

Introduction to DataCAD Plus ZAC

DataCAD Plus ZAC helps increase your productivity by automating repetitive design tasks. Based on the concept of making variations on a basic zone, you can quickly design and generate construction documents for a multilevel building.

This manual serves both as a tutorial and a reference tool. This chapter introduces you to ZAC with a brief overview. The tutorial (Chapters 2 through 6) guides you while you draw a ZAC building. The remaining chapters and the Appendix contain detailed instructions and reference information about the ZAC program features.

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In this chapter:

- ⊕ Concepts and terms
- ⊕ ZAC icon bar
- ⊕ Navigation and input aids
- ⊕ Test drive ZAC

Introducing ZAC Concepts and Terms

ZAC (Zone-based Architectural Construction) is a design tool that will help you reduce repetitive work and increase productivity. For example, in a 15-story building, many of the floors will be exactly the same, while others will have minor variations (such as different window styles or modified floor plans to accommodate more offices) based on your client's requirements. Rather than starting from scratch on each floor, ZAC lets you copy the basic data from one floor to another. Then, ZAC helps you to make those changes rapidly and painlessly.

Even a single-story building can take advantage of the ZAC concept. For example, a single-story school's classrooms can all be based on one zone. Then, you could make minor changes to each classroom.

ZAC relies on the concept of a basic theme and variations. For centuries, this concept has been successfully used in the music field (from Bach to Brubeck to the Beatles and beyond) where melody A changes slightly to become melodies A-1, A-2, and A-3. As you develop proficiency with ZAC, you will see many more opportunities where you can use this powerful design tool.

Some of the concepts and terms used in the ZAC program are familiar, while others will soon become part of your everyday thought process as far as architectural design is concerned.

Drawing

Your entire project is stored in a computer file that DataCAD Plus calls a *drawing*. In this file, there are several layers containing details that relate to different building components (such as windows, doors, and walls). For information about naming, working with, and managing drawing files, see Chapter 2 in the *DataCAD Plus Reference Manual*.

Plan

A *plan* is a paper summary (a print or plot) of your drawing, including the information from different layers within your file.

Database

A *database* is a structured collection of information. ZAC relies heavily on several databases that contain information about building components such as windows, doors, and walls. For example, the ZAC windows database contains records for many shapes, sizes, and types of windows that you can use in your drawing. Although DataCAD Plus supplies many records in this database, you can also edit existing ones or add new/custom windows (see Chapter 9 in this manual for details on editing and adding to databases).

One of the most familiar databases is a telephone book. Each line (known as a *record*) contains information about one person. That record contains several *fields* with specific pieces of information about that person. One field holds the person's name, a second field contains the street address, and a third has the phone number. Some fields can only contain numbers (such as the phone number), while others will accept letters and other characters (such as the name and address fields). The person who designed the database makes these decisions and determines the maximum characters, numbers, or other typographic symbols each field can hold (maximum field length).

ZAC

This is the acronym for Zone-based Architectural Construction.

Zone

A *zone* links building elements which share a common, logical design purpose and Z-height within a defined area. The zone encompasses the layer-spanning information (about such things as walls, openings, stairs, shading, dimension strings, and text) you want to connect into a distinctive, logical, easy-to-change group. Basically, a zone contains all the things that you want to keep together when you plot or print your plan on paper. ZAC helps you control, collect, and connect the various purpose- and dimension-dependent elements in your plan.

A zone can be as small as part of a room or as large as the footprint of a building. For example, in a 15-story building, each floor could be a separate zone. And each of those zones could be based on the same fundamental information, with minor variations (such as different window styles). In a one-floor, sprawling industrial plant, you could have several zones (such as the shipping area, production floor, and administrative offices) where different Z-heights and dimension strings would be the distinguishing factors.

Using the Context-sensitive ZAC Icon Bar

Some DataCAD Plus icon bars appear only when you perform certain functions. These icon bars are called context-sensitive. When the program needs them, they open on your screen. At other times, they are dormant.

This ZAC icon toolbar appears after you activate ZAC on the switch bar and select ARCHTECTOR from the Edit menu:



When you switch to another Edit or Utility menu (such as Mirror or Hatch), the ZAC icon toolbar disappears. It disappears because the functions controlled by those icons are temporarily unavailable. The dormant context-sensitive ZAC icon bar looks like this:



If the context-sensitive menu does not appear, select the Display pull-down menu, choose Toolbars, and make sure that Context Icon Bar is activated. An option is activated when there is a checkmark in front of it.

Navigating Through the ZAC Program

As with regular 2D and 3D DataCAD Plus drawings, you often can use several ways to navigate through ZAC: menus, keyboard shortcuts, and icons.

