Microspot PC Draft®

Tutorial Guide

Microspot PC Draft® Tutorial Guide

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Lesson 1

Learning to Use PC Draft

PC Draft Introduction

You should already be familiar with the basic concepts behind the PC, as well as some of the fundamentals of PC Draft. If you are not comfortable with your ability to select options from the Tool palette, to draw, to select, and to edit objects and text, *refer to Chapter 1 of the User Guide* and review these techniques before you continue.

In this tutorial you will be using PC Draft to complete a floor plan layout. We have chosen a floor plan because we can incorporate many of the special features of PC Draft into one drawing. After you have completed the exercise in this chapter, you may want to create your own drawings until you are thoroughly familiar with these new features.

In this tutorial you will learn how to:

- Create a scaled drawing

- Use Show Size as a visual aid to draw to a precise size

- Add dimension lines to a drawing

- Create precise circles, arcs, and polygons on a drawing

- Use Zoom In and Zoom Out to add detail to a drawing

- Rotate objects

- Duplicate objects, either one at a time or in linear and circular arrays

- Use libraries to place objects onto a drawing

- Draw with parallel lines

- Use layers

After completing this tutorial, take a look at the *Microspot PC Draft User Guide*; it describes many important features that will not be introduced to you in the exercises covered in this tutorial. *If you would like more detailed information concerning the use of tools and menu choices, refer to the User Guide*.

Getting Started

Before the step-by-step exercises in this lesson, let's go over the general preparations you'll make when starting a completely new drawing.

PC Draft is a software tool that emulates a drafting board while giving you the advantages of creating and working with scaled images on a computer; you can easily make changes without physically erasing or discarding sheets of paper.

PC Draft's greatest strength as a drafting and design tool is the way it enables you to define your drawing environment. Using simple commands and palette choices you can specify the default scale, drawing units and page setup for the drawing.

The scaled environment automatically keeps track of the size and area of the objects you draw. You can display their dimensions using the Show Size feature (*see Chapter 6 of the User Guide*), the various dimension tools (*see Chapter 4 of the User Guide*), or the onscreen rulers (*see Chapter 6 of the User Guide*).

NOTE: If you expect to use the same settings over and over in most of your drawings, you can make those the defaults for all new drawings using the File menu's Set Defaults command (*see Chapter 1 of the User Guide*).

Setting the Size Units

With PC Draft you can draw using either English units (feet and inches) or metric units. PC Draft offers the most commonly used English-unit and metric scales. Once you choose a unit system for your drawing you can define the scale you want to use.

To set the units for a drawing:

**1.** **Open the Layout menu and choose Set Scale/Units.**

The Document Scale & Units dialog box will appear.

2. **Click on the button beside English or Metric, depending on the type of units you want to use in the document.**

Whether you use the English or Metric system, you can choose the

Document Scale & Units

Units:

Places:

○ English   Millimeters   ▼   0.X ▼

⊙ Metric   ☐ Hide Metric Units

Scales:

Default Scale: 1 : 1 ▼

Dimension Standard:

Metric   Custom...

Status: Standard

Angular Display:

⊙ Decimal Degrees

○ Degrees & Min.

○ Degrees, Min. & Sec.

○ User defined units

Places:

0.X ▼

OK   Cancel

basic units for the drawing: Decimal Inches, Decimal Feet & Inches, Decimal Feet, Fractional Inches or Fractional Feet & Inches in English drawings; and Millimeters, Centimeters, Decimeters or Meters in Metric drawings.

Document Scale & Units ✕

┌─ Units: ──┐
│   │
│ ⦿ English   ┌──────────────────────────┬──┐   │
│ ○ Metric   │ Fractional Feet & Inches │ ▼ │   │
│   ├──────────────────────────┴──┤   │
│   │ Decimal Inches   │   │
│   │ Decimal Feet & Inches   │   │
│   │ Decimal Feet   │   │
├─ Scales: ────│ Fractional Inches   │ ──── ion Standard: ─┐
│ Default Scale:│ Fractional Feet & Inches   │   Custom... │
│   └────────────────────────────┘   │
└───┘

Document Scale & Units ✕

┌─ Units: ──┐
│   Places: │
│ ○ English   ┌──────────────────────────┬──┐ ┌──────┬──┐   │
│ ⦿ Metric   │ Millimeters   │ ▼ │ │ 0.X │ ▼ │   │
│   ├──────────────────────────┴──┤ └──────┴──┘   │
│   │ Millimeters   │   │
│   │ Centimeters   │   │
├─ Scales: ────│ Decimeters   │ ──── ion Standard: ─┤
│ Default Scale:│ Meters   │ Metric Custom... │
│   └────────────────────────────┘   │
└───┘

3.   If necessary, change the units in the Units popout menu.

> **NOTE**: In metric drawings, you can choose "Hide Metric Units," which will prevent the unit abbreviations ("mm," "cm," and so on) from appearing when dimensions are displayed on the drawing. You can also control the number of places displayed behind the decimal point in both metric and English decimal drawings.

Setting the Scale

Before starting a drawing you need to determine the sizes of the objects and the paper you are going to use. For large drawings it is impractical to draw objects at their actual sizes; it is necessary to reduce them, yet still maintain their proper proportions.

A scale, the ratio of the object's size on the drawing to its size in the real world, accomplishes this. For example, if you choose a scale ratio of one millimeter equals 100 millimeters (1:100), a line drawn 50 millimeters long on a drawing would represent a line 5 meters long in the real world.

NOTE: When you paste an existing object into a drawing with a different scale, the object will automatically adjust in size to conform to the scale of the new drawing. The exceptions to this rule are text objects: when moving a text object onto a drawing with a different scale, an alert will display allowing you to choose whether or not the text objects should be scaled.

To specify the default scale:

1.	**Make sure the Document Scale & Units dialog box is open.**

2.	**Point on the button beside the label Default Scale.**

3.	**Press down the mouse button.**

	The Scale popup menu will appear, displaying the scales available for the chosen unit system.

4.	**Holding down the mouse button, drag until the scale you want is highlighted.**

5.	**Release the mouse button.**

	The new scale will be displayed in the Default Scale button.

6.	**Click on the OK button to close the dialog box and apply the changes.**

NOTE: In drawings that include more than one layer, you can set different scales for different layers if necessary (*see Chapter 7 of the User Guide for information about using layers*). However, all the layers in a drawing must use the same unit system (English or metric).

Setting the Drawing Size and Layout

You can set a drawing's page size, page orientation, and total size according to your needs. Page size is simply the size of the paper you will be printing on, and orientation is whether each page is printed vertically or horizontally.

If necessary, you can create a drawing that will print over several sheets of paper. The maximum drawing size is approximately 1.44 by 1.44 meters, depending on which page size and orientation you choose.

The choice of page size is subject to the page sizes available for the currently active printer or printing device; for example, if the printer you've selected only supports A4-size or US Letter-size paper, you cannot print to larger or smaller sheets. (*See Chapter 8 of the User Guide for more information.*)

To set your drawing's page size and orientation:

1. Choose the File menu's Page Setup command.

A Page Setup dialog similar to the one below will appear.
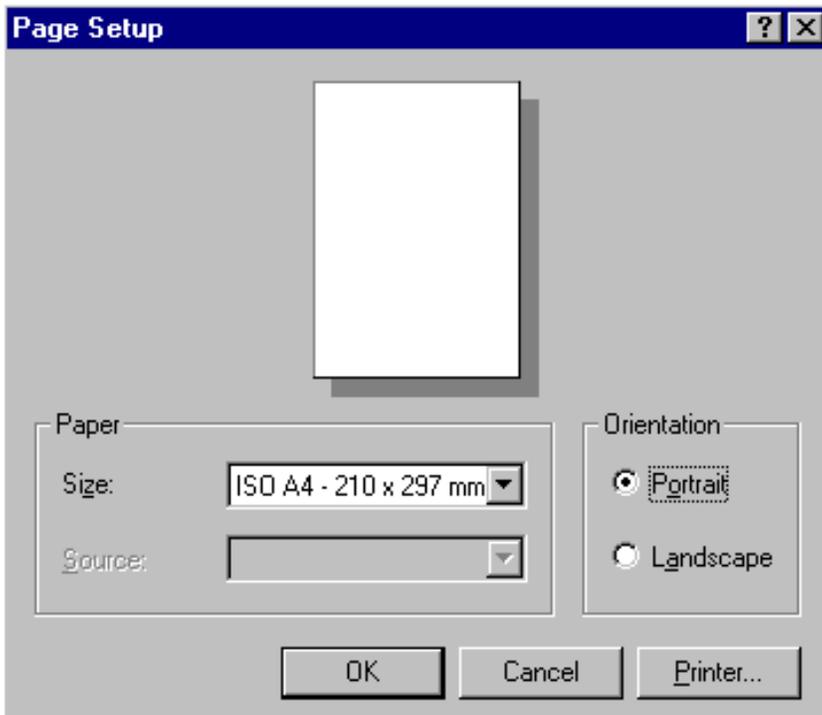
2.   Select the paper size you want for printing your drawing.

3.   Select the page orientation you want for printing your drawing.

4.   Click the OK button.

The Page Setup dialog box will disappear. Your drawing will now have the desired page size and orientation assigned.

To set the size of your drawing:

1.   Open the Layout menu and choose Drawing Size.
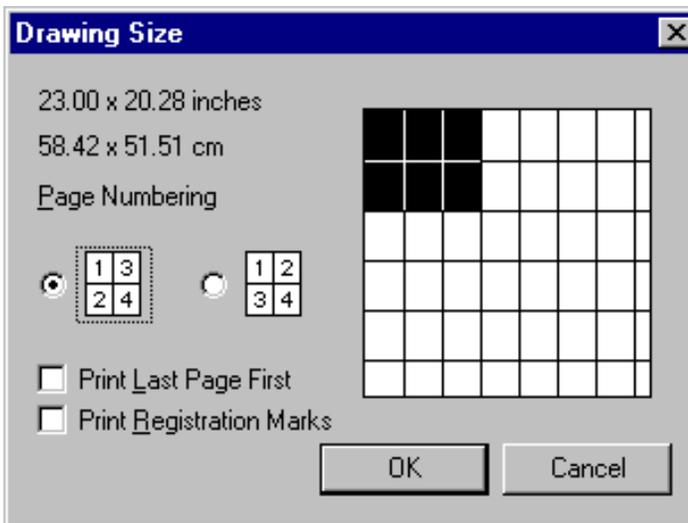
A dialog box will appear, displaying the current total drawing size in the form of a block diagram.

This diagram represents the maximum drawing size available; each block represents a single page. The blocks that are darkened indicate the current drawing size. You can control the overall size and shape of the drawing by clicking in the diagram.

To change the drawing size:

2.   Position the tip of the pointer on one of the activated page blocks and press down the left mouse button.

3.   Holding down the left mouse button, drag until you have activated the number of page blocks required for the drawing size you want.

4.   Release the left mouse button.

5.   Click the OK button.

The PC Draft drawing window generally shows only a portion of the overall drawing. Therefore when you change the drawing size it might not be noticeable in the window until you zoom out or scroll to another area of the drawing (*see Chapter 2 of the User Guide for information about scrolling and zooming*).

Rulers and the "Crosshair"

PC Draft's onscreen rulers can help you draw and position objects in precise locations on your drawing. They appear along the top and left sides of the drawing window and reflect the current position of the window during scrolling. At magnified views (zoomed in or out), they change size accordingly.

The rulers are especially useful in conjunction with PC Draft's "crosshair" drawing cursor. This looks like a large pair of crosshairs that extend horizontally and vertically across the window, into the rulers, when a drawing tool is active.

The rulers can show either onscreen sizes (Standard Rulers) or values that match the current scale and units.
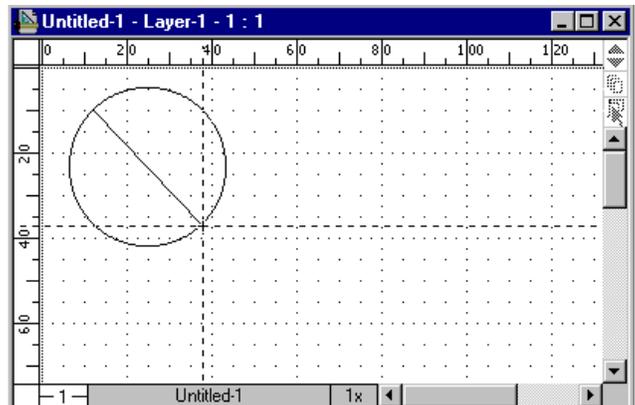
To display PC Draft's rulers:

•   **Open the Layout menu and choose Show Rulers.**

     The rulers will be displayed and a check mark will appear by the Show Rulers command in the Layout menu.

To display scale rulers (if Show Rulers is checked):

•   **Open the Layout menu and choose Scale Rulers.**

To display standard rulers (if Show Rulers is checked):

•   **Open the Layout menu and choose Standard Rulers.**

To activate the crosshair cursor:

- **Choose Cross Cursor from the Preference menu.**

  When a drawing tool is selected the cursor will now appear as a large pair of crosshairs. A checkmark will appear by the Cross Cursor command in the Preference menu.

Now that you've seen the basic method of setting up a completely new drawing, you can begin exercises using a drawing that's been started for you.

Starting the Tutorial

Finding the Tutorial Files

The files you will use for this lesson, "Floor Plan" and "Desks", are in a folder called "Tutorial Files", which was placed on your hard drive during installation. It is located in the Microspot PC Draft folder.

To find the tutorial files:

1. **Find the Microspot PC Draft folder on your hard disk.**

   A folder called "Tutorial Files" should be inside it.

2. **Open the Tutorial Files folder.**

   The folder will open and reveal its contents, including a document named Floor Plan.

Duplicating a Document

To preserve the contents of the original document, you will make a duplicate of the Floor Plan document to save as a backup for the original document that you will use in this exercise.

To duplicate the Floor Plan document:

1. **Right-click the Floor Plan icon and choose Copy from the contextual menu.**

2. **Right-click anywhere inside the folder and choose Paste from the contextual menu.**

   The Copy of Floor Plan document will appear. You can keep this copy as a backup for the original Floor Plan document.

Opening the Floor Plan Document

To open the Floor Plan document and reveal its contents:

1.   Click on the Floor Plan document.

2.   Open the File menu and choose Open.

In a few seconds, the document will open on the screen as shown by the following figure.
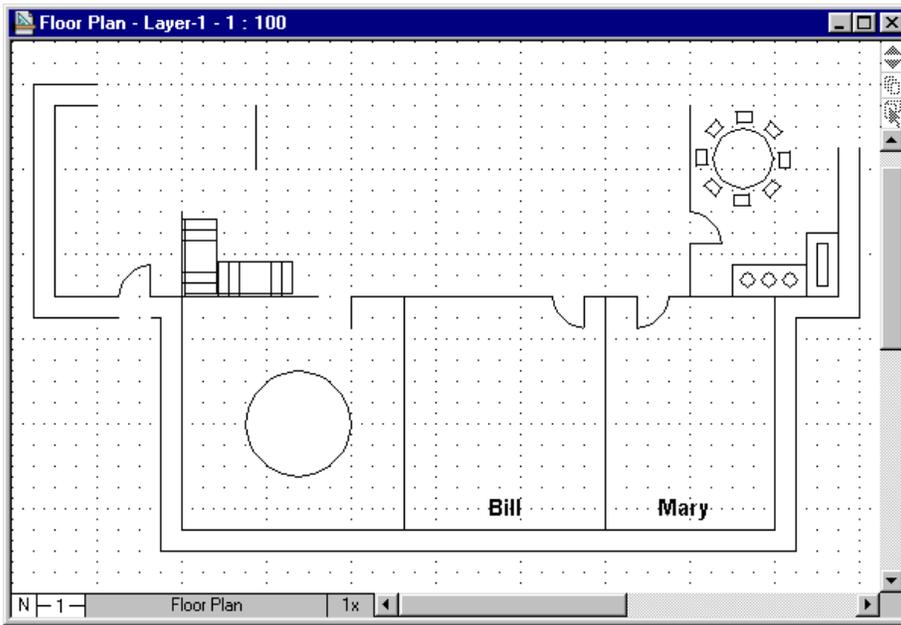
Now that you have opened the Floor Plan document, you can see a partially completed drawing, only part of which may be visible in the window. The window does not necessarily show the entire document as part of the drawing may extend beyond the window. You are now viewing the upper-left corner of the drawing. This view is called the **Home View**.

Learning Some Basic Skills

When you need to access a part of your drawing that is not currently visible it is not always convenient to use the scroll arrows to reposition the window. Using the scroll arrows to change your view of the document only allows you to see and work in small portions of the drawing at

a time. There will be many occasions when you will want to view the entire document within a single window. To accomplish this, PC Draft incorporates a feature called **Zoom Out**.

Using Zoom Out

The Zoom Out function displays a view of your document as it would appear from a distance. Using this feature, you can view either a single-page document or a multiple-page document by zooming out up to eight times. Each time you choose to zoom out, your view becomes more distant and reveals a larger portion of your document.

The Zoom function is accessed from the View menu, from the Tool palette, or from the bottom of the document window.

For this exercise, we will use the Zoom tool in the Tool palette.

To perform the Zoom Out function:

1. **Click on the Zoom icon on the Tool palette.**

2. **Position the pointer on the drawing area.**

3. **Press down the ALT key.**

   The Zoom cursor (a miniature magnifying glass) will appear. A minus sign (-) will appear inside the Zoom cursor to show you are in the Zoom Out mode.

4. **Holding down the ALT key, click once on the drawing.**

   NOTE: If the ALT key is not held down when you click to zoom out, PC Draft will default to the Zoom In mode. In this mode, a plus sign (+) will appear inside the cursor and each time you click the left mouse button you will magnify your view of the drawing instead of reducing it.

5. **Return to the pointer mode by clicking on the Pointer icon in the Tool palette.**

   You have now zoomed out on your drawing two times (2x)

```
Floor Plan - Layer-1 - 1 : 100                    _ □ ✕
```
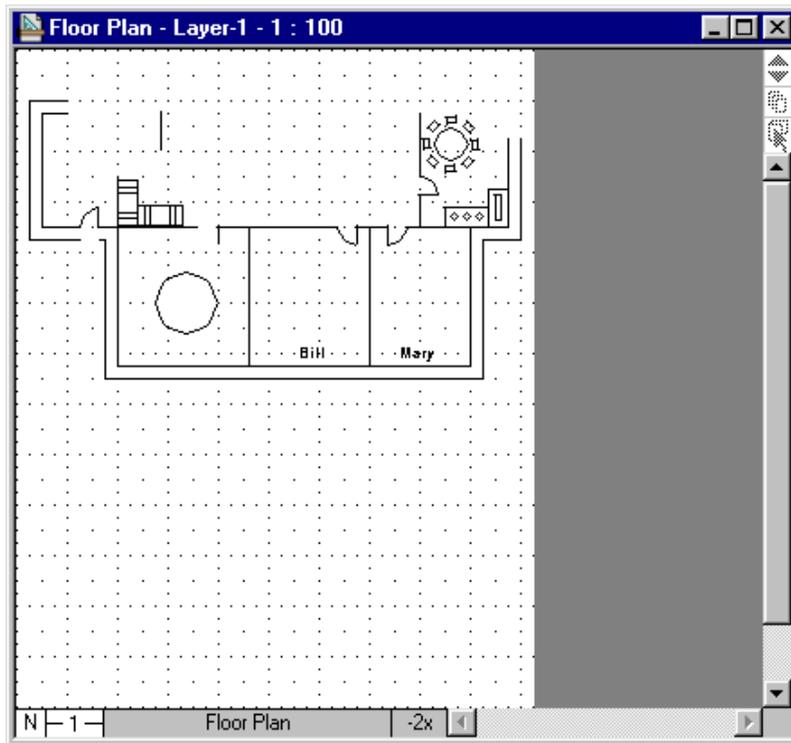
Notice that the page appears to be smaller now, and the entire drawing is visible in the window. This is an extremely valuable feature when working with large drawings.

Now that you have learned how to use the Zoom Out function, let's return to the original view of the floor plan so we can continue.

Returning to Home View

Remember that **Home View** was previously described as the upper-left corner of your document, that is, your initial view of the drawing. If you change your view by using Zoom In or Zoom Out, you can easily return to the home view.

To return to the home view:

• **Choose the Home View command in the View menu.**

From the home view you can begin work on this floor plan exercise. Look at the partially completed floor plan on the preceding page, and compare it with the completed one below.
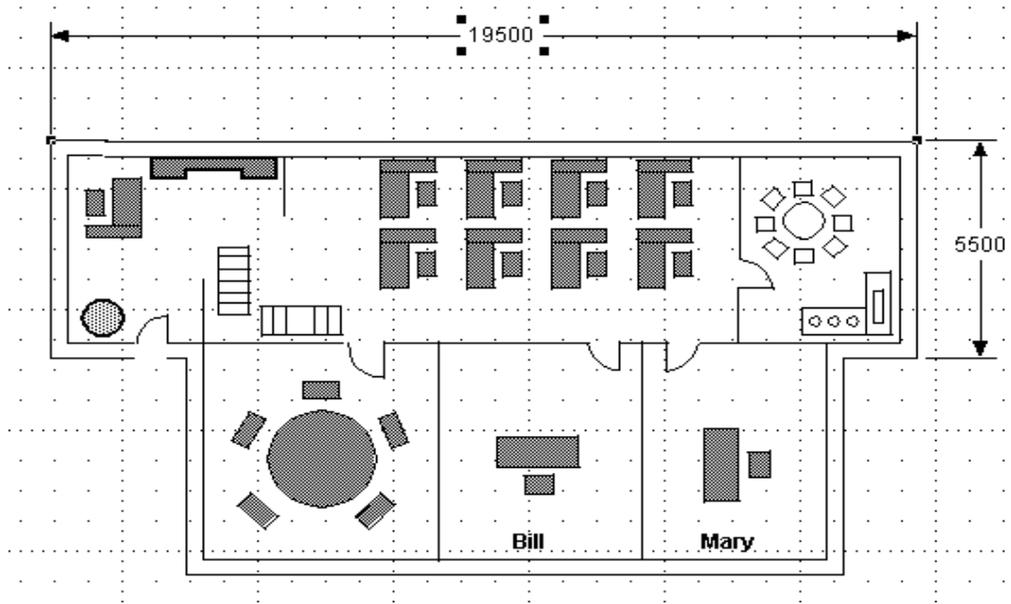
Your job is to complete the exterior walls of the unfinished floor plan and then move furniture into the offices. You will be using several of PC Draft's drawing tools, and a combination of its many features to accomplish these tasks. As you build onto the floor plan, you will learn many of the special features of PC Draft.

