be modified immediately after it is drawn by changing the values in "Settings >

Windows and Doors” and tapping the “Replace” button (tapping the "Done" button applies the changes to future doors/windows and leaves the current one unchanged).

When drawing walls with gaps, reference icons appear that show the measurement being entered. The default measurement distance is the overall length of a wall, as depicted in Figure 8.

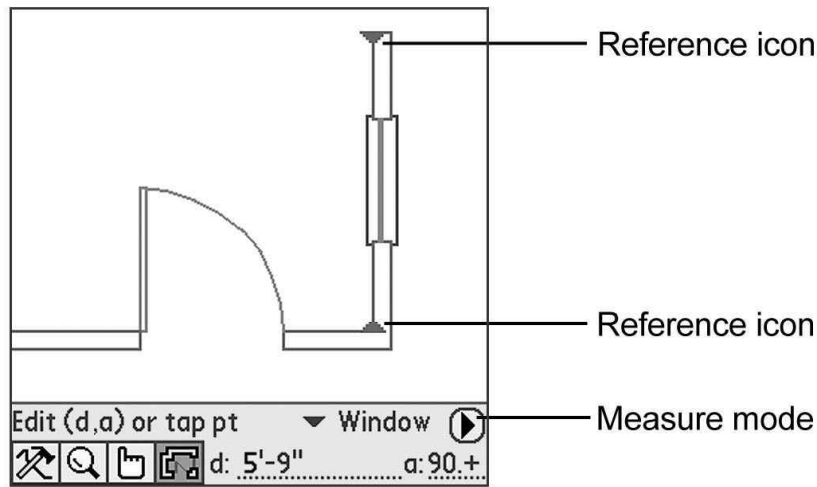


Figure 8 - Walls&Gaps tool with reference icons

Entering overall wall lengths create more accurate floor plans than accumulating shorter measurements because it eliminates accumulation error that can result when adding several shorter lengths. However, there are times that such accuracy is not necessary and it is easier to measure shorter lengths. Tapping the *Measure mode* button changes the type of measurement being entered. For example, tapping the button for the drawing displayed in Figure 8 changes the location of the reference icons (see Figure 9).

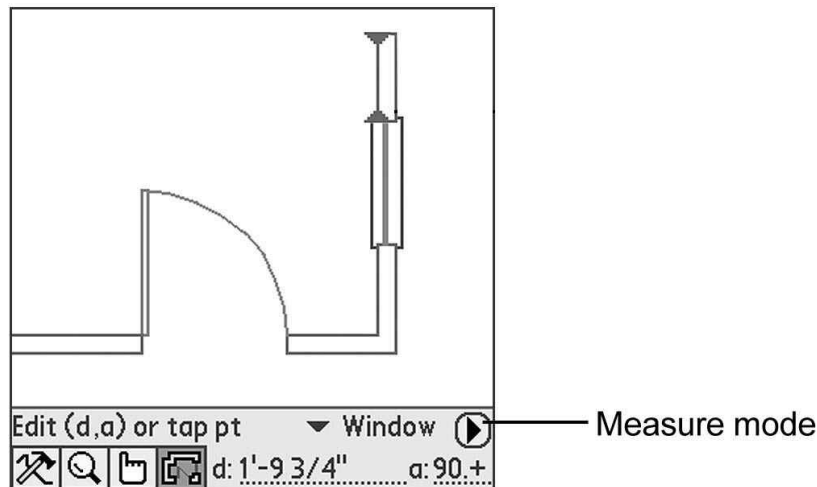


Figure 9 – Reference icons repositioned

Irregular floor plans, such as the one depicted in Figure 10, can be easily drawn with the *Walls&Gaps* tool. After tapping an approximate wall angle, an exact wall angle is entered by tapping on the “a” field (see Figure 11).

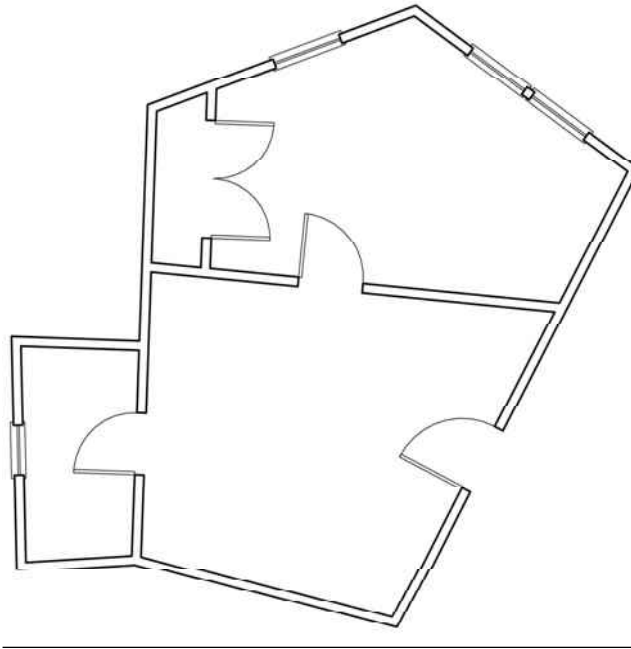


Figure 10 - Floor plans with few orthogonal corners can be drawn quickly with the *Walls&Gaps* tool

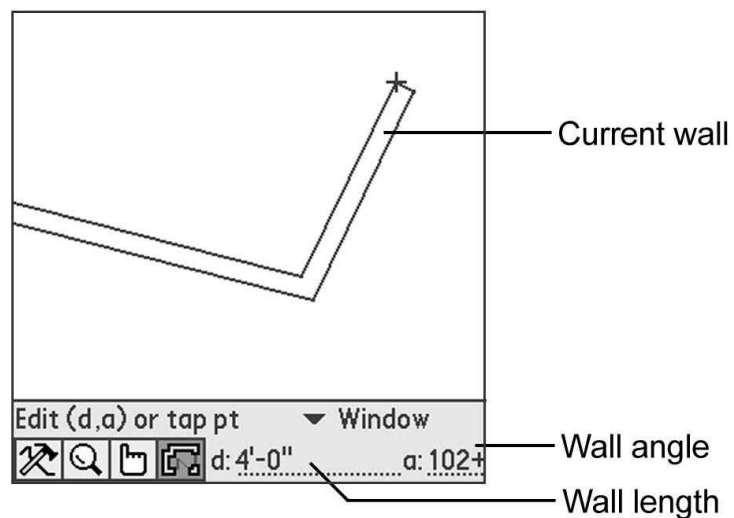


Figure 11 - An irregular corner drawn with the *Walls&Gaps* tool: Relative or Polar angles can be entered for corners by tapping on the “a” field



Angles can be measured in the field with a protractor or calculated with the “Triangulate” calculator at the top of the angle popup keypad (see Figure 12). When drawing walls and lines, measurements are stored in two sides of the triangle. When three valid triangle sides are entered, the angle opposite the hypotenuse is calculated and set in the field at the bottom of the keypad. The value is applied when the “Enter” button is tapped (tap “Esc” to cancel without applying the angle). When the angle is explicitly entered with the keypad, the hypotenuse is updated and can be used to verify field conditions. Entering non-orthogonal lines is generally simpler when the “Relative Angles” setting is on, which is located in the “Settings > Walls and Gaps” dialog. (Relative Angles are the local angle between adjacent line

or wall segments as opposed the angles of the coordinate system.)

