A Complete Home Design & Remodeling Program

Abracadata®
Your Source for Quality Software since 1985

Windows

Design Your Own Home®

3D WalkAround™

DESIGN YOUR OWN HOME®
3D WalkAround™

for Windows ®

Published by Abracadata, Ltd., Eugene, Oregon
Programmed by Mike Matsel, Joe Delaney, and Alan Fraser
Manual by Sandy Muller and Marc LaPalme

System Requirements

IBM or compatible computer with at least 8MB of RAM

Microsoft Windows 3.1 or better (including Windows 95)

17MB minimum hard disk space available

Microsoft compatible mouse or pointing device

CD-ROM drive

VGA or better monitor

Optional: Dot-matrix printer or laser printer

Contents

LICENSE NOTICE, LIMITED WARRANTY AND DISCLAIMER AND LIMITATION OF LIABILITY

Abracadata, Ltd. grants to Licensee the non-exclusive license to use the Software on one computer and to make a backup copy of the Software for Licensee's own use. The "Licensee" is the single individual or business entity for whom the Software was originally purchased. All rights and protections under federal, state and international law, including but not limited to the law of copyright, patent, trademark, trade secret and contract, shall remain in full force and effect. Licensee may not download, reproduce, distribute, republish, sell, rent, lease, sublicense, or translate the Software or documentation in violation of those laws and this License. The Software remains confidential, proprietary information, in which Abracadata, Ltd., the authors, suppliers and developers of the Software claim trade secret rights. Licensee may not modify, reverse engineer, decompile or disassemble the Software.

Abracadata, Ltd. warrants to Licensee and to no other person or entity that the physical media provided to Licensee (but not the Software recorded on them or the documentation), are free from defects in materials or workmanship for a period of 30 days from the original purchase date. Abracadata cannot guarantee that the program will operate on all systems that meet the minimum specifications indicated on the box. If during this 30-day period a defect should occur, contact Abracadata to obtain a return authorization number before returning the product. Licensee's sole remedy in the event of a defect in the disk is limited to replacement of the disk. As stated below, Abracadata disclaims any and all implied warranty is found to exist, it shall terminate no later than 30 days after purchase. If the disk has been physically damaged, is beyond the 30-day limit or is not accompanied by proof of purchase, include $10.00 for each disk plus $3.00 postage and handling per request. Please return the disk only, not the entire package. Do not staple or paper clip the disk. Package the disk carefully to prevent bending, and mark the package Do Not X-Ray or Use Magnets. Ship via UPS or U.S. Postal Service with return receipt requested. Abracadata, Ltd. is not responsible for disks not received

when Licensee cannot provide proof of shipment and Abracadata, Ltd.s receipt.

This Limited Warranty does not grant and specifically excludes any right to recover any other damages whatsoever, including but not limited to, loss of profit, loss of information, business interruption, or special, incidental, or consequential damages or other similar claims, arising out of the use or inability to use the Software or documentation, even if Abracadata, Ltd. has been specifically advised of such damages. In no event shall Abracadata, Ltd.s liability for any damages to Licensee or any other person ever exceed the actual price paid for the Software, regardless of the form of the claim.

In all other respects, the Software and documentation is licensed AS IS, WITH ALL FAULTS. ABRACADATA, LTD. SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES REGARDING THE SOFTWARE AND DOCUMENTATION, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Abracadata, Ltd. specifically makes no representation or warranty that the Software is fit for any particular purpose.

This Limited Warranty gives Licensee specific legal rights. Licensee may have others, which vary from state to state. Because some states or provinces do not allow the exclusion or limitation of liability for consequential or incidental damages, or the limitation on duration of an implied warranty, some of the limitations may not apply to Licensee.

Abracadata, Ltd. gives no assurance that the information used in the development of the Software is reliable and accurate. Any recommendations or suggested results in the Software represent only the generic opinions and judgments of the author and are intended to be applicable in a variety of circumstances. However, individual circumstances vary and may render certain recommendations and results inapplicable. Abracadata, Ltd. gives no assurance that the opinions or judgments of the author are reliable or accurate.

If any provision of this License is held to be unenforceable, it will be construed to have the broadest interpretation that would make it valid and enforceable. Invalidity or unenforceability of one provision will not affect any other provision of this License. This License shall be governed by the laws of the State of Oregon.

Introduction

Congratulations and welcome to *Design Your Own Home 3D WalkAround*! This program is a powerful, flexible, easy-to-use tool for drawing floor plans and architectural designs and viewing them in real-time 3D. Start by drawing the walls of your home. Then add symbols to represent doors, windows, cabinets, furniture, and so on. View your layout in both 2-dimensional and 3-dimensional views simultaneously on screen as you are designing your home. Add more symbols, experiment, rearrange, edit, and print out your customized plans. You can also load one of the pre-drawn floor plans that came with your *3D WalkAround* program and edit it to your specifications. Other 3D programs may show you what it is like to be in your dream home by giving you still images of the interior, but 3D WalkAround will actually allow you to walk through your own design.

We hope you enjoy *3D WalkAround.* We are sure that you will find that it makes designing your home or office fun, easy and fast!

Using the Manual and Help

Design Your Own Home 3D WalkAround's only limitation is your imagination. You'll find examples in the manual to get you started and to inspire you. These examples step you through various procedures so you can learn to use the program efficiently. Just follow the numbered steps.

Be sure to use the Help (F1) option while you're operating the program to get specific help information on the feature you're using.

About the Team

Design Your Own Home 3D WalkAround is brought to you by a team of professional designers, programmers, writers, testers, and other business professionals who pride themselves in providing software that is dynamic, easy-to-use, and enriches a particular aspect of your life.

We would love to hear from you about *Design Your Own Home: 3D WalkAround* or any other Abracadata products that you use. And here's why: Most software is continuously updated and enhanced over time. And YOU are one of the best sources of information for enhancement ideas. We wrote the software for you; so

if you want new features or have suggestions about how you'd like to see the program work in the future, please let us know.

Technical Support

If you run into a problem using ***Design Your Own Home 3D WalkAround***, please read through this manual, and the on-line help (F1) for the solution. If you still need help, please gather the appropriate information then call Abracadata's technical support number.

Remember, the technician will be trying to solve your problem without seeing, hearing, or touching your computer—a mighty challenge. He or she depends on you to communicate precise information, sequentially ordered, succinct and yet detailed. You and the technician are the detectives on the case and you're both depending on each other to solve the problem. Neither can solve it alone. So all facts need to be communicated and examined so that the right solution emerges.

Remember, too, that Abracadata technicians are trained at the task you are asking them to do, and they are answering your call precisely so that they can help you. If you feel particularly frustrated by the problem, first write down everything you

can think of about what happened, then *take a break* before you call! Review your notes, refine them and add to them. Your role on the team is very important. The more analytical you can be, the more calm, polite, and precise you can be, the faster the technician will be able to help.

Gather these facts and add them to your notes before the call:

1. To determine what version of *3D WalkAround* you have, choose About from the Help menu to find out the version number.

2. What version of Windows are you using?

3. How much memory is available on your computer? Do you know how it's configured? If so, please provide that information when you're asked. (Example, you might have 8 megabytes with 2 MB set up as a RAM drive and 2 MB set up for expanded memory in DOS.)

4. What brand of mouse do you have? What mouse driver are you using? (Windows or the one that came with your mouse)

5. What is your computer hardware configuration? (Example: it's a 386 running at 33Mhz)

6.　　What type of video display do you have? (VGA or Super VGA) What resolution are you using? How many colors?

7. What screen savers are you using? (Windows or others)

8. What other programs are you running at the same time? Are they Windows or DOS programs?

9. Are you using a disk doubling or stacking program? Which one?

10. Which version of DOS are you using?

Tech Support Phone: (541) 342-3030

Hours: Monday - Friday 8:30 AM to 4:30 PM Pacific Time, Fax: (541) 683-1925, 24 hours.

Internet: www.abracadata.com

America Online: Abracadata@aol.com

Address:

Abracadata

P.O. Box 2440

Eugene, OR 97402

Chapter 1

Getting Started

The purpose of this manual is to give you specific information (and a little inspiration) to use *Design Your Own Home 3D WalkAround*. Please refer to your Windows User's Guide, the Readme.txt file and the on-line help for information not found here.

We suggest that you proceed step-by-step through the tutorial (Chapter 2) to get some immediate hands-on experience with *3D WalkAround*. Use other sequenced examples that appear in the manual for practicing other functions. If you do these two things and use help (F1) while you're using the program, you'll be a *3D WalkAround* expert in no time.

Installation

Install *3D WalkAround* from inside Windows. Insert the *3D WalkAround* CD into your CD-ROM drive. From within the Program Manager choose Run from the File menu. **Windows 95** users click on the "**Start**" button, then "**Run**". Type the letter that corresponds to your CD-ROM drive, followed by **:\setup** (e.g. **d:\setup**). Then

follow the instructions as they appear. If you wish to install the program to a different directory, select "Browse" when prompted, then select or type in the destination path you with to install to. The software will do the rest.

Starting 3D WalkAround

For Windows 95 users click on the "Start" button, then "Programs", then "Abracadata 3D WalkAround", and select "Design Your Own Home". For Windows 3.1 users, open the Program Manager, then open the Abracadata group and double-click the *Design Your Own Home* icon.

Once opened, you'll see the *Design Your Own Home* desktop. It consists of a row of pull-down menus and rows of colors and patterns across the top of the screen (the Pattern/Color palette), icons in two rows along the left side (the Tools palette, also referred to as icons in the manual), and the line palette, found below the icons on the left.

We assume that since you own Microsoft Windows you are already familiar with using scroll bars, clicking and double-clicking the mouse buttons, and dragging the mouse. You are also very likely familiar

with the pointer. We call the pointer (or cursor) the Selector Tool in *Design Your Own Home: 3D WalkAround*. You'll also see your cursor turn into small cross hairs when you select one of the tools, and a standard I-beam when you're in text mode.

If you are unfamiliar with any of the above, please review your Windows documentation or use Windows Help (F1) when you're in the Windows Program Manager.

Note: Keyboard shortcuts and commands in this manual are referenced with key + key combinations. For example, Ctrl + A means to hold down the Ctrl key, then press the A key, then let both keys go. Never press plus. This is a standard you're probably already familiar with from other Windows programs.

If you don't have a mouse, please refer to the Appendix-Keyboard Use, to learn how to use *3D WalkAround* without a mouse. Also, read the Windows manual to learn how to use Windows without a mouse.

Chapter 2
Tutorial

We recommend that you work through this tutorial chapter from beginning to end because once you've done so, you'll be on your way to becoming a *3D WalkAround* expert.

In this section, we'll draw a simple room plan and tell you how to add predrawn symbols to your drawing.

One basic concept that you must become familiar with in order to get the most benefit from 3D WalkAround is that two applications are used together. The first is a 2D home design package to help you lay out your floor plans and add symbols to represent furniture, doors and windows. The second is a 3D viewer which operates simultaneously as you are constructing your home, and lets you walk through and view your design room by room.

Before starting, you'll need an empty drawing window. If you just started *3D WalkAround* , you've already got an empty drawing window; if you've been working on a practice floor plan, you'll need to open a new file.

To open a new file: Choose New from the File menu. Since you probably haven't saved your file, a dialog box appears, telling you (Untitled) has changed, and asking whether you want to save those changes before closing. For now, click No.

If you want to save the file, click Yes and the Save As dialog box appears, allowing you to name the drawing. To save the file on a different drive, click the Drives box, then click on the drive where you want to save the file. To save to a different directory, double-click the directory you want in the Directories box. Type a name for the file in the File Name box, then click OK. File names are limited to 8 characters, followed by a 3-letter extension. You do not need to type the .YOH extension; the program will add it to your file name. An example of a file name is MYDRAWNG.YOH. The file is saved to disk, removed from the screen, and a new, "Untitled" window is opened.

If you have already named the drawing because you've saved it earlier, the file is automatically saved with its current name, then removed from the screen, and a new, "Untitled" window is opened.

To be sure your drawing will fit on an 8.5"-by-11" sheet of paper, go to the Layout pull-down menu, and select Drawing Size.

You will see a drawing size that's appropriate to your default printer. You may leave the drawing at its default size, or enlarge it by using the TAB key to move from box to box and typing in new values, or you can click your mouse in the box you want to change. Drag the mouse over characters you want to replace or use the backspace key to edit. You may also select Metric or English measure-ments in this dialog. After you have selected your settings, click OK.

Now we'll create a simple two level living room/dining room plan. Then we'll use several of the program's features to complete the plan and walk through it.

1. First, click on the 3D icon (located on the bottom right of the tool bar) to open a 3D window.   This will allow you to see your room in a 3D view while you are drawing. 3D WalkAround displays the 3D view in a separate window from the 2D drawing. Select Automatic Update from the 3D Menu, if it is not already checked. Also select 'Snap to Grid' from the Layout manu. Then select "Prefer-ences" from the Layout Menu and make sure all five boxes on the left-hand side have check marks in them. If any boxes are unchecked, left-click with your mouse in the appropriate boxes until all five boxes are checked, and then click OK to exit back to the 2D View. We will

explain more about selecting Preferences in Chapter 4. You need to arrange the two windows so that it's easy to switch back and forth between the two views. To do this, size the two windows equally, one at the right side and one at the left. This allows you to see the 3D view being automatically updated as you make changes to the 2D view. You also could maximize both windows by double-clicking on the title bar of either one, and then switch back and forth between them by pressing Alt+Tab. When you click the mouse on the 3D View window it becomes the active window.

2. Click on Drawing Size, located under the Layout menu at the top of the drawing screen. This will bring up the Drawing Size dialog window. Here, you can select between English or Metric measurements, as well as your target printer and drawing size. For now, choose English Inches if it is not already selected. Leave the drawing size at its default setting. Click OK to finalize.

3. Click on Drawing Scale (under the Layout menu). Select the 1/4" scale and click OK. Now we will draw a wall in the 2D view. Select the wall tool. It's the fourth icon up from the bottom left of
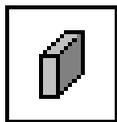
Wall
Tool

Figure A.

the tool palette. Place the cross hair in the upper lefthand corner of the 2D drawing window (*Figure A*).

While holding down the left mouse button, drag a line horizontally to the right. Notice the measurements appearing at the right end of the wall as you draw. Keep the left mouse button held down and extend your wall to the right until it reaches 14'4" and is perfectly horizontal. Now release the mouse button and your wall should appear in both the 2D and 3D views. Earlier, we selected the 'Snap to Grid' option from the Layout menu. This allowed you to draw a perfectly straight wall by automatically "snapping" the end point of the wall to the nearest gridpoint. If your wall did not come out exactly right, go

` up to the Edit menu and choose 'Undo'. This will reverse your last action so you can start over.
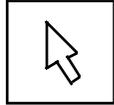
Selector Tool

Next, in the same manner, draw a 12' 0" wall vertically, down the left hand side (*see figure A*). In the 3D view, you will see two walls and a floor. Left-click on the selector tool icon. It's the top-left icon on the tool palette. Now, select the vertical wall that you drew in the 2D window by left clicking on it. Hold down the CTRL key and simultaneously press the D key. This will duplicate the wall that you just drew. Select your new wall by clicking on it with the left mouse button. Now hold down the mouse button and practice moving your wall around the 2D view. Place your wall opposite the first vertical wall (see figure B).
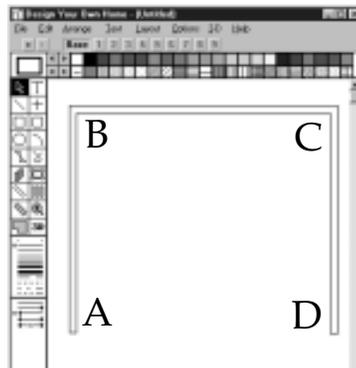
Figure B

In the 3D view, you should see a floor. This is the default floor. We want to replace the default floor with our own floor, which we will draw now.

Floor Tool

4. Select the floor tool. It is the bottom left icon on the tool bar. Place the cross hair on the lower left wall end at point A and left click your mouse (*see figure B*). This will drop your first floor point. Move the cross hair to point B and left click again. This will drop your second floor point. Repeat this procedure through points C and D. From point D, draw the final line back to point A. When you reach point A, right click the mouse to finalize your floor. In the 2D window, you should now see a floor and three walls (*figure C*).
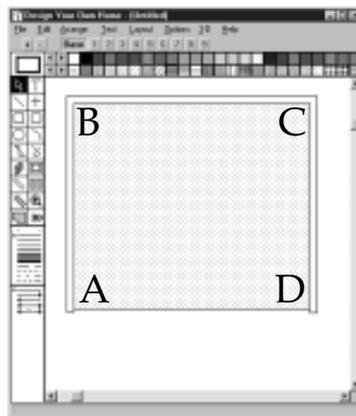
Figure C

5. Click on the selector tool icon and then right click the floor object and then click the 3D Info button. Set both the Floor Altitude and Floor Thickness to 1'. Click OK to finalize.