Basic Setup for Drawing

PC Draft offers many features you may want to use when composing a drawing. Generally, you should decide which features are important to you and go through a quick set up procedure, as we will do now.

Before starting a drawing, you should consider the actual, real-world size of the subject you intend to draw. If the subject is very large, such as a floor plan, it would be impractical to draw it to represent its actual size. Therefore, you will most likely want to draw the floor plan at a reduced size in order to fit it all onto a single document. **Drawing to scale** is a method of reducing the size of an object to fit it on a drawing, while still maintaining the object's proportions.

Scale Function

Before you start drawing, you must choose the scale that you wish to use for the document. To do this, consider the actual size of the subject you want to create, and the size of the document you want to print. You can then determine the scale that you should use.

Grid divisions subdivide the drawing area. When metric units and millimeters are selected, at a scale of 1 to 1, the distance between the grid lines represents 20mm. The scale determines what that 20mm-square grid on the drawing represents in the real world.

If you want to draw a line that represents an object that is 15 meters long, and fit the line on an A4-size piece of paper (210mm wide), you might choose a scale of one millimeter equals one hundred millimeters (1:100). Using this drawing scale, a line 150mm long on your drawing would represent a line 15 meters (15000mm) long in the real world. Similarly, a square that is 20mm by 20mm on your drawing would represent a square that is 2 meters by 2 meters in the real world.

The ability to draw to scale is a very valuable feature. It allows you to draw large objects on a small, manageable document.

We will review this principle using the floor plan layout. Keep in mind that not all of the document may be visible in the document window. Let us check and see what scale is currently chosen for this floor plan.

Look at the title bar on the document window. The title bar shows the name of the document and the active layer. It also shows the current scale.

The title bar shows you that the current scale for the layer you are working on is 1:100 (millimeters).

To reduce the size of the floor plan by changing its scale:

1.   Open the Layout menu and choose Set Scale/Units.

The Document Scale & Units dialog box will be displayed.
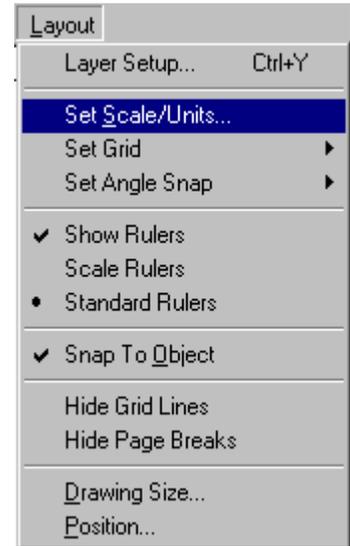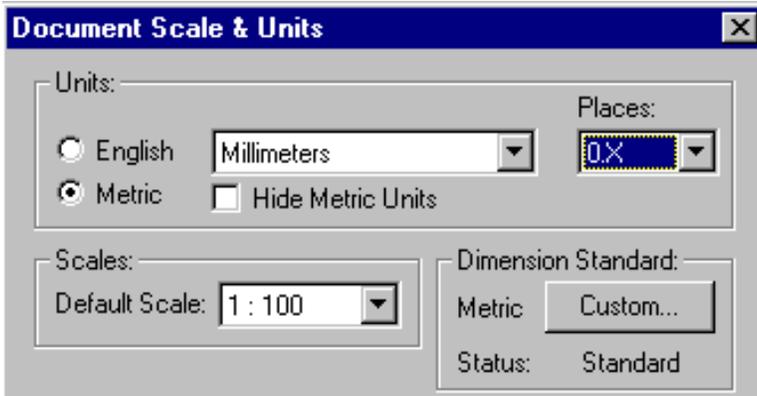
Notice that the Default Scale button reads 1:100, indicating again that the current drawing scale is 1mm = 100mm.

PC Draft lets you choose from 22 scales to help you make large and small drawings.

2.   Point on the button beside the title Default Scale.

3.   Press down the left mouse button.

The Scale popup menu will appear.

4.   Drag until 1: 200 is selected.

5.   Release the left mouse button.

6.   Click on the OK button.
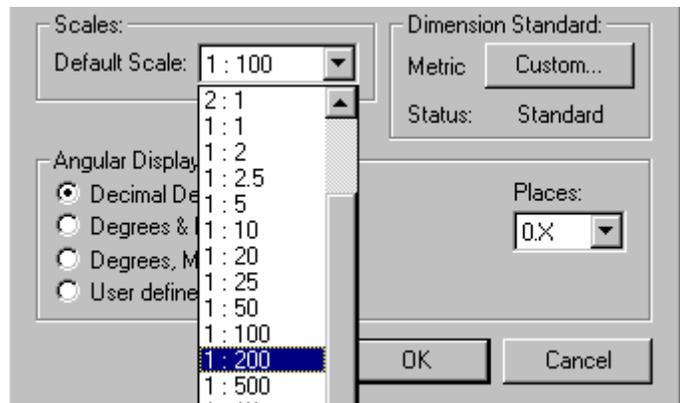
An alert will display asking you if you wish to scale the text objects on the drawing.

7.   Click on the "Yes" button.

Notice that the floor plan is now one half of its original size. The new scale specifies that 1mm in the drawing area represents 200mm in the real world.

Using this method, you can change the scale of a drawing created with a different scale setting. If you misjudge the scale and find that your drawing will not fit on the document, change the scale setting to one that is more suitable.

For this floor plan exercise, you need to change back to the original scale setting.

1.   **Open the Layout menu and choose Set Scale/Units.**

     The Document Scale & Units dialog appears.

2.   **Select 1:100 from the Default Scale pop-up menu.**

3.   **Click OK.**

4.   **Click Yes when the scale object alert appears.**

When you set the scale, other parts of the drawing environment are updated to conform to the scale change. For example, the **grid snap** options are updated to provide snaps that represent incremental steps of the scale (and the size units). The grid snap can be thought of as an invisible network of magnets that allows you to move objects in even increments and draw objects with greater precision.

With some understanding of the scale function, you are ready to learn about another of PC Draft's convenient features.

With the scale set to 1:100, you can be assured that each millimeter of a line on this drawing represents 100 millimeters. But how do you know when you have successfully drawn a line 2684mm long?

In some instances, it might be difficult to draw a line to a precise size. PC Draft assists you with this task by providing a constant digital display of the size of an object or line as you draw it. This feature is called **Show Size**.

Using Show Size

The Show Size palette provides you with a constant display of an object's size while you are drawing it. The measurements displayed always reflect the current scale of the drawing. For example, we have chosen a scale of 1mm: 100mm for our floor plan. If you were to draw a line from one grid line to the next, the length of the line would be displayed as 2000mm, since 20mm on the drawing represents 2000mm in the real world.

Using the Show Size function relieves you of calculating the actual size of each object on your drawing, regardless of the scale you have chosen. This feature is crucial when you need to draw to a precise size, as you will in this exercise.

To use the Show Size function:

- **Choose Show Size from the Palettes submenu in the View menu.**

    The Show Size palette will appear.

For the Floor Plan, you will want the objects measured in millimeters with a fractional display. For this exercise, **Millimeters** has already been set for you. Let's verify this:

1. **Open the Layout menu and choose Set Scale/Units.**

    The Document Scale & Units dialog box will be displayed.

    Notice that Millimeters appears on the long button in the top of the dialog box. In an untitled PC Draft document, where options have not been preset for you as they have in this floor plan tutorial, you would choose the size units with which you prefer to work (for example, centimeters, decimeters, meters, feet only, inches only, feet and inches, and so forth).

    As you can see, millimeters has been chosen already. So when you draw an object, the Show Size palette will display the size of objects and lines using these units.

2. **Click on the OK button.**

Now that you have determined how the sizes of objects are to be displayed on the drawing, you are ready to begin working on the Floor Plan.
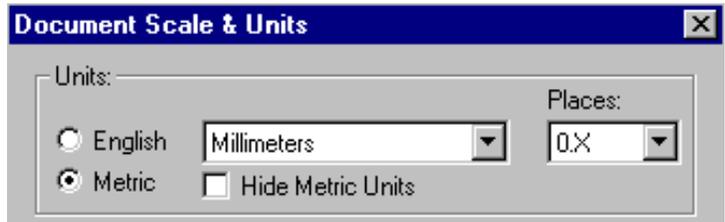
Completing the Floor Plan

The floor plan is missing two exterior walls. Your first task is to add the missing exterior walls.

If necessary, use the Zoom Out function so that the entire drawing is visible on the screen. This way it will be easier for you to draw the walls.

1. **Click on the Zoom icon in the Tool palette.**

2. **Press and hold down the ALT key.**

3. **Position the Zoom pointer on the drawing.**

    The Zoom Out pointer will appear on the screen. A minus sign will appear in the center to confirm the reduction mode.

4. **Click the left mouse button.**
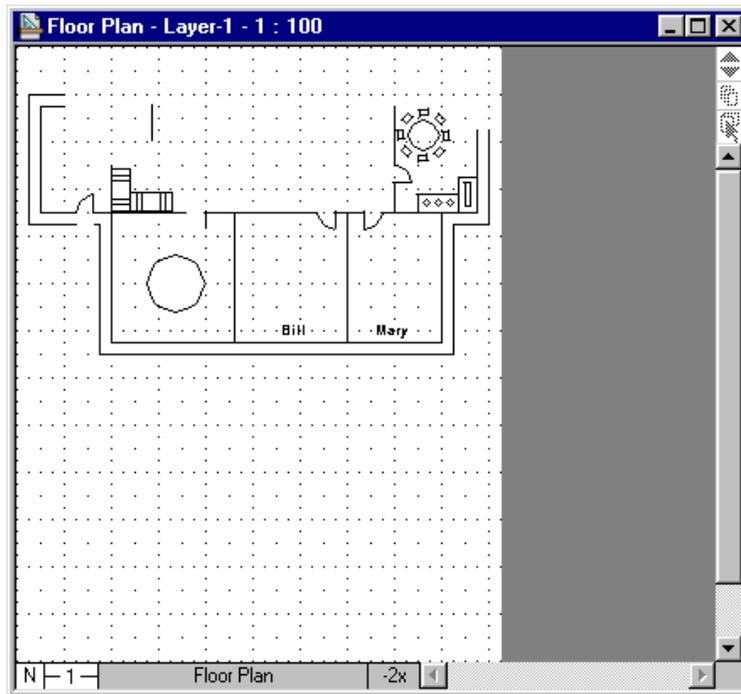
5. **Click on the Pointer tool to return to the pointer mode.**

The exterior walls are represented by parallel lines. PC Draft lets you draw a single set of parallel lines, as well as polygons and polylines with double lines.

Since most of the exterior walls are already in place, we merely have to complete the top and far right walls.

Drawing Parallel Lines

The easiest way to complete the walls is to use the polyline option for parallel lines.

To choose the polyline option for parallel lines:

1.   **Point on the Parallel Line icon on the palette.**

2.   **Press down the left mouse button.**

       The Parallel Lines popup menu will appear.

3.   **Holding down the left mouse button, drag until Polyline is highlighted.**

4.   **Release the left mouse button.**
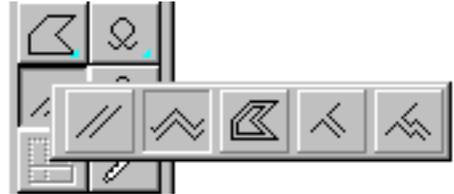
To finish the exterior walls:

1.   **Position the center of the cross cursor on the end of the upper parallel line in the top left corner.**

2.   **Click the left mouse button.**

3.   **Press down the Shift key.**

       The Shift key constrains the projection of the lines to 90 degrees.

4.   **Holding down the Shift key, drag to the right until you have created a pair of lines approximately 18000mm long. The cross cursor should make it easy to line up the end of the parallel line with the outer line of the right hand wall.**
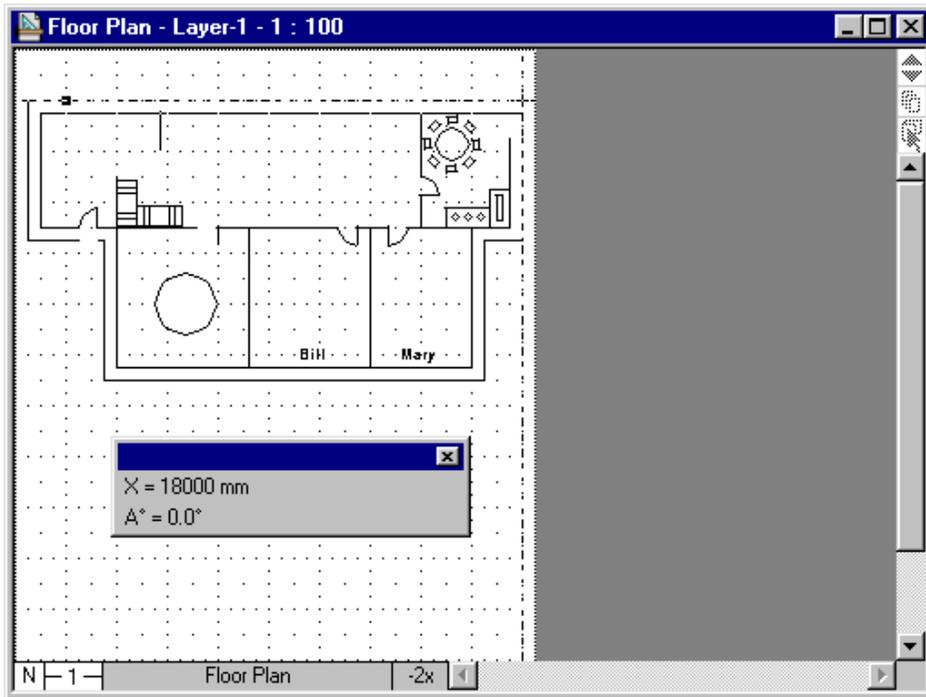
5. Click the left mouse button.

Note that as you were drawing the lines, the Show Size palette gave you a constant display of the length.

6. Drag downward until the parallel lines meet the lines of the existing right hand wall.

7. Double-click the left mouse button.

8. Release the Shift key.

9. Click on an empty area of the drawing to revert to the Pointer tool.

Since the exterior walls are complete, it is no longer necessary to remain in a zoomed out view.

• Choose Home View from the View menu.

The original view of the floor plan should now be displayed.

In the next few pages you will perform the following tasks:

• Create a layer to hold the office furnishings.

- Use a library to furnish Mary's and Bill's offices, the reception and main office areas.

- Arrange chairs in a circular array around the table in the conference room.

- Create a coffee table and cabinet in the reception area.

But first, let's keep the office furnishings separate from the wall layout. We can do this by putting the furnishings on a separate layer.

Layers

Layers are useful in that they allow you to physically separate the various components of your drawing. The objects on different layers are independent of each other. You can perform operations on objects on one layer without affecting objects on other layers.

The independence of the separate layers also gives you flexibility in controlling the way objects are "stacked" on a drawing. Stacking refers to the order in which the different layer planes are arranged on the drawing.

Let's begin by creating a new layer that will hold all the office furnishings:

- **Open the Layout menu and choose Layer Setup.**

The Layer Setup dialog box will appear.

When you open a new PC Draft document, you start out working on Layer-1, the default layer. Layer-1 appears in the list box and, when it is selected, in the text box below the list box.
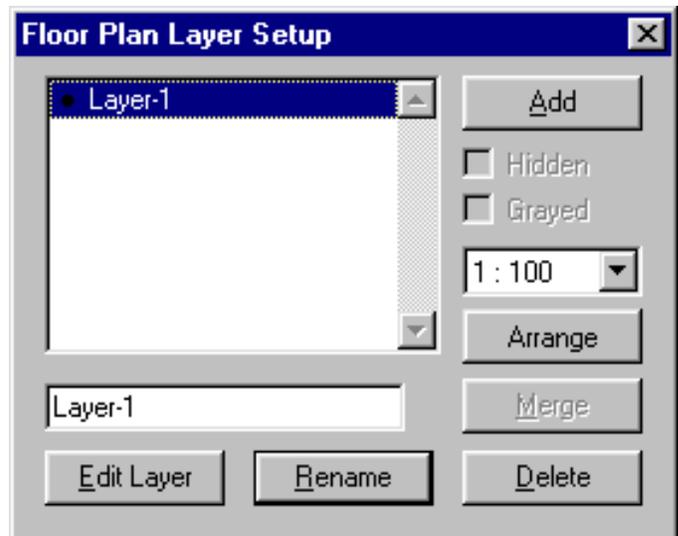
Renaming Layers

Let's rename Layer-1 with the more meaningful name, "Wall Layout". Select Layer-1 in the list box and its name will appear in the text box. Simply begin typing the new name.

1.   Type "Wall Layout".

2.   Click the Rename button (or press Return).

The new name, "Wall Layout", will replace the name "Layer-1" in the list box and in the text box.

The new layer Wall Layout is the active layer. You can always tell which the active layer is by the bullet symbol (•) that appears beside the name of the active layer. Only one layer can be active at a time. The active layer is the only layer you can edit.
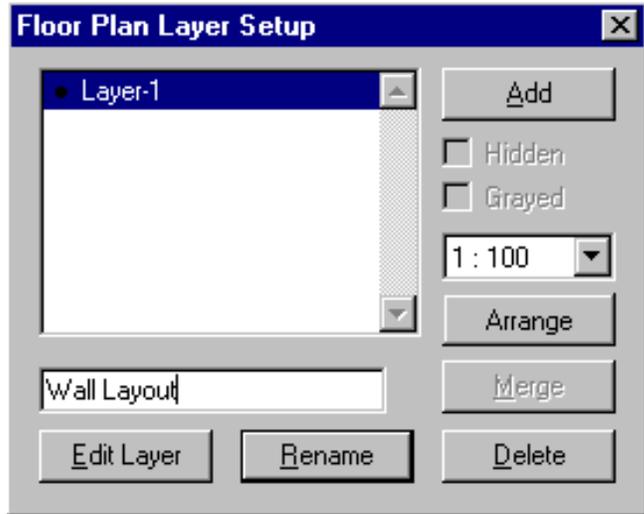
Adding a New Layer

We can now add a layer to hold the office furnishings and call it, "Furnishings". With the Layer Setup dialog box still open, you can create a new layer by simply clicking on a button.

•   Click on the Add button.

PC Draft assigns a default name to new layers. PC Draft assigned the name "Layer-2" to the layer you just added. The assigned number reflects the total number of layers in the document. Notice that the new untitled layer appears underneath the Wall Layout layer with a bullet symbol beside it, and a check mark now appears beside the layer, Wall Layout. The check mark indicates that Wall Layout is no longer the active layer. When you add a new layer, it automatically becomes the active layer.   Therefore, the bullet symbol now appears beside the new untitled layer.

A check mark beside a layer's name also means it is a visible layer. You have the option of hiding or displaying layers (*see the section "Layers" in Chapter 7 of the User Guide for details*).

You'll want to rename Layer-2 with the more meaningful name "Furnishings," just as we renamed Layer-1 "Wall Layout." Layer-2 is already selected, so we only have to type in the new name and execute the change.

1.   **Type "Furnishings".**

2.   **Click on the Rename button.**

Displaying Layers

By default, the contents of inactive layers are displayed. However, you can choose to 'gray' the contents of inactive layers. To show you how this works, let's choose to gray the contents of the Wall Layout layer.

To gray the contents of the Wall Layout layer:

1.   **Click on "Wall Layout" in the list box.**

2.   **Click on the check box beside "Grayed".**

      Notice that a check mark appears in the check box. This means that the contents of the layer will be grayed when the layer is inactive.

3.   **Click on the checkbox again to display the layer contents.**

You must close the Layer Setup dialog box to start editing the active layer, Furnishings.

To close the Layer Setup dialog box:

•   **Click on the close button (at the right end of the title bar).**

The Layer Setup dialog box will close and you can begin editing the Furnishings layer.
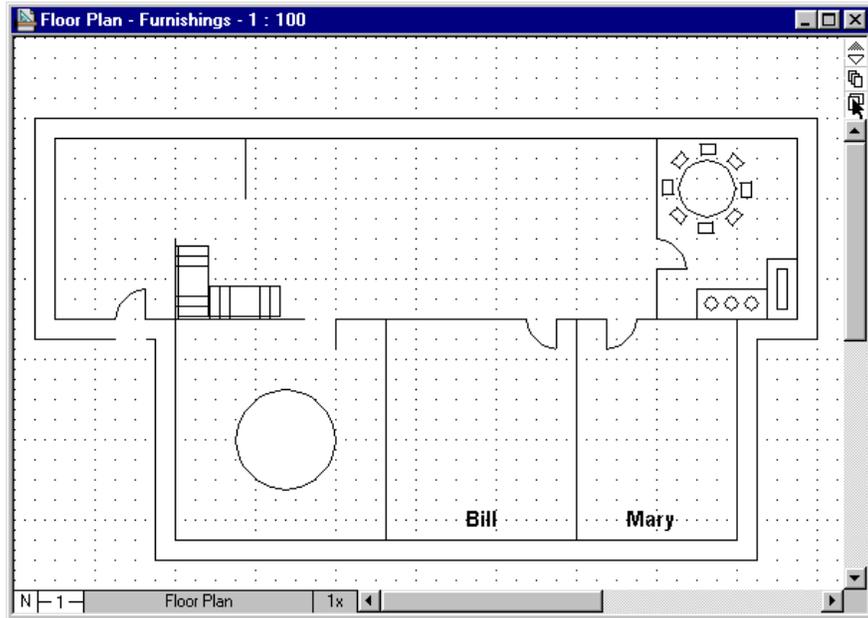
Now that you have created the Furnishings layer, let's begin furnishing Mary's and Bill's offices using a library.