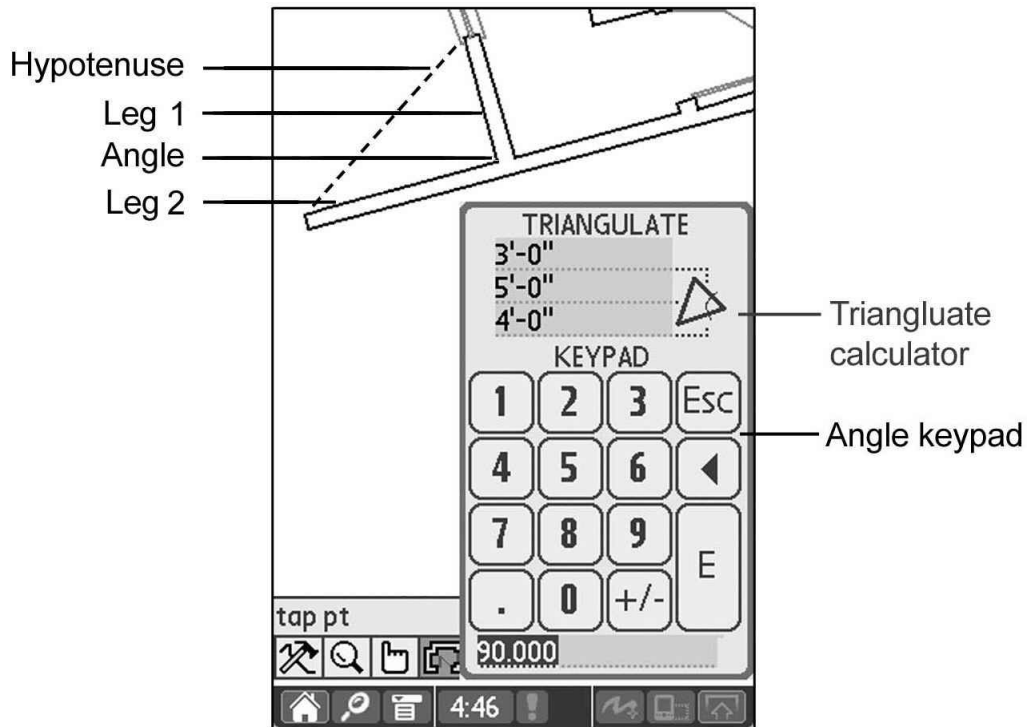



Figure I 2 - The angle keypad and optional “Triangulate” calculator simplifies the drawing of angled walls.

 *Arc, Box, Circle*: These tools have two or three drawing types for each. For example, an Arc can be defined by its center point and two points on the radius, or by tapping three points on the radius. After selecting the tool, these options are available to the right of the toolbar (see Figure 13). After selecting the desired option, follow the command line to complete the operation.

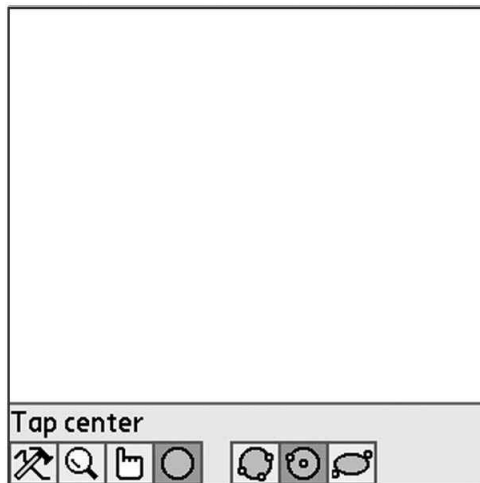


Figure I 3 - The *Circle* tool displays three modes

T *Text*: Adds text to any location in the drawing. After activating the text tool, tap the location and enter the text into the popup text keypad. The size of the text is specified by “Settings > Preferences > Text Size” (see *Preferences* in “Settings Menu,” page 32). Text in the drawing can be edited by selecting it with the *Pick*

tool as described in “Select Tools,” page 28.



Punchlist: ‘Punchlist’ is the term used by building professions during construction to describe a list of outstanding items in a project to be completed. This tool adds punchlist items to the drawing and displays their locations in the drawing or as a list. *ZiPCAD* contains in internal database in each drawing for tracking punchlist items. The punchlist can be exported as a comma-separated values (CSV) spreadsheet to the expansion card or to a PC during a Hotsync. The punchlist items can also be included in an exported DXF drawing (see “Chapter 5. Importing and Exporting,” page 35). Each punchlist spreadsheet item is assigned a unique key for cross-referencing the exported DXF drawing (see Figure 14). The user can then combine the exported punchlist spreadsheet and drawing into a single punchlist report.

ID	LOCATION	CATEGORY	ENTRY	DESCRIPTION
PL.1	Yard	Landscaping	Grade	Grade too low
PL.2	Yard	Landscaping	Height	Fence not secured to ho
PL.3	Yard	Millwork / Trim	Fence	Shingles not flat in rear a
PL.4	Yard	Millwork / Trim	Incorrect installation	eaves detail
PL.5	KITCHEN	Hardware	Net	Letting missing in side o
PL.6	Millwork / Trim	Damage		
PL.7	KITCHEN	Lighting		
PL.8	LAV	Tile		
PL.9	LAV	Hardware		
PL.10	KITCHEN	Hardware		
PL.11	BASEMENT	Millwork / Trim		
PL.12	BATH	Tile		

Figure 14 – Punchlist spreadsheet and drawing with cross-reference IDs exported from *ZiPCAD*

Creating a Punchlist with *ZiPCAD*

While users may develop their own standards and preferences for creating and formatting punchlists, the typical steps taken are:

1. If referencing existing drawings created from a desktop CAD program, such as *AutoCAD*, turn on the layers in the drawing that you wish to include in the final punchlist report image. This drawing usually consists of plans with minimal text, such as the labels of the rooms and a title block for each floor (see Figure 14).
2. Export the layers to a DXF file and import the file into *ZiPCAD*. If several users will be supporting updating the punchlists for the same project on different devices, it’s generally a good idea for each user’s drawing to have a unique name; for example, the name of the project followed by the user’s initials (“MainStreet-MJ”). Naming with this convention allows for beaming

project drawings among users without fear of overwriting or confusing drawings. This approach is particularly handy when multiple users are supporting the same punchlist on different devices.

3. Open the imported drawing in *ZiPCAD* and set up a saved view for each layer group for quick reference. For example, turn on all of the First Floor layers, activate the *Saved Views* tool (see page 29), and create a view named “1-Flr.” Doing likewise for all the layer groups will allow you to quickly change visible layers in the field.
4. After creating a punchlist in the field, the user can export the punchlist as a spreadsheet and export the drawing as a DXF file for cross-referencing with the punchlist (see “Chapter 5. Importing and Exporting” on page 35). If multiple users have modified the punchlists, they can be merged into a single drawings punchlist before being exported.