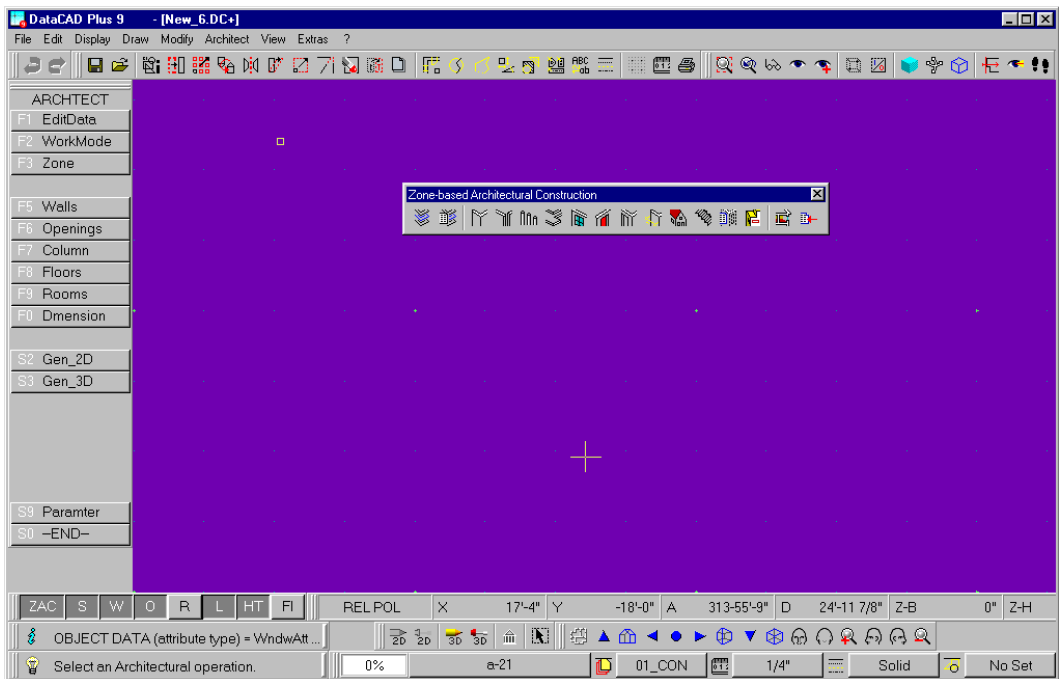
At first, you may rely on the menus. As you become more familiar with the program, you will probably want to bypass many menus. Then, you can use keyboard shortcuts and icons to quickly access the menus and functions you want.

Menus

ZAC uses most of the regular DataCAD Plus menus that you can dock to the margin of the drawing window or float anywhere on your screen (even outside the drawing window). The pull-down menu bar lets you access dozens of functions, too. Both menu systems are described in the *DataCAD Plus Reference Manual*.

The most striking difference between the regular DataCAD Plus and ZAC menus is the ARCHTECT button in the EDIT menu. (If ZAC is not active, this menu item changes to Architct.)

Selecting ARCHTECT from the EDIT menu displays the ARCHTECT menu and the ZAC icon bar. The ARCHTECT menu gives you access to the ZAC program functions. Your screen looks similar to this:



Keyboard Shortcuts

Since most people who use a program daily quickly tire of going through multiple menus to access the functions they want to use, DataCAD Plus gives you many keyboard shortcuts. These one- or two-key shortcuts instantly deliver you to the menu you want. For a comprehensive list of these keyboard shortcuts, see the Appendix in the *DataCAD Plus Reference Manual*.

For example, if you press the combination [Alt]+[E], DataCAD Plus immediately brings you to the Enlarge menu instead of going through layers of menus. Likewise, [Alt]+[L] takes you to the LineType menu and [M] to the Move menu.

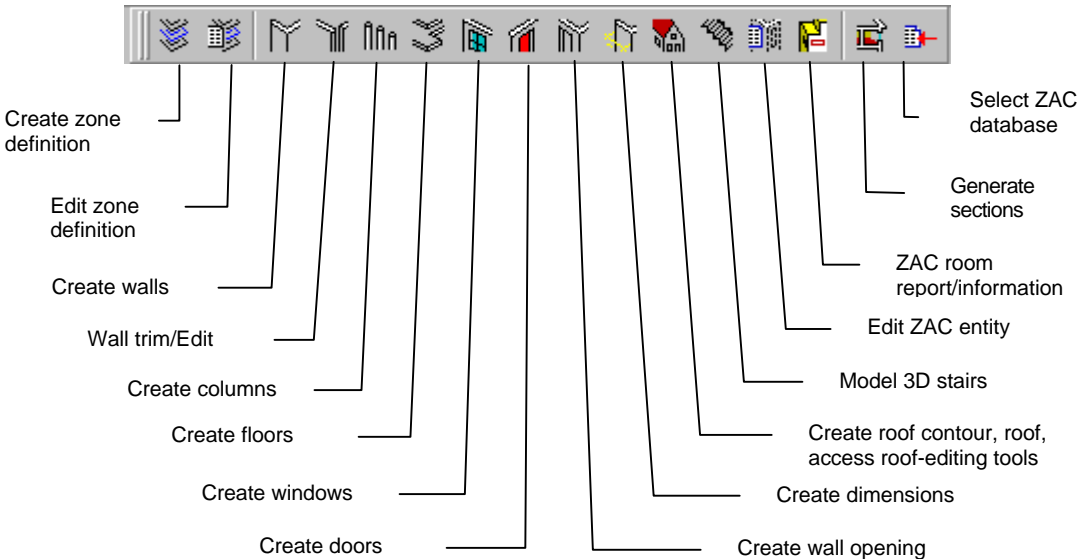
Icons

Icons are symbols that represent program options. If you move your cursor over an icon, a brief description or “tooltip” appears beneath it.