Libraries

Libraries give you the ability to save, catalog, and reuse standard images. You can copy previously created symbols from libraries and paste them directly onto your drawing.

For this floor plan exercise, symbols of an executive desk set and a secretarial desk set have already been drawn for you, and have been stored in a library. You will learn how to open the library, and copy and paste the symbol you want to use onto your drawing.

To open the library:

1.   Open the File menu and choose Open.

A dialog box will appear.

2.   Choose Libraries from the Files of Type popout menu.

3.   Locate the Tutorial Files folder if necessary.

The list box will display the library titled "Desks". If it is not selected, click on it.

4.   Click on the Open button.

The library file will then appear on your screen.
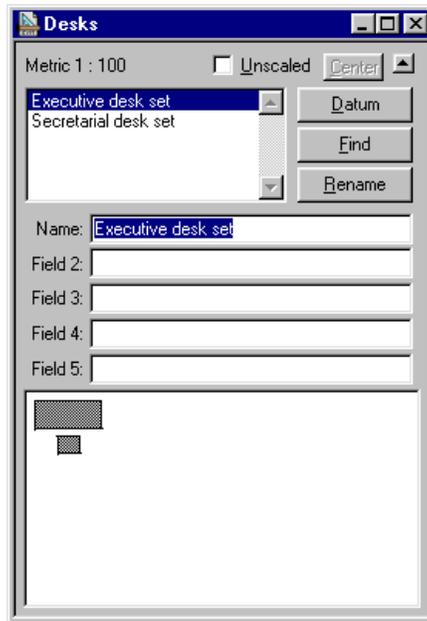
Because only one window can be active at a time, the inactive window (in this case the drawing window) is temporarily sent behind the library window and grayed out. For convenience, you should move the library window to the lower-right corner of your screen, overlapping the drawing window. By positioning the library window in this way, you will be able click on it to make it active when you want to use it again.

To move the library window:

1.   Position the pointer on the title bar of the library window.

2.   Press down the left mouse button.

3.   Holding down the left mouse button, drag the window to the lower-right corner of the screen.

4.   Release the left mouse button.

Inserting a Symbol into a Drawing

Now we're ready to place the executive desk set symbol into Bill's office.

To place the symbol:

1.   **In the library window, click on the "executive desk set" icon to select it.**

      The full name of the symbol selected is displayed in the Item Name field at the bottom of the window.

2.   **Position the cursor over the executive desk set icon and click and hold down the left mouse button.**

3.   **Holding down the left mouse button, drag the cursor over the Floor Plan document and position it over Bill's office.**

4.   **Release the left mouse button.**

      A copy of the executive desk set now appears in Bill's office. Position the desk in the center of Bill's office, if it is not centered already. You can position the desk by dragging it with the mouse.
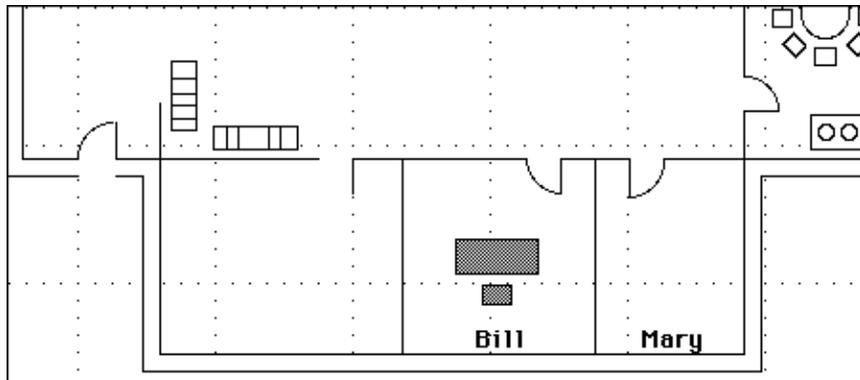
Now that you have furnished Bill's office with an executive desk set, you will need an additional one to place in Mary's office. You could drag and drop another copy of the symbol into the drawing, but we will duplicate the desk you have placed in Bill's office. Rather than choosing Duplicate directly from the Edit menu, let's look at a faster way to execute the command.

Keyboard Command Equivalents

Certain menu items can be chosen directly from the keyboard without using the mouse and pull-down menus. The letters CTRL and a character appear beside menu items that can be chosen from the keyboard. The CTRL represents the Control key. You can choose these items by holding down the Control key and pressing the key that corresponds to the character beside the item name.

For more information on the various menus and the functions within them, refer to Appendix A of the User Guide.

To duplicate the desk and chair set:

1. **Click on the set to select it (if it isn't already selected).**

2. **Press and hold down the Control key (the key with CTRL on it).**

3. **Type D (uppercase or lowercase)**

    The duplicate copy that you have just made should be selected, and ready for you to move into Mary's office.

Moving an Object

To move the duplicate set:

1. **Position the tip of the pointer anywhere on the desk set, except on one of its edit handles. (Edit handles are used to change an object's size or shape.)**

2. **Press and hold the left mouse button down.**

3. **Drag the duplicate set into Mary's office, as shown in the following figure.**
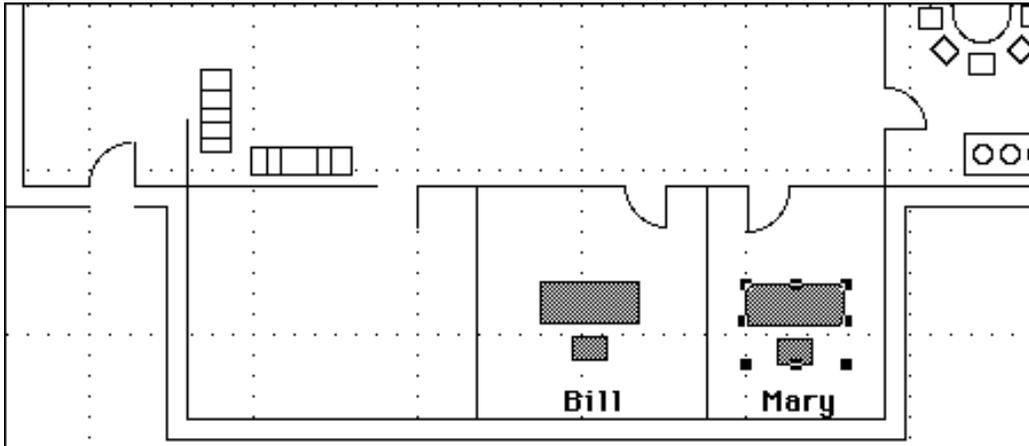
As you may have noticed in the finished floor plan example, the desk in Mary's office is rotated 90 degrees to face Bill's office. Therefore, you must rotate the desk.

Rotating an Object

On many occasions you will want to orient an object in a position that is other than horizontal or vertical. It is for this reason PC Draft incorporates the Rotation function. This feature allows you to rotate lines and objects in a full 360-degree range.

The Show Size palette provides a constant visual display of the number of degrees you have rotated an object.

Now let's rotate Mary's desk 90 degrees.

1. **Make sure that Mary's desk is still selected. If it isn't, click on it.**

    Edit handles will appear on the desk set.

2. **Choose Rotate from the Arrange menu.**

3. **Without pressing mouse buttons, move the cursor to the center of the window. The Rotation pointer will appear.**

4. **Holding down the left mouse button, drag counterclockwise until you have rotated the desk 90°.**
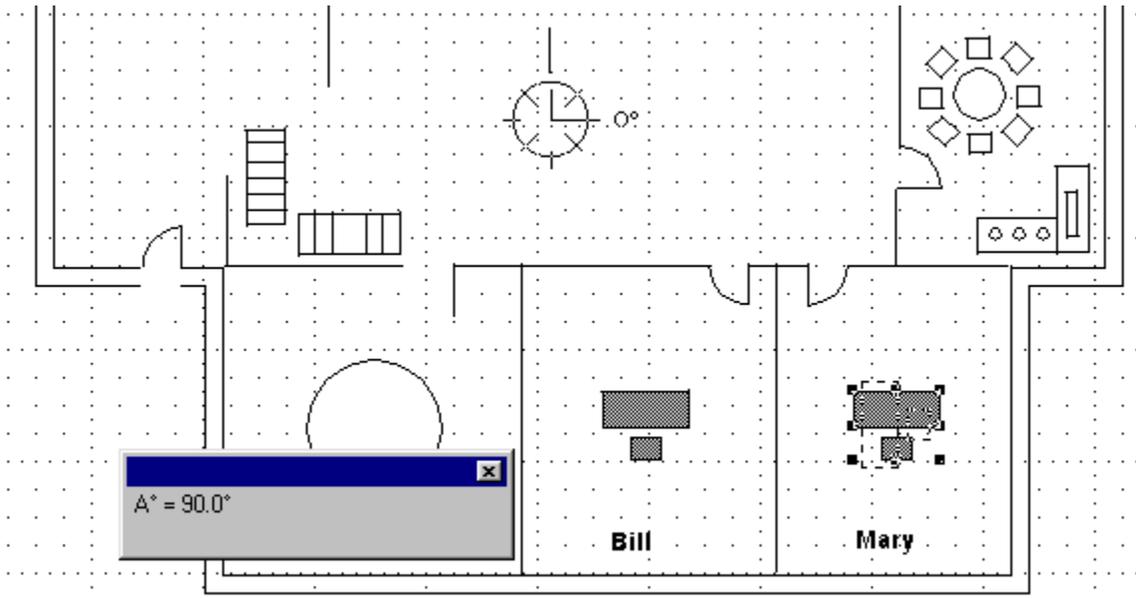
5.   Release the mouse button.

6.   Click on the Pointer tool to return to the pointer mode.

As you drag, the Show Size palette will give you a constant visual display of the number of degrees you are rotating the object. If you make a mistake, or release the left mouse button too soon, choose Rotate to Zero from the Arrange menu; choose Rotate again, and rotate the object the correct number of degrees.

For more information on Rotation, refer to the section titled, "Rotating Objects" in Chapter 5 of the User Guide.

NOTE: Rotation can also be performed by selecting the Rotate tool in the Tool palette. Rotations of 90° can also be accomplished by using the Rotate by 90° tool in the Tool palette.

Rotate Tool

Rotate by 90° Tool
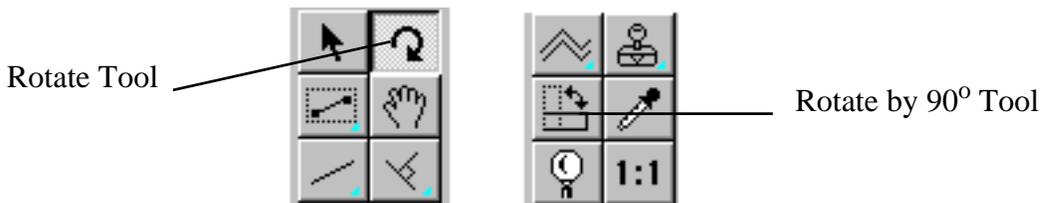
With Bill's and Mary's offices furnished, you are ready to use the symbol for the secretarial desks, which will be placed in the reception and main office areas.

Positioning Additional Symbols on the Drawing

The secretarial desk set symbol is also located in the Desks library. To place it in your drawing:

1.   **Click on the library window to activate it.**

2.   **Click on the "Secretarial desk set" icon and hold down the left mouse button**

3.   **Drag the cursor over the floor plan drawing and position it over the main office area.**

4.   **Release the left mouse button.**

      A copy of the secretarial desk set symbol now appears in the main office area.

You will use this secretarial desk set for both the reception and the main office areas. Therefore, let's make a duplicate that you can use for furnishing the reception area. Make the floor plan drawing the active window by clicking on it. The secretarial desk set should still be selected. If it isn't, click on it.

1.   **Open the Edit menu and choose Duplicate.**

2.   **Point on the dupli-cate desk and press down the left mouse button.**

3.   **When the white move arrow appears, drag the duplicate into the center of the recep-tion area.**

4.   **Release the left mouse button.**
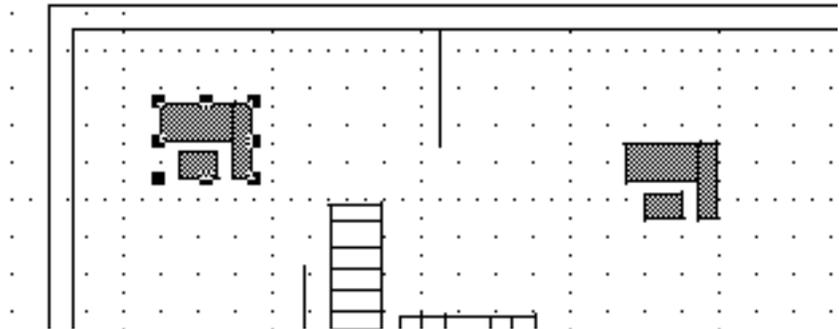
You may have noticed in the finished example of the floor plan that the reception desk is positioned in the upper left corner of the reception room, facing the main office area. You will therefore have to rotate the desk before you move it into its final position.

To rotate the desk, follow these steps:

1.   **Select the secretarial desk in the reception area by clicking on it.**

2. **Choose Rotate from the Arrange menu.**

3. **Without pressing buttons, use the mouse to move the rotation pointer to the center of the window.**

4. **Press down the left mouse button.**

5. **Holding down the left mouse button, drag clockwise, rotating the desk to 270°.**

6. **Release the left mouse button.**

7. **Click on the Pointer tool to return to the pointer mode.**
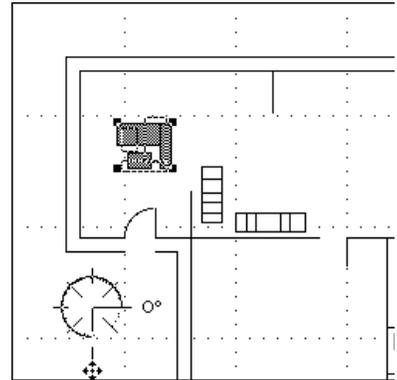
To place the desk in its proper position:

1. **Point on the desk.**

2. **Press and hold the left mouse button down until the white arrow appears, showing that you can drag the selected group.**

3. **Drag the desk into the upper-left corner of the reception area.**

4. **Release the left mouse button.**
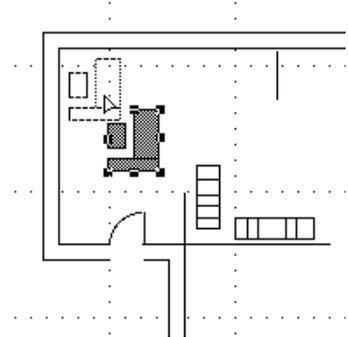
Next, we will complete the main office. The main office will have eight secretarial work stations. Therefore, you will need to make eight desk groups. The desks should be arranged in two rows of four desks each, with each desk facing the reception area.

First you will rotate the desk in the main office area so that it faces the reception area.

To rotate the desk:

1. **Select the desk by clicking on it.**

2. **Choose Rotate from the Arrange menu (or select the Rotation tool in the Tool palette).**

3. **Move the Rotation pointer to the center of the window.**

4. **Press down the left mouse button.**
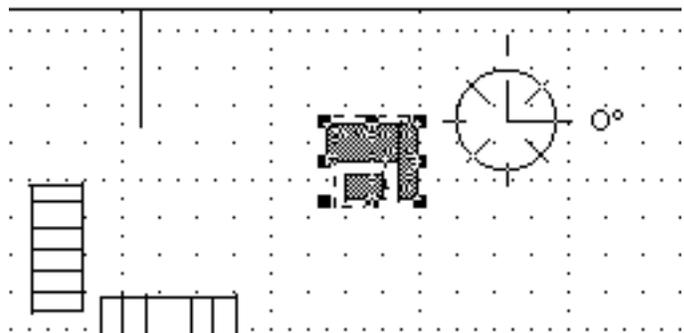
5. **Holding down the left mouse button, drag in a counterclockwise direction until the Show Size palette reads 90°.**

6. **Release the left mouse button.**

7. **Click on the Pointer tool to return to the pointer mode.**

Now that you have rotated the desk, you will need to move it into position, then make seven more copies in two rows.

To position the desk:

1. **Point on the desk.**

2. **Press and hold the left mouse button down until the white move arrow appears.**

3. **Drag the desk into position as shown.**
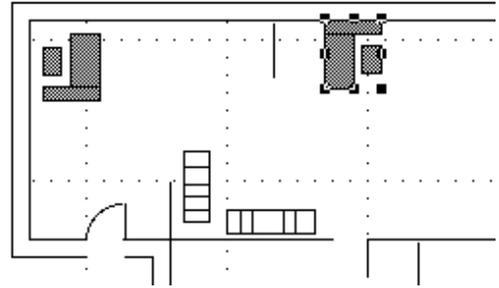
Now that you have positioned this desk, let's use the Linear Duplication function to create the other seven desks. The desk should still be selected. If it is not, click on it.

Using Linear Duplication

With Linear Duplication, you can duplicate an object or group in one or two directions at the same time. Here, you will create a row of duplicates, as detailed above, and simultaneously create a duplicate of that row.

1. **Choose Linear... from the Edit menu's Duplication submenu.**
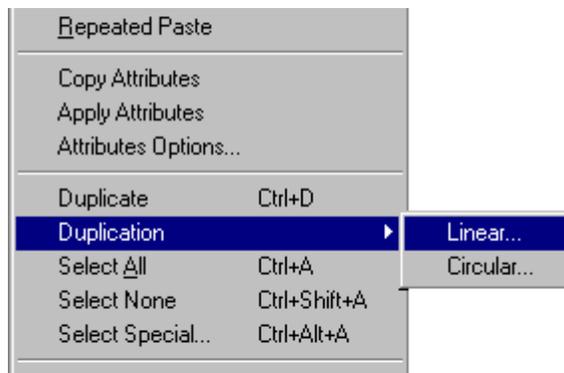
The Linear Duplication dialog box appears.
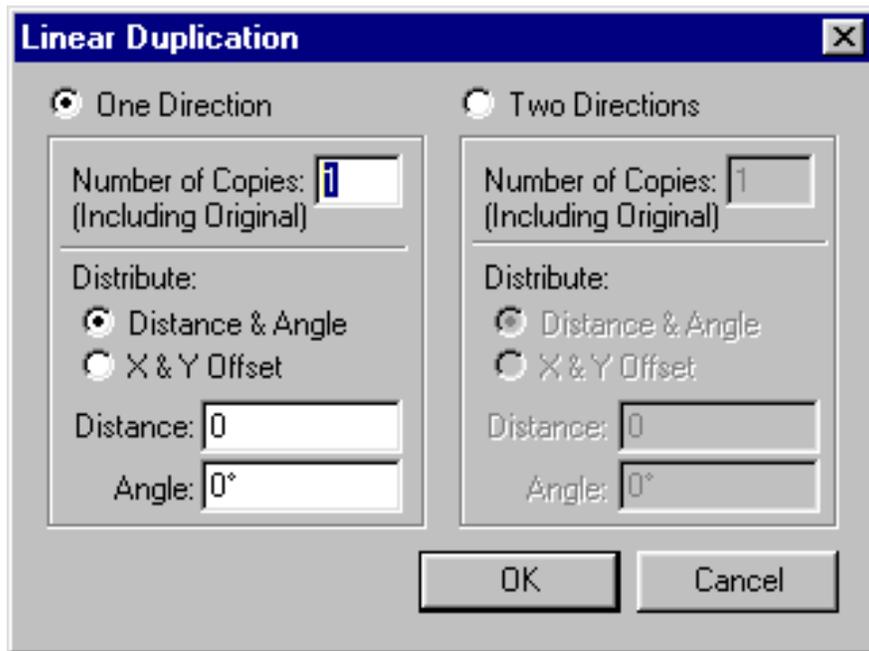
2. **In the Number of Copies field, enter 4 (the total number of copies for the first row).**

3. **In the Distance field, type 2200.**

Distances between objects will be in the drawing's scale and units.

4. **In the Angle field, make sure 0 (zero) is entered, so the copies will appear to the right.**

5. **Click the Two Directions radio button.**

The choices for Two Directions become active.
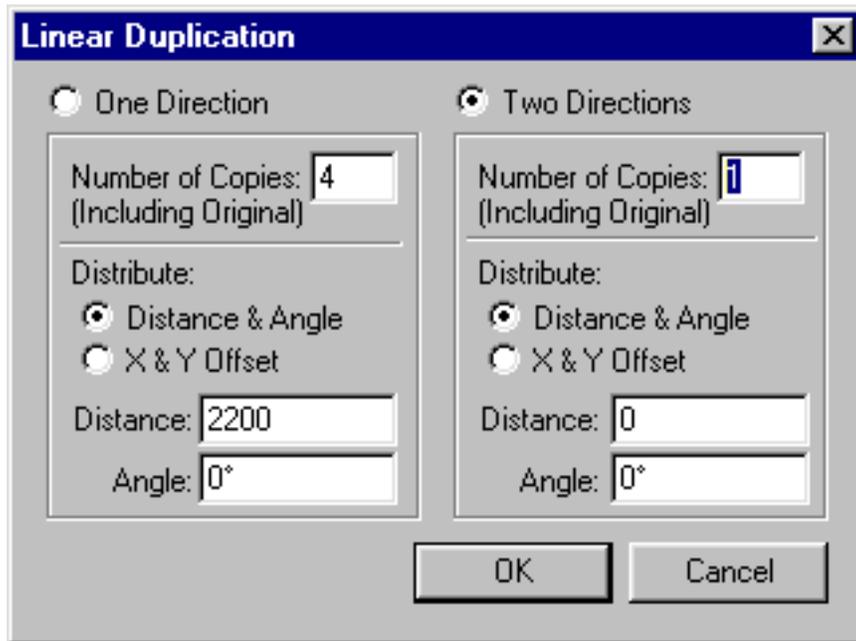
You can also define the duplication interval by horizontal and vertical offset, entering an X and Y value to determine the positions of the copies.

6.   Type 2 in the Copies field.

7.   Under Two Directions, click the Distribute: X & Y Offset radio button.

The X and Y distance fields appear.

8.   In the Delta-X field, make sure 0 (zero) is entered, since you only need a vertical offset to create the second row.