Punchlist Items in a Drawing

After activating the *Punchlist* tool, all visible punchlist items are displayed as an icon accompanied by a brief description (see Figure 15).

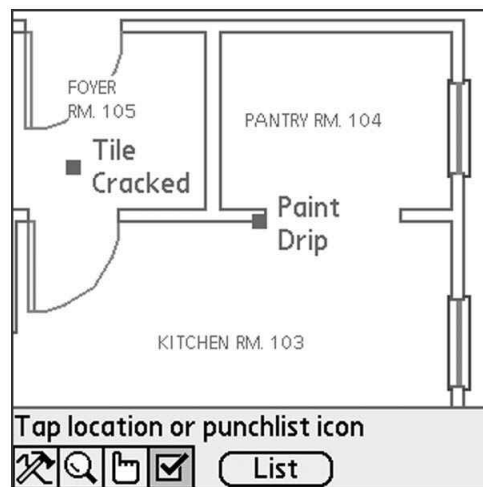


Figure 15 – Punchlist items displayed as icons with brief descriptions

New punchlist items are created by simply tapping the location for the item in the drawing. A punchlist dialog is then displayed with several input fields (see Figure 16). All fields are optional. While the specific use of fields may vary depending on the user, typical uses are described in “Editing Punchlist Items” on page 26. To edit an existing punchlist item, simply tap the item’s icon in the drawing.

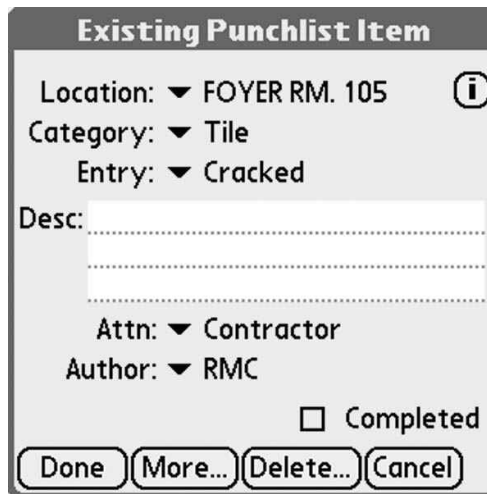


Figure 16 – Punchlist item editor

Punchlist Items in a List

In addition to viewing punchlist items in drawing, punchlist items can be displayed in list format by tapping the “List” button at the bottom of *ZiPCAD*’s interface when the *Punchlist* tool is activated (see Figure 15). The list shows all punchlist items in the drawing, regardless of whether or not they are on a visible layer (see Figure 17). Completed items are displayed with their checkbox checked (unless the setting “List completed items,” described below, is not active). The order of the values displayed in the list from left to right is specified by the punchlist settings (see “Punchlist Settings” page 26). Values of a punchlist item that are blank or unassigned are depicted with an underscore (“_”) in the list. The list can be scrolled left and right with the arrow buttons at the bottom of the dialog. Specifying a value for “Sort” at the top of the *List* dialog sorts the contents of the list appropriately.

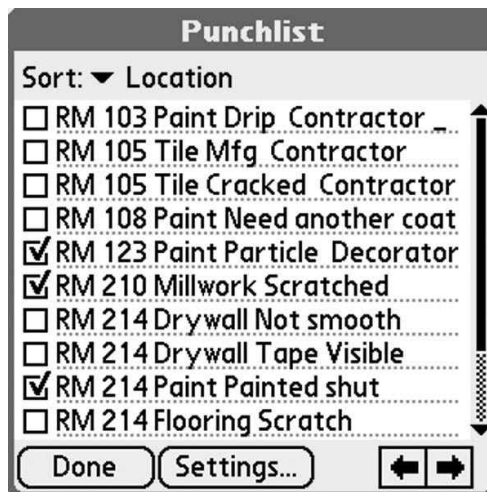


Figure 17 – List of punchlist items

The checkbox associated with each item is checked if the punchlist item has a *Completed* date associated with it. You can specify whether or not you want completed items displayed by setting the proper value in the *Punchlist Settings* dialog. To view or edit the details of a punchlist item, simply tap the item in the list.

Punchlist Settings

The punchlist setting associated with the punchlist have an effect on the display of punchlist items in exported DXF drawings, their format on the device, and their format in exported CSV files. To access the punchlist settings, activate the *Punchlist* tool, tap the “List” button at the bottom of the screen, and tap the “Settings...” button at the bottom of the list displayed (see Figure 17). The *Settings* dialog shows the columns to be displayed when listing the punchlist items on the device or in the exported CSV file. The user can show as many or few columns as desired.

When “List completed items” is checked, punchlist items with a completion date are displayed in the drawing (both on the device and exported DXF drawings) and in lists (on the device and exported CSV files). When unchecked, the completed items are hidden from view, though still retained in the database.

The “Font size” specifies the font size used when displaying punchlist items in the drawing on device and the exported DXF file. The “ID prefix” is an optional field to proceed punchlist item IDs in exported DXF drawings.

Editing Punchlist Items

Punchlist items are displayed in the drawing when the *Punchlist* tool is active and hidden otherwise. When creating a new punchlist item or editing an existing one, the more commonly entered punchlist items are preset in customizable popup menus. For example, the *Category* section has many preset value associated with it in its adjacent menu. You can customize the list of items by adding new items and deleting or renaming existing items by scrolling down the menu and tapping the “*Edit categories*” entry. The default contents of the menus can be imported from other *ZiPCAD* drawing’s punchlists by using the “File > Import” feature (see “Importing punchlists from *ZiPCAD* drawings,” page 37).

The punchlist menus are initially populated with the defaults in the *ZiPCAD~DefaultPunchlist.PDB* file. This file is a standard *ZiPCAD* drawing and is only unique in that its name is reserved for the default punchlist. If you create custom punchlist menus that you would like to use as the default, simply give it this name. If you use more than one type of punchlists for various projects types and do not want to use any particular punchlist as a default, you can have no *ZiPCAD* drawing with the default punchlist name and, instead, import punchlists explicitly by using the “File > Import” option (see “Importing punchlists from *ZiPCAD* drawings,” page 37).

Below is a list of values associated with each punchlist item. These values are organized as columns in the exported CSV file and listed in the *ZiPCAD* punchlist.

Location is the reference name in the drawing where the punchlist item is located; typically a room name or location name. You can add new locations by tapping “*Edit locations...*” at the bottom of the popup list or you can browse the drawing to select a location name by tapping the “*Pick in drawing...*” option. After tapping “*Pick in drawing...*” the dialog closes and you can pan and zoom the drawing to tap the name associated with the location. After selecting and you are returned to the

dialog with the location name inserted into the list.

Category is the general category description of the punchlist item.

Entry is a subcategory of *Category*. Changing the *Category* menu value changes the list of available values in the *Entry* menu.

Description is optional text to explain the nature of the punchlist item in more detail than afforded with the *Category* and *Entry* menus.

Attn is an abbreviation for “Attention” and supports a list of contacts that should be notified of the punchlist item.

Author is the name or initials of the individual entering the punchlist item. Several people can support the punchlist on different devices and the resulting punchlists can be merged into a single punchlist (see “Importing punchlists from ZiPCAD drawings,” page 37).