6. Select a different wall color by right clicking on a color in the color palette at the top of the 2D screen. This will make it easier to tell your walls apart in the next step. Select the Wall Tool again and draw a new 12' vertical wall starting at the bottom of the left hand wall and extending downward. Select this wall and make a copy of it using the 'Duplicate' command in the Edit menu. Place the copy at the bottom of the opposite vertical wall. Make sure that the bottom points of the two new walls are even in the 2D view. (*Figure D*).
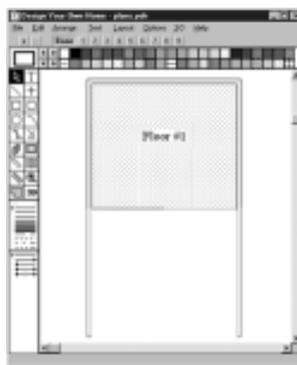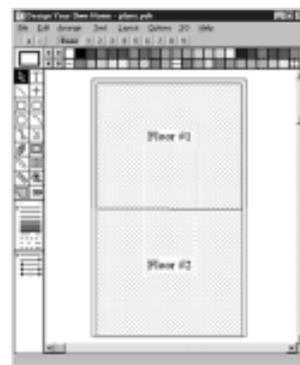
| *Figure D* | *Figure E* |

7. Now select the floor tool and draw a floor for the bottom portion of this room. Leave the default altitude and

thickness for this floor. You should now see the equivalent of figure E in your 2D window.

8. In the 3D window you should see a split level room. By right clicking on one of your floors in the 2D viewer and then clicking on the 3D Info button, you may change the texture. Select the Top Side of the lower level floor and place a different floor texture on it. Choose a tiled texture to simulate a kitchen or dining room floor. Repeat this procedure for the top floor, only this time place a light colored carpet. Your 3D window should now look like the one below (*Figure F*) We are now ready to place furniture.
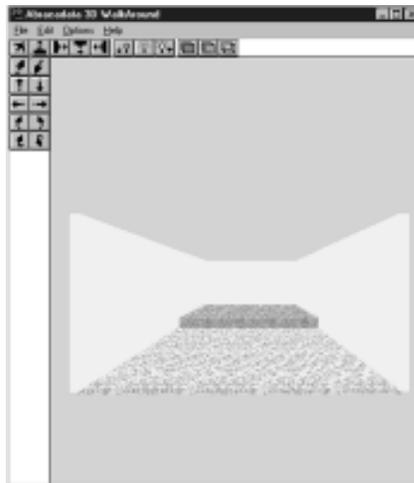
Figure F

Placing 3D Objects
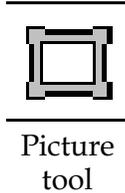
Picture tool

1. To place furniture objects in 3D WalkAround, first click on the **Picture Tool**. The selector tool will turn into a cross hair. Click the cross hair on the spot in the 2D window where you want the object to be placed. This will bring up the **Select Picture To Insert** window (*Figure G*).
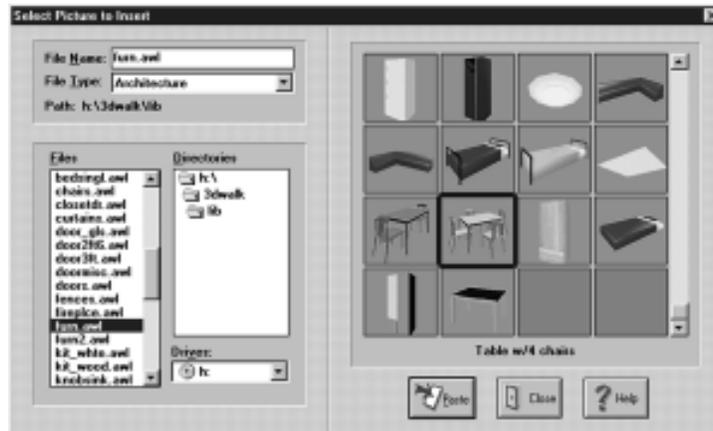
Figure G

In the File Name dialog, the file should read, ***.awl**. File Type should be set to **Architecture**. The Path setting should be set to the Lib directory. If you performed the default installation, it would read as follows:

Path: C:\Abra\3DWalk\Lib

If you set your install directory to a different path, you will need to modify the path so that it points to the Lib directory! You may modify the path in the Directories window.

In the Files window, you will see all the different library names that have an .awl file extension. These are the different furniture and object libraries.

Scroll down and select the library called **furn.awl**. You will then see objects appear in the large window to the right.

2. Scroll down and select the *table w/4 chairs*. You may either double click on the object or click it once and then click on the Paste button to place the object. A dialog will pop up telling you that the object you selected has been pasted into your drawing. Now repeat this procedure and paste the *tall cabinet, wood*. Click Close to exit the library window.

3. In the 2D window, you will see the two furniture objects you just placed. Place the *table w/4 chairs* in the center of the lower part of the room. Select the cabinet with the selector tool. Press CTRL+L to rotate the cabinet to the left and then place it against the left hand wall as in *Figure H*.
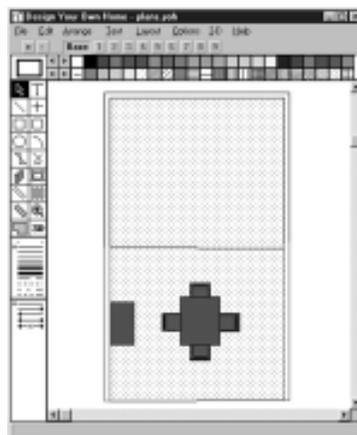
Figure H

4. Select the picture tool again and click on the 2D view to open the library dialog. Choose the library called **seating.awl**. Now select the first sofa object, called *7' Sofa01a* and paste it into your layout. Next, go to the **misc.awl** library, and place the aquarium. Then find the **lamps.awl** library and place *FloorLamp3a*. Go to the **tv_audio.awl** library and place the 25" Television. Next, find the **tabled.awl** library and place the object called *Table,Baby 3'x2'7*. Finally, choose the library called **Windw3ft.awl** and place the first object, called *Wnd, 1-pane 3'xs4'2*. These will go into the upper part of your drawing, but before they do, you will have to reset the height on each object **except the window**. To accomplish this, right click on each object and select the 3D Info button. In the dialog, Height Above Ground, enter the value of 1'. This will set the object on top of the 1' thick floor that you created. Set the height of the television at 3.5 feet. Use the CTRL+L or CTRL+R to rotate objects in 90 degree increments. For single degree rotation, use CTRL+1 (to rotate left), and CTRL+2 (to rotate right) and place them so that they match *Figure I*.

    Smart doors/windows: 'Note that when you place your window against the wall, the window is essentially poking a hole in the wall, eliminating that section of the wall so the textures don't show through. Placing a door against a wall will cause the same effect.

We are now ready to add textures to our dining room walls.
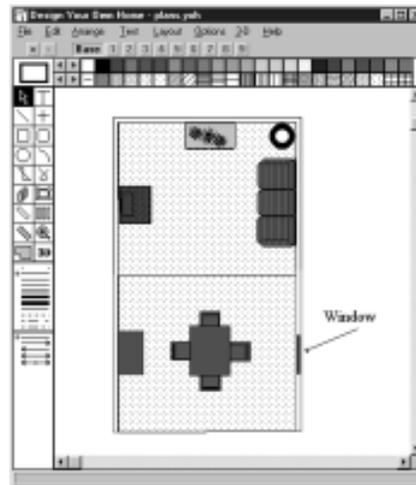
Figure I

Applying Textures

Applying textures in Design Your Own Home 3D WalkAround is as easy as clicking your mouse. Just follow the steps below and you'll soon be on your way to being an interior decorator.

1. We'll first start off with wallpaper. Right click on the lower left hand dining room wall (the one with the large wooden cabinet in front of it.) In the Object Information dialog, click the 3-D Info button to bring up the Wall 3-D Display Info. Now click the Texture Button to the right of the Right Side text field. This will open the Texture Viewer.

Texture
button

2. Once in the Texture Viewer (*Figure J*), you will see all of the different wallpaper patterns available to you. Whenever you select a wall, the viewer will automatically default to wallpaper textures for walls, floor textures for floors, and fabric textures for most furniture. You may, however, select any texture from any category you wish. If you want to place a floor texture on a wall, simply click on Floors to bring up the floor textures. For the time being we will select a wallpaper texture. Click on the first wallpaper texture (located in the upper left hand corner of the viewer). Click OK to go back to the Wall 3-D Display Info dialog window. You should see the texture name *wall001.bmp* in the Right Side text field. You may also type these texture names in if you wish.
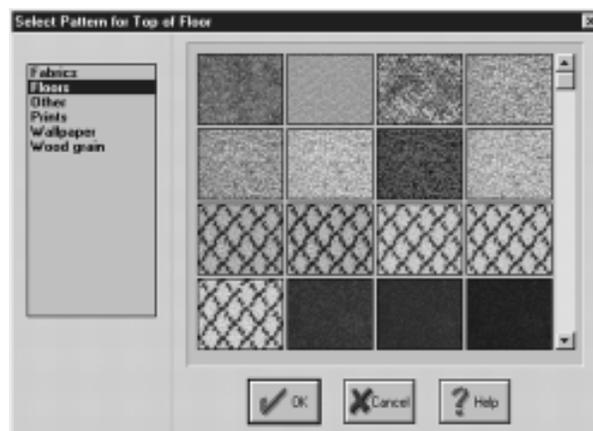
Figure J

3. Click OK to finalize your texture selection or repeat the same procedure for
the right hand wall, only this time, set the texture on the left side.

4. Repeat the above steps to add textures to the living room left and right side walls. For the back wall, place the texture on the left side of the wall.

Applying floor textures

3D Walkaround has a default floor texture that is applied to all floor objects in the program. If you wish to change this default texture, select **Preferences** (under the **Options** menu) and click on the Texture Viewer button to the right of the Floor Texture File field. Select the new default floor texture and click OK.

To change a floor texture on a new floor object that you have drawn, right click on the floor and then click the 3D Info button. Select the Top Side option. This will apply a given floor texture to the top and sides of the floor object. Select the floor's thickness and altitude.

Scaling Floor Textures

Changing the texture Scale setting in the 3D Info Window allows you to modify the scale at which textures appear in the 3D window. The number in the Texture Scale

box will remain at zero until it is changed. The default setting for any texture is 100. At this scale the texture will appear on the object unchanged. If the number is raised above 100, the texture will be stretched out in proportion to the increase. Likewise, lowering the Texture Scale amount below 100 will scrunch the texture in proportion to the decrease. Any number from 0 to 9999 may be used. This feature is also available on wall textures. Now you're ready to add a roof to your design.

Adding the roof

Before we add the actual roof pieces, we need to construct a couple of wall pieces that will attach the far wall to the roof. Select the wall tool and start drawing a wall from the middle of the top (horizontal) wall. Make sure that you start exactly on the centermost point of the wall, otherwise, your walls won't fit your structure correctly. Stretch this new wall directly to the left, until it reaches the top right corner of your structure. At this point, let go of the mouse button, and your new wall piece will pop into view. Now, right-click on the wall piece and click on the 3D Info Button so that we can change the height of the wall.

Once in the 3D Info window, change the 'Elevation of Wall' figure under 'Whole Object' to 8'. Set the 'Height of Wall' at point 1 to 2' and Point 2 to 0'. Click OK to exit back to the 2D and 3D views, and you should see the new

wall pop into place atop the left portion of the far wall. Now, select 'Duplicate' from the Edit Menu to make a copy of this wall. With this duplicate wall selected, use the CTRL+R function on your keyboard twice to rotate the wall so that it appears as a mirror image of the original. Place the copy so that it sits atop the left portion of the far wall. Finally, add textures to these upper walls so that they match the rest of the interior. Now we're ready to design the roof.

Select the floor tool, and start drawing a floor by left-clicking at the gridpoint just to the right of the lower right corner of your structure. Starting at this point will provide a little bit of overhang to the roof. Drag the drawing line left and click at the bottom center of the lower floor. Draw a line straight up and left-click at the top center of the upper wall. (This should be the same point at which you started your wall that you just created.) Draw the next line out to the gridpoint just to the right of the upper right corner of the structure and left-click. Finally, drag the last line down to where you started and right-click. A floor object should appear in the 2D view. Right-click on the lower right corner to bring up the 'Object Info' window, and enter the '3D Info' window.

Now, we will transform the floor into a roof. Change the Altitude for Point 1 to 7.8'. Notice the small diagram showing Point 1 of the floor.

Click on the right arrow next to the diagram to change the window to show Point 2. Set the Altitude for Point 2 to 10'. Go to Point 3 and set the Altitude to 10'. Set Point 4 to 7.8'. Now, select a texture that you would like to see on the bottom of the roof. Click on OK and exit back to the 2D and 3D Views. You should see the right half of the roof appear in the 3D view. To add the left half, simply duplicate the right portion, rotate it by using the CTRL-R function twice, and set it into place opposite the right half. Your structure should now be complete! If it doesn't look quite the way you expected it to, or if you want to change anything at all, feel free to experiment with this tutorial until you feel totally comfortable with the basic functionality of the program. 3D Walkaround allows a great deal of flexibility, so you can design your home exactly the way you want. Now, let's move on to some of the program's additional features.

Constructing simple 3D objects

We will now cover the procedures on constructing simple 3D furniture objects using the floor and wall tools. We will construct a cabinet and then add it to the tutorial object library.

1. Go up to the Layout menu and turn 'Snap to Grid' OFF. Turning this function off will be necessary for precise
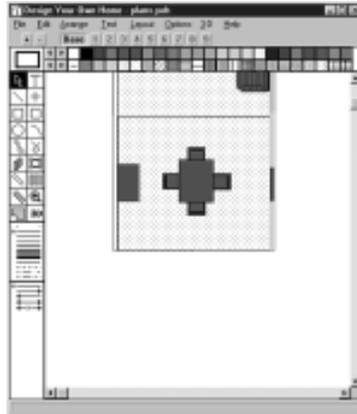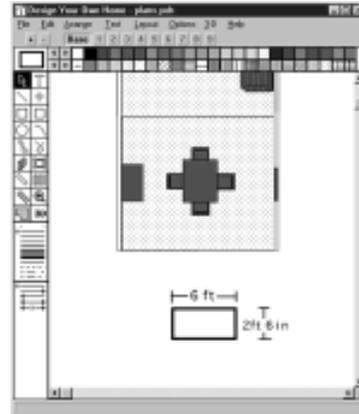
Figure K   *Figure L*

measurements. Use the down scroll arrow to bring the current tutorial layout that you have been working on up so that you have some blank space below it to work in (*Figure K*)
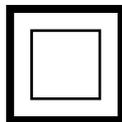
Box Tool

2. Select the Box Tool. We'll use this to make a template for the main body of the cabinet. Draw a rectangle that measures 6' long and 2'6" deep (*Figure L*).

3. Select the floor tool and use it to trace the outline of the rectangle that you just drew. When you finalize the last line, the new floor piece will automatically be sent to the back. Select the first rectangle template that you drew and delete it. You should now be left with just the floor piece that you drew.

4. Right click the floor object and click on the 3D Info button. Set the Floor Thickness and Floor Altitude to 3'. Now we will change the texture of our counter. Normally, you would select the new

textures by bringing up the texture viewer and selecting the textures from there. For now, we will simply type the texture names in manually. In the Top Side texture field, type *ashsen.bmp.* You may type the same texture name in the Bottom Side field, or leave it blank. Click OK twice to finalize and exit.

5. Repeat the process but this time make the object 6'6"x3'. Set the thickness to 2" and the altitude to 3.2'. After you have done this, assign the texture file name of *floor062.bmp* to the object. This object will serve as our tiled counter top. Select and place the 3' thick object that you drew earlier and center it on the counter top object but do not send it to the back yet.