9.   In the Delta-Y field, type 2000.

Linear Duplication

☐ One Direction   ◉ Two Directions

Number of Copies: 4
(Including Original)

Number of Copies: 2
(Including Original)

Distribute:
◉ Distance & Angle
☐ X & Y Offset

Distance: 2200
Angle: 0°

Distribute:
☐ Distance & Angle
◉ X & Y Offset

dX: 0
dY: 2000

OK   Cancel
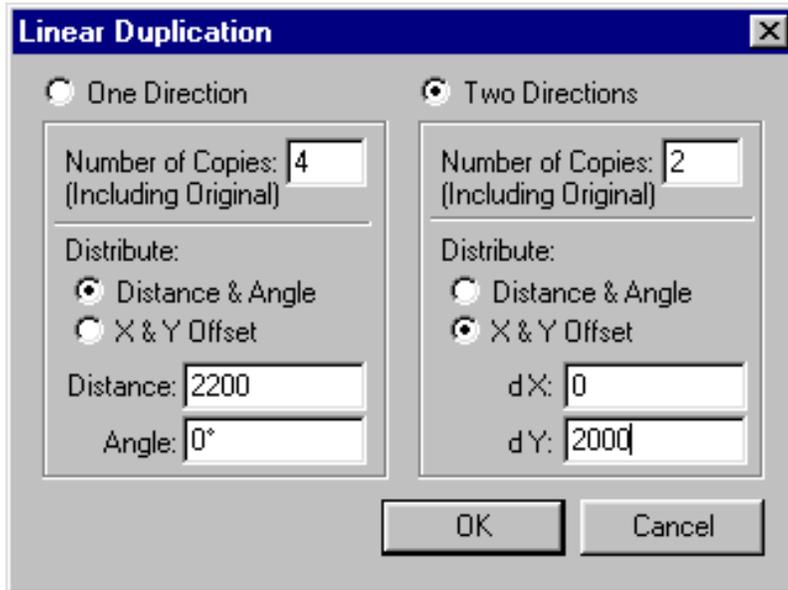
10.   Click OK.

Eight desks appear, spaced as you specified.
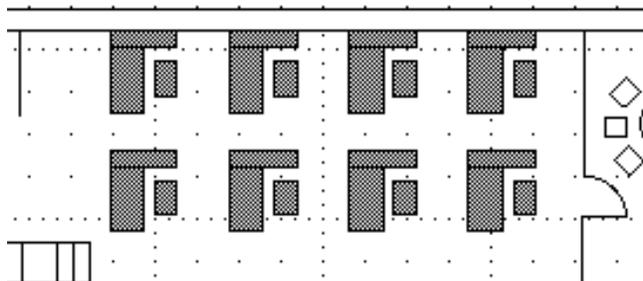
You have just used a combination of functions to assist you in creating the two rows of desks for the main office area. As you can see, by using several of PC Draft's features in conjunction with one another, you can perform many tedious tasks quickly and easily.

With the main office area completed, you are now ready to furnish the conference room. You will be creating a conference table and eight chairs. However, notice this room is small and therefore does not allow you much space for creating furniture. Drawing small objects, such as chairs, in a confined area could be very difficult, especially if you need to draw them to a precise size.

A special feature of PC Draft, **Zoom In**, allows you to obtain a magnified view of the conference room so that you can work at a more detailed level. This feature is particularly useful when you want to add small details to a large scale drawing, such as this floor plan.

Zoom In

The Zoom In function allows you to obtain a full-screen display of a selected portion of your drawing. Once you have zoomed in on a small portion of the drawing, and have added the detail that you desire, you can then return to the normal, or home view of the drawing.

We will use the Zoom In feature to add and position the furniture in the conference room. To zoom in on the conference room:

1.   **Click on the Zoom (magnifying glass) icon in the palette.**

2.   **Without pressing down mouse buttons, position the Zoom pointer over the conference room.**

3.   **Click the left mouse button.**

4.   **Click on the Pointer tool to return to the pointer mode.**

Each time you click on the portion of the drawing that you want magnified, the power of magnification increases by two, up to a magnification of 32 times for a one-page drawing.

For more information on the Zoom In function, refer to the section "Zooming in or out on a drawing" in Chapter 2 of the User Guide.

Notice that the conference room appears much larger now, and we have adequate space to work with furniture. First, let's give the conference table some definition by filling it with a pattern.

Changing the Fill pattern for an Existing Object

PC Draft offers a variety of fill patterns to help you distinguish between similar objects, identify different layers on a drawing, and show textures and surfaces. Fill patterns also add definition and shape to your drawing. In this exercise, you will use a fill pattern for the conference table and chairs, the coffee table, and the cabinet. You will first draw an object and fill it with a particular pattern, then learn how to choose a preset fill that will appear inside all objects you draw.

To add a fill pattern to the conference table:

1. **The conference table is on the Wall Layout layer. To make this the active layer, select its name from the Layer popup menu at the right side of the document window.**

2. **Click on the table to select it.**

3. **Open the Attribute Palette's Pattern Fill menu.**

   The Fill Pattern submenu will appear.

4. **Holding down the left mouse button, drag across the submenu until a suitable fill pattern is highlighted.**

5. **Release the left mouse button.**

   The table is now filled with a pattern.
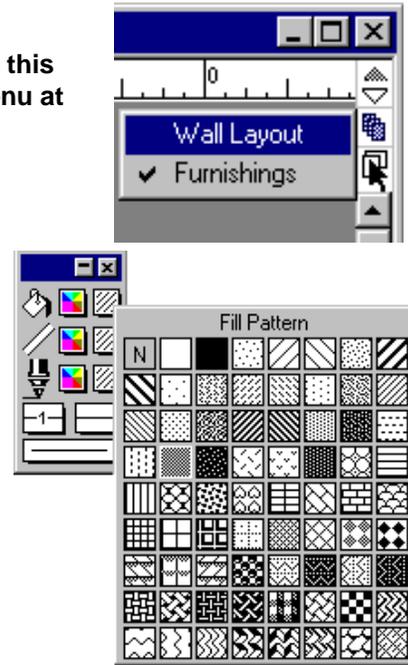
Drawing with a Preset Fill

Now you are ready to draw the chairs. To choose a preset fill, you must make sure that no objects on the drawing are selected before you make your fill choice.

1. **Click on a blank part of the drawing to deselect all objects.**

2. **Open the Fill Pattern popout.**

   The Fill Pattern submenu will appear.

3. **Holding down the left mouse button, drag across the submenu until the same fill pattern as used for the table is highlighted.**

4. **Release the left mouse button.**

   Notice that the Fill Indicator now displays the chosen fill pattern. All objects you draw will contain this gray fill until you make another choice for the current fill.

Drawing Rectangles

To draw the first chair:

1. **Return to the Furnishings layer by clicking on its name in the Layer popup menu at the right of the document window.**

2. **Activate the Square-Corner Rectangle tool in the palette by clicking on it.**

3. **Position the cursor above the table.**

4. **Press down the left mouse button.**

5. **Holding down the left mouse button, drag to create a rectangle that is about 500mm x 500mm.**

6. **Release the left mouse button.**
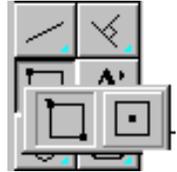
You have created the first of five chairs that will be positioned around the conference table. You will use this chair with the Circular Duplication feature to create and position all of the other chairs around the conference table.

Circular Duplication

As you may have noticed in the example of the finished floor plan, the chairs are each rotated to face the table. With Circular Duplication, you can duplicate objects or groups so that they appear arranged around a circle, rotated to match their positions. Let's start by returning to the pointer mode.

1. **Return to the pointer mode by clicking on a blank area of the drawing.**

2. **Select the chair.**

3. **Open the Edit menu's Duplication submenu.**

4. **Choose Circular….**
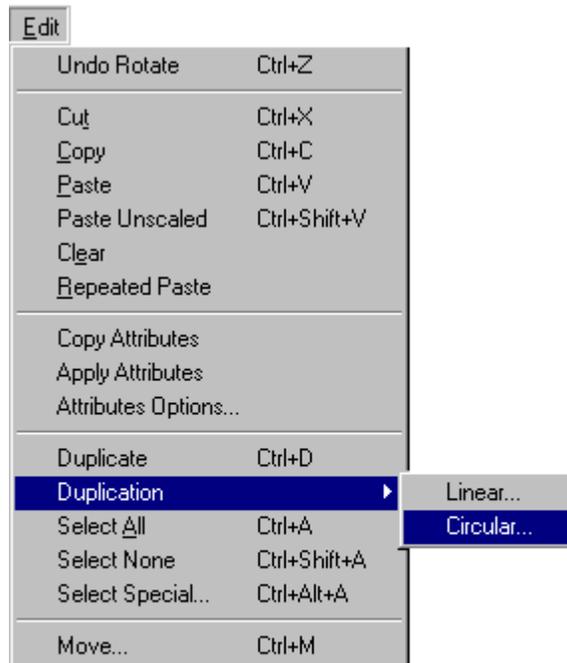
The Circular Duplication dialog box appears.
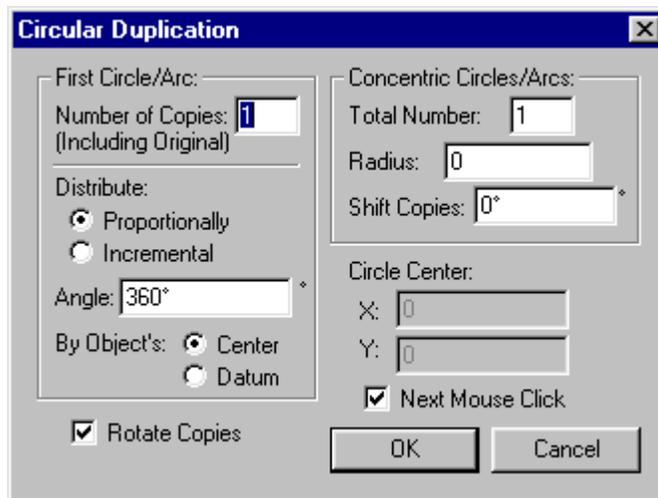
5.   In the Number of Copies field, enter 5.

6.   Make sure that Distribute: Proportionally is selected and that the angle entered is 360°.

These settings ensure that the distribution will be all the way around a circle.

7.   **Make sure the box Rotate Copies is checked.**

8.   **Make sure the Next Mouse Click choice is checked**

9.   **Click OK.**

The centering cursor
appears.

10.   **Move the centering cursor to
       the center of the table, then
       click.**

A ring of 5 duplicate chairs
appears, centered around the
point you specified.
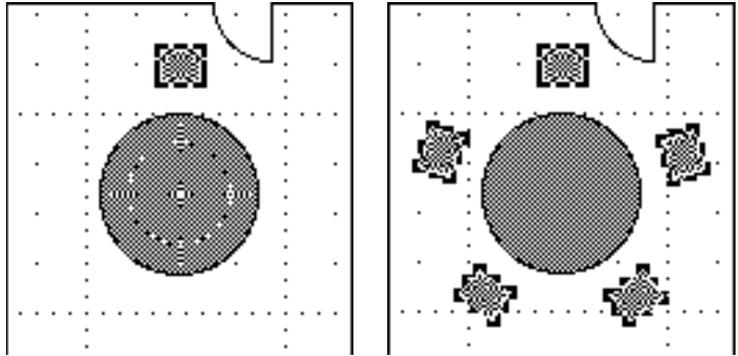
The conference room is now complete. Let's go back and look at our work from the home view
(that is, the original, non-magnified view).

•   **Choose Home View from the View menu.**

You now see the home view of the floor plan. In the finished floor plan example the reception
area had a round coffee table in the bottom left corner.

To make this coffee table, you will zoom in on the reception area, just as you zoomed in on the
conference room. While zoomed in on this area, you will also be making a cabinet in the space
between the reception area and main office area.

These steps will complete all the detailed drawing in the floor plan. Let's begin by following
these steps:

1.   **Click on the Zoom icon on the palette.**

2.   **Position the Zoom pointer so it is in the
       middle of the reception area.**

3.   **Click the left mouse button.**

4.   **Click on the Pointer tool to return to the
       pointer mode.**

Notice that your new view shows the
entire reception area and a portion of the
main office.
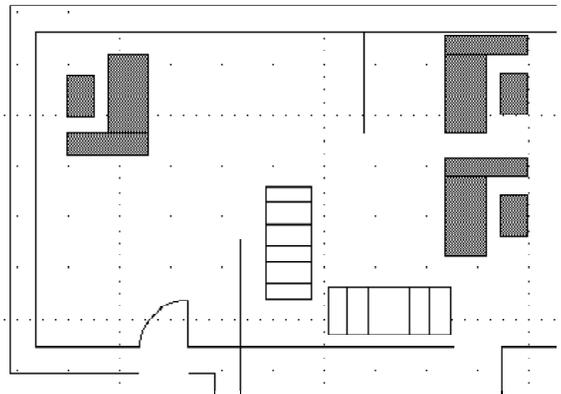
Drawing Circles

You will use the **Circle tool** to create a round coffee table, 1000 millimeters in diameter, and place it in the reception area.

PC Draft has three different tools and methods to help you draw circles. You can draw a circle by its diameter, by its radius, or by three points. In this exercise, you will draw the circle by its diameter. Notice that within the palette, the letter "D" appears inside the Circle icon. The "D" is a visual indicator to let you know that any circle you create will be drawn by its diameter.

For more information on circle drawing modes, refer to Chapter 2 of the User Guide.

Because we have not changed the current option for the Circle tool, "D" for circles by diameter will still be active.

1.   **Activate the Circle tool in the palette by clicking on it.**

      The drawing cursor will appear. Position the cursor in the bottom section of the reception area.

2.   **Press down the left mouse button.**

3.   **Holding down the left mouse button, drag to the right to create a circle 1000mm in diameter.**

4.   **Release the left mouse button.**

By positioning the tip of the pointer on an edit handle and pressing down the left mouse button, you can confirm that your circle is 1000mm' across.

The coffee table is complete, so let's position it in the reception area.

1.   **Return to the pointer mode by clicking on a blank area of the drawing.**

2.   **Point on the circle.**

3.   **Press down the left mouse button until the white move arrow appears.**

4.   **Holding down the left mouse button, drag the circle to the bottom left corner of the reception area.**
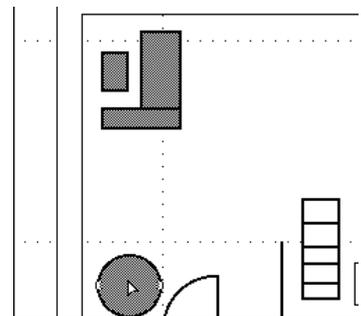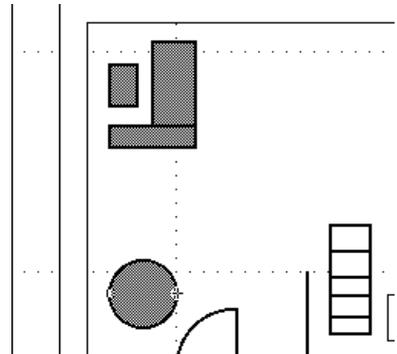
5. Release the mouse button.

With the coffee table in place, you are ready to complete the reception area by creating a cabinet in the upper right corner. Notice that in the finished floor plan example the cabinet is an odd shape. You could create this cabinet by using the Constrained Line tool in conjunction with sets of short lines. However, a more efficient method is to use the **Polygon tool**.

Drawing Polygons

The polygon tool allows you to create irregularly shaped objects easily. With this tool you can draw an uninterrupted series of straight lines. You can orient the lines at any angle. Then, when you are done, PC Draft will automatically close the object.
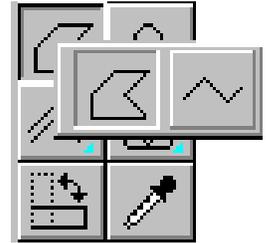
1. Activate the Polygon tool in the palette by clicking on it.

2. Position the cursor to the right of the reception desk.

position cursor here
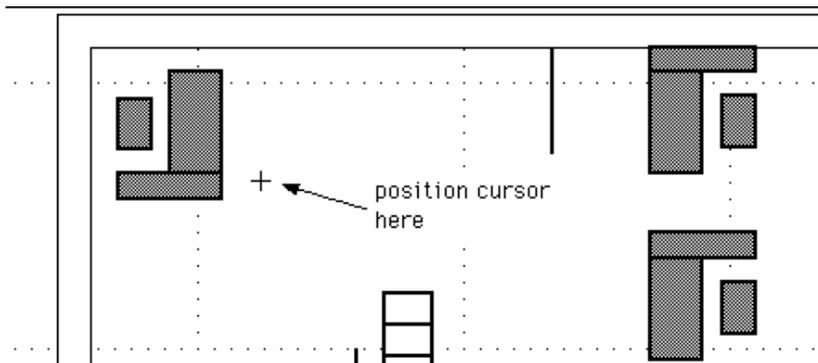
If you want any of the sides of a polygon to be horizontal or vertical, you can restrict the line to 90 degrees by holding down the Shift key while you drag. Because all the cabinet sides are either horizontal or vertical, using the Shift key will simplify the task of drawing the cabinet in this case.

The Show Size palette will display the length of the line between the starting point and the present cursor position, allowing you to draw line segments to a precise size.

3. Press down the Shift key.

4. Press down the left mouse button

5. Move the cursor upwards until the line length reads 500mm.

6.   **Release the left mouse button.**
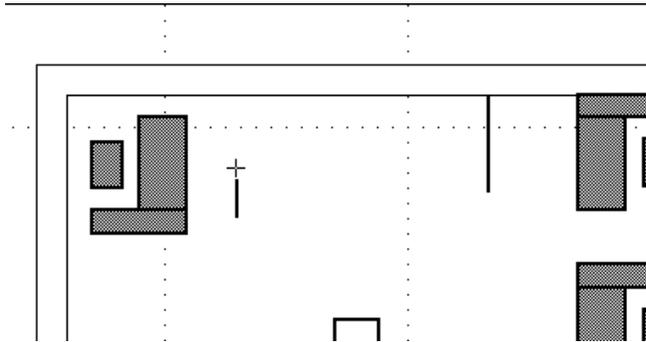
Notice that while you were drawing, the line remained perfectly vertical. By holding down the Shift key, you were constraining the line to a vertical axis.

7.   **Without pressing down the left mouse button, move the cursor to the right to create a line 2500mm long.**

8.   **Click the left mouse button.**
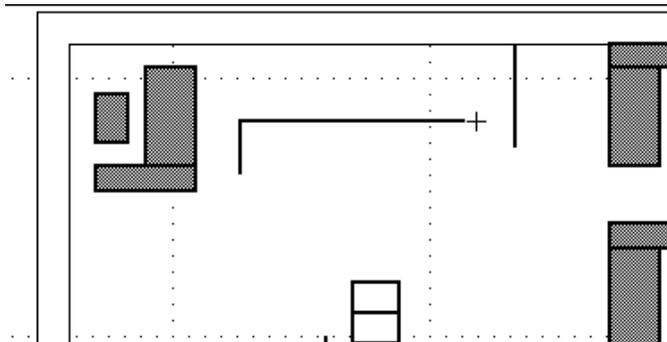
We purposely had you draw a line that was too long so that we could introduce you to a special polygon editing feature that lets you edit a polygon **while you draw it**.

Dynamic Editing of a Polygon

The Polygon tool features **dynamic editing** of the last point. This means that you can change the length and position of the last line drawn by moving the last selected point.

Now let's edit the 2500mm line that you just created. If you have moved the cursor away from the end point of the last line segment, just reposition it onto that same point.

Remember to hold down the Shift key to maintain a horizontal drawing plane.

1.   Click the left mouse button to reselect the end point.

2.   Move the cursor to the left until the line length reads 2000mm.
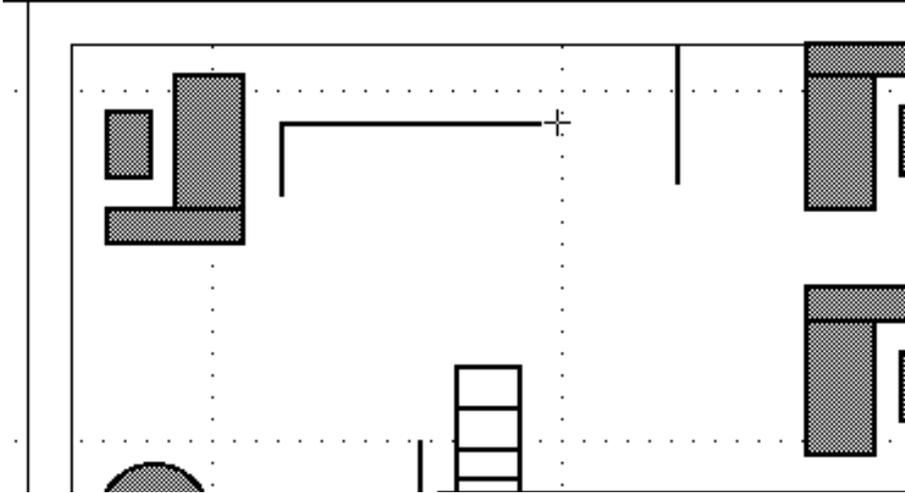
3.   Click again to select the new end point position.

Now that you have edited this line, let's continue with the cabinet.

**4.   Without pressing down the left mouse button, move the mouse in a downward direction to create a line 500mm long.**
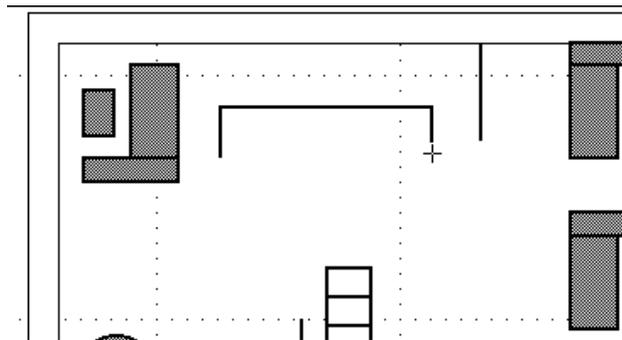
5.   Click the left mouse button.