Completed checkbox is checked if the punchlist item is assigned a *Completed* date. Completed punchlist items are retained but can be optionally hidden from view (see “Punchlist Settings” on page 26). Checking the box sets the completion date to today’s date. Unchecking the box clears the completion date. Completed punchlist items are hidden from view if the “List completed items” setting is off.

Find in drawing button closes the dialog and changes the visible layers and location in the drawing to display the location of the punchlist item. The button is hidden when the punchlist item is within view in the current drawing.

Delete... followed by a confirmation permanently deletes the punchlist item. No copy of the item is retained in the punchlist after it is deleted. If you simply want to stop displaying the item but do not want to delete it, you may consider tapping the *Completed* checkbox.

Cancel closes the dialog without saving any changes.

Done saves changes and closes the dialog.

More... displays the additional fields listed below.

Logged is the date the punchlist item was entered. This date is automatically set when a punchlist item is created but can be modified by tapping the value and specifying a new date.

Completed is the date the punchlist item was completed. This date is set to today’s date when the *Complete* checkbox is set and can be modified by tapping its value.

Due is the optional due date of the item.

Remark is for comments associated with the punchlist item that are not appropriate for the *Description* field.

Reference is for documents generally not in the drawing or punchlist, such as a project specification, which are related to the punchlist item.

Type is an optional field to further define the type of punchlist entry. Firms often have internal classifications for punchlists that can be specified here.

Relocate in drawing button closes the drawing and allows the user to browse and tap a new location for the punchlist item. (This button is hidden when new punchlist items are being created.)

ID is the unique identification number assigned the punchlist item. These numbers are maintained internally in *ZiPCAD* and may not be defined by the user. When the punchlist is exported to a DXF drawing, the punchlist item IDs are used as labels for the items. The ID is also included in the exported CSV list so that the list and the drawing can be cross-referenced.

Less... returns the user to the previous dialog.



Sketch: This tool allows the user to quickly draw freehand by dragging the stylus on the screen to draw. Because this tool requires the stylus to be dragged, it is not possible to use *Anytime Windowing* while the *Sketch* tool is active. To zoom and window, tap the “Window” button displayed at the bottom of the screen when this tool is active.



Dimension: Horizontal, vertical, and aligned dimensions can be added to the drawing. After selecting the dimension tool, a popup menu allows the user to specify the type of dimension. After selecting the type, follow the command line to add the dimension to the drawing. Three taps are required: two for the start- and end-points and one for the location of the dimension line.






Arrows: Arrows can have open or closed triangle heads or ticks. They can also be straight-lined or curved. After starting the arrow tool, the user can select from these options in the input area at the bottom right of the screen. To draw the arrow, simply tap the arrow points in the drawing area. Additional arrow settings, such as the color and aspect ratio of the arrow head, can be specified by tapping the menu button and selecting “Settings > Arrows.”

Select Tools

Many *ZiPCAD* tools operate only on selected objects. For example, “Edit > Delete” will delete selected entities and groups in the drawing. Selected objects are indicated as being drawn more thickly than unselected objects. Below are the *Select* tools available from the toolbar.











Pick: Tap entities and groups to select them. Tapping selected objects deselects them. When picking entities, the “Match” and “Edit” buttons appear at the bottom of the screen. Tap the “Match” button to set the current line drawing properties and active layer to match the tapped entity (see “The “Match” Button,” page 17). Tap the “Edit” button to change the coordinate properties of the entity (see “The “Edit” Button,” page 17).

-  *Select All / Deselect All*: Selects/deselects all of the visible objects in the drawing, including objects outside of the screen's viewing area. Objects on hidden layers are not selected.
-  *Area Select*: Selects objects completely contained in a user-specified rectangular window.
-  *Area Include*: Select objects completely and partially contained in a user-specified rectangular window.















View Tools

There are several ways to navigate in the drawing. The two most commonly used view tools, the *Anytime Window* tool and the *Pan-and-zoom* device-key tools are accessible at anytime without using the toolbar tools (see “Anytime Windowing,” page 15). Below are the *View* tools available from the popup toolbar.

-  *Extents*: This will bring all the objects on visible layers within view.
-  *Full Screen*: Hides the toolbar area. Users may zoom and pan in this view with the device keys or *Anytime Windowing*. Tap anywhere in the drawing to exit full-screen viewing.
-  *Window*: Allows the user to zoom into a rectangular area by tapping (not dragging) two diagonal corners of the desired rectangular viewing window.
-  *Prev Window / Next Window*: Scrolls through the ten most recent windows specified by the *Window* tool or *Anytime Windowing* (see “Anytime Windowing and Device-key Viewing,” page 15).
-  *Refresh*: Like most CAD programs, for performance reasons *ZiPCAD* does not redraw the screen after every operation. Some operations, such as deleting objects that overlap other objects, can muddle the screen. This tool redraws the current view.
-  *Recenter*: Allows the user to pan through the drawing by tapping a new center for the viewing area.
-  *Zoom In / Zoom Out*: Zooms in/out of the drawing's current view.
-  *Saved Views*: Allows users to name and save the current view so that the exact view can be revisited at later. To save the current view, start this tool, tap *New* at the bottom of the dialog window, write a name for the view, and tap “Done.” To recall a previously saved view current, tap the name of the desired view and “Done.”

Build Tools

Tools common to most CAD programs, such as trimming, moving, mirroring, etc., are collectively referred to as *Build* tools in *ZiPCAD*.

-  **Corner:** Extends/Trims two user selected lines to form a corner of any angle. After starting the tool, tapping two lines extends or trims the lines to form a trimmed intersection.
-  **Offset:** Copies an entity, such as a line or circle, a specified offset distance. If the “Lock” button is activated, the distance is fixed by the value in the “d” input field. When not locked the distance is specified by the tap of the stylus. The user can toggle the “Lock” activation on or off at any time by tapping its button and can modify the offset distance by tapping the “d” input field and entering a new value in the pop-up keypad.
-  **Line Trim:** Trims/Extends selected entities, such as lines or arcs, to the line specified as the *trim line*. Note: after selecting a *trim line*, users will be prompted to “Tap side to remove”.
-  **2-Pt Trim:** Performs the same operation as *Line Trim* except the user defines a trim line by tapping two points instead of selecting a line.
-  **Break:** Breaks an entity at the tapped point. If two or more lines are tapped at the same time (e.g., a line intersection) then a selected line is given precedence.
-  **Seg. Trim:** Deletes a segment from an entity. The first tap selects the entity and the second and third tap defines the trim points. When trimming circles or ellipses, the first tap selects the entity and determines the portion of the curve you want deleted.
-  **Mirror:** Reflects selected entities about a line specified by two points. To create a copy of the mirrored image in the original location, check the “and Copy” box displayed at the bottom of the screen immediately after the *Mirror* tool is activated.
-  **Stretch:** ‘Stretches’ objects by moving their points within a user-defined rectangular area a specified distance.
-  **Move:** Moves the selected objects a given distance. To create a copy of the moved object in the original location, check the “and Copy” box after activating the *Move* tool.
-  **Rotate:** Rotates the selected objects a given angle. To create a copy of the rotated object in the original location, check the “and Copy” box after activating the *Rotate* tool.
-  **Resize:** Enlarges or shrinks selected objects a specified amount.
-  **Group/Ungroup:** *Group* collects selected entities into a single group on the current layer. *Ungroup* disassembles a group.
-  **Query:** Gives information about the selected objects. If more than one object is selected when the tool is activated, it gives all of the information common to the selected objects. For more detailed information, select one object at a time. After activation, it gives information on subsequently tapped objects.
-  **Measure:** Displays the distance or angle between user-specified points. Three types of modes are offered when the tool is activated: Cartesian (x,y), Polar (d,a), and the

angle between two lines formed by three points.



