

# Settings for DataCAD Plus vis

You can control the way DataCAD Plus vis works by making decisions about program and general settings. There are many options you should consider when starting a project.

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### In this chapter:

- ⊕ Program settings
- ⊕ General settings
- ⊕ Project options

## **Controlling the DataCAD Plus vis Program**

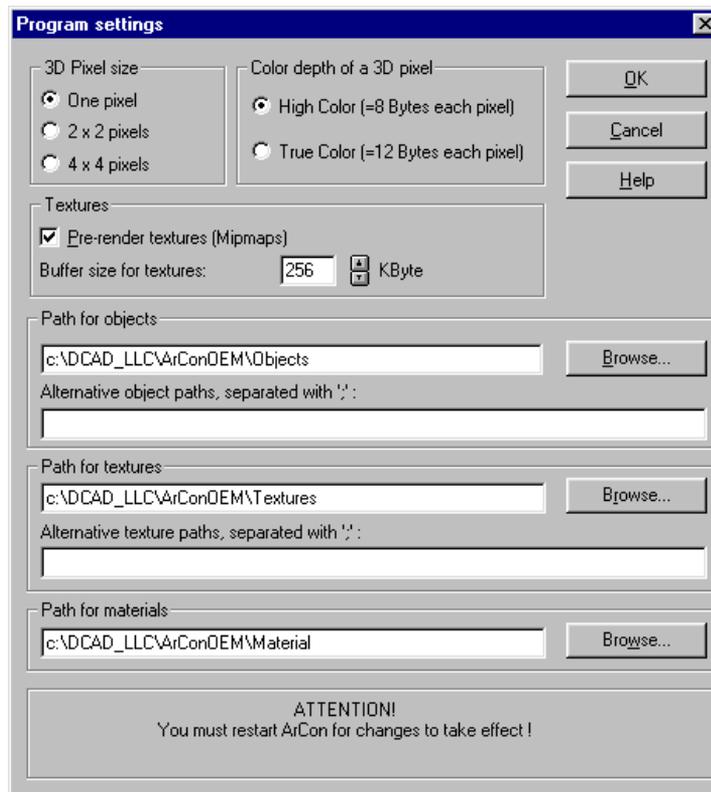
You can control how DataCAD Plus vis works on your computer. It is a good idea to make changes to the program settings, general settings, and project options before you begin working on a project.

Some settings (especially the program ones) do not take effect until you exit and re-enter the DataCAD Plus vis program. Other settings can be changed at any time while you are working on a project since they take effect immediately. However, it is a good idea to make as many decisions about how you want to set up and view your project early in the process.

## Program Settings

The program settings control the way DataCAD Plus vis begins. However, any changes you make to these settings don't take place until you restart the vis program.

- To control program settings:
1. Select Options from the pull-down menu.
  2. Choose Program.
  3. Click on Program settings. The Program settings dialog box appears.



4. Make changes to pixel, color, texture, and path options.

To calculate and display a 3D picture (as in perspective view), a set of working conditions and requirements is needed for each screen pixel. These affect screen resolution, which you probably set in the Windows Control Panel to determine color depth or the number of colors a pixel can display.

Higher screen resolutions and color depths require much more memory. This can slow down your computer (especially the 3D display). You can change the settings to minimize the memory needed and the demands put on your system.

### **3D Pixel size**

In this portion of the Program settings dialog box, you can modify the size of a 3D pixel to reduce memory consumption and facilitate smooth program operation. You have three choices:

- |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| One pixel    | The 3D pixel in memory corresponds exactly to a pixel on your display. This default selection gives you an optimal view, but it requires a lot of memory. If you have performance problems, you should change to another pixel size.                                                                                                                                                                                                                                                                                                                                                                       |
| 2 X 2 pixels | A 3D pixel in memory corresponds to four pixels on screen, in a 2 x 2 array (so the pixel size is doubled in each direction). Not only does this free up some of your computers memory and other resources (reduced by a factor of four), but it greatly speeds up rendering and display speeds since DataCAD Plus vis is drawing only a quarter of the pixels for the same size image. Of course, display quality decreases. This option speeds up a demonstration dramatically. If you are using a projector or a screen some distance away, the degradation in image quality might scarcely be noticed. |
| 4 X 4 pixels | A 3D pixel in memory corresponds to 16 screen pixels, decreasing the memory required by a factor of 16. This gives you a rougher and more jagged 3D display.                                                                                                                                                                                                                                                                                                                                                                                                                                               |