6.   Without pressing down the left mouse button, move the mouse to the left to create a line 250mm long.
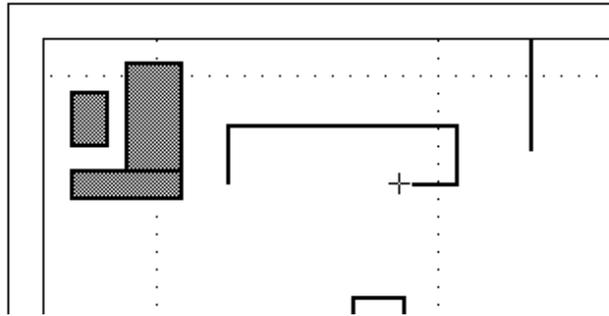
7. **Click the left mouse button.**

8. **Without pressing down the left mouse button, move the mouse upward to create a line 250mm long.**
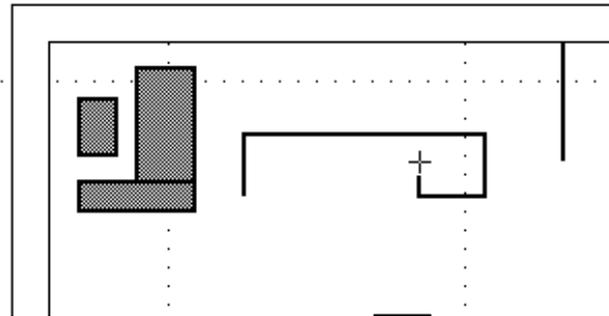
9. **Click the left mouse button.**

10. **Without pressing down the left mouse button, move the cursor to the left again to create a line 1000mm long.**
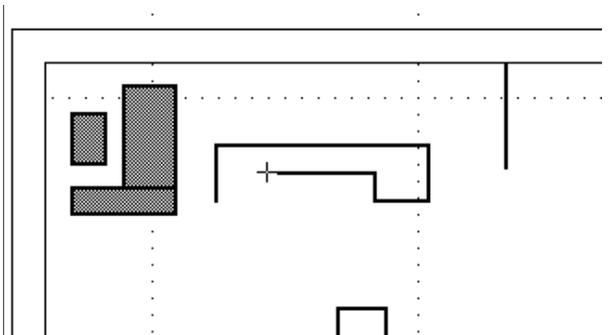
11. **Click the left mouse button.**

12. **Without pressing down the left mouse button, move the mouse downward to create a line 250mm long.**
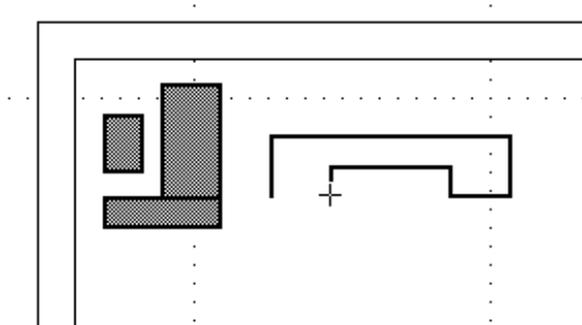
13. **Double-click the left mouse button**

Notice that when you clicked twice, the polygon automatically closed itself. This **double-click** technique is a convenient, step-saving way of closing any polygon that you create.

Now that you have created the cabinet, you are ready to move it into position.

1. **Return to the pointer mode by clicking on a blank area on the drawing.**

2. **Point on the cabinet.**

3. **Press the left mouse button down until the white move arrow appears.**

4. **Holding down the left mouse button, drag the cabinet into position as shown in the following figure.**
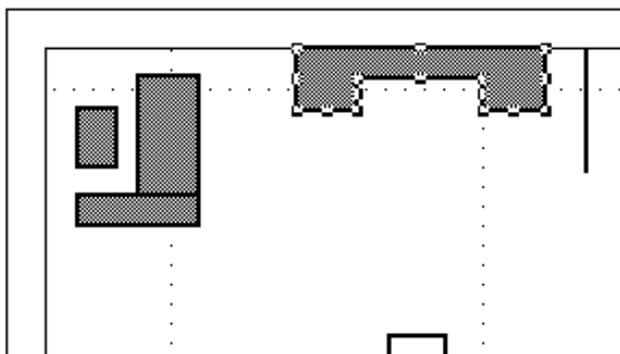
You have added a coffee table and cabinet to the reception area of the drawing. The floor plan is now completely furnished. Let's return to home view and see how the drawing looks.

- **Choose Home View from the View menu.**

All that is left to do now is to create the conference room doorway, and add the dimension lines to the exterior walls.

Let's start with the doorway. First we must make the Wall Layout layer active again before we can draw the doorway. You can use the Layer Setup dialog box to select the active layer.

1. **Open the Layout menu and choose Layer Setup.**

   The Layer Setup dialog box will appear.

2. **Click on the Wall Layout layer in the list box.**

3. **Click on the Edit button.**

4. **Click on the close box on the Layer Setup dialog box.**

The Layer Setup dialog box will close and the Wall Layout layer will be activated. Remember, the contents of the inactive layer may be grayed out depending on the settings for the layer. Therefore, the furniture on the Furnishings layer may now be grayed out.

Next, let's magnify our view to make the drawing task easier:

1. **Click on the Zoom icon on the palette.**

2. **Position the Zoom pointer so that it is directly over the door opening in the conference room, as shown in the following figure.**
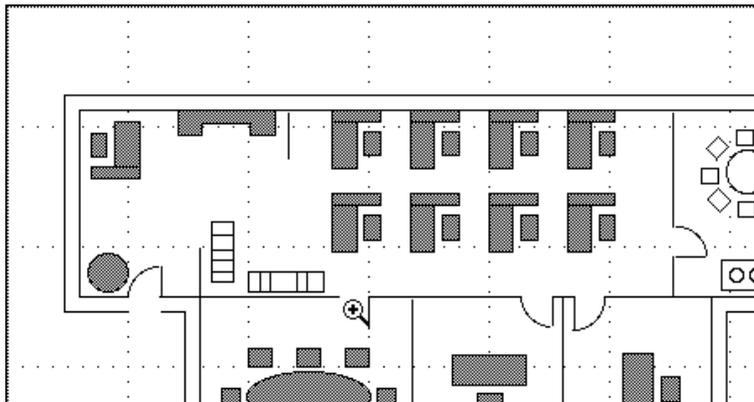
3. **Click the left mouse button twice to zoom in 4x.**

4. **Click on the Pointer tool to return to the pointer mode.**

With the view of the doorway area magnified, you can now create the doorway. Generally, you use curved lines to draw doorways. The curve of the line shows the direction the door opens. The **Arc tool** offers the simplest way to represent a doorway.

Drawing Arcs

Remember that the pattern fill is still active. If you were to draw an arc now, it would have a pattern fill and appear on the drawing as a wedge.

Therefore, you will want to create an arc with no fill. To create an arc with "No fill" defined as the current fill attribute, you must first make sure that no objects on the drawing are selected.

1. **Click on a blank part of the drawing to make sure no objects are selected on the drawing.**

2. **Open the Attribute Palette's Fill Pattern popout.**

3. **Drag across the Fill Pattern submenu until N for "No fill" is highlighted.**

4. **Release the left mouse button.**
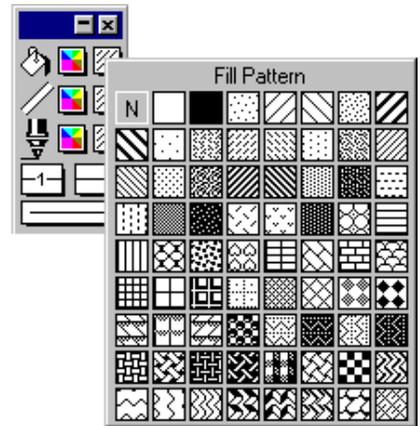
   The Fill Pattern Indicator will reflect the new current fill attribute.

To create the appearance of a doorway, you need to use a circular arc drawn by its radius. Notice that the letter "R" is currently displayed beside the Arc icon in the Tool palette indicating that the **Arc By Radius** function is the current arc drawing option.

For more information on drawing arcs, and the different modes for drawing them, refer to the section titled, "Drawing Arcs" in Chapter 2 of the User Guide.

To draw the arc:

1. **Click on the Arc tool on the Tool palette.**

2. **Position the cursor on the right edge of the conference room door opening.**

3. **Press down the left mouse button.**

4. **Holding down the left mouse button, drag to the left until the cursor touches the starting point of the room wall.**
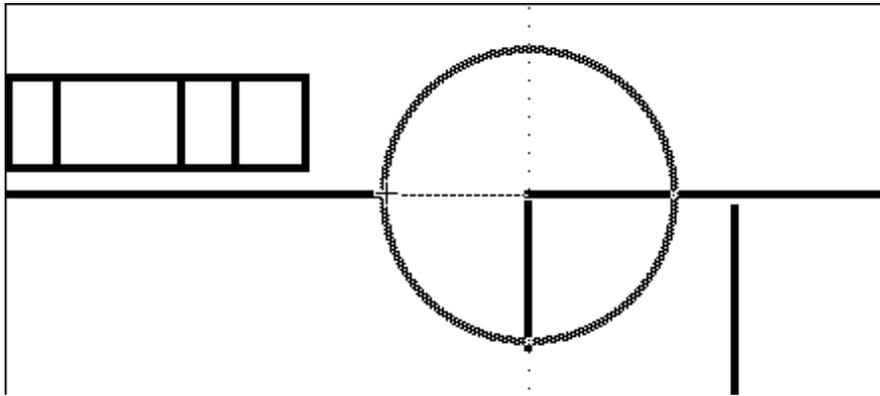
5. **Release the left mouse button.**

To complete the arc (doorway):

6. **Without pressing down mouse buttons, move the mouse down and to the right.**

7. **Click the left mouse button when the Show Size display reads "ΔA° = 90°".**
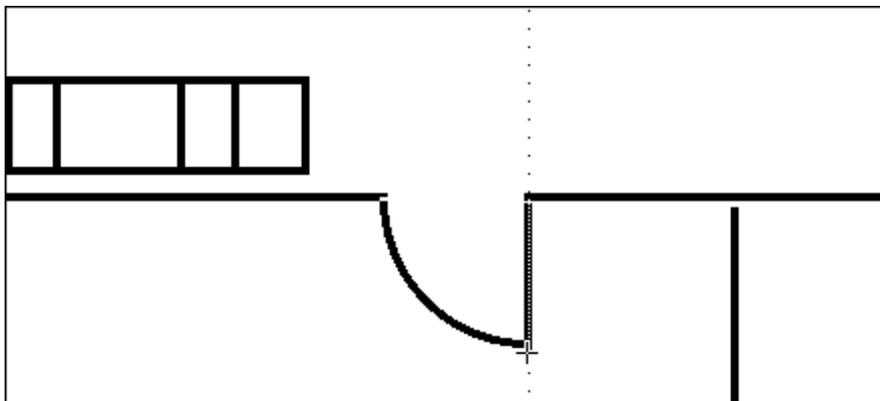
If you accidentally release the mouse button at the wrong angle, you can easily edit the arc to obtain the correct angle.

To correct the arc angle:

1. **Return to the pointer mode by clicking on a blank area on the drawing.**

2.   **Point the tip of the pointer on one of the edit handles on the ends of the arc.**

3.   **Press down the left mouse button.**

4.   **Holding down the left mouse button, drag until you obtain the reading of "ΔA° = 90°".**

With the doorway complete, the final task on this floor plan is to add the dimension lines onto the two exterior walls you created earlier. Zooming out to view the entire floor plan makes it easier to add the two dimension lines. Let's zoom out to add the lines.

1.   **Choose Home View from the View menu.**

If necessary to fit the complete drawing in the document window:

2.   **Click on the Zoom icon.**

3.   **Press and hold down the ALT key.**

4.   **Click on the drawing to zoom out 2x.**

5.   **Click on the Pointer tool to return to the pointer mode.**

Dimension Lines

Adding Dimension Lines

Another convenient PC Draft feature, **Dimensioning**, gives you the ability to add dimension lines to display the sizes of objects on your drawing.

In this section you will create horizontal and vertical dimension lines that measure the distance (in millimeters) of the outside exterior walls.

The dimension lines that you will create are called **associative** dimension lines. These dimension lines will measure the distance from one end of the wall to the other end. The dimension value is displayed to the scale of the drawing.

On associative dimension lines, witness lines extend from the ends of the dimension line to the points they measure. Witness lines are automatically generated when you create associative dimension lines. **Linked dimension lines** are automatically linked to their associated points. This means that if the points change position, the dimension lines will be updated automatically to reflect the new dimension.

You create dimension lines using the tools in the Dimension palette.

To display the horizontal distance between the top left and right corners of the exterior walls:

1.   Open the Palettes submenu in the View menu and choose Dimension.

The Dimension palette appears.

**2.   Click on the Horizontal Dimension Line icon on the palette.**
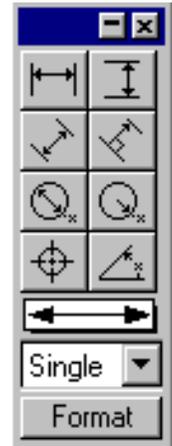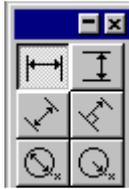
3.   Position the "1st Point" cursor near the left corner of the top exterior wall, as shown in the figure below.
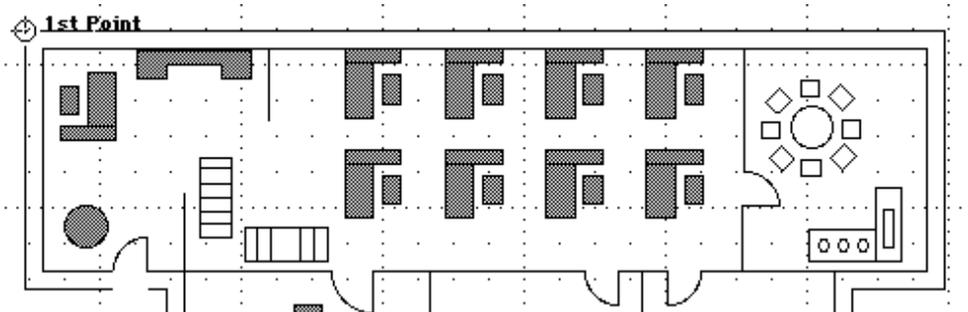
4.   Click the left mouse button.

The point becomes marked, indicating the beginning point for the dimension line, and the "2nd Point" cursor appears.

5.   Position the pointer near the top right corner of the top exterior wall.
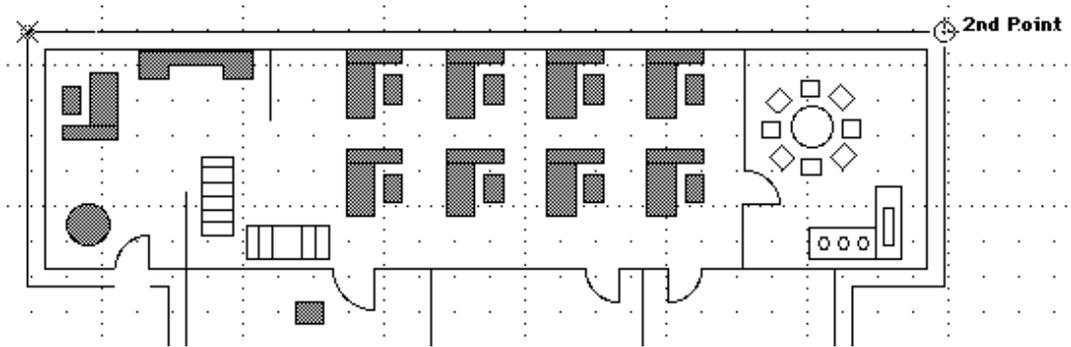
**6.   Click the left mouse button.**

The point becomes marked, indicating the ending point for the dimension line, and the "Anchor" cursor appears.

To position the dimension line away from the wall:

7.   Click about half a grid division above the wall to indicate where you want the dimension line to appear.
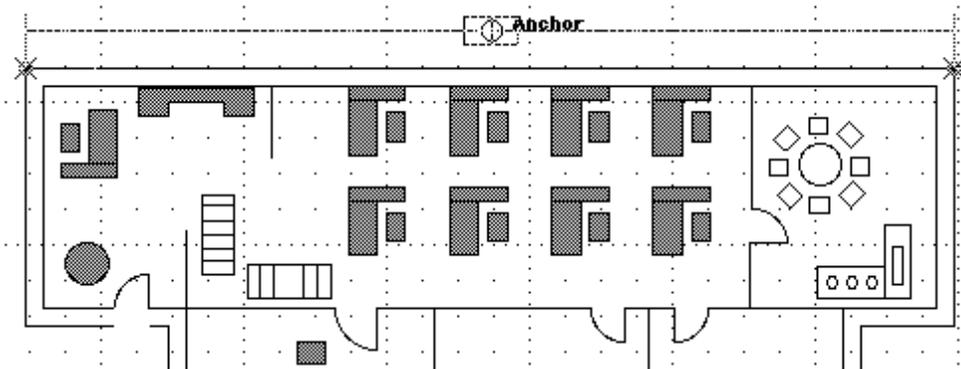

The dimension line shows the horizontal distance between the two points on which you clicked.
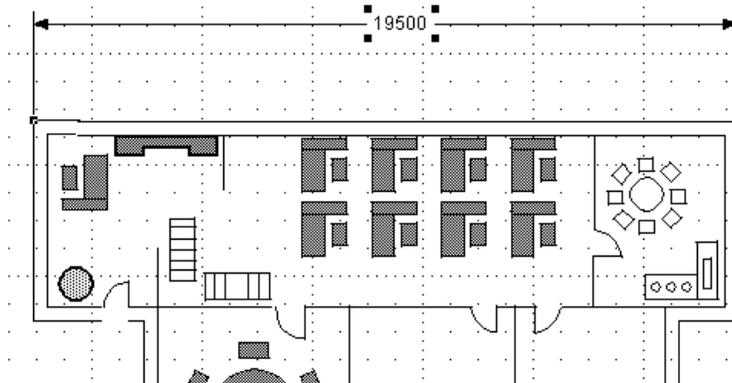
To create the vertical dimension line for the far right exterior (lunchroom) wall:

1. **Click on the Vertical Dimension Line icon on the palette.**

2. **Click on the top corner of the right exterior wall to specify the beginning point of the dimension line, as shown in the figure below.**

3. **Click on the bottom corner of the right exterior wall to specify the ending point of the dimension line.**

4. **Click about half a grid division to the right of the lunchroom wall to indicate where you want the dimension line to appear.**
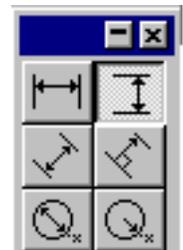
   The dimension line will appear half a grid division away from the vertical exterior wall.
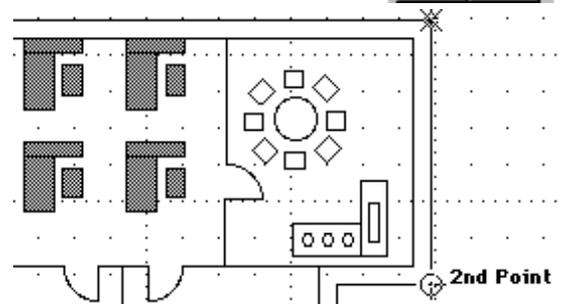
5. **Click on the Pointer tool to return to the pointer mode.**

Check the placement of your horizontal and vertical dimension lines with the following figure. You may want to increase or decrease the distance between the dimension lines and the exterior walls.
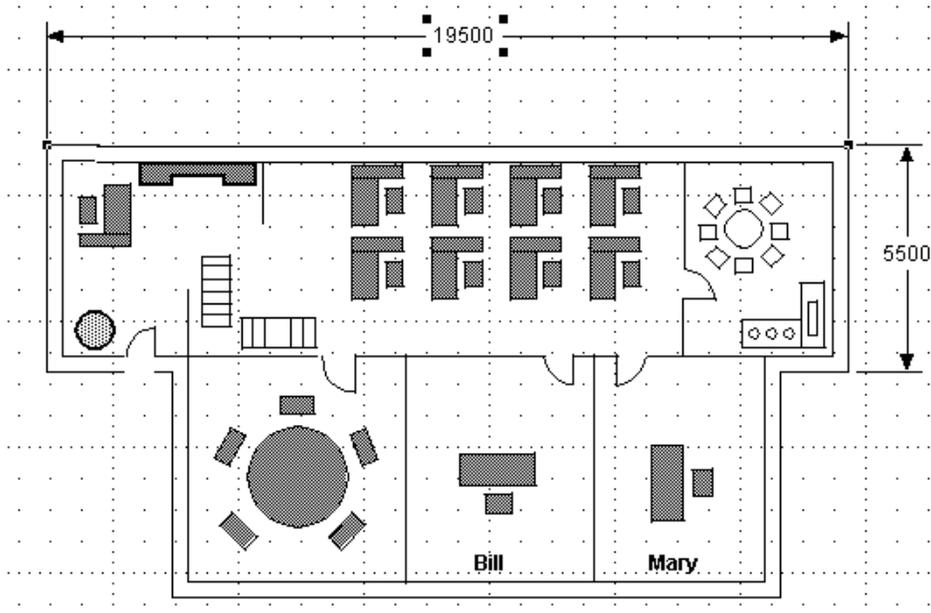
You'll see how you can move dimension lines soon. First, let's find out how linked dimension lines automatically update.

Linked Dimensions

As an example of how the dimension value of a dimension line is automatically updated, let's move one of the points the dimension lines are linked to, then change it back to its original position.

To move the point and see the dimension value update automatically:

1. **Point on the left corner of the top exterior wall (the 1st Point selected when creating the horizontal dimension line).**

2. **Press down the left mouse button.**

3. **Holding down the left mouse button, drag to the left to move the end point of the wall.**

4. **Release the left mouse button.**

    Notice that the dimension line and its value have been updated automatically to reflect the new length of the wall. Since we want to leave the length of the exterior wall as it was

previously, we will choose the Undo command immediately, before we perform any other action, to reverse the effects of the last command.