Area: Calculates the area of a user-specified polygon. If any lines of the polygon overlap, the area is invalid and a 0.0 is displayed.



Door: Draws a door after the user specifies the hinge point, strike point, and a third jamb corner point and trims the opening in the wall. The hinge, strike, and wall points must fall on an entity (usually a line or wall). The door style can be modified immediately after it is drawn by changing the values in “Settings > Windows and Doors” and tapping “Replace.”



Window: Similar to the *Door* tool except draws a window (see instructions for the *Door* tool).



Symbols: DXF drawings often contain *blocks* (referred to as “symbols” in *ZiPCAD*). Symbols in one drawing may be copied into another by starting the symbols tool, tapping the “Symbols...” button, and selecting the drawing with the desired symbols. After the tool is activated, a table of available symbols is shown. Tapping one of the symbols and then tapping the location of the symbol will copy it into the current drawing. Tap the “Edit” button that appears at the bottom of the screen to modify the symbols attributes, such as the rotation angle and scale.

Symbol Libraries

Users can create a symbol libraries by loading commonly used blocks into one or more DXF drawings and importing them into *ZiPCAD*. For example, commonly used plumbing fixtures can be placed a drawing in a desktop CAD program, such as *AutoCAD*, and exported to a drawing called “Plumbing.dxf.” The drawing can then be imported into *ZiPCAD*. When a plumbing fixture is needed in the current drawing, simply activate the *Symbols* tool, browse to the “Plumbing” drawing, and select the desired symbol.



Weld: Selecting two line segments and then activating the *Weld* tool combines the two lines into a single line defined by the outer-most endpoints of the two lines.

Menus & Settings

Three pull-down menus are provided: *Drawings*, *Edit*, and *Settings*. These menus are hidden when not being accessed to maximize the drawing space and are accessible by tapping the menu button (see Figure 5).

File Menu

The *File* menu is identical to the *File* menu found in most desktop software applications.

- **New:** Start a new drawing. If the drawing currently being edited is named, it is

automatically saved. If it is not named, the user is given the option of saving or discarding the drawing.

- *Open ...*, *Save As ...*: Displays a File Dialog box listing all of the *ZiPCAD* drawings on the RAM and expansion card. These dialogs also give the user the option of deleting existing drawings.
- *Info*: Displays information about the drawing, such as the size of the drawing and the number of entities.
- *Import*: Imports a punchlist or DXF drawing. See Chapter 5, *Importing/Exporting DXF Files*, for more information.
- *Export*: Exports a CSV punchlist or DXF drawing. See “Chapter 5, *Importing/Exporting DXF Files*” on page 35 for more information.

Beam: Transmits the current *ZiPCAD* drawing to another device.

Edit Menu

The *Edit* menu also will be familiar to most users. It has common editing features, such as *Cut/Copy/Paste*, *Undo/Redo*, and *Delete*, found in most applications. Because these features are often accessed, Command Bar shortcuts are provided for each (see page 13, “Command Bar Shortcuts,” for more information). The icons shown represent the Command Bar shortcut icons.



Undo/Redo: Any change to the drawing can be infinitely undone or redone with these tools. Note that exiting the drawing clears the *Undo/Redo* memory.



Cut/Copy/Paste: These are clipboard features for moving or copying objects across layers and drawings – e.g., To move an object to another layer; select the object(s) using any of the selection tools, choose *Cut* from the *Edit* Menu, select “Settings > Layers,” set the desired Layer as active, tap “Done” to return to the drawing, and choose *Paste* from the *Edit* Menu.



Duplicate: Creates a copy of the selected entities in the same location. If the move or rotate tools are active, the duplication is offset or rotated by the amount specified. For example, to copy a series of entities an identical distance, use the *Move* tool (with “and Copy” set) followed by several *Duplicate* commands. A copy of the entity will be inserted by the amount specified in the *Move* tool.



Delete: Similar to *Cut*, except a copy of the objects is not placed on the clipboard.

Settings Menu



The *Settings* menu has features specific to CAD. This menu allows users to customize their drawings and *ZiPCAD* preferences.

- *Layers*: Layers can be added, deleted, renamed, toggled on/off, and set as the active layer. The active layer receives all newly created entities. To move objects to another layer use the *Cut/Copy/Paste* tools as described in the “Edit Menu” on page 32.
- *Line Types/Colors*: Four line types are available: *solid*, *dotted*, *dashed*, and *dot-dashed*. Selecting a line type will change the type for all of the selected entities *and* for all newly created entities. For devices that support color, 16 user-customized colors are provided. Tapping the "DXF Number" button displays the number assigned to the color when importing and exporting DXF files. This allows you to customize your *ZiPCAD* color table to match the settings of your desktop CAD program. The active lines settings are displayed in *ZiPCAD*'s interface (Figure 1).
- *General Preferences*: Basic user preferences, including Metric/Imperial units of measure, keypad default units, unit display format, text size, Polar/Cartesian coordinate systems, Relative/World origin points, angle units, zooming and saving preferences are specified here (see Figure 4). The text size is the size of the font in drawing space when the image is exported as DXF.
- *Snapping*: The snap settings available are *Endpoint*, *Midpoint*, *Perpendicular*, *Intersection*, *Curve Quadrant*, and *Snap Angle*. The maximum distance between the tap location and the snap point is specified by the *Tap Window* setting. If you find you're having trouble specifying snaps, enlarge this setting. Likewise, if you find you're snapping too often, reduce this setting. If you feel your taps are not being accurately interpreted, you may need to run the *digitizer* feature of your device (see your devices manual for more information).
- *Help*: Displays some tips for getting started with *ZiPCAD*. When running certain *ZiPCAD* tools a small information button with an “i” in it appears in the lower right-hand corner of the screen (see Figure 1). Tap this button for information on the currently active tools.
- *About ZiPCAD*: Displays some company information and the “Register...” button (for unlicensed copies) which allow unregistered users to enter their unique *ZiPCAD* key.
- *Windows and Doors*: Several settings for the rendering style of windows and doors can be customized, including door, window, door swing, and glass color (if color is supported on the device), jamb widths, threshold widths, etc. (If the check boxes next to the color selection is not checked, the color dictated by the values in “Settings > Line Type/Color” are used.) Tap “Done” to apply the new settings to subsequently created windows and doors. If a window or door was created immediately before opening the *Windows and Doors* dialog, the button “Replace” appears at the bottom of the screen. Tap this button to apply the settings to the newly created window or door.
- *Custom Shortcuts*: Each tool of the toolbar is assigned a custom single-character shortcut key (see Figure 2). Edit the text next to the tools icon to specify the shortcut for the tool. The special characters *Carriage Return*, *Space*, and *Backspace* are given the two-character descriptors “CR,” “SP,” and “BS,” respectively.
- *Distance Meter*: Palm OS devices with Bluetooth capabilities can remotely connect with a Leica Disto distance meters. This menu contains buttons to simply connect and disconnect from the distance meter. The round off setting rounds off measurements to

the specified amount, so for a round off of $1/4$ ", an entry of $2-7 \frac{15}{16}$ " will be entered as $2'-8"$. See "Chapter 6. Linking to a Distance Meter," page 39, for more information on linking *ZiPCAD* to a distance meter via Bluetooth.