6. Now draw a horizontal wall that is 2'6" long. Right click on the wall and click on the 3-D Info button. Change the height of the wall to 2', the elevation to .5, and the thickness to 1". Now type in the file name *ashsen.bmp* on the left side of the wall. With this new wall piece selected, press CTRL+D to duplicate it. This will give you two walls which will be used as cabinet doors. Arrange both wall pieces to match *Figure M.*

7. With all of the pieces placed, the object is now ready to be grouped. Hold down the left mouse button and draw a
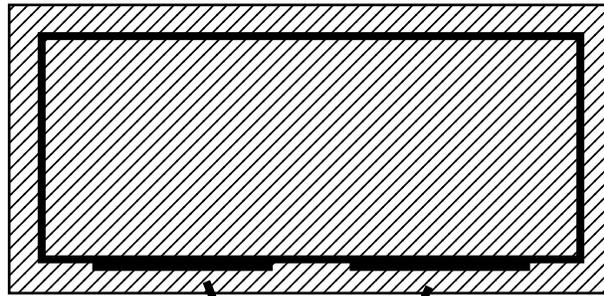
Wall pieces

Figure M

marquee box around all of the pieces. Once all of the pieces are selected, press CTRL+G to group them all together. Now, with the object still selected, hold down the CTRL key and click on the Picture Tool icon on the tool bar. This will place you in the Save Picture In Library window. Select the Tutorial library. You will see all of the current objects that are in that library appear in the window. Click on the Add button and type in a name for your new object, then click OK. Your new object is now part of the Tutorial library and may be used in future designs.

Picture tool

8. To delete an object that you no longer wish to use, go to the Save Picture In Library window and select the object by single clicking on it. Click Delete, followed by Yes. This will permanently remove the object from the library. Click Close to exit.

Changing the lighting in the 3D viewer

Turn on the lighting function by either pressing CTRL+L or by clicking on the lighting mode feature in the 3D Window (represented by the center light bulb). Turning this feature on will change the brightness and contrasts rendered in the 3D viewer and shade the surfaces more realistically. When this feature is off, each surface has a single lighting level.

You can brighten the lighting level by pressing F2 or by clicking on the brighten feature in the 3D Window (represented by the right light bulb.) To darken the lighting, press F3 or click on the darken feature (left bulb) in the 3D Window. Continue to press these function keys until you can see each symbol's details. Note: sometimes it appears that some objects such as white kitchen cabinets, don't have doors. This is a problem of the lighting being too bright on your system. Press F3 repeatedly until you can see more details in the objects.

Changing the Heights of Symbols

You may want to change the height of some of the symbols. For example, you may want to set a lamp on a table. To change the height, select the object in the 2D Window and right-click on it. This will bring up the Object Information Dialogue Box. Click on the 3D Info Button and you will see a 3D Info Display Window. The display windows for walls and floors appear

slightly different from those for other objects. In these windows, you can change the altitude and thickness of a floor, height and elevation of walls, and altitudes of other objects. You will not notice any changes you have made to an object until you exit the 3D Info and Object Windows.

Changing an Object's Texture

You can change the texture of an object by entering the name of a bitmap file or by selecting a texture through the Texture Viewer. All bitmap files are located in the data subdirectory.

If you would like to use your own bitmaps (BMP format) as textures for symbols, copy your bitmap into the DATA subdirectory of the 3D WalkAround directory. You can then access them just as you would the bitmaps provided with this program.

Line Palette
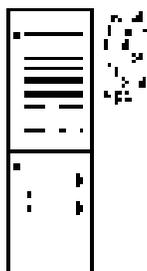
Line thicknesses and styles apply to both the thickness and style used for lines and to thickness and style used for other drawing-tool objects' borders.

The line-end styles (the four lines on the bottom of the palette) apply only to objects drawn with the line and constrained-line tools.

A bullet appears beside the currently selected line thickness or style, and line-end style. To change to a different thickness, style, or end, just click on a new one.

Note: the funny-looking "line" at the top is the invisible line. Use it when you don't want an object to have a border (especially if you have an object background that is a pattern and you want the whole object to be filled with the pattern from edge to edge).

The three lines below the "invisible" line may look the same on your monitor and printouts. However, they are different from each other. The top one is the thinnest possible line that will show up on any monitor or printer. It will show up as one pixel thick on your screen, and it will show up as 1/600 thick on a 600 dpi laser printer, 1/300 thick on a 300 dpi, 1/150 on a 150 dpi, etc. Use Zoom (Ctrl+Z) after drawing a line of each thickness to see the difference.

Pattern/Color Palette

The box at the left end of the pattern/color palette contains a rectangle that displays the working line color and the working fill pattern or color. Call this the "working rectangle."

Fill Color
or Pattern

File   Edit   Arrange
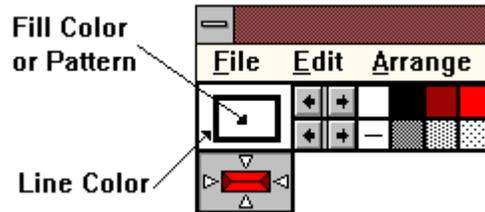
Line Color

The line color is used for object borders, text colors, and interior lines. The fill pattern or color is used for object interiors and text background. The minus symbol at the bottom left position in the palette lets you create objects with transparent interiors. To create a transparent border see Line Palette.

Changing a Symbol's Patterns

Changing a Symbol's Patterns

3D Walkaround treats a symbol as a single object unit. This means that if you select a symbol and choose a color or apply a texture, all the components of the symbol take on that color. You can also select several objects and change their colors and patterns, just as you would a single or grouped object. Just draw a box around the objects using the Selector Tool.

You can use patterns or colors for filling object interiors. You can use colors for drawing lines and object borders.

Note: Colors operate the same for both line and fill, but patterns work differently. You cannot use a pattern for a line or border.

To change a fill color or pattern:

Click on a color or pattern with the left mouse button and you will see the working rectangle change color or pattern.

To change a line color:

Click on a color with the right mouse button to see the working line color change.

To change the fill color of the pattern palette:

Hold down the Ctrl key and click the left mouse button on the color you want to use. If you have mixed (dithered) colors in the top row of the color palette, you won't be able to change the fill color to one of these, but the fill color will approximate the dominant color in each mixed color as you click on it.

To change the line color of the pattern palette:

Hold down the Ctrl key and click the right mouse button on the color you want to use.

To see more colors and patterns on the palette:

Click and hold the arrow keys at the right end of either the color palette or the pattern palette.

Creating New Patterns

You can create a new pattern or edit an existing one with Edit Pattern in the Options menu. Select this option and the Edit Bitmap Pattern Dialog appears. The scroll bar at the bottom of the dialog shows all the current patterns in the pattern palette from left to right.

To edit a pattern or create a new one:

Select one of the patterns. Next, clear the selected pattern by clicking the Clear Pattern button or just start with the selected pattern and make changes to it by moving the cursor to any square and clicking it. A black square will change to white. A white square will change to black. On the right you'll see the effect on the pattern. Changing even one square can have a startling effect on a pattern. Try it.

Once the pattern is the way you like it, you need to decide if you want to replace the pattern you started with or save a new pattern.

To save a new pattern:

Click Save As New. A dialog asks if you want to create a new fill pattern. Click Yes. Scroll the bar at the bottom of the dialog and you'll see the new pattern on the right most end. Click OK to close the dialog and you'll see your new pattern at the right most end of the pattern palette. Scroll the palette with the right arrow to see it.

To replace a pattern:

Click Save Pattern. A dialog asks if you want to modify the selected fill pattern. Click Yes. The pattern you changed will replace the original pattern. Click OK to close the dialog. The new pattern will replace the original one.

Note: When you change the pattern palette you must save your drawing in order to save the new palette. This way you can have a custom palette for each drawing. If you wish to save a default palette to use with all of your drawings, we suggest the following:

Modify the pattern palette so it is the way you want it. Then save a drawing (with one object only) called "mypalette" or "default." Choose a name that means something to you. Then each time you start the program you can open that file, delete the one object in it and start a new drawing. Be sure to use Save As to save the new drawing so you don't overwrite your default file.

Creating New Colors

You can create a new color or edit an existing one with Edit Colors in the Options menu. A color is defined by its hue (its position in the color spectrum), saturation (the purity of the hue-from very gray to the pure color), and luminosity (its brightness from black to white).

To define a new color select Edit Colors in the Option Menu and the Edit Color Dialog appears.

The existing palette colors show in the Palette Color box. If your palette has more than 40 colors, use the scroll bar below the Palette Color box to see additional colors. If you click on any of the existing colors you'll see the color refiner cursor move to different areas of the color refiner box on the right, and you'll see the vertical luminosity indicator move on the vertical luminosity bar to the right of the color refiner box.

To modify an existing color:

Select a color and drag the color refiner cursor to the color that you want. Then drag the arrow next to the vertical luminosity bar up or down to adjust the brightness.

As you change the color, the new color is displayed on the left side of the Color|Solid box. The right side of the box shows the solid color that is closest to the color chosen.

Once you have a color you want, you need to decide if you want to replace the color you started with or save a new color.

To save a new color:

Click OK. This will take you back into the design window. Click on the Option menu and then Save/Load Color Palette. Select the

Save Color Palette option. This will bring up the Save Palette dialog box. Type in the name that you wish to give your new palette and then select the save location in the Directories window. Click OK when finished. This will save your new color palette with a .pal extension.

To replace a color:

Select Edit Color under the Options menu. In the Palette Colors window, click on the color that you wish to modify. This color will appear in the Color|Solid box. To modify it, grab the black cross-hair and move it to the new color. You may also adjust any of the numeric values located below the color window. Click replace when finished. The program will then ask if you wish to modify the selected color. Click Yes to finalize your choice or No to cancel. The color you originally selected will be replaced by the new color. Click OK to close the dialog. The new color will replace the original one in the Color Palette.

Note: You can save the new palette by using the Save/Load Color Palette menu option.

Create Your Own 2D Library Symbols

You can easily create your own libraries of 2D WalkAround symbols; however, these symbols will not appear in the 3D WalkAround view. To do so you must first have an object or

grouped object on the screen. Select the object you want to place in a library and then Ctrl+click on the picture frame icon. You'll see a special dialog where you can either create a file for your library or select an existing library file to add your picture to.

In the File Name box you see *.awl, which is the default extension for 3D WalkAround Windows Libraries. If there are existing *.awl libraries in the drive, path, and directory selected, you'll see a list. You might want to change the path if you don't see any *.awl files listed. You should also see your shape in the Selected Object box.

To create a new library file, type a name for the new file in the File Name box and hit Enter. (You do not need to type the AWL extension; it will be added automatically.)

When you select a library file name, the symbols (if any) in that library appear in the viewer on the right hand side of the dialog.

To add the new object to the new or to an existing library click the Add button. The Enter Object Name dialog box appears. Enter a name for your object and press Enter, or click OK. Your object is now available to use over and over with 3D WalkAround's Picture Tool.

To change the name of an object, select the object and click the Edit button.

To delete an object from the library, select the object and click the Delete button, and reply Yes when the program asks you to confirm that you want to delete the object. Be careful — there is no Undo for this operation.

If you get a "File Full" message when you are adding a picture to an existing file, it means that you need to start a new file. Each library file's size is based on the size and complexity of the component pictures or objects in it, rather than the number of objects the file contains.

Create Your Own 3D Library Symbols

You can create your own 3D library symbols for objects that you've created in the 3D View. Once you have created your object (such as the cabinet from the tutorial), use the Screen Capture function, which is common on most systems. (Usually, pressing the key labelled 'Print Scrn SysRq' located above the insert key will perform this function.) Once you have the desired 3D view copied onto your Clipboard, you can open a drawing program that handles .tif files and Paste the contents of the Clipboard into your drawing program. Edit the picture to your desired specifications and save the file as a .tif file. You can then insert the file into an existing library, or it might be a good idea to create a new library for your own 3D objects, In this way, it's possible to create whole rooms

and display them as 3D objects libraries. You will have to experiment with setting the .tif files to the proper specifications for viewing in 3D Walkaround.

Importing Other File Types

1. After you've drawn the picture frame and you see the Select Picture to Insert dialog, select the directory where you have placed the file that you want to import.

2. If you don't have any particular file you want to import, select the Windows directory for an example.

3. To see any files listed, go to the List Files of Type box, click the little arrow, and then select Windows Bit map (.BMP). Several .BMP files should appear in the File Names list. Or select another file type if you want to import another type of file.

4. Select a file and you'll see a picture in the picture box. Select OK to place the picture in your 3D WalkAround drawing.

Importing DXF files

Design Your Own Home 3D WalkAround now has improved DXF file support. It is possible to import DXF files into your drawings by following the steps below.

1. Click on File, then Open. This will bring up the Open Drawing dialog.

2. Set the List Files of Type to AutoCAD DXF files.

3. Select the file name and path that you wish to open and click OK.

4. Once the drawing has been imported, you may edit it by first ungrouping the object (**CTRL+U**) and then selecting the indi vidual lines you wish to edit. When fin ished, you may then regroup the object (**CTRL+G**).

Chapter 3
Tools

While laying out your floor plan in the 2D view, *Design Your Own Home: 3D WalkAround* offers you an array of drawing tools. These tools will not change the 3D view of the symbols. Only the symbols which you have placed into your layout will appear in the 3D viewer.

Arc Tool

To draw an arc:

Select line pattern and fill pattern. Set line thickness or style by clicking the appropriate icon on the line palette, then click the arc icon on the tool palette.

Move the cross hairs to the place on the drawing area where you want to begin drawing the object. Press the left mouse button to anchor one end of a flexible arc. Drag the cross hairs. The flexible arc stretches from the anchor point to the mouse position. If you pull the arc down and to the right, it will curve out to the right. Pull it down and to the left to make it curve to the left. Notice that the screen scrolls smoothly if you try to extend the arc off the edge of the current window.

When the arc is the size and shape you want, release the mouse button.

To draw a wedge or pie piece, hold down the Shift key when you click the left button to start drawing.

To draw a chord, hold down the Ctrl key when you start drawing.

To force an arc, wedge or chord to be circular (i.e. to be a section of a circle), press the Ctrl key after you have started to draw it.

You can change an existing arc in two different ways. You can resize it the same way you resize other objects, but you can also adjust the position of its vertices.

To adjust the vertices of an existing arc, position the selector tool over the object, hold down the shift key and click. If the arc was not already selected, standard handles will appear. Shift-click again and handles will appear at each vertex. (A third Shift-click makes all handles disappear.) You can drag each vertex to increase or decrease the amount of arc. As you move a vertex, the angle of the vertex from the X-axis (i.e. from the line that points in the 3-o'clock direction) is displayed at the center-point of the arc.

To make an existing arc circular, press the Ctrl key while you move one of its four standard handles.

▢▢ **Rectangle Tools**

These tools draw rectangles with straight or rounded corners.

To draw a rectangle or box:

First, select line pattern and fill pattern. Set the line thickness or style by clicking the appropriate icon on the line palette, then select one of the rectangle tools by clicking the appropriate icon in the tool palette.

Move the cross hairs to where you want to begin drawing the rectangle. Press the left mouse button to anchor one corner. Drag the cross hairs. A flexible box stretches from the anchor point to the mouse position. Notice that the screen scrolls smoothly if you try to extend the rectangle off the edge of the current window.

To make a perfectly square box, press the Ctrl key while you drag.

◯ **Circle/Ellipse Tool**

Draws a circle or ellipse.

To draw an ellipse:

Select a line pattern and a fill pattern, set a line thickness or style by clicking the appropriate icon in the line palette, then click the ellipse icon on the tool palette to select it.

Move the cross hairs to where you want to begin drawing a circle. Press the left mouse button to anchor one side of a flexible circle. <u>Drag</u> the cross hairs. The flexible circle stretches from the anchor point to the mouse position. Notice that the screen scrolls smoothly if you try to extend the circle off the edge of the current window.

When the circle is the size and shape you want, release the mouse button.

To make an ellipse a perfect circle, press the Ctrl key as you drag.
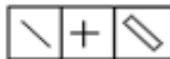
❘❙ **Line, Constrained-Line, and Hollow-Line**

All three tools draw lines. The constrained-line tool draws lines at vertical, horizontal, and 45 degree angles.

To draw a line:

Select a line color by clicking the right mouse button on a color on the top row of the color/pattern palette. Set line thickness or style by clicking the appropriate icon on the line palette, then select the line, constrained-line, or hollow-line tool by clicking the corresponding icon on the tool palette.

Move the cross hairs to the place on the drawing area where you want to begin the line. Press the left mouse button to anchor one end of the line. <u>Drag</u> the cross hairs. A flexible line

stretches from the anchor point to the mouse position. Notice that the screen scrolls smoothly if you try to extend the line off the edge of the current window.

When the line is the length and orientation you want, release the mouse button.

To constrain an already existing line, or to constrain a line after you've begun to draw, press the Ctrl key while you edit and drag the line by one of its handles.