To revert the wall to its original length:

1.   **Open the Edit menu and choose Undo Resize.**

Notice that as the wall changed back to its original length, the dimension line and value also changed back to display the original position and value.

Moving Dimension Lines

PC Draft allows you to move not linked dimension lines closer to the walls of the building or farther away. You can move horizontal dimension lines up and down, and you can move vertical dimension lines to the left and to the right.

To move the vertical dimension line:

1.   **Click on the vertical dimension line to select it.**

2.   **Position the cursor on the dimension text box.**

3.   **Press down the left mouse button.**

4.   **Holding down the left mouse button, drag the dimension line to the right about half a grid division.**

5.   **Release the left mouse button.**

Notice that the witness lines change size so that they always remain under the end marks of the dimension line.

Dimensions are important in showing the sizes of objects in a drawing. With auto dimensioning, all you do is choose the type of dimensioning; click on the first point; click on the second point; and click off the line to indicate where the dimension line is to appear. *Refer to the section titled "Dimension Objects" in Chapter 4 of the User Guide for more information about dimension lines.*

Congratulations! You have now completed the floor plan exercise.

If you would like to quit this session and return to the desktop:

1.   **Open the File menu and choose Exit.**

2.   Save your changes if you wish.

The document and the PC Draft application will be closed.

The next section of this Tutorial covers several important features that have not been introduced to you so far, such as applying identifying information to objects and the creation of reports and worksheets from drawings. You can go through the next lesson now, or try out various PC Draft features on your own with the aid of the User Guide.

Lesson 2

Working with Object Information

Object Information

In PC Draft, you can associate names and other text information with objects or groups. This lesson covers how to assign object information to items in a drawing, then use that information to find and replace items, present data about the items in a report, and export the report as a text file to be edited further within (for example) a spreadsheet application.

The drawing you will be using, "House Plan" already has object information assigned to many of its objects. The following exercises will show you how to access, change, and use that object information to make a drawing more useful.

(If you are new to PC Draft, you will probably want to complete the "Basic Drawing" lesson that appears earlier in this Tutorial booklet before working with object information. If you are an experienced PC Draft user, take a look through the "Basic Drawing" lesson to make sure you are proficient in the skills it covers.)

First, let's open the drawing and look at some of the object information:

1. **Launch PC Draft and open the House Plan drawing (which should be in the Tutorial Files folder inside the Microspot PC Draft folder).**

The drawing appears.
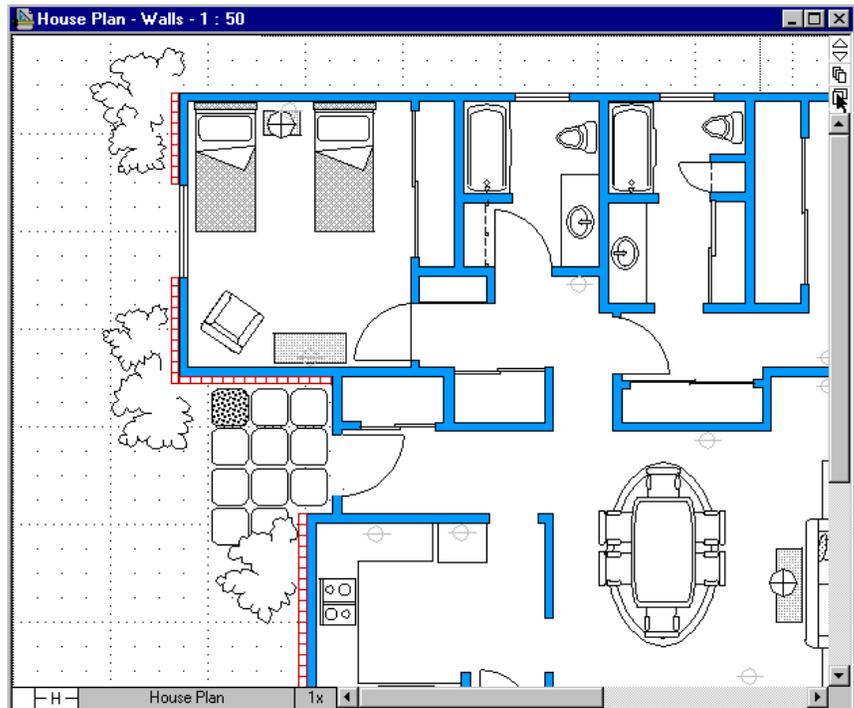
2. Select one of the stepping stones.
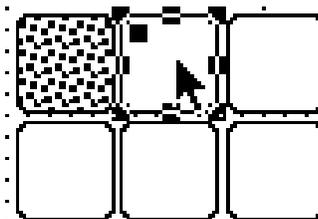
3. Open the Data menu and choose Edit Object Info.
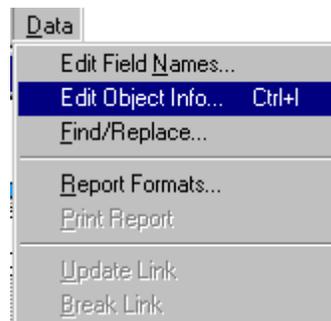
The Edit Object Info dialog box appears, displaying the object information for the selected item.

Here, the object is named "Stepping Stone" and its Type is "Smooth."

The object information can be used as criteria for searches using the Find and Replace feature or for functions in a PC Draft Report Format; you'll learn about both of them later in the lesson.
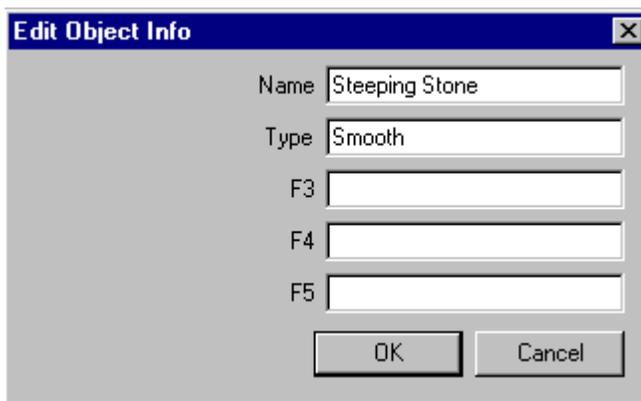
Each object or group can have up to five text strings assigned to it, in "fields." The first field is always called "Name" and can be used to name the object. You can give the other four fields different type-names, depending on what each field represents in your drawing's objects. (Notice that you don't have to use all the fields when you assign object information.)

NOTE: Each field can hold up to 25 characters, including any letters, numerals, or punctuation marks (including spaces).

To close the Edit Object Info dialog:

- **Click OK.**

    The object information dialog box will disappear.

An item will retain its data if you copy and paste it, duplicate it, or move it — even if you put it in a different PC Draft document.

Adding Object Information

Now, you can add some object information to an item—the brick facing on the front of the house:

The house has an exterior brick facing; it shows up on the drawing as four red parallel line objects, including the one shown here.

You can use the object information feature to specify a facing type of "Brick," so that you can use a report function later to show the total length of the brick facing on the house.
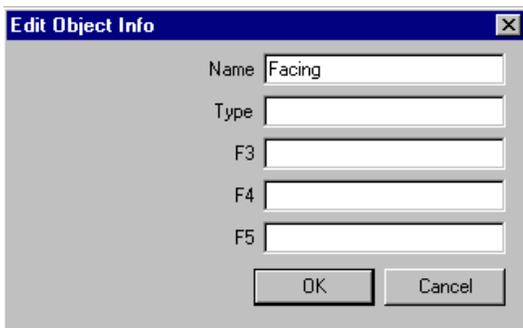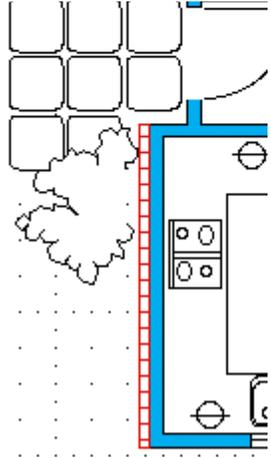
To add the type "Brick" to the facing:

1. **Select one of the facing pieces.**

2. **Hold down the ALT key and click the facing.**

    The Object information dialog box appears. (The ALT-click method is a shortcut for opening the object information dialog box.)

3. **Select the Type field and enter "Brick"**

4. **Click OK.**

5. **Repeat the previous steps for each of the other facing pieces.**

Editing Data Field Names

Each object or group can have up to five text strings assigned to it, in "fields." The first field is always called "Name" and can name the object. You can give the other four fields different type-names, depending on what each field represents in your drawing. The default names are simple numeric indicators (F2, F3, F4, and F5). In this drawing, for example, one of the field names is "Type" and you have already changed the Type of some objects (the facing). You can assign other names to fields, to make them more meaningful to your particular drawing. At this point, we are going to assign the field names "Finish" to the third field (so far called only F3), and "Manufacturer" to the fourth field (so far called only F4).

In PC Draft, the names of fields are assigned using the Data menu's Edit Field Names command.

Take a look at the field names:

1. **Open the Data menu and choose Edit Field Names.**

   The Edit Field Names dialog box appears.

   The field name can be up to 12 characters long, and can contain any letters, numerals, or punctuation marks (including spaces).

2. **Select the third field (F3) and enter "Finish"**

3. **Select the fourth field (F4) and enter "Manufacturer"**

4. **Click OK.**

   Any object that you enter data for will use the field names defined for the drawing, including the field names "Finish" and "Manufacturer" that you just defined.

Edit Field Names

Field: Name:

F1: Name

F2: Type

F3: F3

F4: F4

F5: F5

OK   Cancel
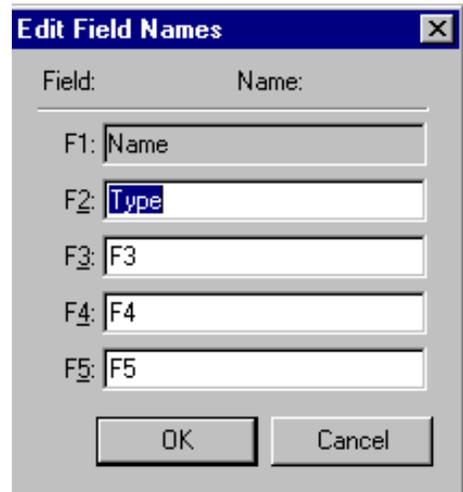
Using Find and Replace

Sometimes you may need to quickly find certain objects or groups in a large drawing. Scrolling and examining all the items in a drawing to find the one you want can be time-consuming and inaccurate, so PC Draft includes a Find and Replace feature.

You can automatically find and select objects or groups that have names or other object information assigned to them. The feature is most useful for finding items that have been copied many times in a drawing. The Data menu's Find/Replace command will display a dialog box that enables you to instantly locate certain items, and even replace them with other objects.

You can define the objects to be found by specifying all or some of an object's information as search criteria. The quickest way to define search criteria is with the "Use Mouse" button, which lets you enter all of an item's object information instantly by clicking on it; you can then de-check unwanted fields if necessary. You can also manually type the desired object information in the appropriate fields; keep in mind that any typing errors will affect the results of the search, and may cause the wrong objects to be found.

In this exercise, you will use the Find and Replace feature to replace the single-plug electrical outlets in the house plan's Electrical layer with duplex outlets.

To move to the Electrical layer:

1.   **Open the Layers pop-out menu at the right-hand edge of the drawing.**

2.   **Choose "Electrical"**

     The view will shift to the Electrical layer, showing the location of the wall outlets in the house.

The duplex outlet you will use to replace the existing outlets is in the House Elements Catalog. You need to place the duplex outlet from the library into the drawing.

1.   **Open the File menu and choose Open.**

2.   **Select Libraries from the Files of Type popup menu in the Open dialog.**

3.   **Locate the Tutorial Files folder and click on House Elements.**
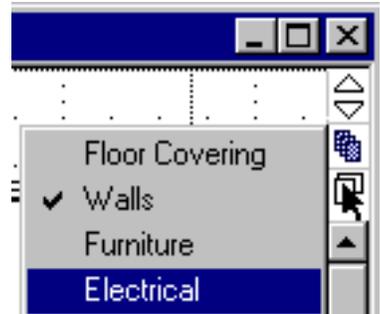
4. Click on the Open button.

The House Elements library window will display.

5. Select the symbol Outlet.

6. Drag and drop the Outlet symbol onto an empty area of the House Plan drawing.

The duplex outlet will appear in the drawing.

**7. Click on the drawing to make it the active document.**

Now you can use the Find and Replace feature to replace the regular outlets with the duplex outlets.

To replace one outlet with another:

1. Choose Find/Replace from the Data menu.

The Find/Replace dialog box appears, with no information entered.

You can specify an object to find either by typing in its information or by using the mouse to automatically copy its object information into the appropriate fields. For this exercise, it makes more sense to use the mouse.
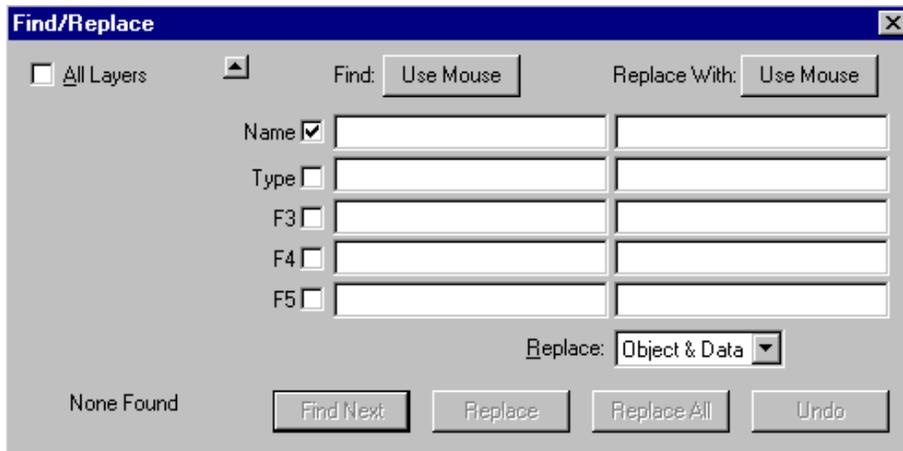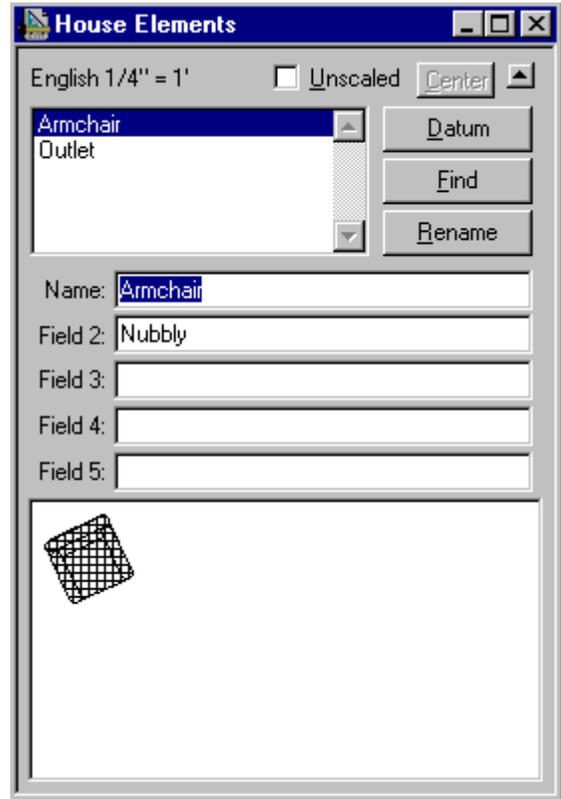
2. Click the Find: Use Mouse button.

The Find/Replace dialog box will temporarily disappear, and the special "?" cursor will appear on the drawing.

3. Click one of the single outlets along a wall.

The Find/Replace dialog box reappears, with all the object information for the outlet displayed in the Find fields, and the Name field checked.
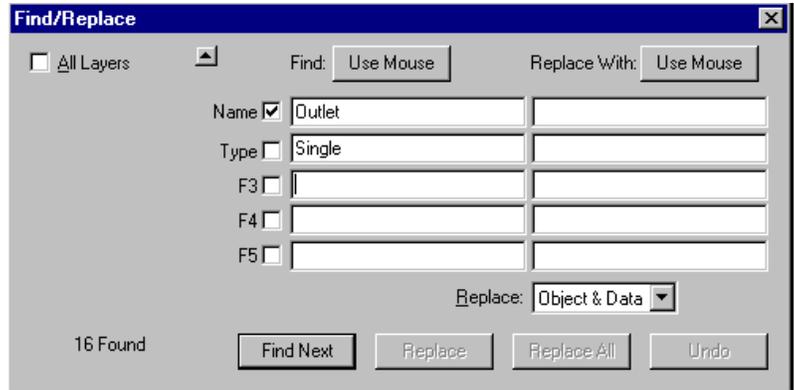
Notice that the total number of outlets found is displayed at the lower left of the dialog box.

Now we need to include the Type field as part of the find criteria.

4. Click the Type checkbox.

Defining the item for replacement works the same way.

5. Click the Replace: Use Mouse button.

The Find/Replace dialog box will temporarily disappear, and the "?" cursor will appear again.

6. Click the duplex outlet that you placed on the drawing.

The Find/Replace dialog box will reappear, with all the outlet's object information displayed in the Replace fields. (Because replacement selections
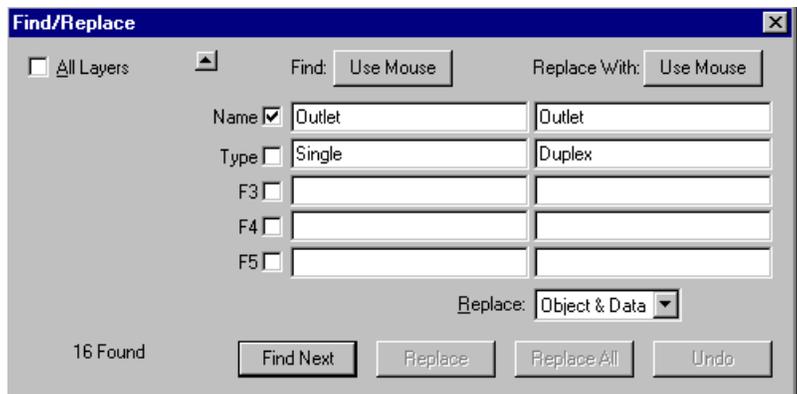
must be unique, with no ambiguity, PC Draft always uses all object information fields to define a replacement.)

The next step is to actually replace some outlets.

7.   Click the Find Next button.

One of the existing outlets will be selected.

8.   Click the Replace button.

The selected outlet will be replaced with a copy of the duplex outlet.

9.   Click the Find Next button.

Another outlet that matches the Find criteria will be selected. You can replace it or click Find Next again to move to the next matching object.

10.   Click the Replace button.

This outlet will be replaced with another copy of the duplex.

**11.   Repeat the last two steps until all the outlets have been replaced.**

12.   Delete the duplex outlet that you first placed on the drawing.

You can also Find and Replace every occurrence of a defined object in one action. For example, you may have noticed that one of the stepping stones outside the house has a pattern, showing that it has an aggregate finish (instead of smooth concrete). You can replace all the smooth stepping stones with aggregate.

To replace all the stepping stones at once:

1.   Switch to the Walls layer, then open the View menu and choose Stone View.

The Drawing window will shift to show the aggregate stepping stone (patterned) next to several of the smooth (plain) stones.
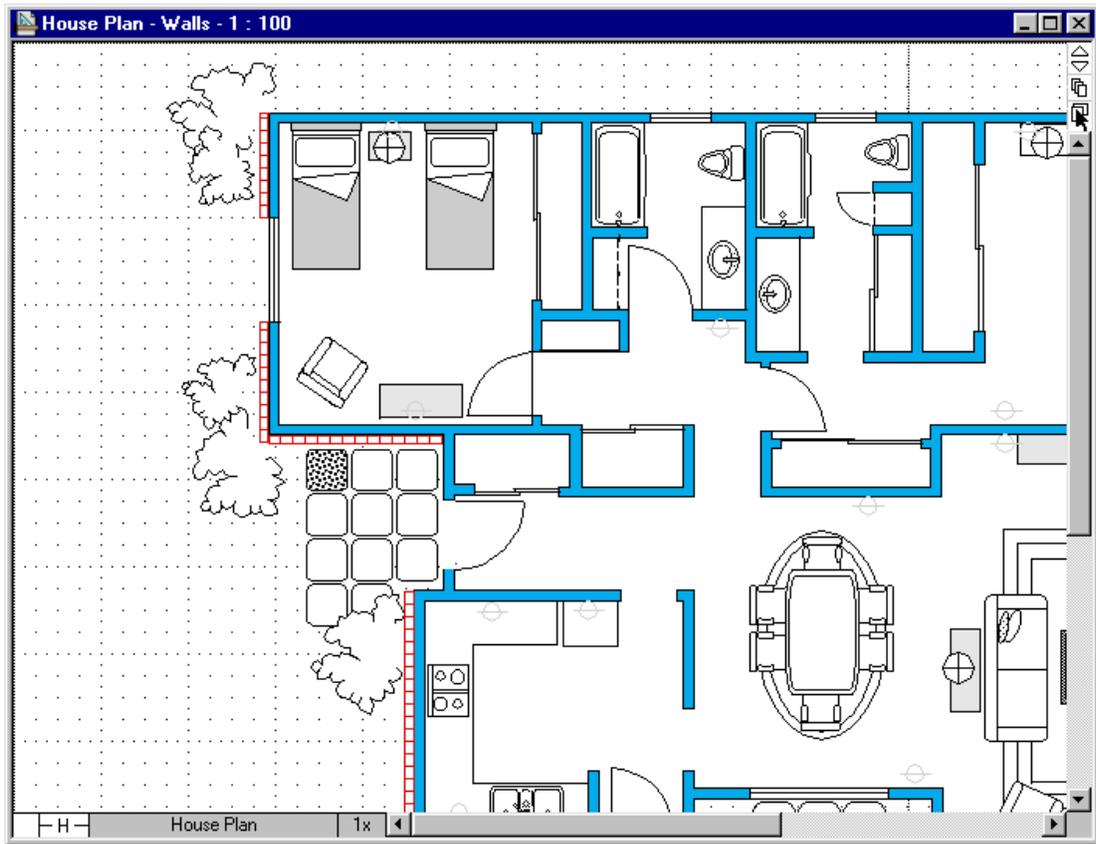
2. **Choose Find/Replace from the Data menu.**

The Find/Replace dialog box appears.