### **Color Depth of a 3D Pixel**

Changing the color depth of a 3D pixel has a considerable effect on the required memory. There are two options for color depth:

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|------------|----------------------------------------------------|
| High Color | This lets you display approximately 32,000 colors. |
|------------|----------------------------------------------------|

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This requires that you set the Windows color palette to High Color or True Color in the Windows Control Panel. If your computer has MMX capability, this option accelerates screen output. However, although MMX supports High Color, it does not support True Color.

DataCAD Plus vis works in High Color mode, not in True Color. Make sure your computer's graphic card also is in High Color mode.

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**True Color** This lets you display approximately 16 million different colors. You must also set the Windows color palette to True Color in the Windows Control Panel. If you have not done this, selecting the True Color option in this dialog will have no effect.

Although your screen display is lower, True Color lets you create high-quality pictures that will be printed out or transferred to another computer. Even though you won't be able to display all the colors, they will be intact for your saved pictures and printouts. Remember to switch back to High Color mode again since the True Color setting is always slower. This applies in particular to computers with MMX since the display is accelerated in High Color but not in True Color.

With the screen resolution, which you specified in the Windows Control Panel, and color depth determined you can compute the memory requirements. Remember that the menu and icon bars use approximately 20% of the display. For example, with a resolution of 1024x768 and True Color mode, the approximate storage requirement would be 7.4 MB; in the High Color mode, only 5 MB would be necessary.

## Textures

This portion of the Program settings dialog box defines how DataCAD Plus vis manages textures. You should adapt these specifications to work best with your hardware.

**Pre-render** Textures are stored in memory and rendered at various resolutions when they are loaded. This results in the highest-quality display of textures in 3D views. However, calculating different resolutions while loading the textures takes more time and increases the memory required by approximately 33% over that needed if you do not use mipmaps.

**Buffer size** All the textures you load (including those attached to objects) are stored in a memory buffer, regardless of whether you are using them in your project. When the buffer is full, lesser-used textures are removed from memory. This lets you load frequently used textures quickly because they're already stored in memory. The value in this field (specified in Kbytes) indicates the size of the texture buffer in memory. Adapt it to the amount of memory installed in your computer.

With mipmaps (pre-render) enable, you need approximately 90 KB of memory per texture; without mipmaps, approximately 60 KB per texture is required. You can see the textures in your memory buffer (even the ones you are not using in your project) by selecting Loaded textures from the Catalog pull-down menu in the ArCon-Explorer window.

## **Path for Objects**

The path specified here identifies the directory (folder) DataCAD Plus vis uses to read all objects (such as furnishings). This default was set when you installed the program, so you do not normally have to modify it. However, if you modify the path, you can edit the path for objects using your keyboard or clicking on the Browse button to find the folder containing your objects.

Besides the default object path, you can specify alternative object paths in the Alternative objects paths field. DataCAD Plus vis will look there for objects that it cannot find in the standard path. You can enter multiple paths, but they must be separated by a semicolon (;).

If you have little free memory to use for storing objects, you can store them in a compressed form. In this case, you must change the path.

## **Path for Textures**

Similarly, you can change the default path or alternative path(s) for storing DataCAD Plus vis textures.

## **Path for Materials**

This field is basically identical to those for objects and textures. When you modify the default path, you must also modify this field.