Note: You can adjust the width of the hollow-line borders by choosing a different line thickness from the line palette. You can change the width setting for the hollow-line tool by increasing or decreasing the number of units in the User Preferences dialog under the Options menu.

Magnifying Tool

This tool lets you zoom in on a particular area of your drawing. You can draw and edit just as you normally do on the full screen.

To magnify an area of your drawing:

Click the magnifying tool icon on the tool palette, then move the cross hairs to the place on the drawing area you want to magnify. Press the left mouse button to anchor one corner of a flexible box. Drag the cross hairs over the area of your drawing that you want to

magnify. Notice that the screen scrolls smoothly if you try to extend the box off the edge of the current window.

When the box encloses the area you want to magnify, release the mouse button. You may also click once on an area to zoom in.

To return to normal view, use the Restore option under the Layout menu.

Measuring Tool

The measuring tool allows you to measure the distance between any two points on the screen. That distance will be displayed in the working unit of measurement.

The measurement shown will appear on screen only as long as you hold down the mouse button. Use a dimension line if you want to keep a measurement on screen.

To measure:

Click the measuring tool icon on the tool palette, then move the cross hairs to the place on the drawing area where you want to begin measuring. Press the left mouse button to anchor one end of the line. Drag the cross hairs. A flexible line stretches from the anchor point to the mouse position, and the length of the line appears in the center. Notice that the screen scrolls smoothly if you try to extend the line off the edge of the current window.

When you're done measuring, release the mouse button.

To constrain the line (drag at 45 degree angle), press the Ctrl key while you drag.

Picture Tool

The Picture tool is one of 3D WalkAround's most powerful features, and it's what makes 3D WalkAround special. You'll use this tool to insert 3D WalkAround libraries or bit-mapped pictures into your art work. You can import numerous file types that you've created with other programs. With it you also create your own libraries.

To insert a picture: Click the picture icon on the tool palette. Move the cross hairs to the place on the drawing area where you want the picture to be. Drag the cross hairs over the drawing area until the insertion box is the size and shape you want. (The insertion box will be a dashed rectangle that won't stay on your drawing. It's just an outline for the picture you select from the Select Picture dialog.)

Note: You can constrain the insertion (picture) box by holding the Ctrl key down while dragging the box.

When you release the mouse button, the Select Picture dialog appears.

Caution: If you ungroup a symbol you will no longer be able to view it in 3D WalkAround. An imported symbol may consist of dozens of small shapes. You'll know the magnitude of the number of shapes when you ungroup the symbol. If you see dozens of handles, you'll know there are a lot of component shapes. Regroup the object before you do anything, move it to a clear part of your drawing window, then ungroup it again. It will be easier to manipulate the individual parts of the shape and regroup it if you don't have any other objects from your drawing in the vicinity.

Selecting a Picture

When you see the dialog, click through the various file types which include: Architecture; Windows Bitmap(BMP); Windows Metafile(WMF); PC Paintbrush(PCX); DYOH 2.1 Libraries; and All files.   Be sure to click on the first file type called Architecture to list and access the *3D WalkAround* symbols. All *3D WalkAround* symbols have a .awl extension. If you don't see any file names under the file name dialog, use the directory dialog in the center to click on the *3D WalkAround* "lib" directory (or another directory, if you have libraries in another location).

To insert a picture:

1. First, select the type of picture you want to insert from the File Type list, and be sure

you're in the directory where the picture is located. If you don't see the file names you want in the Files box, double-click on the icons in the Directory box to move to the correct directory.

2. Click the file name of the file or library you want to examine. You'll see the available pictures appear in the box on the right-hand side of the dialog. If the file contains a lot of pictures, a scroll bar will appear in the box to let you scroll up and down and look at them. (If the box stays black, the file does not contain any importable pictures.)

3. If the box contains more than one picture, click on the picture you are interested in. To insert the picture in your drawing, click the Paste button.

4. If you want to insert other pictures, or more copies of the same picture, repeat the above procedure as often as you like. When you're done, click the Close button to return to your drawing.

New Improved Library Object Views:

In version 3.0 (or later) of 3D Walkaround, the library objects are represented by .tif files, giving the objects a 3D appearance. If you desire to see the objects represented by overhead views, instead of 3D views, you can change this by unchecking the uppermost box in the Preferences menu, called ***Show 3D View***

in insert dialog. It is possible to create your own .tif files using one of the many artistic drawing programs on the market. See the section on Creating Your Own 3D Library Symbols for information on creating .tif files for your own objects.

⊡ **Polygon Tool**

Draws polygons from connected straight lines.

To draw a polygon:

Select a line pattern and a fill pattern. Set line thickness or style by clicking the appropriate icon on the line palette, then click the polygon icon on the tool palette.

Move the cross hairs to the place on the drawing area where you want to begin drawing the polygon. Press and release the left mouse button to anchor one end of a flexible line, then move the mouse. The flexible line stretches from the anchor point to the mouse position. Notice that the screen scrolls smoothly if you try to extend the line off the edge of the current window.

When you have stretched the line to the length you want, click the left mouse button again and the first segment is set. Move the cursor (don't drag) and then click for each additional segment. When you have completed the last segment, click the right mouse button. The last

point will automatically connect to the first point and any <u>fill pattern</u> or color that shows in the working rectangle will fill the polygon.

You can change existing polygons in two different ways. You can resize it the same way you resize other objects, but you can also adjust the position of its vertices.

To adjust the vertices of an existing polygon, position the selector tool over the object, hold down the shift key and click. If the polygon was not already selected, standard handles will appear. Shift-click again and handles will appear at each vertex. (A third Shift-click makes all handles disappear.) You can drag each vertex to a new position.

Selector Tool

The selector tool is the arrow-shaped pointer that is displayed when you're choosing a drawing tool, pattern, line thickness, selecting an object, or using the menus. The selector tool moves in response to movement of the mouse. To select the selector, click in the top left corner of the tool menu. Your cursor should become an arrow and the arrow on the tool bar should be highlighted.

To select an object: First, select the selector tool. Position it over the object you want to select and click. Four black handles will appear around the object, indicating that it's been selected.

To select an additional object: Position the selector tool over the next object you want to select, hold down the Shift key and click.

To select several objects: Drag a box with the selector tool that surrounds the objects completely.

To bring up information and properties on an object or shape double-click with the left mouse button or right click the mouse button to bring up the Object Information Dialog box.

⊠ **Sketch Tool**

Draws a freehand object.

To sketch an object: Select a line color. Set line thickness or style by clicking the appropriate icon on the line palette, then click the sketch icon on the tool palette.

Move the cross hairs to where you want to begin sketching. Press and hold the left mouse button to drag the cross hairs into a shape. When the sketch is to your liking, release the mouse button. Notice that the screen scrolls smoothly if you try to extend the line off the edge of the current window.

Note: The sketch tool will not fill with a fill pattern. You'll find it useful for signing your name or writing messages, or sketching custom shapes.

▥ **Stud Tool**

Draws a stud object, showing joists or studs, whose size and orientation are determined by the settings in the Stud Specifications dialog.

To draw studs:

Adjust the settings in the Stud Specifications dialog to what you want. Be sure to specify which tracking option you want: rectangle or polygon. This changes the way the stud tool defines the area to be filled with studs. You can draw using a flexible box (Rectangle option) or a flexible line (Polygon option).

Select a line color. Set line thickness or style by clicking the appropriate icon on the line palette, then click the stud icon on the tool palette.

Move the cross hairs to where you want to begin drawing. Press and hold the left mouse button to anchor one corner of a flexible box (or flexible line, if using polygon tracking option). Drag the cross hairs. The flexible box (or line) stretches from the anchor point to the mouse position. Notice that if you drag it off the side or bottom of the screen, the screen automatically scrolls to accommodate the size you want.

When the stud box (or polygon) is the size and shape you want, release the mouse button (or click the right mouse button to complete the polygon).

To draw a perfectly square box, or to constrain the lines of the polygon (to horizontal, vertical, and 45 degree angles), press the Ctrl key while you drag.

You can use the stud tool to help you draw decking. Just change the on center distance to match the board width.

⊤ **Text Tool**

You can type text of any line color with any fill pattern or color.

To use the text tool: Select a fill pattern (left-click) as the background, right-click for the text color, then select the text tool. Next, move the cross hairs into the drawing area and click where you want to begin typing. If you make a mistake while typing, just backspace and press delete to remove an incorrect letter. You can highlight several letters to delete or replace them. (See Editing Existing Text). Use Ctrl + right and Ctrl + left arrows to jump from word to word in your text, or just click the cursor next to the unwanted letter and delete it. You can also use the Home and End keys.

With the mouse only, if you want to continue typing but at a different location, move the pointer to the new location and click. The last text you typed is kept as an object and you can begin typing a new text object.

3D WalkAround lets you easily experiment with text to get the effect you're looking for. Select a text object. Left-click in various locations along the pattern and color palettes to change the background. Right-click on several different colors to change the text. Change the patterns with Ctrl + right-click and Ctrl + left click.

To type white on a color, left-click red or black or another dark color and then right-click white for a nice effect.

To block out your text when you want it to stand out from the background color of another object, you can use the reverse process just described or you can select a white fill (left-click) and a dark text (right-click).

You can manipulate an existing text object with items from the Text and Edit menus. Options in the Edit menu operate on selected text objects just like any other object. First, select the text object using the selector tool, then select the item you want from the Edit menu.

Changing Text Styles

You can use bold, italic, underline and strikeout styles for the text you type. Except for normal, which cancels all others, the styles are cumulative. The styles you choose affect all selected text objects and the text tool.

1. Select a text object.

2. Go to the Text pull-down menu and select Bold, Italic, Underline, or Strikeout to change the text.

3. To cancel any style (except for Normal), choose the style again. To cancel all current style selections, choose Normal.

You can also select a style in the Font Dialog box.

Choosing Fonts and Sizes

Fonts and font sizes affect all selected text objects and the Text tool.

To choose a font or font size: Choose Font... from the Text menu. Select a font from the font box, select a size from the Size box, then click OK. You can use this option before typing to set up your text correctly; or you can select one or more text objects to change. You can also select a style from the Style box. Try this too with a selected text object.

Editing Existing Text

To edit existing text, select the text tool, then click the cursor at the place within the text object where you want to start editing. A blinking cursor will appear.

You can also highlight a part of the text to delete or replace it. Drag the cursor over the letters you want to replace. While text is highlighted you can press the delete key to remove it, or type correct replacement letter(s).
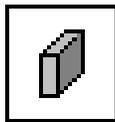
Wall Tool

Draws a thick line, designated as a wall object.

Wall
Tool

To draw a wall:

Select a line color by clicking the right mouse button on a color on the top row of the color/ pattern palette. Select the wall tool by left clicking its icon on the tool palette.
Move the cross hairs to the place on the drawing area where you want to begin the wall. Press and hold the left mouse button to anchor one end of the line. Drag the cross hairs. A flexible line stretches from the anchor point to the mouse position. You will see the measurements of the wall on the right hand end of the wall as you draw it. Notice that the screen scrolls smoothly if you try to extend the line off the edge of the current window.

When the line is the length and orientation you want, release the mouse button.

To constrain an already existing or new wall, simply hold down the CTRL key as you edit and drag one of its handles. This will ensure that the line is perfectly straight.

Note: To make it easier to connect the walls of your house, be sure to use the **Automatic Wall Snap** option in the **User Preferences** dialog under the **Options** menu. Choosing this option will automatically "snap" the ends of walls together. After drawing the first wall, position the cross hairs close to the end of the first wall and draw the second wall. The second wall will automatically be snapped to the end of the first. You can change the distance setting for the wall snap by increasing or decreasing the number of units in the User Preferences dialog.

You can cause an automatic dimension line to be displayed next to the walls you have drawn. To do this, select the wall(s) you want to change, hold down the CTRL key, and left click the Measuring Tool icon. To hide the dimension lines, simply repeat the procedure.

You can control the side of the wall on which the dimension line appears and its distance

from the wall by setting the desired values in the Preferences dialog before drawing the wall. For more information about dimension lines, see **Dimension Lines.**

Setting a wall altitude:

You may assign an altitude to your walls by right clicking on the wall. This will bring up the Object Information dialog window.

Clicking on the 3-D info button will call up the

Wall 3-D Display Info dialog. Here, you can enter the Wall Height, Wall Altitude, Thickness in 3-D Viewer, as well as Texture file names for your walls.
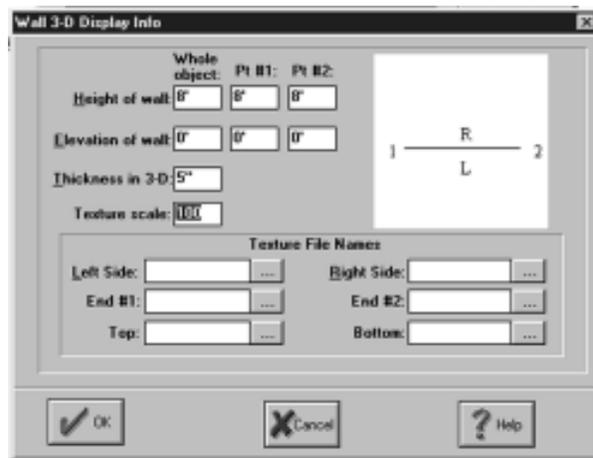
Height of Wall: This value determines how high your wall is. The height limit for any wall is 327.67'. While it is possible to stack walls on top of each other that will exceed this height, doing so will probably give erroneous results. The default value of any wall is 8'.

To set the height for a wall with a *level* top, enter the value into the box in the 'Whole Object' column. Entering information for Points 1 & 2 is not necessary. If you want a wall height of 8 1/2', enter a value of 8.5. You don't need to type the apostrophe.

To set the height for a *slanted* wall top, you must first determine from the diagram on the right side of the 3D Info Box which point is

Point 1 and which is Point 2. Once this has been established, enter the desired height into each box under Pt #1 and Pt #2. You do not need to enter a value in the 'Whole Object' box.

Elevation of Wall: This setting determines the altitude at which your walls will be displayed. This feature allows the design of multiple story structures, split levels, and sunken rooms, as well as aiding in the construction of 3D objects. The default elevation for any wall is 0'.

To set the altitude for a wall with a *level* bottom, enter the value into the box in the 'Whole Object' column. Entering the information for Points 1 & 2 in not necessary.

To set the elevation for a *slanted* wall bottom, enter the values in the boxes under Pt #1 & Pt #2, as you would for the height of the wall (above). It is not necessary to enter a value for the Whole Object. Note that the wall top will also be slanted unless you change the Wall Height to compensate for the slanted bottom.

Thickness In 3-D Viewer: This setting allows you to adjust the thickness of the wall in the 3-D viewer. The default value is 5". If you want 1' thick walls, you would enter a value of 1', or 12". If you wish to enter the number in feet, you must type in the ' symbol after the number,

Texture scaling: Changing the Texture Scale setting allows you to modify the scale at which textures appear in the 3D window. The default setting for any texture is 100. At this scale the texture will appear on the object unchanged. If the number is raised above 100, the texture will be stretched out in proportion to the increase. Likewise, lowering the Texture Scale amount below 100 will scrunch the texture in proportion to the decrease. Any value from 0 to 9999 may be used.

Floor/Ceiling Tool
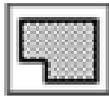
Floor/
Ceiling
Tool

The Floor Tool allows you to draw polygons that represent floors or ceilings which will automatically appear in the 3-D view. This tool also allows for the design of multiple story structures, split levels, sunken rooms, and simple 3-D object creation such as cabinets, tables, counters, etc...

To draw a floor, you will most likely want to trace a room's walls. After selecting the floor tool, your pointer will turn into a cross hair. Place the cross hair at the point where you want to start your floor and left click once. Move to the first line's end point (and the next line's start) and left click again. Continue this sequence until you've completed the floor object by ending at your original start point and right clicking. Once back at your starting point, right click to finish the floor.

Once the floor is drawn, it is automatically moved below walls and other objects in the 2-D window. This ensures that it will not cover anything else that you have drawn. You may now edit the floor patterns and colors just like with any other polygon. You may also edit the shape of the floor by left clicking the floor object, then holding the **Shift** key down, pausing for a second, and left clicking it again. If it is an irregular shaped polygon, you will notice that the handles now appear at every point of the polygon instead of just the four corners. Once you have done this, you may grab any of the points and alter the shape of the polygon.

Note: After you have drawn a floor object, the default floor will disappear. If you delete the floor that you just drew, the default floor will return. If you have a full floor plan with many rooms but only want to change the floor in one of them, it is best to draw a new floor that will fit the entire area of the plan.