3. **Click the Find: Use Mouse button.**

The Find/Replace dialog box will temporarily disappear, and the special "?" cursor will appear on the drawing.

4. Click one of the smooth stepping stones.

The Find/Replace dialog box reappears.

Find/Replace ✕

☐ All Layers ▲ Find: [Use Mouse] Replace With: [Use Mouse]

Name ☑ [Stepping Stone] [ ]

Type ☐ [Smooth] [ ]

F3 ☐ [ ] [ ]

F4 ☐ [ ] [ ]

F5 ☐ [ ] [ ]

Replace: [Object & Data ▼]

None Found [Find Next] [Replace] [Replace All] [Undo]
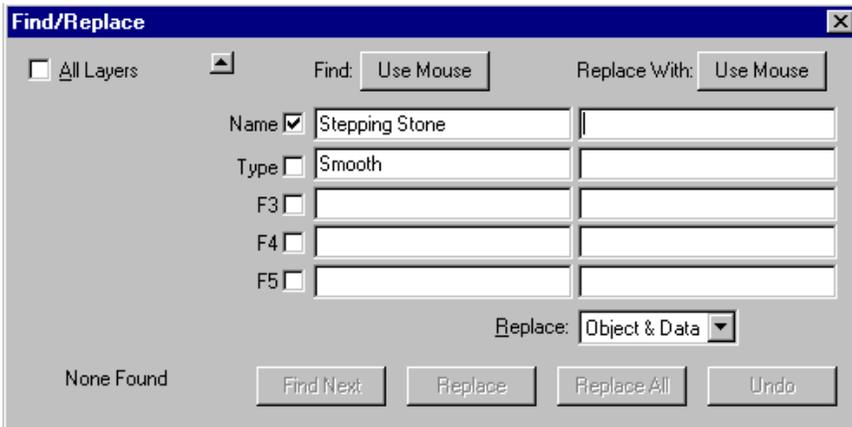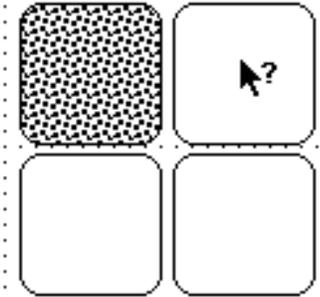
5. Click the Type checkbox to define Smooth as one of the Find criteria

6. Click the Replace: Use Mouse button.

The Find/Replace dialog box will temporarily disappear, and the "?" cursor will appear again.

7. Click the aggregate stepping stone.

The Find/Replace dialog box will reappear.

Find/Replace ✕

☐ All Layers ▲ Find: [Use Mouse] Replace With: [Use Mouse]

Name ☑ [Stepping Stone] [Stepping Stone]

Type ☐ [Smooth] [Aggregate]

F3 ☐ [ ] [ ]

F4 ☐ [ ] [ ]

F5 ☐ [ ] [ ]

Replace: [Object & Data ▼]

None Found [Find Next] [Replace] [Replace All] [Undo]

The next step is to actually replace some stepping stones.

8.   **Click on the Find Next button.**

9.   **Click the Replace All button.**

All of the drawing's smooth stepping stones will be replaced with aggregate stepping stones.

Reports

Often, you may want to extract information from your drawing in the form of a report. Or you may need a report detailing the properties of objects in your drawing, such as perimeter, area, length, or other measurements.

Reports can be very useful for such things as determining the cost of a project or counting items in a drawing. Just about any drawing can be made more meaningful using PC Draft's report functions.

Any change made to your drawing will be reflected in your reports. Once you create a report, you don't have to remember if you've change the length of a wall or added furniture or fixtures to a layout. PC Draft's automatic updating of any data you've designated for a report can save you hours of work and prevent many mistakes.

PC Draft reports can include data about any objects to which you've assigned object information. In the Report Format window, you designate which items of object information you want included as criteria, which functions (Count, Height, Length, Width, X Dimension, Y Dimension, Area, Perimeter or Totals) you want performed on the item, label the items if necessary, then print or display the report results.

| House Elements							
Clone...							
▶			House Items				
▶	CRITERIA	Name ▼	Type ▼	Undefined ▼	Undefined ▼	Undefined ▼	Results ▼
▶	COUNT	Outlet	Duplex				
▶	COUNT	Stepping Stone	Aggregate				
▶							
▶	LENGTH	Facing	Brick				
▶							
▶	CRITERIA	Finish ▼	Manufacturer ▼	Undefined ▼	Undefined ▼	Undefined ▼	Results ▼
▶	AREA	Linoleum	Acme				
▶	AREA	Carpet					
Obj Info.	◀						

In this exercise, you will create a report showing the drawing's total number of electric outlets and stepping stones, as well as the total length of brick facing and the total areas of carpet and linoleum. The functions you will use for the report are, respectively, Count, Length, and Area.

Creating Reports

Most report actions, including creation of a new report, begin with the Report Formats dialog box. The dialog box displays the names of all of a drawing's reports, and its buttons initiate creating, editing, renaming, and deleting reports, as well as loading reports in from other drawings.

To create a report:

**1.   Open the Data Menu and choose Report Formats....**
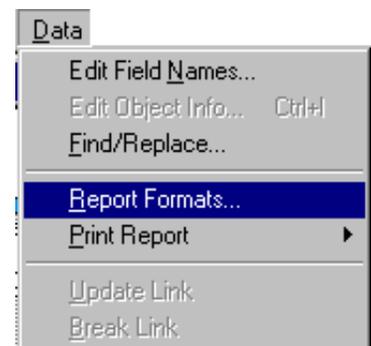
The Report Formats dialog box will appear.
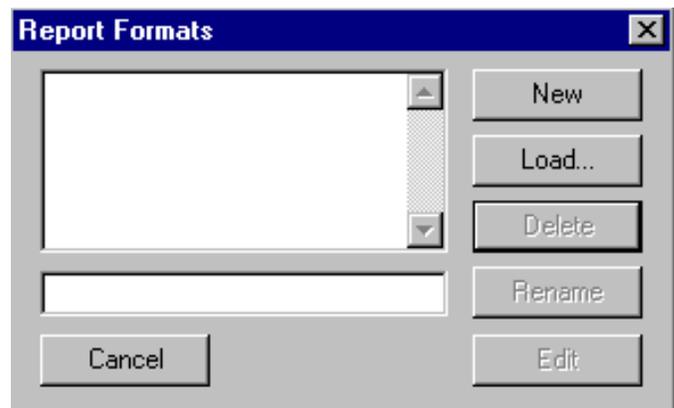
2. Click the New button.

A default name for the report will appear in the list box and the text field.

3. Select the text field and type House Elements

Report Formats

Untitled Report-1

New
Load...
Delete
Rename

Untitled Report-1

Cancel
Edit
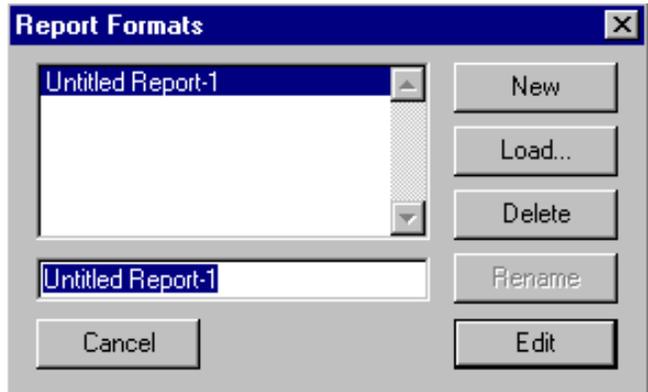
4. Click the Rename button.

The report's name will change in the list box.

You can now edit the report, setting it up to display the data you want.

Report Formats

House Elements

New
Load...
Delete
Rename

House Elements

Cancel
Edit
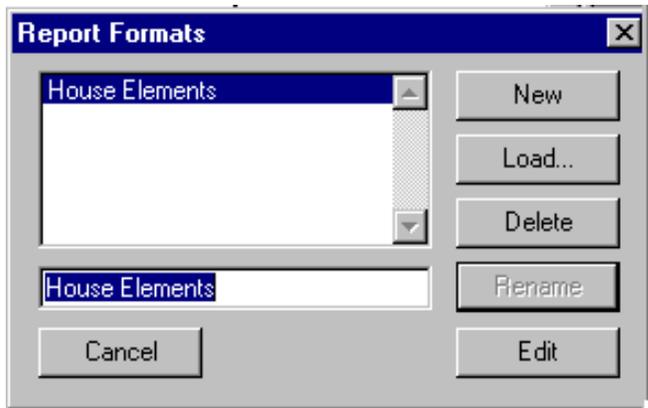
PC Draft's report formats can display the individual or total lengths, widths, heights, areas, and perimeters of objects or sets of objects chosen by the object information you specify. The reports can also display the count, or total number, of objects that match your criteria.

Report formats include three basic elements: Functions, such as COUNT; Criteria for the functions (for example, you can COUNT all objects with Name = "Outlet" and Type = "Duplex"); and Text for headings and notes.

Text Cells

Criteria Row

Function Row

Row Popouts

			House Items					
	CRITERIA	Name ▼	Type ▼	Undefined ▼	Undefined ▼	Undefined ▼	Results ▼	
▶	COUNT	Outlet	Duplex					
▶	COUNT	Stepping Stone	Aggregate					
▶								
▶	LENGTH	Facing	Brick					
▶								
▶	CRITERIA	Finish ▼	Manufacturer ▼	Undefined ▼	Undefined ▼	Undefined ▼	Results ▼	
▶	AREA	Linoleum	Acme					
▶	AREA	Carpet						

House Elements Clone... Obj Info.

Result Column
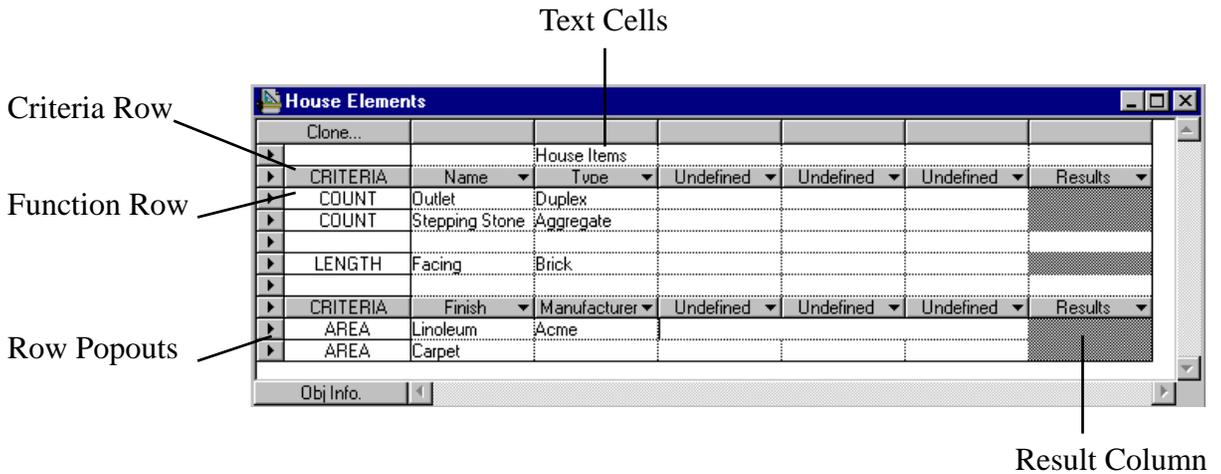
When the report is printed, not all the parts will appear on paper.

House Elements - Print

House Items

Outlet	Duplex	17
Stepping Stone	Aggregate	49
Facing	Brick	7.11m
Linoleum	Acme	4.67 m
Carpet		48.61 m

Print...   Print Setup...   Update
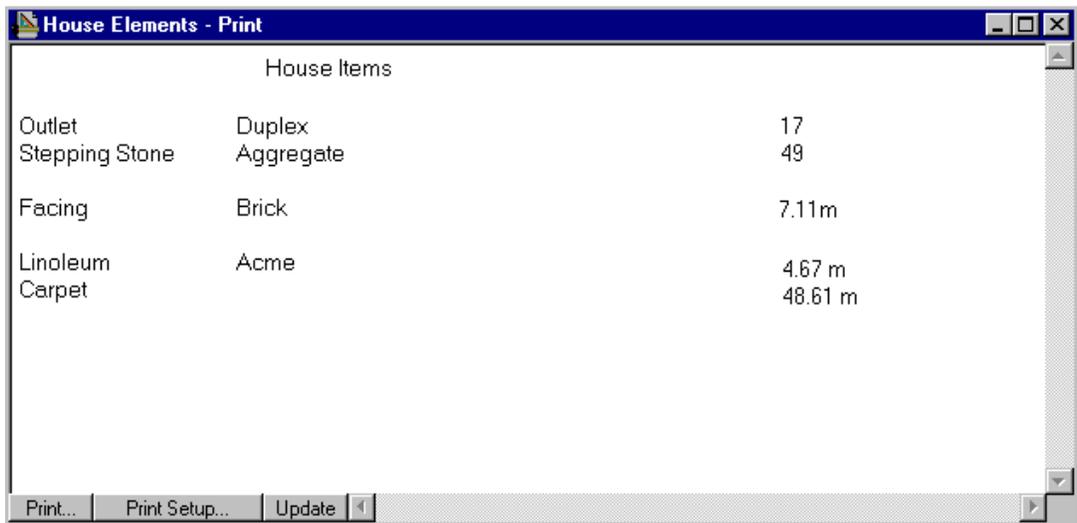
You set up a report mainly by using the row pop-out menus. These let you quickly define whether a row will contain text, criteria, or a function. All you need to do is mouse down at the end of the row and make your choice.

The default condition for rows is text; any row not marked in the leftmost column is a text row. You can enter text in the row's cells just by clicking and typing. You can also choose Text from the row menu to define a text row.

Choosing Criteria from the row menu makes that row a criteria bar. Each column in the criteria bar will have a menu containing the list of object field names you can use for criteria. You can choose a field name for a column or leave it Undefined.

Adding a function to your report is as easy as choosing it from the menu. Once you've done so, the name of the function will be displayed at the beginning of the row. To set the criteria for the function, you enter the desired Object Info into the column under the appropriate field name.

You can either type an object's information manually to establish criteria or point and click the appropriate object after clicking the "Obj. Info." button in the Report Format window. This allows you to choose a function like COUNT, then click on a sample of the object you want to count. Its Object Info will automatically be inserted into the appropriate criteria fields.

You can continue to define additional rows of functions using the same field names, or insert a new criteria bar to change the field names used in the functions that follow. (Each function row is controlled by the closest criteria bar above it.) Inserting criteria bars and adding functions below them allows you to create comprehensive reports that may extend over multiple pages if needed.

You can set up the parts of a report in any order, but usually the most sensible way is to first define the criteria bar, then choose the functions for that criteria bar, and finally enter the object information for each function.

For this first simple example, you'll set up one criteria bar, one function row, and one kind of object information, then print the report to screen to see the function's result. That will give you a realistic overview of the steps involved in getting a useful outcome. After that, you can construct the rest of the report, adding more criteria bars and function rows, then adjusting the format and inserting a title at the top.

First, set up the criteria bar:

1.   **Open the Report formats dialog box, if necessary.**

     The Report Formats dialog box will appear.

2.   **In the list of reports, select House Elements.**

3.   **Click the Edit button.**

     The Report Format window will appear.
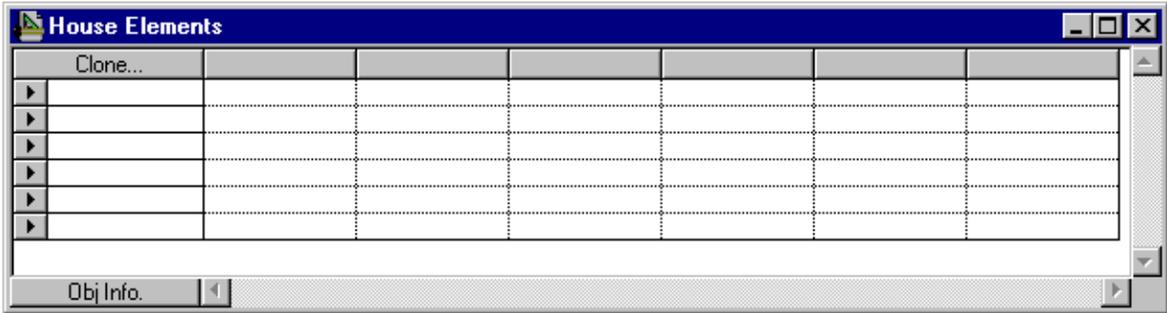
**4.   Open a Row Popout menu a couple of rows down from the top and choose Criteria.**
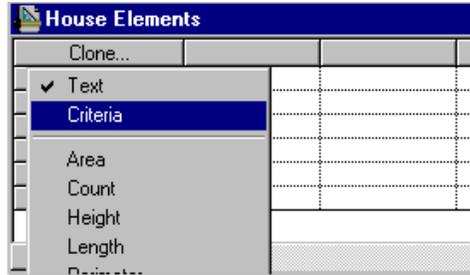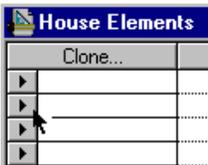
The row will read "CRITERIA" in the first column, showing that it is a criteria bar. All the cells in the bar will read "Undefined", except the last which will read "Results".

This criteria bar will control which items are totaled up using the COUNT function in the report. The next step will be to create the function rows.

- **Open the Row Popout menu at the left end of the row below the criteria bar, then choose Count.**

    The row will display the function COUNT in the first column, showing that it is a function row.
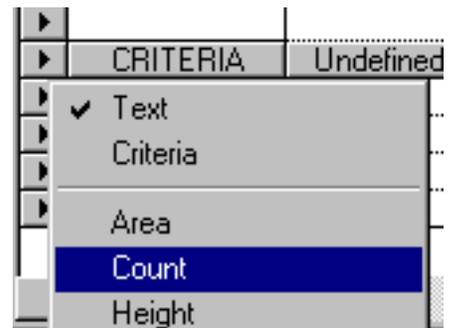
To define which object information fields act as criteria for this function:

1. Move the cursor to the first cell in the criteria bar, then press the left mouse button.

The drawing's field names will appear in a pop-out menu.

2. Choose "Name" and release the left mouse button.

The cell will read Name.

3. Move the cursor to the second cell in the criteria bar, then press the left mouse button.

4. Choose "Type" and release the left mouse button.

The cell will read Type.

The last kind of information to include is the object information itself. You can specify objects either by typing the object information manually or by clicking on an example object in the drawing. Usually it's easier and faster to click an example object.

To define a function's object information by pointing and clicking:

1. Click anywhere in the Count row, then click the Obj. Info. button at the lower left of the report window.

The Report Format window will temporarily disappear, the drawing window will become active, and the cursor will have a question mark ("?") attached.

2. Click one of the duplex outlet symbols.

The Report Format window will reappear, and the row you clicked will display "Outlet" and "Duplex" in the Name and Type columns.

NOTE: The Obj. Info button can be used to add object information for objects on any visible and un-grayed layer. *See the section "Layers" in Chapter 7 of the User Guide for more details about layers.*
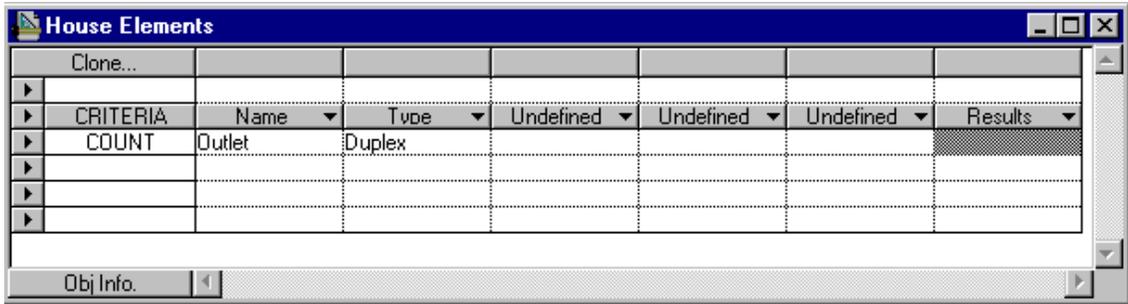
Running the Report

You've defined what the report will do (count objects) and which items it will use (duplex outlets). Now you need to run the report to see the results of the function.

The quickest way to see the result is the Print to Screen feature. (Later in this lesson you'll learn more about printing and page setup; for now, just concentrate on the count result).

To see the results of the report:

1.   **Open the Data menu's Print Report submenu and choose House Elements.**

     The Report Print Destination dialog box will appear.

2.   **Select the Screen button, then click OK.**

     The Print Report window will appear.
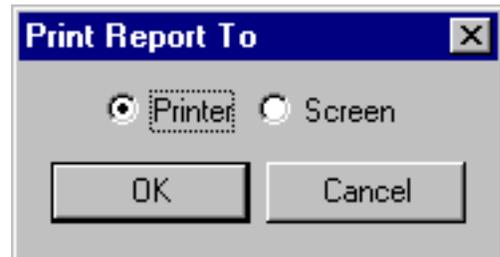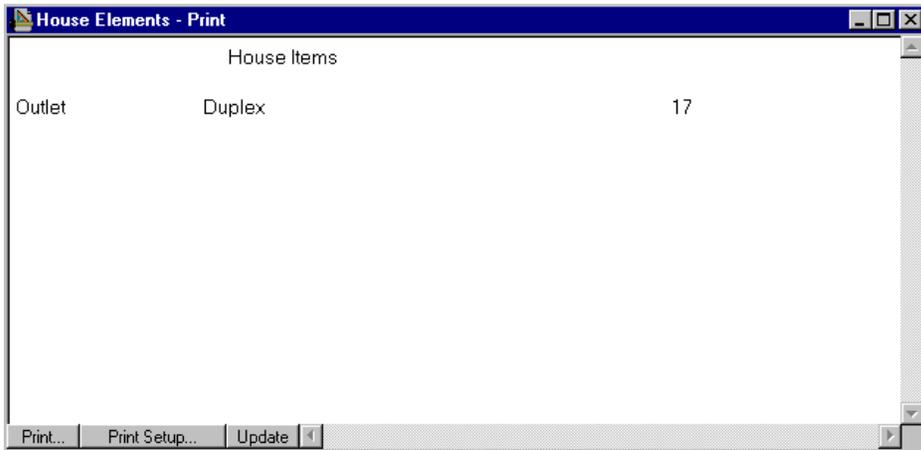
You can see the exact count of the duplex outlets in the drawing. (Depending on the size of your screen, you may need to use the scroll bars to see the whole report.) In a moment you'll edit the report to include several more functions, revealing other kinds of information about other kinds of objects.