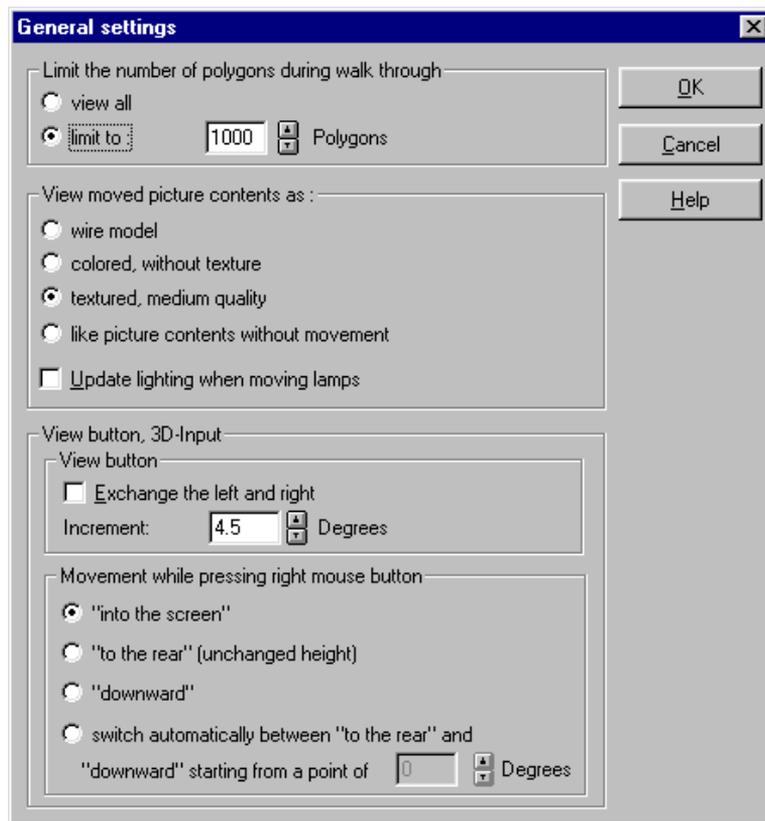
## **Confirming Program Settings**

After you have made changes in the Program settings dialog box, click OK. Remember that you must restart the DataCAD Plus program for these changes to take effect.

## General Settings

These settings control the DataCAD Plus vis program's operating speed and its handling of 3D displays.

- To control general settings:
1. Select Options from the pull-down menu.
  2. Choose Program.
  3. Click on General. The General settings dialog box appears.



You can make changes in this dialog box to limit the number of polygons during walk through, set the view, and control the 3D input view button.

## Limit the Number of Polygons During Walk Through

If your computer is unacceptably slow when you walk through a project, you can reduce the number of displayed polygons. Depending on the project, DataCAD Plus vis may be processing hundreds of thousands of polygons. To accelerate the display, select the limit to option; then, enter a number that meets your computer hardware's requirements and your working style. For example, depending on your computer's configuration and the complexity of your project, you can start with a limit of 3,000 polygons. If the walk-through is still slow, you can decrease the limit to 2,000 or fewer polygons.

## View Moved Picture Contents

Moving around in a 3D display with the icon Change viewpoint  as well as placing objects can slow down your computer. By adjusting types of view in this dialog box, you can accelerate the display. This determines which of the viewing mode options  serves as the default.

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|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wire model               | During walk-through  or using the viewpoint  icon, the project is displayed in wire frame viewing mode.                         |
| Colored, without texture | During walk-through  or using the viewpoint  icon, the project is displayed without textures, but with matching solid colors.   |
| Textured, medium quality | During walk-through  or using the viewpoint  icon, the project is displayed without textures, but with reduced texture details. |

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This option is not suitable to computers without MMX. For computers with MMX, this generally offers the optimal compromise between quality and frame rate.

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|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Like picture contents without movement | During walk-through  or using the viewpoint  icon, the project is displayed without textures, but with matching solid colors.                                                                                                                                                                                                                                                     |
| Update lighting when moving lamps      | You may deactivate lighting changes while you move lamps. Updating a room's lighting while you move a lamp that is turned on is very computer-intensive because vis constantly updates the lighting of all objects and structural elements as you move the lamp. So you can leave the room lighting alone until you position the lamp (by releasing the left mouse button). If you deactivate this switch, the lamps are not switched off; only the effects of their light are put "on hold" until you place the lamp, when the lighting is recalculated. |

If you deactivate this switch, the lamps are not switched off; only the effects of their light are put "on hold" until you place the lamp, when the lighting is recalculated.

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## View Button, 3D-Input

You can adjust the functionality of the  icon and control the effect of the right mouse button in the 3D display (perspective view).

### View Button

The  icon lets you rotate the viewpoint around the building or rotate the building, depending on your choice. By default, the viewpoint rotates around the building, so clicking on the left arrow appears to rotate the building to the right. If you activate Exchange the left and right, the building will rotate left when you click on the left arrow (the viewpoint will rotate right). Decide which option you prefer.