You may also change the default texture on any floor object, including the default floor.

Changing the default floor texture:

In the 2-D window, select **Options** followed by **Preferences.** Click on the button to the right of the Floor texture file window. This will bring

up the texture viewer. Select the texture that you wish to apply to your default floor. This texture will stay in effect until you change it.

Changing drawn floor object textures and attributes:

Select the floor object whose texture you want to change by right-clicking on it. In the Object Information window, click on the 3D Info button. This will bring up a dialogue box called 3D Floor Parameters, which will give you the following options.

Texture File Names: This field lets you select textures for your floor or ceiling. The Top Side will change the top and sides of your floor. The Bottom setting will change the underside of your floor object.

Altitude: Use this field to change the altitude of your entire floor, or one or more points. To change the altitude of the entire floor, enter a new value in the field in the 'Floor' Row. To change the altitude of a single point, first select which point you want to change by using the arrows to the left of the diagram of the currently selected point. Once you have selected the point that you want to change, set the altitude to the desired height. Once you are back in the 3D view, the floor will change to the specifications you've set. If you set two adjacent floor points to different heights, the floor will slope between the two points.

Thickness: This will allow you to change the thickness of your entire floor, or you can adjust the thickness at one or more points. This is done in the same way as adjusting the altitude.

Texture Scale: Changing the Texture Scale setting allows you to modify the scale at which texture appear in the 3D window. The default setting for any texture is 100. At this scale the texture will appear on the object unchanged. If the number is raised above 100, the texture will be stretched out in proportion to the increase. Likewise, lowering the Texture Scale amount below 100 will scrunch the texture in proportion to the decrease. Any value from 0 to 9999 may be used.

3D WalkAround View Button

Click the 3D button to open a 3D window for the active 2D design window Once the 3D window is open, you may resize it to whatever size you wish. You may have both a 2D and a 3D window open at the same time and arrange them together side by side. To have the 3D
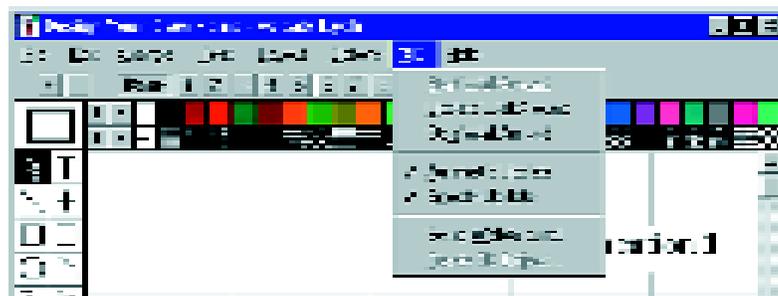
window update itself whenever you make a change in the 2D window, select 3D from the menu and select **Automatic Update.** Whenever it is active, you will see a check mark next to it.

3D Window Buttons

Bird's-Eye View Button

Click this button to change from a walk-around side view to a 3D overhead bird's-eye view of the 2D design.

Walk-Around Side View Buttons

Click these camera buttons to see one of four 3D side views, or re-center a side view.

Light Intensity Buttons

Clicking the middle button here will turn the lighting effects on and off. You may increase or decrease the lighting intensity by clicking on the buttons with the up and down arrows.
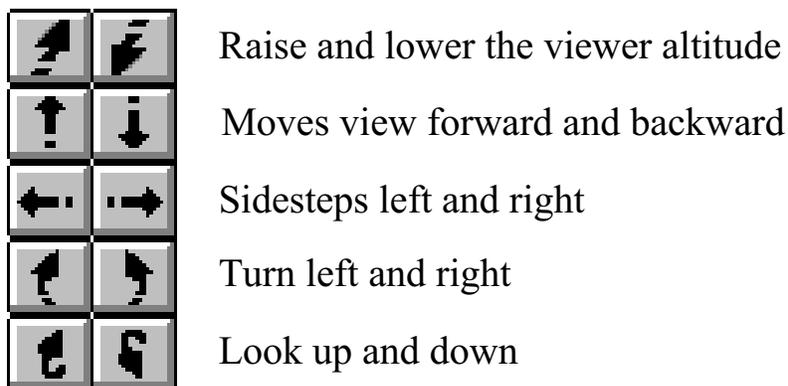
Texture Buttons

Use these buttons to specify whether to apply textures to the 3D view. The leftmost button will toggle between textures and flat-shaded objects. Turning textures off will speed up your walk-around speed. The middle button is

the *Coarser but Faster* setting. This setting will lessen the detail in the 3D window allowing for faster movement. The rightmost button will put you in wireframe mode. This turns off all textures and shading and will greatly increase movement speed. You may also select *Coarser but Faster* while in wireframe mode for an even greater increase in speed.

You may also access any of these functions by clicking on Options in the 3D window and choosing them from there.

Movement Buttons

Movement in the 3D window can be accomplished in more than one manner. Perhaps the easiest way to navigate throughout the 3D window is with the movement buttons.

Raise and lower the viewer altitude

Moves view forward and backward

Sidesteps left and right

Turn left and right

Look up and down

Navigating with the mouse

You may also navigate by using your mouse pointer in the 3D window. Think of the 3D window as a clock face. As you move the pointer up towards 12 o'clock and hold down the left mouse button, you will move forward. Move it down towards 6 o'clock and you will move backwards. Likewise, moving the pointer to the 3 o'clock position will cause you to turn towards the right, while the 9 o'clock position will turn you to the left. Anywhere in between these positions will move you in that direction. If you wish to side step, hold down the shift key while placing the pointer at the 9 or 3 o'clock positions.

Navigation via the keyboard

You may also use your keyboard to move about in 3D by pressing the cursor arrow keys. The up and down arrows will cause forward and backward movement and the left and right arrows will cause you to turn in those respective directions. To sidestep using the keyboard, hold down the shift key while pressing the left and right keys. The Page up and Page Down keys will raise and lower the camera. To look up or down, hold down the CTRL key while pressing the up or down arrow keys.

Chapter 4
Menus

Essential features of *3D WalkAround* are found in the menus across the top of the window. Some menu options have an ellipsis following the them (e.g., Font...). When you select a menu item with an ellipsis, a new window with special options or instructions appears (a dialog box). Some menu options have an arrow next to them, indicating that option has a submenu. Sometimes a menu option is dimmed (shown in gray text instead of black) and you cannot select it. This usually means you need to do something else first.

Keyboard Shortcuts

A keyboard shortcut is a combination of keys that you can press to carry out a particular command. Keyboard shortcuts are listed to the right of the menu options in each pull-down menu. Do *not* press the + sign. Just press the two indicated keys. Notice that not all menu options have a shortcut key. You'll find that after you have become familiar with *3D WalkAround,* using shortcuts will come naturally and will speed up program operation.

File Menu

New

Opens a new drawing window and assigns it the name "Untitled". Whenever you start 3D WalkAround, it starts with the file "Untitled."

To start a new file: Choose New from the File menu. If you have made changes to the current file, a dialog box appears telling you that your file has changed and asks if you want to *save* it before closing that window and opening a new one. If you change your mind and don't want to close the current drawing, click Cancel. If

you don't want to save the file, click No. The drawing is removed from the screen and a new, "Untitled" window is opened.

If the file already has a name it is automatically saved if you click OK. It's then removed from the screen, and a new, "Untitled" window is opened. If the file's name is "Untitled" and you click OK, the *Save As dialog* appears.

Keyboard shortcut - Ctrl+N

Open

This option brings an existing *3D WalkAround* file from the disk to the drawing window.

To open an existing file: Select Open from the File menu. If you have made any changes to the current file, a dialog box appears, asking whether you want to save those changes before opening a different file. If you change your mind and don't want to close the current drawing, click Cancel. If you don't want to save the file, click No. The drawing is removed from the screen and then the Open Drawing dialog box appears. If the file already has a name, it is automatically saved when you click OK. It's removed from the screen, and the Open Drawing dialog box appears. To save the file, click Yes. If the drawing name is "Untitled," the Save As dialog box appears.

Your file is saved to disk, removed from the screen, and the Open Drawing dialog box appears.

The Open Drawing dialog box displays the names of all files in the current directory that have the extension *.yoh. To display all files in the current directory, select All Files from the List Files of Type box. Change directories and disk drives by clicking in the appropriate boxes. When you have found the file you want to open, double-click the file name, or click the file name and then click OK.

Keyboard shortcut - Ctrl+O

Open Old Versions

If you have upgraded to a new version of 3D Walkaround, and you want to open one of the layouts you created with the older version, choose this option to open the desired layout. You will probably have to locate the old layout in a different folder, depending on where you saved it. Upon opening the layout, save it so that it will be recognized as a new version.

Save

Saves the current drawing to a disk file.

To save a file: Choose Save from the File menu.

If the drawing name is "Untitled," the Save As dialog box appears. To save to a different drive, select the drive you want from the

Drives box. To save the file in a different directory, double-click the directory in which you want to save the file. Click on a file name in the File Name box if you want to write over an existing file on disk. For a new file, type a name in the File Name box, then click OK. File names are limited to 8 characters, followed by a 3-letter extension. An example of a file name is MYDRAWNG.YOH. You do not need to type the .YOH extension. The program will automatically add it to your file name.

If you have already named the drawing, the file is automatically saved without any confirmation or dialog.

Save replaces any previous version, use Save As to give the file a different name.

Keyboard shortcut - Ctrl+S

Save As

Selecting Save As brings up the Save As dialog box, allowing you to name a new drawing, rename the one currently open, or overwrite the current drawing to one already on disk.

The Save As dialog also appears whenever you tell the program you want to Save and the current file name is "Untitled." When the dialog appears you can select options to save files to any drive by clicking the drive you want in the Drives box. To save to a different directory, double-click the directory where you want to

save the file. Type a name for the file in the File Name box, then <u>click</u> OK. If you want to overwrite an existing file, you can click on a gray name in the File Name box and it will appear in the entry box. File names are limited to 8 characters, followed by a 3-letter extension. An example of a file name is MYDRAWNG.YOH.

Note: You need only type the first 8 characters of a file name. The .YOH extension will be added to it automatically.

When you click OK, the file saves to disk. And depending on where you were before the Save As dialog appeared, different things will happen after the Save. If you have selected New, after the save the file is removed from the screen, and a new, "Untitled" window is opened. If you've selected Open, after the save the Open dialog appears. If you've selected Exit, the file is saved and the program closes. If you've selected Save As, you return to your current drawing.

Export

This menu option allows you to export all objects or selected objects. You can export objects in several file formats for use in other programs. The formats include: Windows Bitmap (BMP), QuickDraw PICT (PCT), PC Paintbrush (PCX), Multipage PCX (DCX), and Windows Metafile (WMF).

To save all objects or selected objects in your drawing, in the File menu select Export. First select the File Type from the list of formats. Then type a file name in the file name box. Select the directory and drive where you want to save the file and click OK.

Export to Design Estimator

This option creates files compatible with the *Design Estimator*, a powerful estimating program available from Abracadata that will attach prices to objects, enabling you to estimate the total cost of your project.

Nothing visible will happen on screen, but this option will create a file with the same name as your drawing, with the extension CSV.

Print

This option prints the current drawing on a printer device you have set up in Windows.

The Print Drawing dialog box appears. You'll see your current printer listed on the upper left. Beneath that, you'll see a small image of your drawing, covered with one or more gray page outlines. Click on the pages to turn the outlines off and on to select the page(s) you want to print. From the keyboard, you can TAB over to the image, move from page to

page with the arrow keys, and use the space bar to select and unselect the pages you want to print.

In this dialog you can also select an alternative printer quality configuration. The possible choices depend printer. You can also choose Print to File. If you select this, you'll get an additional dialog requesting file name and directory information. You can also tell the printer to Collate Copies. This means, if you have several pages and you've requested more than one copy, the printer will print them in sequential groups rather than in groups of numbered pages.

Click OK to start printing. Make sure your printer is turned on and on-line.

To check or change the paper size and other settings for your printer, click the Setup button. The Print Setup dialog box appears.

To interrupt the printing process, click Cancel or press Enter while the Cancel dialog is on the screen.

Keyboard Shortcut - Ctrl+P

Printer Setup

This option brings up the Print Setup dialog box, allowing you to select a printer and set printer options before printing. The options available depend on the printer you select. This option and the one in the Print dialog connect

you to the Windows Setup options which may be familiar to you already. Consult your Windows documentation if you need detailed information on setting up your printer.

Printing with a Laser or Ink Jet Printer

Laser printers and Ink Jet printers have "unprintable regions" around the edge of the page. Typically the unprintable region is between 1/8 & 1/4 of an inch. Each individual printer has its own alignment characteristics which can affect these unprintable regions. Therefore, if you are trying to center a drawing on a page for one of these printers, it may require some experimentation on your part to determine what type of margins you need to give your drawing in order to center it on a page.

We suggest using the default page size shown in the drawing layout dialog. The page size that you see in the drawing layout dialog indicates the maximum printable area for your currently selected default printer for the current paper size. Then make sure to leave 1/8" to 1/4" margins around the drawing. Once your drawing is finished, you can group the whole drawing and move it up, down, right, or left to center it with respect to your individual printer.

Exit

Closes the file you have been working on and quits *3D WalkAround*. If you have made any changes to the current file, this item asks whether you want to save those changes before quitting. If you select yes and your drawing already has a title, it will be saved and you will exit the program. If your drawing does not have a name you will go to the Save As Dialog to enter a name.

Keyboard Shortcut - Alt+F4

Edit Menu

Undo

Reverses the last change made to a drawing.

To undo your last action, select Undo from the Edit menu. You can undo many changes in your drawing. The number of undos available to you depends on available computer memory. It is not unusual to be able to undo 10 changes, and in some cases, you may be able to undo hundreds of changes. Redo allows you to change your mind again.

Caution: Although 3D WalkAround can remember more than your last change, it is good practice to Undo a change right away if you don't want to keep the change.

Keyboard shortcut - Alt+Backspace

Redo

Undo lets you reverse the last change made to your drawing; Redo allows you to change your mind again. You can redo as many undos as you have done.

Keyboard shortcut - Alt+Shift+Backspace

Flush Undo

This menu command clears your computer's memory of all the Undo and Redo information. It is particularly useful if you have performed an undo or redo on a bit map. Bit maps use up a great deal of memory, so you'll get better performance from this application as well as other Windows applications if you flush the buffer periodically.

To flush the buffer, simply select this menu item. You'll notice that the Undo and Redo commands become gray.

Cut

Removes all selected objects from the current window and moves them to the clipboard. This is the same clipboard shared by other Windows applications, so you can use this option to export objects or groups of objects into other programs or into another open 3D WalkAround window.

To Cut one or more objects:

Select one or more objects that you want to remove, then choose Cut from the Edit menu. All selected objects are removed from your drawing and moved to the clipboard.

Keyboard shortcut - Shift+Delete

Copy

Copies all selected objects to the clipboard without removing them from your drawing.

To copy objects: Select the objects that you want to copy, then choose Copy from the Edit menu. A copy of all selected objects is placed on the clipboard. Your original stays on the screen.

Keyboard shortcut - Ctrl+Insert

Paste

Places a copy of the clipboard's contents in the current window. This object can be something you just cut or copied to the clipboard, or it might be an object from another application.

To paste the clipboard's contents into the current drawing: Choose Paste from the Edit menu. A copy of the clipboard's contents appears in the drawing.

You can use Copy and Paste together to copy objects from one drawing into a different drawing or from one Windows application into another. Copy the object(s) to the clipboard, then open another drawing or application and paste the object(s) into it. You can perform dozens of Pastes after one Copy or Cut. So use this option if you need to duplicate an object many times.

Keyboard shortcut - Shift+Insert

Delete

Removes all selected objects from the current window, but does not move them to the clipboard. Use delete to permanently remove an object from the drawing.

To remove objects from the current drawing: Select the objects you want to remove, then choose Delete from the Edit menu, press the Delete key, or press Ctrl+Delete.

Keyboard shortcut - Delete key or Ctrl+Delete

Duplicate

You can perform the equivalent of a copy and paste in one operation by using the Duplicate option.

To duplicate objects: Select the objects that you want to duplicate, then choose Duplicate from the Edit menu. A copy of all selected objects is placed on the clipboard, your original stays on the screen, and a copy of the selected objects appears in the drawing.