3.   Click the close button at the upper left corner of the Print Report window.

The Print Report window will disappear.

As you've seen from this simplified example, there are three essential steps to setting up a report: first, setting up the criteria in a criteria bar; second, choosing a function; and third, defining the object information to be used with the criteria and the function. These three elements are the core of any PC Draft report.

Now you can start adding to the report, making it more like the type of thing you're likely to produce in your own work. PC Draft allows for using many different reports in one drawing, but usually it makes sense to combine several functions in one report format.

This report will include an additional Count function, with Name and Type as criteria. The best place to put the second Count function is right below the first, because each criteria bar remains "in force" for all functions until another criteria bar is inserted further down; that is, for all rows below itself and above any lower criteria bar.

To set up the next function:

1.   Open the Row Popout menu at the left end of the row below the Count function row and select Count.

The row will display the function COUNT in the first column, showing that it is a function row (just like the one above).
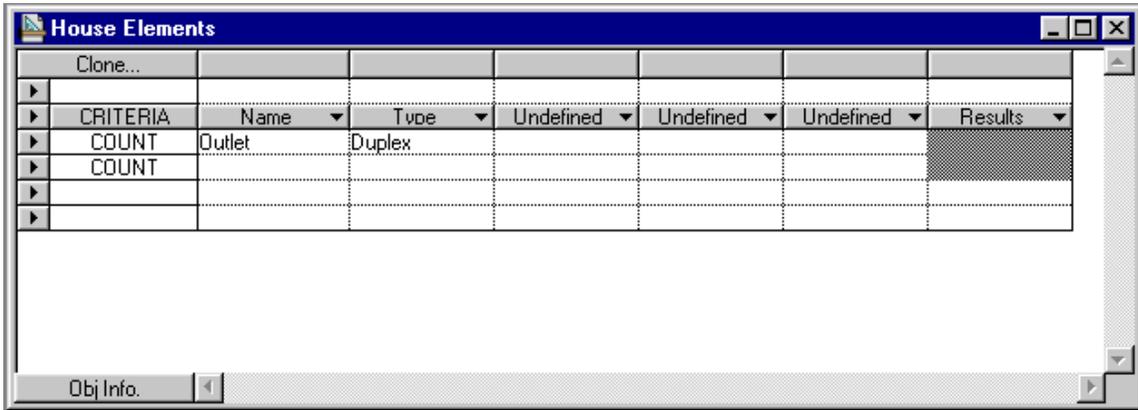
Continue by inserting the object information for the stepping stones:

2. Click anywhere in the new Count row (below the Outlet row), then click the Obj. Info. button at the lower left of the report window.

The Report Format window will temporarily disappear, the drawing window will become active, and the cursor will have a question mark attached.

3. Switch to the Wall layer, then click one of the aggregate stepping stones.

The Report Format window will reappear, and the row you clicked will display "Stepping Stone" and "Aggregate" in the Name and Type columns. (If "Stepping Stone" is cut off, don't worry; you'll get a chance to fix the layout later.)

As you may have noticed, there are several segments of brick facing in the house plan. If more than one object matches a function's criteria, PC Draft will automatically provide a total, reflecting all the matching objects, as the result. The next part of the report will display the total length of the brick facing. It will consist of a single function row.

Because the function will use the same criteria (Name and Type) as the function rows above, there is no need for a new criteria bar. You do need to create a new function row, however.

To set up a new function row with object information:

1. Open a Row Popout menu about two rows below the last Count row, then choose Length.

NOTE: If you need to add rows to the report, click in a row to select it and choose Insert Row from the Edit menu. A row will be inserted above the row you selected.

The row will display the function LENGTH in the first column.

Clone...						
▶						
▶ CRITERIA	Name ▼	Type ▼	Undefined ▼	Undefined ▼	Undefined ▼	Results ▼
▶ COUNT	Outlet	Duplex				
▶ COUNT	Stepping Stone	Aggregate				
▶						
▶ LENGTH						

House Elements window, with Obj Info. button at lower left.

NOTE: Even though this function will use the same criteria as the functions above, you can leave a blank row above it to make the layout easier to read.

This row will depend on the first and second fields ("Name" and "Type" in this drawing) for its criteria, and will display the total length of any facing of the Type "Brick."

2. **Click in the "Length" row, then click the Obj. Info. button at the lower left of the report window.**

The drawing window will become active, and the cursor will have a question mark attached.

3. **Click any of the segments of brick wall facing.**

The Report Format window will reappear, and the Length row will display "Facing" and "Brick" under Name and Type.
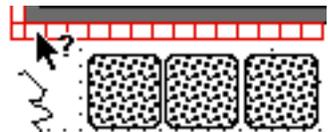

The final part of the report will display the total areas of the rooms with carpet. In this house plan, several rooms have a floor covering of carpet (represented in the drawing by large polygons on the Floor Covering layer). We could use separate functions to find the area of each

carpeted room by name. However, it's probably more useful to set up a single function with a single criterion ("Finish = Carpet") to provide the total area of carpeting, without specifying the rooms by name.

Because the new function will only use the field Finish for a criterion, it will need a new criteria bar.

1.   **Open a Row Popout menu about two rows below the Length row, then choose Criteria.**

     The row will read "CRITERIA" in the first column, showing that it is a criteria bar, with all its cells reading "Undefined."

2.   **Open the Row Popout menu at the left end of the row below the criteria bar, then choose Area**
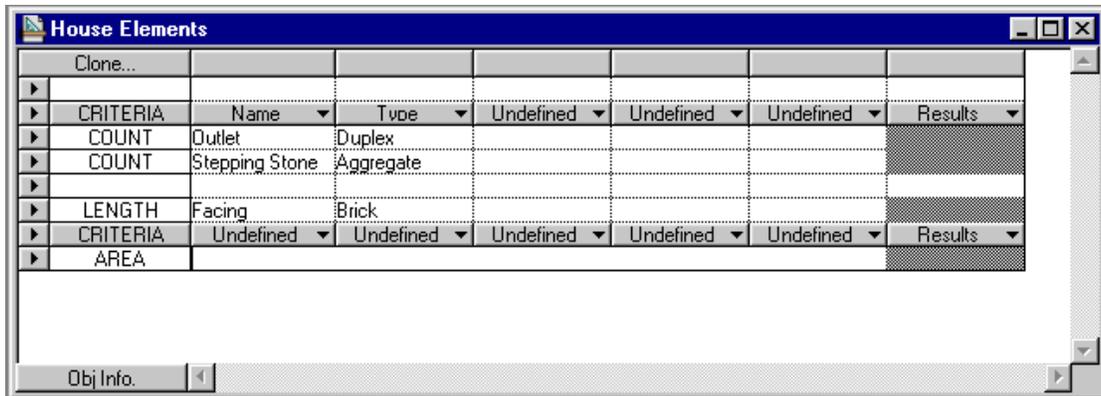

The row will display the function AREA in the first column, showing that it is a function row.

This row will depend for its criteria on the third field ("Finish").

To define which object information field acts as the criterion for this row:

1.   **Move the cursor to the first cell in the criteria bar, then press the left mouse button.**

     The drawing's field names will appear in a pop-out menu.

2.   **Choose "Finish" and release the mouse button.**

     The cell will read "Finish."
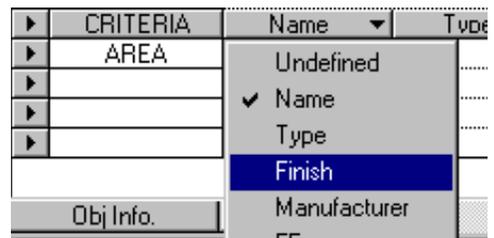
3.   Mouse down on the second cell in the criteria bar and choose "Manufacturer."

As mentioned earlier, you can specify objects either by entering the object information manually or by clicking on an example object in the drawing. It is easy to enter "Carpet" manually.

To specify by keyboard entry:

1.   Click in the first cell (under "Finish") in the first Area function row.

2.   Enter Carpet

House Elements							_ □ ×
Clone...							
▶							
▶ CRITERIA	Name ▼	Type ▼	Undefined ▼	Undefined ▼	Undefined ▼	Results ▼	
▶ COUNT	Outlet	Duplex					
▶ COUNT	Stepping Stone	Aggregate					
▶							
▶ LENGTH	Facing	Brick					
▶ CRITERIA	Finish ▼	Manufacturer ▼	Undefined ▼	Undefined ▼	Undefined ▼	Results ▼	
▶ AREA	Carpet						

Obj Info.
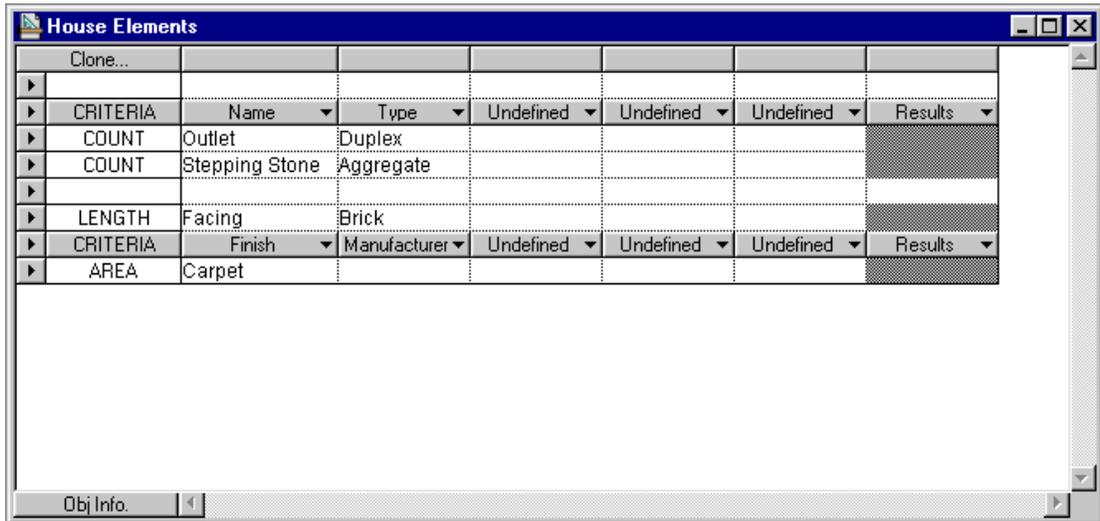
This row is now been set up to display the total area of carpet in the drawing, regardless of room.

At this point, you can run the report, and print it if you have a printer available. Later, you will insert another row to accommodate another function, along with a title for the report.

Printing the Report

When all the criteria bars, text labels, function rows, and object information are in place, you're ready to run the report by printing it (either to the screen or to a printer). That will put the results of each function in the Results column.

Printing to the screen creates a Print Report window that shows you the results of all the functions and gives you a preview of how the report will look on paper. The Report Format window stays on screen, so that you can edit the drawing or report and update the report before printing

if necessary. (You can also print to the screen if you just want to see the results of the report, but don't need a copy on paper.)

To print the report to the screen:

1.   Open the Data menu's Print Report submenu and choose House Elements.

The Report Print Destination dialog box will appear.

2.   Select the Screen button, then click OK.

The Print Report window will appear.

Print Report To

◉ Printer   ◯ Screen

OK   Cancel

House Elements - Print

House Items
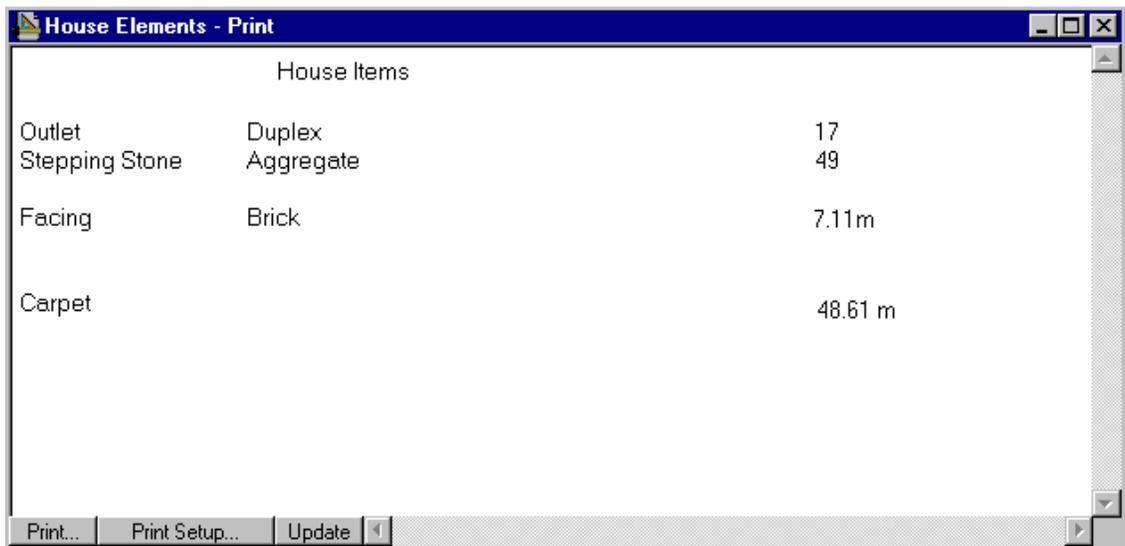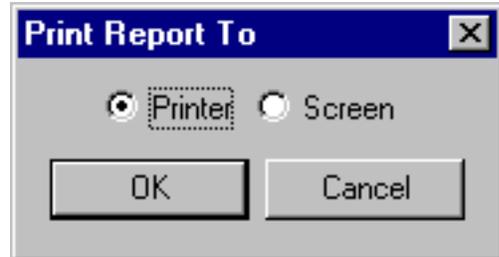
Outlet	Duplex	17
Stepping Stone	Aggregate	49
Facing	Brick	7.11m
Carpet		48.61 m

Print...   Print Setup...   Update

You can see the exact counts, area, and length of the objects you included in your report. (Depending on the size of your screen, you may need to use the scroll bars to see the whole report.)

Before printing the report to paper, though, let's add a title and another function.

1.   Click on the Report Format window.

The Report Format window will become active.

You will now add a title to the report.

2.   Click in the middle cell of the top row.

The text-insertion cursor will begin flashing.

3.   Type House Items

Now the report will have a title when printed. Notice that entering text requires no special row-selection.

Next, let's add a new function row to calculate the total area of linoleum needed for the kitchen, bathrooms, and any other rooms with linoleum floors. We'll put this new function above the existing carpet row, inserting a new row to make room.

To insert a row so that the report can include the total area of linoleum:

1.   Click the word AREA in the Carpet row.

The row will be selected.

2.   Open the Edit menu and choose Insert Row.

A new row will appear above the selected row.
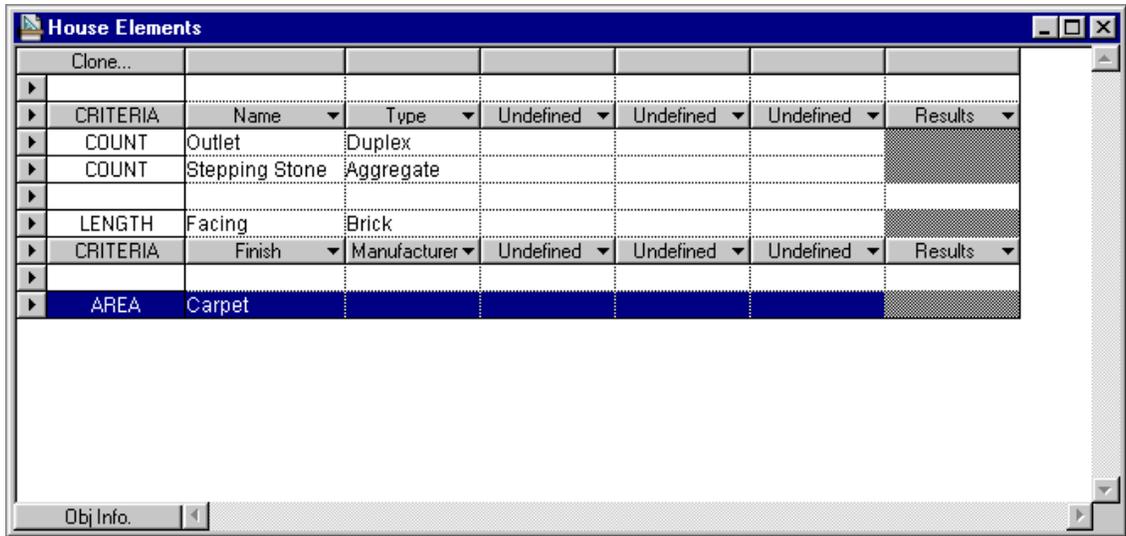

3.   Make the new row into an Area row.

4.   Click in the new "Area" row (above the Carpet row), then click the Obj. Info. button at the lower left of the report window.

The drawing window will become active, and the cursor will have a question mark attached.

5.   Click the linoleum-floored kitchen.

The Report Format window will reappear.

The new row will display "Linoleum" in the Finish column. This word may be too long for the cell, covered by the word "Acme" in the next column (representing the manufacturer of the linoleum).
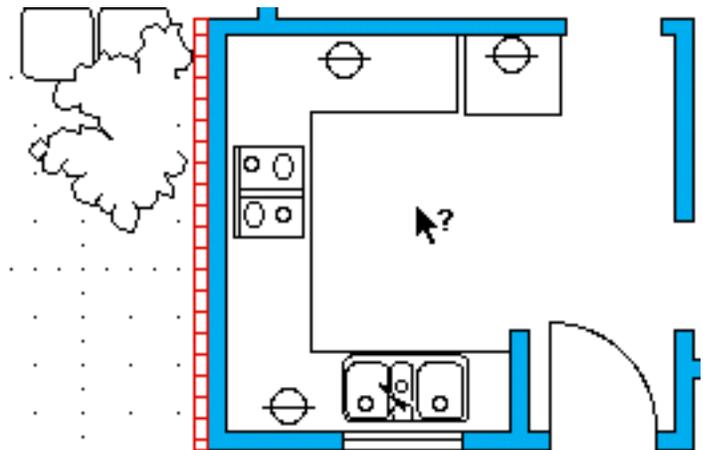
You can widen columns in a report format to make room for more letters in a cell.

1.   Move the cursor to the top of the column containing the truncated word.

2.   Move the cursor to the right-hand edge of the column and press the left mouse button.

The cursor will change to the column-adjustment cursor.

3.   Holding down the left mouse button, move the cursor about a quarter-inch to the right, then release the left mouse button.
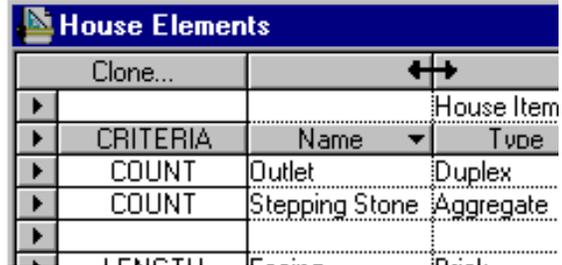
The column will be wider, and the whole word "Linoleum" should be visible.

If you want, you can adjust the widths of other columns to make the report look better.

Now you can update the Print Report window to include the new row and its result.

1.   Click on the Print Report window or select House Elements - Print from the Window menu.

The Print Report window will become active.

2.   Click the Update button.

The Print Report window will be updated to include the area of all the linoleum in the drawing.

If you want to have a copy of the report on paper:

1.   Click the Print... button.

The Print dialog box for your active printer will appear.

2.   Make any desired selections in the Print dialog box, then click Print.

The report will be printed.

Exporting a Report

A report can be exported as a text file so that it can be edited further in (for example) a spread sheet application.

To export a report:

• **With the relevant Report Format window open, select Export Report from the File menu.**

A standard Save dialog will display allowing you to specify the location and name for the file.

For more information regarding PC Draft's report feature, see Chapter 9 of the User Guide.

File	
New	▶
Open...	Ctrl+O
Load Layer...	
Close	Ctrl+W
Close All	Ctrl+Alt+W
Save	Ctrl+S
Save As...	Ctrl+Shift+S
Revert	
Export Report...	
Export File...	
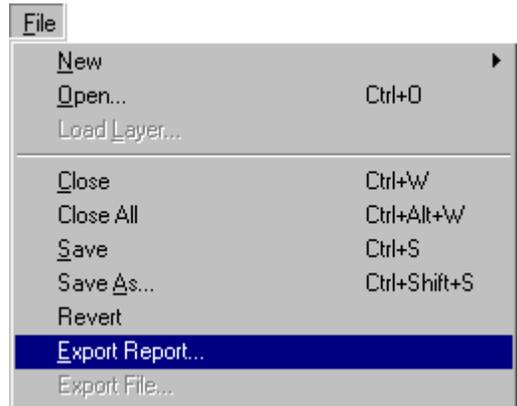
Conclusion

The two lessons you've completed, "Learning to Use PC Draft" (the office plan) and "Working with Object Information" (the house plan), have covered some of the most frequently used features in PC Draft. At this point, you should be able to create your own drawings, adapting what you've learned to the requirements of your work.

However, you should take a look at the PC Draft User Guide as well. It explains, in detail, every feature, command, and tool in PC Draft. The User Guide is organized into chapters that group features by function and use. A good way to learn where to find information in the User Guide is to skim through its Table of Contents.