You can also increase the rotation Increment by changing the number in the Degrees field. This controls how far the viewpoint is rotated with each click of the  icon. To change the value, click on the up and down arrows or type a value between 1 and 90 manually.

### Movement While Pressing the Right Mouse Button

These options define how objects are moved and placed when you press the right mouse button. You can adjust this to optimize the operation of the program.

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|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Into the screen | The object you're manipulating moves forward and back "into" the screen when you press the right mouse button. This is independent of the view, regardless of whether you view your project from above or from the side.                                                                                                                                                                                                                                                                                           |
| To the rear     | Independent of the view, this moves the selected object with a constant height over the floor of your building when you press the right mouse button. This option may seem confusing if you view your project in the perspective view from above and move an object while pressing the right mouse button. If this happens, use the last option (Switch automatically . . .).                                                                                                                                      |
| Downward        | This can have strange effects if you look at your project in the perspective view from almost directly above. If you move the mouse upward, the object does not follow your mouse movement but rather moves toward the floor. You must press the right mouse button for the object to move correctly upward on the display. If you select the option "downward," the behavior is reversed (that is, if you move the mouse upward without pressing the right mouse button, the object moves upward on the display). |

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Note that this is the case only if you look from almost directly above. If you press the right mouse button to move the mouse upward, the object moves "into the display." This and the previous options are practical only in certain circumstances.

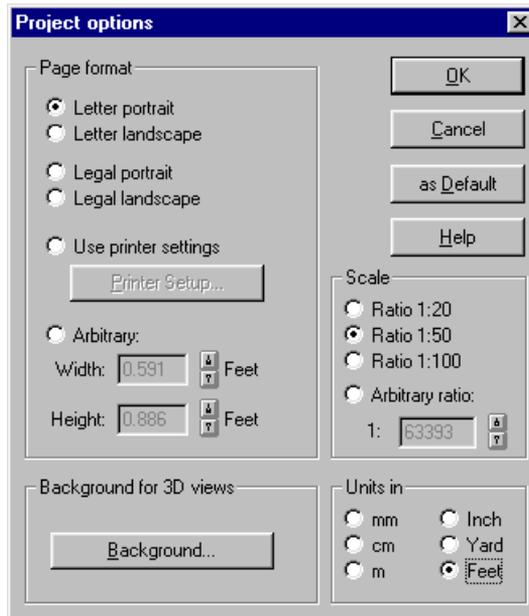
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Switch . . . This lets you combine "to the rear" and "downward" by having DataCAD Plus vis switch automatically between the two. This prevents the problem described above. You can specify the point (in degrees) where the vis program switches between the modes.

## Setting Project Options

DataCAD Plus vis uses these settings when creating a new project. You can change these settings later as you work on your project. The project options include settings for page format, background for 3D view, scale, and measurement unit.

- To set project options:
1. Select File from the pull-down menu.
  2. Choose Project options. The Project options dialog box appears.



### Page Format

The Page format section of the Project options dialog box lets you control the size of the paper you use when printing your project. In addition to the Letter and legal size sheets printed in portrait or landscape mode, you can use your Windows printer settings or an arbitrary size.

Besides the printout page format having to match the actual paper size, the page format (and paper size) must be able to contain your entire project. Therefore, you should adapt the page format and the scale of your building so the project fits on the printed page. For example, you can reduce the page format, modify the scale of your project, and shift the page in the layout view so it all fits nicely.

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When you select a page format that exceeds the maximum paper size supported by your printer, the printout will be divided over multiple pages. Then, you can cut and piece the sheets together to create a larger page. For this reason, the printed pages include overlapping regions with small cutting labels. All pages are numbered so you can easily identify which page goes where in the larger scheme. This lets you print via any standard letter-size printer a sheet of much larger size.

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### **Scale**

Your project can be scaled using one of the standard ratios (1:20, 1:50, or 1:100). Alternatively, you can set your own scale by clicking on Arbitrary ratio and typing a value in the input field.

### **Units**

DataCAD Plus vis allows you to select the units used for measuring your project and the objects you place in it. Selecting the correct measurement unit is particularly helpful when you are sizing an object that you want to place in your project.

### **Background for 3D Views**

You can select a background color to use in perspective and plan views. This specification is made separately for day and night views. See the Background Settings information in Chapter 3 for details.