Keyboard shortcut - Ctrl+D

Select All

This option selects every object in the current drawing. Every object will have handles. You can then perform any of the Edit menu operations on all of the objects at once, provided none of the objects are locked. (See "Lock" under the Arrange Menu). You can stretch all objects, change colors, line sizes, line pattern and fill pattern. This command can also be handy if you want to move your whole drawing to a different screen location.

Keyboard shortcut - Ctrl+A

Repaint

Repaint redraws the *3D WalkAround* screen. Select Repaint when you see parts of objects or other items on the screen that shouldn't be there. This sometimes happens after rotating or dragging certain types of objects or text, or under certain scrolling conditions.

Keyboard shortcut - Ctrl+P

Arrange Menu

Arrange	
Bring To Front	Ctrl+F
Send To Back	Ctrl+B
Rotate Left	Ctrl+L
Rotate Right	Ctrl+R
Rotate Left 1 degree(s)	Ctrl+1
Rotate Right 1 degree(s)	Ctrl+2
Flip Horizontal	Ctrl+H
Flip Vertical	Ctrl+I
Group	Ctrl+G
Ungroup	Ctrl+U
Lock	Ctrl+K
Unlock	Ctrl+J

Bring to Front

Places selected objects in front of any objects that overlap them.

Select one or more objects that are behind other objects. Choose Arrange: Bring to Front to bring the objects to the front of the drawing.

Keyboard shortcut - Ctrl+F

Send to Back

Places selected objects behind any objects that they overlap.

Select one or more objects that are in front of other objects. Choose Arrange: Send to Back to send the objects to the back of the drawing.

Keyboard shortcut - Ctrl+B

Rotate Left

Rotates selected objects 90 degrees to the left.

Select the objects you want to rotate, then choose Rotate Left from the Arrange menu.

Keyboard shortcut - Ctrl+L

Rotate Right

Rotates selected objects 90 degrees to the right.

Select the object(s) you want to rotate, then choose Rotate Right from the Arrange menu.

Keyboard shortcut - Ctrl+R

Rotate Left 1 Degree(s)

Rotates selected objects a given number of degrees to the left. To set the number of degrees, see Preferences under the Options menu.

Select the object(s) you want to rotate, then select Rotate Left 1 Degree(s) from the Arrange menu.

Keyboard shortcut - Ctrl+1

Rotate Right 1 Degree(s)

Rotates selected objects a given number of degrees to the right. To set the number of degrees, see Preferences under the Options menu. Select the objects you want to rotate, then choose Rotate Right 1 Degree(s) from the Arrange menu.

Keyboard shortcut - Ctrl+2.

Restrictions on Rotation

Note: Some objects, such as bitmaps, cannot be rotated. If you select a non-rotatable object, the rotation options on the Arrange menu will be gray, indicating that the options are not available for that object. If you rotate a non-rotatable object as part of a group, the object will move to maintain its position within the group, but the object itself will not rotate.

Flip Horizontal

Flips selected objects from side to side. (Note that some objects, such as charts and text, cannot be flipped.) <u>Select</u> the object(s) you want to flip horizontally, then choose Flip Horizontal from the Arrange menu.

Keyboard shortcut - Ctrl+H

Flip Vertical

Flips selected objects from top to bottom. (Note that flipping certain types of objects, such as stairs, may give unpredictable results in the 3D Window.) Select the objects you want to flip vertically, then choose Flip Vertical from the Arrange menu.

Keyboard shortcut - Ctrl+I.

Restrictions on Flipping

Note: Some objects, such as text objects, cannot be flipped. If you select a non-flippable object, the flipping options on the Arrange menu will be gray, indicating that the options are not available for that object. If you flip a non-flippable object as part of a group, the object will move to maintain its position within the group, but the object itself will not flip.

Group

Converts 2 or more selected objects to a single grouped unit. Any changes made to the grouped unit will affect all the component objects.

Select the object(s) you want in the group. Choose Group from the Arrange menu,

or press Ctrl+G.

Keyboard shortcut - Ctrl+G

Ungroup

Separates a grouped unit into its individual component objects.

Select a grouped object and choose Ungroup from the arrange menu, or press Ctrl+U.

Keyboard shortcut - Ctrl+U

Lock

Prevents selected object(s) from being changed, moved, grouped, ungrouped, or deleted.

Select the object(s) you want locked and choose Lock from the Arrange menu (or press Ctrl+K).

A locked object will have hollow handles when you select it.
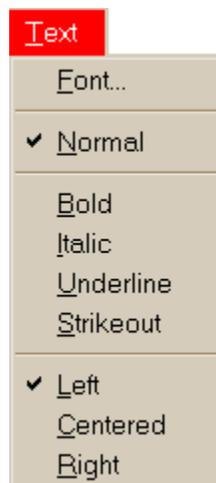
Keyboard shortcut - Ctrl+K

Unlock

Unlocks selected locked objects, enabling you to move and rotate them, change their colors, etc.

Select the objects you want to unlock and choose Unlock from the arrange menu.

Keyboard shortcut - Ctrl+J.

Text Menu

The text menu allows you to set the size, style, font, and alignment of text objects. You can make changes to styles, sizes and fonts from the Font dialog box and you can make style and alignment changes directly from the Text menu. Note: You cannot change the size, style, or font of only a portion of a text object. If you need a font, style, or size change in the middle of a phrase or paragraph, simply complete the

text before the change. Make the appropriate change in the Font dialog and start a new text object right next to the first text object. You can continue to alternate between styles, fonts, and sizes if you need to.

The Font Dialog

When you select Font... the Select Font dialog pops up. The font, size, and style you choose in this dialog affect all selected text objects and the text tool. With the option you can set a default for the size you want your text to start out with. If you change Fonts, Styles, or Sizes, they'll stay that way until you change them.

To choose a font, size, or style: Choose Font... from the Text menu. Select the font you want from the Select Font box, select a size from the Size box. You can also select a Style if you want to set a particular default style. Click OK. The next text you type will be according to the specifications you set. If you have some text selected while you change the options in the Select Font box the selected text will take on the new settings.

Normal Text Style

The normal text style cancels all current style selections. The font selection and the size remain the same.

Bold Text Style
Boldface letters are slightly larger than normal and they appear thicker. Click Bold on the Text menu to embolden a selected text object and to affect the Text tool.

When the Bold menu item is chosen, a check mark appears by it to show it is in use. To turn Bold typing off, click on the menu item again, or click on Normal.

Italic Text Style

An italicized word consists of letters leaning slightly to the right. Italics are often used to show emphasis on a word or idea.

Click Italic in the Text menu to initialize a selected text object and to affect the Text tool.

When the Italic menu item is chosen, a check mark appears by it to show it is in use. To turn italic typing off, click on the menu item again, or click on Normal.

Underline

Choosing the Underline option from the Text menu causes text to be underscored. Click Underline to underline selected text and to affect the Text tool.

When the Underline option is chosen, a check mark appears by it to indicate it is in use. To turn underline typing off, click on the menu item again, or click on Normal.

Strikeout

The Strikeout item on the text pull down menu allows you to type text with a solid line crossing all of the letters.

Click Strikeout to affect a text object and to affect the Text tool.

When the Strikeout option is chosen, a check mark appears by it to indicate it is in use. To turn off the Strikeout option, click on the menu item again, or click on Normal.

Left Justify

To Left Justify selected text and to affect the Text tool, click Left on the Text menu.

Centered

To Center a block of text and affect the Text tool, click Center on the Text menu.

Right Justify

To Right Justify a block of text and to affect the text tool, click Right on the Text menu.

Layout Menu

```
Layout   Options   3-D   Help
   Drawing Size...
   Drawing Scale...

   Show Rulers
   Show Ruler Lines
   Show Page Breaks
 ✓ Show Status Bar

   Create Camera
   Hide Camera

   Show Grid
   Snap to Grid
   Grid Spacing...

   Zoom              Ctrl+Z
   Unzoom            Ctrl+Y
   Whole Drawing     Ctrl+W
   Restore           Ctrl+E

   Layer                    ▶
```

Drawing Size

This option lets you change the size your drawing. The size will always be a whole number of pages, based on the paper size and orientation you have chosen for your printer. The numbers that appear in the Width and Height boxes tell you the total printable area of

the drawing. (Depending on the type of printer, the printable area of a page is often less than the full size of the page.)

The Drawing Size dialog also allows you to select the units of measure you want to use: inches, centimeters, or millimeters. To change the units of measure, click the button for the unit system you want to use. If you have Show Rulers selected, the rulers will change to the selected units when you close the Drawing Size dialog.

To change the drawing size or units of measure: Choose Drawing Size from the Layout menu. Use the arrow keys or the arrow buttons on the Width and Height boxes to change the number of pages in the drawing. Use the lists of available printers and paper sizes at the bottom of the dialog to determine the size of each page. Use the Units buttons to change between English units (inches/feet) and metric units.

Drawing Scale

There is an unlimited number of scale choices available for each unit of measurement (inches, centimeters, millimeters); however, four of the most commonly used scale choices are provided as dialog options. To set a custom scale, click the up and down arrows next to the units you want to change.

The default scale when you first start 3D WalkAround is 1/2 inch = 1 foot (1/2 inch on the screen represents 1 foot in the real world). Ruler units indicate the on-screen measurement; logical units indicate the real-world measurement.

Each scale change increases or decreases the drawing's real-world width and height. For example, if you choose 1/8 inch = 1 foot, the drawing's real-world width increases to 64 feet, and the height increases to 88 feet.

Do some planning before choosing or changing a scale. Although 3D WalkAround can rescale existing objects when you change scales, it's much better to choose the correct scale before you begin drawing and stay with that scale.

If you decide to use a custom scale, we suggest that you choose a number for the logical unit that is divisible by 12 (if you're using English scale) or by 10 (if you're using metric).

Show Rulers

This option displays or removes the on-screen rulers. A check mark next to this option indicates that it is in effect. Rulers are handy for more accurate drawing layouts and when you want to draw a specific sized object. Ruler measurements are set according to the Ruler Type you have selected in the Drawing Size dialog. They can be English-Inches, Metric-Centimeters, or Metric-Millimeters.

Ruler Type

3D WalkAround allows you to select an appropriate unit of measure for your ruler. Valid selections are inches, millimeters, or centimeters.

To change the unit of measure, click one of the ruler type options from the Drawing Size dialog box located in the Layout Menu. The drawing width and height will change to reflect the selected measurements. If you have Show Rulers selected, the rulers on your drawing will reflect the selected units.

Show Ruler Lines

This option displays or removes the on-screen rulers. A check mark next to this option indicates that it is in effect. Rulers are handy for more accurate drawing layouts and when you want to draw a specific sized object. Ruler measurements are set according to the Ruler Type you have selected in the Drawing Size dialog. They can be English-Inches, Metric-Centimeters, or Metric-Millimeters.

Show Page Breaks

This menu option lets you show or hide page breaks. Page breaks appear as light gray lines across your drawing area. These lines are for reference only and will not print.

When you first enter the Mighty Draw program, the drawing size is automatically set to the maximum printable region for one sheet of paper based on the paper specified for your currently set default printer. If you increase your drawing size beyond that set by the default printer, Mighty Draw will break up your drawing area into separate pages. Choosing the Show Page Breaks option causes the outlines of each page to display.

To learn how to change your drawing size, see the Drawing Size command under the Layout menu.

When the Show Page Breaks option is chosen, a check mark appears by it to indicate it is in use. To turn off the page breaks, click on the menu item again.

Show Status Bar

The status bar is the gray bar that runs along the bottom of the drawing window. It displays information about the currently selected object, or the number of selected objects if more than one object is selected. Depending on the object, you might see what type it is, or other pertinent information.

Click on the Show Status Bar option to display or hide the status bar. A check mark next to this option indicates that the status bar will display. Click on an object to see its information.

Create Camera

Selecting this option from the Layout menu will place a camera in the center of the 2D view. The camera is used to direct the 3D view. The camera object is represented by two boxes. The smaller box is the aiming box. Moving this box around will allow you to change the focal point of your 3D view, which is useful if you want to pan right and left to see different views through one point. The larger box is the main camera. Click on the black dot in the center of the main camera, and you can change your view while maintaining your focal point. If you grab the outside of the main camera, you can move both boxes at the same time, thus changing your focal point and view point simultaneously.

Creating a camera with a 3D Window already open will place the camera in the 2D Window, but you'll have to click on it to activate it. If you place a camera with no 3D Window open, when you do open a 3D Window, the camera will activate. Multiple cameras can be created and shown in the 2D view simultaneously.

Hide Camera

Selecting this option will cause all cameras present in the 2D Window to disappear. Any selected camera will still be present and function normally. Deselecting this option will bring the cameras back into view. Most of the

time, you will want to see your cameras, but you may want to hide them when printing, for instance.

Show Grid

This menu option lets you show or hide grid points, a handy drawing aid. If Snap to Grid is enabled, any object you draw or resize will automatically be snapped to the nearest grid points, using the coordinates of the object's upper left corner. To align an existing object to the grid, hold down the Ctrl key and move the object.

If you want to align an existing hollow line to the grid, move the cursor very slowly, or the hollow line may "jump" across the screen.

When the Show Grid option is chosen, a check mark appears by it to indicate it is in use. To turn off the grid points, click on the menu item again.

Use the Layout menu option Grid Spacing to set the spacing of the grid points.

Snap to Grid

When grid snap is enabled, any object you draw or resize will automatically be snapped to the nearest grid points, using the coordinates of the object's upper left corner.

When the Snap to Grid option is chosen, a check mark appears by it to indicate it is in use. To turn off the grid snap, click on the menu item again.

Use the Layout menu option Grid Spacing to set the spacing of the grid points.

Grid Spacing

This menu option allows you to set the spacing of the grid points. The grid points are the little dots that appear on the screen, spaced at regular intervals. For each scale, there is a minimum and maximum number of inches (centimeters, millimeters) at which the grid points can be spaced. Both the vertical and horizontal spacing can be changed.

To change the grid spacing, press and hold the left mouse button on the up arrow (to increase the amount of space between grid points) or the down arrow (to decrease the amount of space).

Zoom

Use the zoom feature to get a close-up view of your drawing. You can draw and edit just as you normally do on the full screen. You'll find that the easiest way to use it is with its keyboard shortcut — Ctrl+Z. Each press of the keyboard shortcut changes the magnification of your drawing by 10%.

Unzoom

Use the unzoom feature to get a distant view of your drawing . You can draw and edit just as you normally do on the full screen. You'll find that the easiest way to use it is with its keyboard shortcut — Ctrl+Y.

Each press of the keyboard shortcut changes the magnification of your drawing by 10%. By unzooming a number of times, you can see the layout of your entire composition.

Whole Drawing

The Whole Drawing command zooms your drawing out so that you can see the whole drawing on the screen at the same time. You can draw and edit just as you normally do at other levels of magnification. The keyboard shortcut is Ctrl+W.

Restore

Restore resizes your screen to its standard default. This is handy to use after zooming or unzooming to return to the original drawing size.

Layer

This menu option allows you to create a layer, remove a layer, or view the base (union of all layers) of a drawing. Layered drawings are

useful for showing different floors of a house, electrical schematics, and even plumbing diagrams. The default setting for this option is Base layer.

To create a layer: Click the plus (+) sign in the upper left corner of the window, above the "working rectangle" at the left end of the pattern palette or choose the Create Layer menu item. The Create Layer dialog appears.

You can choose to have a layer appear "grayed" when you're drawing on another layer by clicking the box next to Show Outline when Inactive. If at any time you want to change this setting, double-click on the layer button number to bring the Create Layer dialog back onto the screen.

To remove a layer: Click the minus (-) sign in the upper left corner of the window, or choose the Remove Layer menu item.

When you remove a layer, its objects will remain in the base layer. To remove the objects, you need to delete them.

To view the base: Click the "Base" button in the upper left corner of the window, or choose the Base menu item in the Layer submenu under the Layout menu.

If you draw objects on the Base layer and want to move them to another layer, select all the objects you want to move, then choose Cut

from the Edit menu. Create a new layer, then choose Paste from the Edit menu to bring the objects onto the layer.

Options Menu
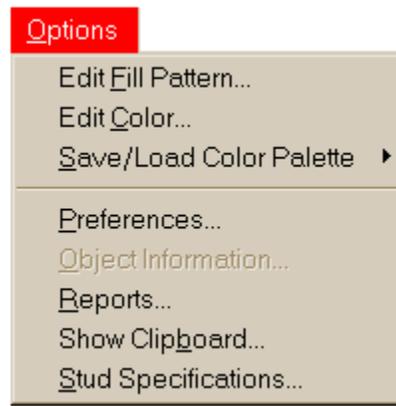
To receive more information on the Options menu or one of its menu options, refer to the on-line help file (press F1 while the menu item is highlighted).