- *Arrows*: Specifies the size and aspect ratio of the arrow head the *Arrow* tool. Optionally, the user can specify the color of the arrow head and shaft by checking the corresponding checkbox.
- *Walls and Gaps*: Specifies how walls are drawn by the *Walls&Gaps* tool (page 19). When walls intersect other walls or lines, *ZiPCAD* can try to trim the lines to create a clean intersection. Similarly, walls can be capped when no intersection occurs.

5. Importing and Exporting

The Windows installation is bundled with a conduit program that resides on the PC for importing and exporting drawing DXF files and punchlist CSV files. Other systems installations, such as the Mac OS or Linux, or that do not Hotsync with any device, such as those networked with *GoodLink*[™], do not have a conduit, but can import and export DXF and CSV files to and from the device's expansion card.

For *ZiPCAD* installations that Hotsync to a PC, a drop folder is created on the PC's desktop named "ZiPCAD Files." To import or export files to the device's expansion card, use *ZiPCAD*'s "File > Import" and "File > Export" features.

DXF Drawings

ZiPCAD reads and writes DXF files that adhere to the R12 DXF specification. DXF files can be read or written by most CAD programs and some drawing programs.

The line colors associated with DXF drawings can be optionally customized to match your desktop CAD application's in *ZiPCAD* by selecting "Settings > Line Types/Colors" and tapping "Edit Palette" and "DXF Numbers." Selecting the proper numbers will insure that the *ZiPCAD* colors match your desktop CAD program's.

Punchlist items are included in DXF drawings when the CSV punchlist file is simultaneously exported. Exporting only the DXF file excludes the punchlist items.

Importing DXF files from Windows

ZiPCAD running on devices that Hotsync to a Windows PC can import DXF drawings either through *ZiPCAD*'s conduit residing on the PC or through the device's expansion card. The steps for importing drawings via the Windows conduit are listed below.

1. From *ZiPCAD*, tap "File > Import"
2. Tap "Computer" and the units of the DXF file being imported.
3. If *ZiPCAD* has not yet created the folder "ZiPCAD Files," (or if the user deleted the folder) a message will appear saying the folder will be created the next time you HotSync.
4. A folder is created on your PC's desktop titled "ZiPCAD Files" that contains a subfolder called "DXF Files to Import." Drag and drop one or more DXF files for importing into this folder and perform a HotSync operation. The files will be imported

into RAM during the operation. After the Hotsync operation the DXF files are moved to the “Completed Imports” folder.

Note that once the folder is created on the desktop, you needn't tap “File > Import” before importing. Simply drop the files into the “DXF Files to Import” folder and Hotsync.

Importing DXF files from the Expansion Card

ZiPCAD can import and export DXF files to the device's expansion card where they can be uploaded or downloaded to the desktop computer via a card reader, the *Palm Desktop* software bundled with the device, or similar third-party programs.

1. From *ZiPCAD*, tap “File > Import DXF”
2. Tap "Card," the *Units* of the DXF file, and “Done.”
3. A file dialog is shown. Browse to the DXF file and tap "Import." A new drawing will be created and populated with the contents of the DXF file.

Exporting DXF files to Windows

Drawings on the device can be exported to a Windows PC during a Hotsync operation by following the steps below.

1. From *ZiPCAD*, tap “File > Export DXF” and tap the “DXF Drawing” button to queue the current drawing for exporting. To include punchlist items in the exported drawing also select the “CSV Punchlist” button (leaving this button unselected excludes punchlist items from the drawing). Note that the punchlist settings, such as *Font Size*, *List completed items*, and column sorting are applied to the drawing (see “Punchlist Settings,” page 26).
2. Tap "Computer" and the units of the DXF file.
3. If not already existing, *ZiPCAD* creates folder on your PC's desktop named "ZiPCAD Files" which contains subfolder name "Completed Exports." Exported DXF and CSV files are placed in the folder during the Hotsync operation.

Exporting DXF files to the Expansion Card

Drawings can be exported directly to the expansion card where they can be loaded into a PC, Mac, or other operating system via a card reader, software bundled with the device or third party software.

1. From *ZiPCAD*, tap “File > Export”
2. Tap “DXF Drawing,” "Card," and the units of the DXF file.
3. A file dialog is shown. Name the DXF file and tap "Export."

CSV Punchlist Files

Punchlists can be exported as a spreadsheet in the comma-separated value (CSV) file format, which is a standard format supported by most spreadsheet and database applications, such as *Excel*, *Access*, and *WordPerfect*.

To specify the punchlist values to export, activate the *Punchlist* tool, tap the “List” button at the bottom of the screen, and tap the “Settings” button at the bottom of the *List* dialog. The order of the columns is specified by the number column fields. The option for whether or not to include completed punchlist items is determined by the “List completed items” setting. The sorting order of the rows is specified by the *Sort* field at the top of the *List* dialog (see Figure 17).

Exporting punchlist CSV files to Windows

The punchlist can be exported directly to a Windows PC during a Hotsync operation as a CSV file.

1. From *ZiPCAD*, tap “File > Export” and select “CSV Punchlist.”

1. Tap “Computer.”

2. Perform a Hotsync. The CSV file will be exported to the “Completed Exports” folder in the “ZiPCAD Files” on your PC’s desktop.

Exporting punchlist CSV files to the expansion card

The punchlist can be exported as a CSV file directly to the expansion card.

1. Specify the punchlist format as described above.

2. From *ZiPCAD*, tap “File > Export” and select “CSV Punchlist.”

3. Tap “Card.”

4. Tap “Done.” A file browser will display that allows you to specify the location and name of the file on the expansion card.

Importing punchlist CSV files

ZiPCAD punchlists contain important information relative to punchlist items that are not supported by the CSV file format, such as visible layers and punchlist item locations in the drawing. Consequently, CSV punchlist items cannot be imported into *ZiPCAD*. However, punchlists in other *ZiPCAD* drawings can be imported into the current drawing by following the directions below.

Importing punchlists from ZiPCAD drawings

Punchlists are stored within each *ZiPCAD* drawing and can be merged with the punchlists of other *ZiPCAD* drawings. This capability allows several users to enter or modify

punchlist items on separate devices and then merge the resulting punchlists into a single punchlist.

In addition to merging punchlists, there are times that you may want to only import the default popup menu values of punchlist, such as categories, entries, and authors, and not the individual punchlist items themselves. This option is provided during the import steps listed below.