If the tooltip does not appear, select the Extras pull-down menu, choose Options, and make sure that Show Quick-Info is activated (checked).

Icons are mouse shortcuts to popular DataCAD Plus functions. In this way, they are similar to keyboard shortcuts. Just clicking on an icon lets you bypass intermediate menus, taking you directly to the one that controls the function you want to use. This is a great way to save time.

The context-sensitive ZAC icons are placed in a convenient bar that appears when you activate ZAC on the switch bar and select ARCHTECTOR from the menu.



A simple click of the mouse lets you use all the other icons that appear in the various toolbars on your DataCAD Plus screen. These icons instantly perform functions (such as Undo, Save Current Drawing, or Launch Object Viewer) or bring you to the appropriate menu (such as Copy, Erase, or Define Hatch Patterns). If you aren't sure what an icon does, you can use the tooltip as a guide.

Keyboard Input

You assure precision in your ZAC project by entering measurements, designating angles, using reference points, changing coordinate systems, switching layers, and selecting items from databases. Often, this requires you to use special keys:

[0] – Specify a reference point; sets the relative point to 0, 0

[N] – Snap point; use this if you have no middle mouse button

[Spacebar] – Initiate keyboard input of values; press **[Enter]** to confirm

[Backspace] – Open a database when in a ZAC function

[Tab] – Move from one input field downward to another in a dialog box when in a ZAC function; scroll through active layers when a database is not open

[Shift] + [Tab] – Move from one input field upward to a previous one in a dialog box; scroll backwards through the active layers

[Enter] – Confirm that values or database selections are OK; enter a point

[Insert] – Change to a different coordinate system (ABS POL, REL CART, etc.)

Zoom and Pan

If you want to see more details or pull back to get the full picture of your ZAC drawing, you will use the zoom functions. If saving time is not a priority, you can use the menus to zoom in and out; however, most DataCAD Plus users want quicker results. For a little more speed, you can use the mouse to select the zoom icons. By far, the quickest way to zoom and pan is with these keyboard shortcuts:

[Z] – Zoom in after stretching the rubberband around the area you want to examine

[PgDn] – Zoom in

[PgUp] – Zoom out

[←] – Pan left

[→] – Pan right

[↑] – Pan up

[↓] – Pan down

Previewing the DataCAD Plus ZAC Program

To test drive the ZAC program, you'll make a little utility or garden shed. Don't worry about aesthetics or precise measurements at this point.


➔ To take the ZAC program for a fast spin around the block:

1. Start the DataCAD Plus program and open a ZAC drawing by selecting the New Drawing tab in Start Assistant, highlighting the default file called `zac_us.dc+`, and choosing ARCHTECT from the Edit menu. The ZAC icon bar appears.



2. Select the Create Walls icon and draw a rectangle. This is the beginning of your ZAC building.
3. Choose the Create Windows icon and click twice on the wall (to define the jambs) and once outside (to define the outer window edge) the rectangular building. A window appears on your plan. For practice, you can add another window or two.
4. Select the Create Doors icon and click twice on the wall and once outside the rectangular building. A door appears on your plan. If you want, add another.
5. Click on the Create Roof Contours icon to bring up the ROOFCONS menu.
6. Select Def Contr to reveal the Polyline menu.
7. Choose ContSrch and click anywhere on the outside of the building's external wall. A polyline appears around the building's perimeter. Right-click once to return to the ROOFCONS menu.
8. Select DefRoof to reveal the DefRoof menu.
9. Click on GenRoof to go to the next menu.
10. Turn off RoofExtn (if it's on) and click anywhere on the roof polyline. ZAC generates a hip roof.

➔ To see your first ZAC building:

1. Choose ObjectViewer from the View pull-down menu or use the  icon.
2. Click on the shed and rotate it with your mouse to get a good look at it from all angles. (All right, it's not very pretty.)
3. Click on the X in the upper right corner to exit the Visualisation screen.

Congratulations on completing your first ZAC building! In the tutorial chapters of this manual, you will learn how to design and modify a larger, more attractive structure. Then, you can apply the principles to your own projects.

Feel free to save your garden or utility shed so that you can add improvements later when you learn more about ZAC and its capabilities. Select File/Save if you wish to save your project.