Edit Fill Pattern

This menu option provides you with a utility to add patterns to the pattern palette. You can have a custom pattern (and color palette) for each drawing.

Or, if you wish to set up a set of default patterns for all drawings, simply edit or add patterns) and then save a one-object drawing as "default" or "mypalett." Then, when you

start a new drawing, open "default" or "mypalett" to access all your custom patterns. Delete the one object and start a new drawing.

Be sure to use Save As when you save that drawing the first time so that you don't over-write your default drawing. For details on how to edit patterns, see Creating New Patterns.

Edit Color

This menu option provides you with a utility to add colors to the color palette. You can have a custom color palette (and custom pattern palette) for each drawing.

You can save the new palette by using the Save/Load Color Palette menu option.

For details on how to edit colors, see Creating New Colors.
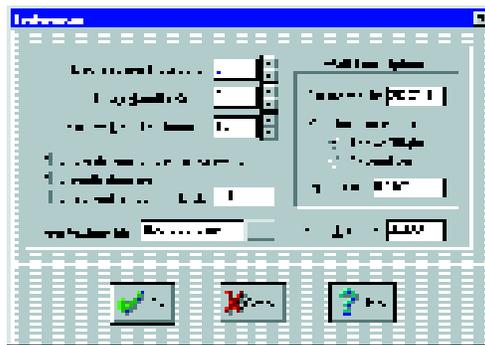
Save/Load Color Palette

This menu option allows you to save or load a custom color palette.

To save a color palette: Choose the Save Color Palette menu option from the Options menu. The Save Color Palette dialog appears.

To save to a different drive, select the drive you want from the Drives box. To save the file in a different directory, double-click the directory in which you want to save the file. Click on a file name in the File Name box if you want to write over an existing file on disk. For a new file, type a name in the File Name box, then click OK. File names are limited to 8 characters, followed by a 3-letter extension. An example of a file name is MYPALETT.PAL. You do not need to type the .PAL extension. The program will automatically add it to your file name.

To load a color palette: Choose the Load Color Palette menu option from the Options menu. The Load Color Palette dialog appears.

This dialog box displays the names of all files in the current directory that have the extension *.pal. To display all files in the current directory, select All Files from the List Files of Type box. Change directories and disk drives by clicking in the appropriate boxes. When you have found the file you want to open, double-click the file name, or click the file name and then click OK.

Preferences

This dialog lets you set the rotation factor, drag handle size, set hollow line thickness, choose to display object dimensions while drawing, use "smooth drawing", and set automatic wall snap.

Degrees per Rotation: Lets you specify the number of degrees of rotation for the Arrange menu options Rotate Left 1 degree(s) and Rotate Right 1 degree(s). There is a limit of 90 degrees.

Drag Handle size: Lets you specify the size of the drag handles that appear on objects you have selected.

Hollow Line Thickness: You can change the width setting for the hollow-line tool by increasing or decreasing the number of units. (Each unit is 1/300 of an inch, no matter which scale you're in.) Changing the number of units will not affect existing hollow line objects.

Show 3D View in insert dialog: This option allows you to set whether library objects are represented by overhead or 3D views. In version 3.0 (or later) of 3D Walkaround, the default setting shows library objects represented by .tif files, giving the objects a 3D appearance. If you desire to see the objects represented by overhead views instead of 3D views, you can change this by unchecking this box.

Smooth Drawing: This option eliminates the "flicker" as you move objects around the drawing.

Show Dimensions When Drawing: This item allows you to show or hide object size measurements that appear when you draw or resize an object. Object dimensions are displayed in the working unit of measurement (English or metric). To change the working unit, see <u>Drawing Size</u> under the <u>Layout</u> menu.

Snap Wall Ends: When you're drawing the walls of your house using the wall tool, this item (when in effect) automatically snaps the ends of walls together, making it easier to draw. After drawing the first wall, position the cross hairs close to the end of the first wall and draw the second wall. The second wall will automatically be snapped to the end of the first. A check mark next to this item indicates that it is in effect.

Wall Tool Options

Smart Walls: Checking this option sets the wall drawing tool to draw with a thick double line instead of a single line. When wall pieces are joined at any point, the walls will appear to meld together so that the overlapping lines will disappear, thus creating a more appealing appearance.

Put Dimension Line: This item lets you change the display option for automatic dimension lines associated with wall objects (see Measuring Tool). You must select your preference for this item before drawing wall objects. Once a wall has been drawn, you cannot change the location in which the dimension lines will appear.

If you click the diamond next to Below/Left, dimension lines will appear below horizontal walls and to the left of vertical walls.

If you click the diamond next to Above/Right, dimension lines will appear above horizontal walls and to the right of vertical walls.

Wall Snap Distance (Dist:) This item lets you adjust the distance for automatic wall snap. (See above.) You can change the snap distance by increasing or decreasing the number of inches.

Floor Texture File

This option allows you to change the texture of the floor. The floor texture files are located in the data directory or pick a floor texture from the texture book. In this space type the name of the floor texture you want (i.e. floor001, floor002, etc...) . Either hit the enter key or click OK. If you have entered a valid file name, you will see the floor in the 3D viewer change to the one you selected.

Object Information

The Object Information dialog displays detailed information about an object. You can open the dialog in two ways:

— Right-click or double-click on an object, or

— Select an object and choose Object Information from the Options menu. If more than one object is selected, the dialog will display information about the one object that was drawn or brought to the front most recently.

Depending on the object type, the dialog displays the following information:

Type: This item defines the selected object (line, rectangle, bitmap) and indicates whether it has been rotated.

Description: This item lets you type in your own description of the object. For example, you may want to describe a rectangle as "Kitchen table" or a line as "Balcony".

Length: Vertical measurement of the object, shown in working unit of measurement.

Width: Horizontal measurement of the object, shown in working unit of measurement.

Area: This is the actual area of the object, shown in working unit of measurement.

Angle: Inclination of object in degrees; applies to lines, constrained lines, walls drawn using the wall tool, and hollow lines.

Layer: Indicates the layer in which the object resides.

Data for Estimating

Estimating Description: This item works with the Design Estimator program, available from Abracadata.

If the selected object has an Estimating Item # already included in the Design Estimator database, don't worry about filling in this box. If you're adding an object to the Design Estimator database, you can type in a description. This description is usually more technical than the one described in the previous dialog item.

Estimating Item: This item works with the Design Estimator program.

Each object in the Design Estimator database has a unique ID number. If the selected object has an Estimating Item # already included in the Design Estimator database, don't worry about filling in this box. If you're adding an object to the Design Estimator database, you can type in a number here.

Unit Symbol: This item works with the Design Estimator program. It tells the Estimator what units (square feet, linear feet, number of pieces, etc) to use for the of object.

Include in Estimating: This item applies to the Design Estimator program. When checked, the object will be included in the file created when you use the File menu option Export to Design Estimator. Unchecked, the object will be excluded.

Include in Material List: When checked, the object will be included in the Reports shopping list. Unchecked, the object will be excluded.

Stud Info Button

If a stud-object has been selected, the object information box will display a yellow "Stud Info" button. When you press this button all stud information is displayed which includes board size, number of boards, center distance, and total board length.

3D Object Info Button

The 3D Object Info button within the Object Information dialog displays additional information about 3D objects. The information is used by the 3D WalkAround viewer; it does not affect the appearance of the object in your 2D design view.

The information in the dialog includes:

Height Off Ground: Distance from the ground to the base of the object, shown in the working unit of measurement. You can change the object's height by clicking the cursor on the box

and typing a new height. (Note: If the 3D WalkAround viewer is open, the height of the object in the viewer will not change until you click Okay on the Object Information dialog).

3D Image File Name: The 3D Image file is a 3D object description file. You may use an .RWX file in the DATA subdirectory. See the section on how to "Create a 3D Object" for more information on 3D image files.

Texture File Name: Optional name of a bitmap used to "texture" the object. Walls can have a left and a right side texture.

Reports

This option lets you generate a list of materials, to be printed or to be sent to the clipboard (for formatting in your favorite word processor). The materials list will show the name of each object and the measurements appropriate for that object.

All objects in the file will be included in the report, except objects you have specifically excluded. To include an object in the materials list, click the right mouse button on the object to bring up the Object Information dialog. Put a check mark in the box (click on) next to "Include in Material List" to include the object in the report.

Show Clipboard

This option lets you view, save, and delete the contents of the clipboard. See your Windows User's Guide for details.

If this option does not work, you probably did not install the clipboard viewer (clipbrd.exe) when you installed Windows on your computer. You can install the clipboard viewer at any time using the Windows Setup program in your Main program group.

Stud Specifications

This item lets you adjust the settings for the stud tool.

Tracking Option: This changes the way the stud tool defines the area to be filled with studs. You can draw using a flexible box (Rectangle option) or a flexible line (Polygon option).

To change the tracking option, click the diamond next to the one you want to use.

If you draw a stud object using the polygon option and object dimensions displayed, do not try to drag the line of the polygon off the edge of the drawing area. Instead, scroll your drawing so enough drawing area is available for your object, then draw.

Spacing, On Center: This refers to the space between studs, measured from the center of one board to the center of the next adjacent

board. Four of the most commonly used on center distances are provided as dialog options.

To change the spacing for studs, <u>click</u> the diamond next to one of the provided spacings, or use the up and down arrows to specify custom spacing.

You can use the stud tool to help you draw decking. Just change the on center distance to match board width.

Orientation: The top four orientations shown are side views of the boards; the bottom four are on-end views. To change the orientation, click the diamond next to the one you want to use.

Board Size: When you draw a stud object using a side view orientation, you determine the length of the boards by dragging a wider or longer box. When you draw a stud object using an on-end view orientation, the length of the boards will be that specified under Length.

Four of the most commonly used board sizes are provided as dialog options. To change board size, click the diamond next to the one you want, or use the up and down arrows to set custom board thickness, width, and length.

3D Menu

Start WalkAround

This option starts the Abracadata 3D WalkAround viewer. The option is grayed if the viewer is already running.

Update WalkAround

This option updates the view in the 3D WalkAround viewer to reflect any changes you have made to your drawing since the last time the view was updated. For example, if you have added furniture to the drawing, choosing this option will cause the new furniture to appear in the viewer.

This option has no effect if you have enabled the Automatic Updates option. In that case, updates are sent to the 3D WalkAround viewer automatically as you modify the drawing. There is no need to use a separate command to update the viewer.

This option is grayed if the 3D WalkAround viewer is not active.

Stop WalkAround

This option terminates the Abracadata 3D WalkAround viewer. The option is grayed if the viewer is not running.

Automatic Update

Put a check mark on this menu option if you want to update the 3D WalkAround window every time you make a change to your design, such as adding walls, moving objects, and the like. This is the most natural way to use the 3D viewer, but you may wish to disable it on a slower computer, to improve the performance of the drawing program.

If the option is not checked, you must use the Update WalkAround menu command to update the 3D scene after you have made changes to your 2D design.

Smooth Update

Smooth Update adds to the Automatic Update option by repositioning the object in the 3D viewer while you are moving the object in the 2D layout, instead of waiting until you release the mouse button. If you are unsure if your computer can handle Automatic and Smooth Update, try it and find out.

Put a check mark on this option if you want automatic updates to be sent to the 3D WalkAround viewer continuously as you move or rotate objects in your design. On a powerful computer with good video performance, this can often give the impression of smooth movement in the viewer, but it may slow the performance of the drawing program.

If the option is not checked, automatic updates will only be sent when you release the mouse button or movement key at the end of a drag or rotate operation.

This option has no effect unless the Automatic Update option is also checked.

Setup WalkAround

This option opens a dialog box where you can enter the complete path to the 3D WalkAround program (abra3d.exe). Normally you don't need to do this, because the location is filled in automatically by the setup process.

Creating Your Own 3D Image Files

3D WalkAround uses Renderware® which creates an .RWX file format for it's 3D images. This is an ASCII file which can be edited, but best results come from the use of 3rd party 3D modeling software. There are also many excellent 3D files available as public domain, in both 3D and DXF formats.

In order to create your own 3D image files, you will need one of the many third-party 3D design programs on the market. The best choice would be Autodesk's 3D studio, since it has the most comprehensive file format.

We have included file converters for both 3D Studio® (.3DS) file formats and AutoCad's .DXF file formats.

Instructions for converting a .3DS file:

In 3D Studio, you may set the units to be real-world by choosing the "unit setup" menu option, and entering: "architectural", denominator: 2, 1 unit = 1.0 feet.

While in 3D Studio, move your object so that the bottom-front-left corner of the object is at the origin (0,0,0). One easy way to do this is to turn on the construction planes by choosing the menu DISPLAY/CONST.../SHOW. Then in both the top and front viewpoirts move the object to the upper right corner. Making sure that the lower left corner of the bounding box of the object falls on the spot where the two black lines cross.

In order to prevent errors and assure that the object loads, you will want to change all of the material on the object so that only .BMP format texture files are being used. The Abracadata 3D WalkAround viewer

only supports .BMP format textures, so all 3DS materials that use JPEG's, GIF's, TIF's or any other non-BMP graphic file format should be converted to BMP or removed.

Once all of that is done, save the file to the directory of your choice.

Converting 3D Studio & .DXF files:

Before proceeding, please take note that the .DXF file format is an absolute "bare-bones" format. All of the information contained within a .DXF file is minimal at best, so it doesn't make the best candidate for accurate model creation or even accurate conversion. With all of the inherent constraints of dealing with such a minimal file format, a lot of experimentation will be required in order to come up with a usable object. Add to this the hundreds of different 3D design packages that save .DXF files incompletely, or with different scaling factors or rotations, and the problem increases. But it is possible.

Depending on the 3D design program that you are using, the object may appear differently after being converted to a 3D WalkAround-compatible file. But in most tested, the bottom-front-left corner of the object should be at the origin (0,0,0) and it should be inverted (upside down) when viewed from the front viewpoint. The actual conversion process is as follows:

1. In Windows 95, go to the Utility folder and start the Renderware file conversion program by double clicking on the file named **RW3DCONV.EXE.**

2. Choose **Open** from the file menu. Select a 3DS or DXF type file. Match the settings from Figure A on the previous page.

Position and Size

Make sure that "Centre object" is not checked. Choose "Scale by" 0.0999.

Hierarchy

Check the "Use prototypes"
Choose "Flat (Single clump)"

Hints

Choose "Hidden surface"

Textures

Check "Lit", "Show textures" and "Override extension" with BMP typed in.

Click OK

Next, **SAVE** the file into your DATA directory as named by 3D WalkAround (named in the "Setup", under the Options menu in the 2D window.

Once the file is converted:

Once you have a 3D Walkaround-compatible .RWX file, move that file into the DATA subdirectory of the directory where you installed 3D Walkaround, along with any .BMP texture files that the object needs in order to display correctly. Then open the 3D Walkaround program and draw a 2D top-view representation of your object. Once that is finished, select all of the pieces of your top-view and group them together. Select that grouped object, then click on the 3D Menu and choose "Create 3D object". You will be presented with a 3D Info dialog box, where you type in the name of the .RWX file for the object that you created in the 3D Image file box. You may also type in an overriding texture file in this dialog box, which will be applied to the entire object. Once you OK this dialog, the object is created and you should see it in the 3D viewer. If you would like to quickly access this object in the future, consider adding it to a library.

If all of the instructions have been followed, and a question mark appears, that means that something went wrong. Things to check include:

—Verify that all of the textures on the object are in .BMP format only.

—Verify that the object's .RWX file is in the 3DWALK/DATA directory.

If the object appears, but isn't the right scale with all of the rest of the objects, you will need to go back to your 3D design program and change the size of the object accordingly and reconvert it. The same is true if the object shows up too dark — lighten the textures in your 3D design program then reconvert the object.

Chapter 5
3D WalkAround View

Design Your Own Home: 3D WalkAround is not a single application but a pair of applications that are used together; Design Your Own Home and 3D WalkAround. Design Your Own Home is the main application. With it, you draw the walls of your floorplan, then you can add symbols to represent doors, windows, cabinets, furniture, and so on. To help you to visualize your home design, 3D WalkAround generates a three-dimensional view of its interior. When you select Start WalkAround from the 3D pull-down menu the 3D View becomes the active viewing window. Use your mouse to move through your floorplan.

The 3D WalkAround View offers two viewing modes: **Birds-Eye View** and **WalkAround View**. To toggle between the two, the following keystrokes are available:

Home — Switch to walk-around mode, eye height, looking forward.

End — Switch to birds-eye mode, above current position, looking down.