1. Tap the *ZiPCAD* “File > Import” menu option.
2. Select “PDB Punchlist.”
3. To import only the default menus of the imported punchlist, such as categories, entries, and authors, select the checkbox displayed. If this checkbox is left unchecked, then both the default menus and the individual punchlist item are imported.
4. Tap “Done” and browse to select the drawing containing the punchlist to import. Please note that the two drawings must have different file names, regardless of whether or not one file resides in RAM and the other resides on the expansion card. If both files have the same name, rename one of them before importing.

6. Linking to a Distance Meter

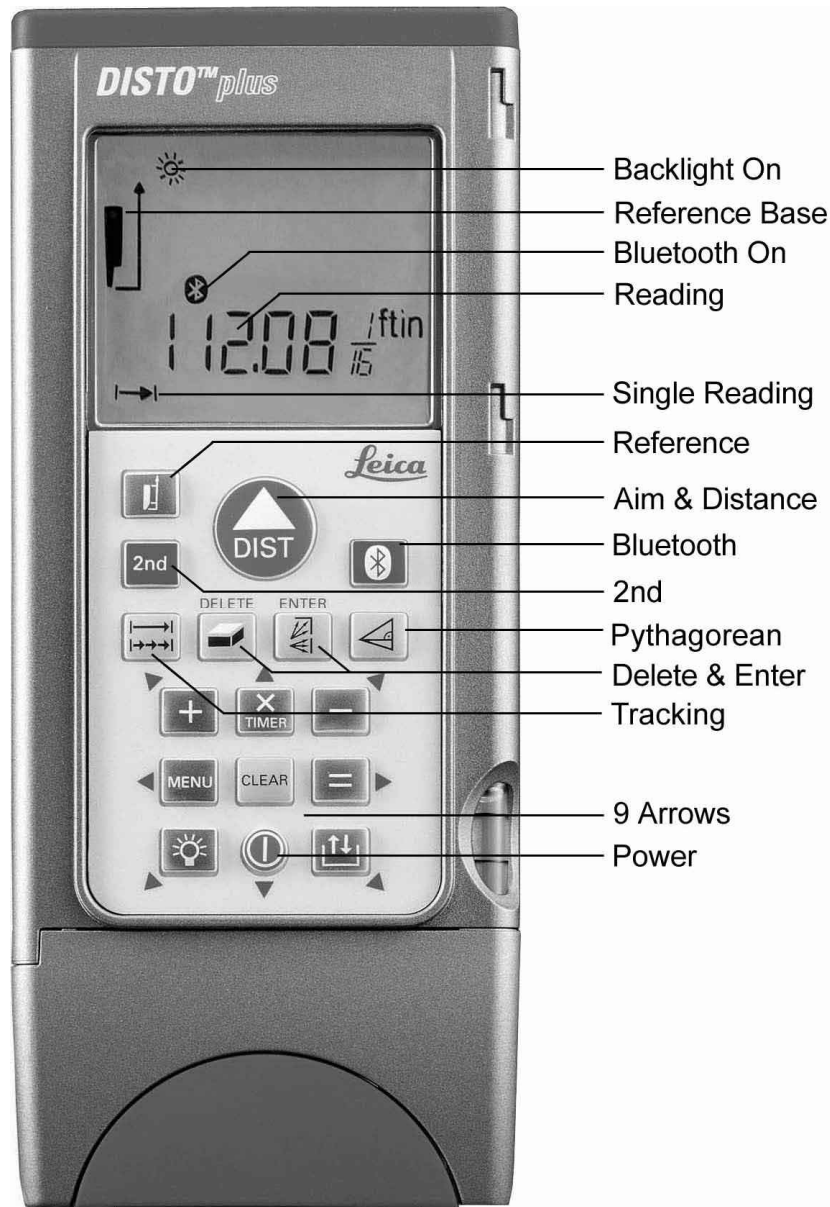


Figure 18 - Leica Disto Plus Distance Meter

A distance meter is not necessary when using *ZiPCAD*; however it can greatly increase the speed of creating and editing floor plans and site surveys.

Drawing Existing Conditions with a Distance Meter



Measuring existing conditions without a distance meter is often done with two people – one person operates the tape measure and calls off dimensions, while the *ZiPCAD* operator draws the plan and enters the dimensions. Measurements taken with the distance meter are automatically uploaded to *ZiPCAD*, allowing a single operator to both draw the plans with *ZiPCAD* and take the field measurements in less time than it takes for two people operating without the distance meter, dramatically reducing the required manpower to create existing conditions.

Leica Disto A6

Leica Geosystems’ most recent Bluetooth distance meter, the *Disto A6*, replaced the *Disto Plus*. Both are similar in functionality and capabilities. There are some differences, however; the most significant are the *Enter* functionality moved to the *Bluetooth* key; the *Delete* key has been removed; and *-/+* keys have replaced the *Tracking* and *Pythagorean* keys. These changes slightly alter the interface between the user, the distance meter, and *ZiPCAD*, as described below.

Operating the Leica Disto

The distance meter comes with a complete operator’s manual that discusses its many features, including features not described here. Please familiarize yourself with the distance meter before attempting to use it with *ZiPCAD*. This section describes just the basics for connecting and using the device with *ZiPCAD*.

Connecting to ZiPCAD

Connecting the distance meter to *ZiPCAD* should only be done from within the *ZiPCAD* program – *do not connect to the distance meter using the Palm Bluetooth program before attempting to connect with ZiPCAD*. Begin by putting the distance meter in search mode by turning the device on and pressing the “Bluetooth” button (see Figure 18). The *Bluetooth On* icon will begin flashing, indicating the device is searching for a Bluetooth connection. This icon *must* be flashing (not solid or off) to connect to *ZiPCAD*. From *ZiPCAD*, tap “Settings > Distance Meter.” To connect to the laser for the first time, tap the “Bluetooth Connect” button. Select “Nearby devices” from the menu. A list of Bluetooth devices in the area is displayed. Select the distance meter and tap “Done.” Subsequent connections can be made by tapping “Reconnect to Previous” button.

When a connection between the two devices is established, the distance meter will beep and the Bluetooth icon will stop flashing and remain solid. Should the connection be dropped, such as when *ZiPCAD* is exited, the distance meter beeps and the icon begins flashing. When *ZiPCAD* is restarted, it automatically reestablishes the connection.

Dropped Connections

When the Bluetooth connection is dropped between the devices, such as when the distance meter powers itself off due to inactivity, the Palm device will often pause for 5-

10 seconds as it recovers. The device has not crashed. Simply wait until it recovers and follow the instructions above for reconnecting.

Disto Plus' Buttons

Please refer to the Leica Disto Plus' manual for a full description of its many features. Below is a description its most commonly used buttons when using *ZiPCAD*.

- *2nd Button*: Many buttons have an alternate function listed in blue above or adjacent to the button. When the 2nd feature is active, these functions are accessed. This is generally the preferred setting when using the distance meter with *ZiPCAD*.
- *Power*: Toggles the device on and off. Note that the 2nd feature must be off to turn the device off.
- *Enter*: Uploads current distance reading into active *ZiPCAD* tool. This functionality is assigned to the *Bluetooth* button of the Disto A6, when the device is in *2nd* mode.
- *Arrows*: Uploads the angle of the arrow direction to *ZiPCAD* and the current measurement (if valid). Because the measurement is also uploaded, pressing the *Enter* key is often not necessary. For most tools, the angle matches the orientation of the *ZiPCAD* drawing, so pressing the “up” arrow enters an angle in the drawing pointing upward. However, when using the *Walls&Gaps* and *Line* tools, if the “Settings > Walls and Gaps > Relative Angle” setting is *on*, the “up” arrow move draws a Wall or Gap in the current angle direction, the “left” arrow turns left 90 degrees, the “right” arrow turns right 90 degrees, etc. (Using *Relative Angles* can expedite drawing plans with non-orthogonal angles, such as the one depicted in Figure 10.) This setting is recommended when using the *Walls&Gaps* tool because it is more intuitive for most users and makes for faster drawing of floor plans.
- *Delete*: Performs Undo in *ZiPCAD* – this button is absent on the Disto A6
- *Bluetooth*: When *not* in *2nd* mode, this feature toggles the Bluetooth connection on and off. When *2nd* mode is active, it sends the current measurement to *ZiPCAD*.
- *Aim & Distance*: Pressing the button once turns the laser on for aiming. A second press takes the distance reading. Note that this distance is not uploaded to *ZiPCAD*. To upload a distance to *ZiPCAD*, press the distance meter's “Enter” button.
- *Reference*: The Disto Plus can reference its base, tripod point, or front edge when calculating distances. This button toggles between these three modes. The current reference mode is depicted in the display. (The Disto A6 does not reference the tripod point.)
- *Pythagorean & Bluetooth*: These keys have been remapped by *ZiPCAD* to scroll through the available gap modes when drawing with the *Walls&Gaps* tool. For example, if the tool inserts a window and you want an inward swinging left-handed door, repeatedly press the Pythagorean & Bluetooth keys until the desired door is displayed. For the Disto A6, this functionality has been assigned to the *-/+* buttons.

Disto Display

Figure 18 depicts the distance meter modes commonly active when using *ZiPCAD* for the *Disto Plus* – the *Disto A6* display is very similar. The *Single Reading* setting indicates that pressing the “DIST” button will take a single measurement. Multiple measurements are desirable when recording the largest or smallest measurement of successive readings by the distance meter.

The *Bluetooth On* indicator is solid when properly connected to *ZiPCAD* and flashes when it loses the connection and is attempting to reestablish connection.

The “Reference Base” mode is when a distance is calculated as the length from the base of the device to the laser point. This mode can be toggled to the front of the device or the tripod point.

Uploading Readings

Pressing the Red “DIST” button once turns the laser on for aiming. Pressing it a second time takes a distance reading but *does not upload the measurement to ZiPCAD*. Press the “Enter” key to upload the dimension to *ZiPCAD*. Measurements can be uploaded to any *ZiPCAD* tool that uses dimensions, such as the *Walls&Gaps*, *Offset*, *Line*, *Circle*, and *Text* tools.

Uploading Keypad Dimensions

If a *ZiPCAD* keypad is active (see figure 3), pressing the *Enter* uploads the dimension into the keypad – on the *Disto A6*, press the *Bluetooth* key while in *2nd* mode.

Uploading Dimensions into Text

Measurements can be used to annotate a drawing with the *Text* tool. For example, to record the floor-to-ceiling measurement, simply invoke the *Text* tool and select a location for the text. The text keypad is then activated. Pressing “Enter” on the distance meter uploads the dimension into the text keypad.

The “Round Off” Setting

The Leica *Disto Plus* is accurate to 1/16th” (1.5 mm). However, there are many times where this accuracy is not required or undesirable. For example, a 2’-8” doorway may measure in the field as 2’-7 15/16”. Since the nominal 2’-8” measurement is often more desirable, the “Round Off” setting can be turned on to round measurements to the closest specified increment. For example, if set to ½”, a 2’-7 15/16” doorway would be rounded up to 2’-8”. (Typically, a desired rounding accuracy is specified before the start of a measuring project and then left for the duration of the project.)

Troubleshooting

Whenever possible, *ZiPCAD* will detect problems and report them to the user. Such errors can occur when running *ZiPCAD* on the device or when performing a HotSync operation.

HotSync Errors

When an error occurs during a HotSync operation, such as when a file fails to import or export, an error message is posted to the HotSync log. The log is accessible by clicking on the HotSync icon in the PC's tray and selecting "*View Log.*"

Error: *The DXF file did not import/export after the HotSync operation.*

Cause: Check the HotSync log by opening the *Palm Desktop* software and selecting "HotSync > HotSync Log..." If the conduit is functioning properly, there will be the message "OK ZiPCAD." Otherwise, there may be explanations as to why *ZiPCAD* could not import the file. If there is not mention of *ZiPCAD* anywhere in the log, and the HotSync operation was not interrupted, then the software bundled with *ZiPCAD* did not register with the *Palm Desktop* software. This may be rectified by reinstalling *ZiPCAD*.

ZiPCAD Device Errors

This section explains errors that may be encountered when running *ZiPCAD* on the device.

Error: *Folder protected or not empty.*

Cause: The system did not allow the folder to be deleted, likely because it contained some files. Occasionally this message is given when the folder contains no drawings and is not protected. Quitting and restarting *ZiPCAD* should remedy the issue.

Error: *The drawing "MyDrawing" was renamed outside of ZiPCAD. THIS CAUSES CONFLICTS! It was moved to RAM and given its original name. (Open cancelled)*

Cause: The name of the drawing is stored internally in the drawing's file and as the name of the drawing. Renaming a drawing within *ZiPCAD* updates the name stored internally. However, renaming the drawing using a third-party file browser does not and may confuse *ZiPCAD*.

Error: *This drawing was created by an unregistered user is blocked from loading.*

Cause: Registered users may not export drawings as DXF files created by unregistered users. As a result, they are blocked from loading the drawings.

Error: *Drawings by this name were found in RAM and on the Card. This causes*

conflicts. Please rename or delete the drawing in RAM. (Operation Canceled)

Cause: Drawings on the expansion card are not opened directly from the card. Rather, they are copied first to RAM and then opened. If a drawing by the same name exists in RAM, this presents a problem for *ZiPCAD* and the operation is cancelled. This problem may be avoided in the future by keeping all of your drawing in RAM or on the card. Note that if a *ZiPCAD* HotSync operation was interrupted, a drawing may have been copied to RAM and not given a chance to be deleted during the cleanup. Simply delete the drawing in RAM if this occurs.

Error: *This card is read-only*

Cause: This error occurs if the system reported to *ZiPCAD* that drawings could not be written to the card.

Error: *No card detected*

Cause: An expansion card was not detected. If one is present, please check that it is seated properly

Error: *Folders are not supported in RAM*

Cause: The Palm operating system supports folders for expansion cards, but not for RAM.

Error: *This is a partially installed copy of ZiPCAD for demonstration purposes only. Please download a licensed copy from zipcad.com.*

Cause: The installation of *ZiPCAD* is not complete, likely because it was beamed to the device or similarly installed. Download and install a new version of *ZiPCAD* from zipcad.com/download.html.

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