Function Keys

The following function keys will help you to navigate in 3D View. These keys are very helpful to use if you cannot figure out where you are in your layout. Note: F4 switches you to birds-eye mode, F5-F8 switch you to WalkAround mode.

F4 — Bird's-Eye view

The F4 key instantly jumps you to Birds-Eye View mode positioned above your layout looking down.

F5 — Front

The F5 key instantly jumps you to WalkAround Mode and positions you at the front of your layout.

F6 — Left Side

The F6 key instantly jumps you to WalkAround Mode and positions you at the left side of your layout.

F7 — Back

The F7 key instantly jumps you to WalkAround Mode and positions you at the back of your layout.

F8 — Right Side

The F8 key instantly jumps you to WalkAround Mode and positions you at the right side of your layout.

Open

Use this command to select the Design Your Own Home drawing you want to view in the 3D Walkaround viewer.

This command is only present on the File Menu if you are running the 3D WalkAround viewer in stand-alone mode. If you started the viewer from the 3D Menu in Design Your Own Home, use the File Open menu command in that program instead.

Keyboard Shortcut - Ctrl+O

Wireframe

This option allows you to view the 3D window without any texture or shading. This will greatly speed up the movement in the 3D window.

Wireframe Mode:

On — Textures and shading do not appear. (faster)

Off — Textures and shading appear normally. (slower)

Textures

This option allows you to turn off textures on the walls and floor. Note that all furniture objects still display their textures. This option is most useful when the focus is on alignment of the walls.

Texture Mode (Ctrl+T):

> On — Textures (fabrics, wallpaper, wood-grain, etc.) appear on surfaces (slower).

> Off — Textures do not appear (faster).

Faster but Coarser

This option allows you to choose between quality and speed. When "Faster by Coarser" is checked, the 3D viewer drops into a lower resolution display method, but speed increases dramatically.

Faster Mode (Ctrl+F):

> On — Scenes are drawn coarsely (faster).

> Off — Scenes are drawn with finer detail (slower).

Lighting Control

A special lighting feature is available in 3D WalkAround. The first time you use this program the default is to have the lighting turned off. Turn on the lighting by either pressing Ctrl+L or by clicking on the lighting mode feature in the options menu. When a check mark appears to the left of the lighting mode the feature is turned on. When this feature is on you will see that surfaces are shaded more realistically. When this feature is off each surface has a single lighting level. You can brighten the lighting level by pressing F2. Continue to press F2 until you get to the brightness level that you like best. To darken the lighting press F3. This will dim the lighting. Again, continue to press F3 until the lighting is just how you like it.

WalkAround View

In this view, you walk through the floor plan as if you were walking through a real house. When starting WalkAround mode, you will be placed in the bottom center facing toward the house.

As with the Birds-Eye View, to move through the house with your mouse: Consider the mouse to be a virtual joystick. Center the mouse in the WalkAround window. Press and hold down the left mouse button. Moving the mouse forward and backward will walk the 3D

viewer forward and backward respectively. Moving the mouse side to side causes the 3D viewer to rotate in that direction.

For more precise control of your movements through the house use the arrow keys on your keyboard. While in the WalkAround View the following keyboard controls are available.

Up/Down Arrow — move forward, back.

Ctrl + Up/Down Arrow — tilt up or down.

Page Up / Page Down — raise or lower eye level.

Left/Right Arrow — turn left or right.

Shift + Left/Right Arrow — slide left or right.

Escape — stop movement.

Birds-Eye View

When you first start 3D WalkAround, the default mode is Birds-Eye View. This mode provides an aerial view to inspect the house and view the floor plan from any angle. To move around while in the Birds-Eye View consider the mouse to be a virtual joystick. Center the mouse in the WalkAround window. Press and hold down the left mouse button. Moving the mouse forward and backward will

walk the 3D viewer forward and backward respectively. Moving the mouse side to side causes the 3D viewer to move in that direction.

For more precise control use the arrow keys on your keyboard. While in the Birds-Eye View the following keyboard controls are available:

Up/Down Arrow — move to top or bottom of layout.

Left/Right Arrow — move to left or right side of floorplan.

Shift + Left/Right Arrow — rotate layout left or right.

Page Up / Page Down — zoom out/ zoom in.

Setup

This option lets you set the path to your image files. Normally the path is set when you first install the program, and you don't need to change it.

Printing a 3D View

Set the 3D View window so it displays the view you want to print. Use Ctrl+C or Edit | Copy to copy the view to the clipboard. Paste the image into a new Architecture drawing, stretch it to the size you want, and choose File | Print.

Or you can paste the image into Paintbrush or your favorite picture editing program for touch-up and printing.

Exit

Closes the file you have been viewing and closes the 3D WalkAround viewer.

Keyboard Shortcut - Alt+F4

Chapter 6
Tips & Hints

Interfacing with Design Estimator

It's easy. Just select the "Export To Design Estimator" option in the File menu. The program will make a file with your current file name and the extension CSV. That file will be placed in the working directory. When you use Design Estimator access the file in the same directory where you saved your plan.

Importing Files

Importing files from the DOS version of Design Your Own Home. Each program (3D WalkAround, Architecture, Interiors, and Landscape) can import files from any of Abracadata's DOS Design Your Own Home programs. To import a file, simply select Open, select the drive and directory where you Abracadata Design Your Own Home DOS files are, and then choose All file in the List Files of Type box. Select your DOS file, click okay and it will import into the Windows program. **Note:** Before opening the DOS file, be sure the current font and style is what you want for your plan. The import function uses the current font for all text that is imported.

Working with Layers

1. **Objects on more than one layer**. If you draw an object on two layers, the object will act as if it's only on one, even though you see it in two layers. So if you change it on one layer, even if the other layer is inactive, it will still change on the second layer. If you delete it from one layer, it will be deleted from the other layer also.

2. **Deleting layers**. You can delete a layer or an object, but you get a different result for each. If you delete a layer, its objects will reside on the base, they won't go away. If you want to get rid of all the objects on a layer, delete them just like any other object, then delete the layer.

On the base layer of your drawing, the appropriate layer where the object originally was drawn will also change. This will be helpful for vertically lining up load-bearing walls, for example. Just set them on top of each other in the base layer, and the separate layers will also be set correctly.

4. **Tricks with "Show outline when inactive".** If you are creating a multi-story house, and you want to add electrical and plumbing to each floor as a separate layer, be sure to utilize the "Show Outline when Inactive" option available in the layer dialog. To get back to an existing layer dialog to change the option, just double-click the layer number in the layer bar.

By turning the "show outline..." option on and off as you need it, you can set up items that relate only to one other particular layer, no matter which one it is. For example, you could turn off every outline except for the second layer. Then you could set up the second layer plumbing on the fifth layer while looking only at the second layer's outline. Then turn the second layer outline off, turn only the third layer outline on and use the sixth layer for the third layer's plumbing.

5. **The Default/Base Layer**. If you import files from DOS Design Your Own Home or if you start a new drawing in 3D WalkAround, your drawing will default to start on the base layer. Objects that are on the base layer cannot be seen on any other layer. Therefore, if you need to view objects on one layer while working on another, first click the plus (+) sign to create a new layer. (And be sure to check the "Show Layer When Inactive" box.) Next return to the base layer and use Ctrl-A to select all the objects on that layer, choose Cut from the Edit menu (Shift-Del) change to layer one (or another layer) and then select Paste from the Edit menu (Shift-Insert). All your base-layer objects will be moved to the new layer. Then you can add other layers and still see the objects on the layer you just created.

Dimension Lines

This is the line at the very bottom of the line palette with an X in its center. The dimension line will automatically indicate its length as you stretch it. The dimension line will also take on the line-end characteristics that you have selected for the Line Palette.

You can change the size, font, and style of the characters in the dimension line just like you do with any text. Just select the line and go to the text menu to change the characteristics.

To display an automatic dimension line next to a wall object, select the wall, then hold down Ctrl and click the Measuring Tool icon. To hide the dimension line, repeat the procedure.

To change the length of a dimension line, or wall object with dimension line attached to it, click the text tool icon, then click the numbers on the dimension line. Type a new length in the working unit of measurement: English or metric (e.g., 8 ft 3 in, 8.5 ft, 7.5 cm).

Nudging Objects

You can use your mouse and the various tools to draw, move, and resize objects. If you need more precise drawing or placement, however, you can use the keyboard in combination with your mouse and the tools. The instructions

below are for moving an object, but you can use the same technique to draw and resize objects, too.

To nudge an object: Select the object you want to move, then hold down the left mouse button and use the arrow keys on the keyboard.

Calculating Square Footage

It is easy to have Design Your Own Home: 3D WalkAround quickly calculate the square footage of an area for you. You simply select the polygon tool and draw a shape to match the area you want to have calculated. Then right click your mouse button while the polygon is selected and it will give you the object information dialog box. One of the pieces of information displayed is the total square footage of the area.

Drawing a Deck

You can use the Stud tool to help you draw decking. Choose Stud Specifications from the Options menu, then change the on center
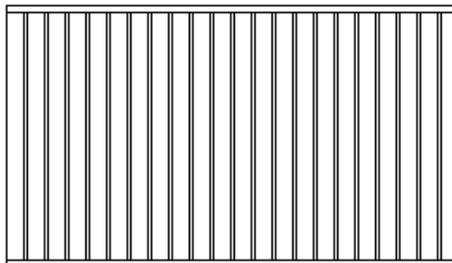
distance to match board width. The following illustration shows a deck drawn using the Stud and Hollow-line Tools.

This deck was drawn with a 2' x 4' board size and the on center distance adjusted to match board width (in this case, 4"). A hollow line was then drawn along each edge of the stud object, giving the deck a finished look.

Stud Tool

This tool draws a stud object, showing joists or studs, whose size and orientation are determined by the settings in the Stud Specifications dialog.
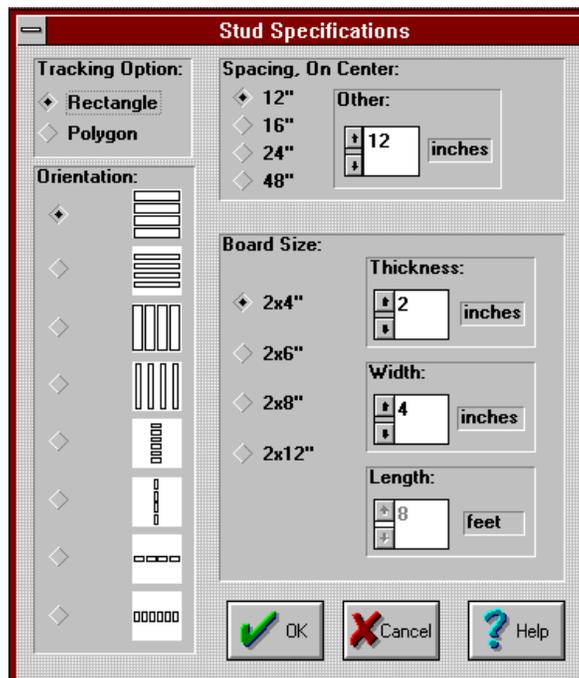
Tracking Option: This changes the way the stud tool defines the area to be filled with studs. You can draw using a flexible box (Rectangle option) or a flexible line (Polygon option). To change the tracking option, click the diamond next to the one you want to use.

If you draw a deck using the polygon option with object dimensions displayed, do not try to drag the line of the polygon off the edge of the drawing area. Instead, scroll your drawing so enough drawing area is available for your object, then draw.

Spacing, On Center: This refers to the space between studs, measured from the center of one board to the center of the next adjacent board. Four of the most commonly used on center distances are provided as dialog options. To change the spacing for studs, click the diamond next to one of the provided spacings, or use the up and down arrows to specify custom spacing.

Orientation: The top four orientations shown are side views of the boards; the bottom four are on-end views. To change the orientation, click the diamond next to the one you want to use.

Board Size: When you draw a stud object using a side view orientation, you determine the length of the boards by dragging a wider or

longer box. When you draw a stud object using an on-end view orientation, the length of the boards will be that specified under Length.

Four of the most commonly used board sizes are provided as dialog options. To change board size, click the diamond next to the one you want, or use the up and down arrows to set custom board thickness, width, and length.

To draw studs: Adjust the settings in the Stud Specifications dialog to what you want. Be sure to specify which tracking option you want: rectangle or polygon. This changes the way the stud tool defines the area to be filled with studs. You can draw using a flexible box (Rectangle option) or a flexible line (Polygon option). The polygon option is slower to redraw, so you should complete the rest of your drawing before drawing a polygon stud object.

Select a line color. Set line thickness or style by clicking the appropriate icon on the line palette, then click the stud icon on the tool palette.

Move the cross hairs to where you want to begin drawing. Press and hold the left mouse button to anchor one corner of a flexible box (or flexible line, if using polygon tracking option). Drag the cross hairs. The flexible box (or line) stretches from the anchor point tot he mouse position. Notice that if you drag it off the side or bottom of the screen automatically scrolls to accommodate the size you want.

When the stud box (or polygon) is the size and shape you want, release the mouse button (or click the right mouse button to complete the polygon).

To draw a perfectly square box, or to constrain the lines of the polygon, press the Ctrl key while you drag.

Keyboard Use

Although we highly recommend a mouse for using *3D Walkaround*, sometimes might not be convenient. So here are the instructions for using the program with your keyboard keys.

To move the pointer: Use the arrow keys, or the number pad with Num Lock off. The pointer picks up speed the longer a key is held down.

To access a menu: Press the Alt key, use the right and left arrow keys to highlight the menu you want (or press the first letter of the menu's name), then press Enter or a down arrow to open the menu. Once one menu is open, arrow right and left to see all menus in their open position convenient if you're looking for a particular option.

Once you have the proper pull-down, use the arrow keys to highlight the option you want, Then press Enter. Or press the underlined letter of a menu item (no Enter is necessary). Press Esc to cancel the menu, and press Alt to leave the menu bar.

Keyboard shortcuts are available for many commands. These are listed to the right of commands in a menu and in Chapter 4 and are certainly most handy if you don't have a mouse.

In The Drawing Window

To draw with a tool (except the polygon tool): Select the tool you want to use, then position the cross hair where you want the object to start by pressing arrow keys. Hold down the Shift key and use the arrows to stretch the object to size. When the object is the size and shape you want, release the Shift key.

To draw with the polygon tool: Select the polygon tool, then position the cross hairs on the drawing. Hold down the Shift key, use the arrow keys to drag the first line segment, then release the Shift key. When you have stretched the segment to the length you want, press Enter. Use the arrow keys to drag the second segment to size, then press Enter. Add other segments in the same way. After you've drawn the last segment, press Esc to complete the polygon.

To select an object: First select the selector tool. Position it over the object you want to select and press Enter. Four black handles will appear around the object, indicating selection.

To select an additional object: Position the selector tool over another object, hold down the Shift key and press Enter.

To select objects by using a selection box: Position the selector on a blank area of the drawing. Hold down the Shift key, then use

the arrow keys to drag a box around the object(s) you want to select. Any object completely enclosed by the box will be selected.

To select all objects: Choose Select All from the Edit menu, or use the keyboard shortcut Ctrl + A.

To unselect an object: Position the selector over the object you want to unselect, hold down the Shift key and press Enter. The handles will disappear.

To unselect all objects: Position the selector on a blank area of the drawing and press Enter.

To move objects: Select the object(s) you want to move, then position the selector over the object, hold down the Shift key, then use the arrow keys to drag the object to where you want it.

To resize an object: Select the object you want to resize. Position the selector over one of the object's handles, hold down the Shift key, then use the arrow keys to drag the handle until the object is the size and shape you want. When you're done, release the Shift key.

To select a fill pattern or color: Tab to the pattern palette. Use the arrows keys to point to the pattern you want, then press Enter.

To select a line pattern: Tab to the pattern palette. Use the arrow keys to point to the pattern you want, then hold down the Shift key and press Enter.

To change the pattern fill color: Tab to the color palette, arrow to the color you want the pattern background to be and Press Ctrl + Enter.

To change the pattern line color: Tab to the color palette, arrow to the color you want the foreground to be and Press Ctrl + Shift + Enter.

To type text: Select the text tool, then position the cursor on the drawing where you want the text to start. Press Enter to begin entering text, then press Esc when you're done.

Index

Z

Acknowledgments

We would like to thank the following for their contributions:

Alex Combs

Mike Curry

Scott Elder

Jeff Farnsworth

Jonathon Hancock

Donna Houle

Marc LaPalme

Melissa Mattick

Steve Mattick

Richard Mattick

Anthony McElroy

Sandy Muller

Rodger Smith

Lisa Yakopec