

Walters Company management wants to arrange the six departments of its factory in a way that will minimize interdepartmental material handling costs. They make an initial assumption (to simplify the problem) that each department is 20 × 20 feet and that the building is 60 feet long and 40 feet wide.

**APPROACH AND SOLUTION** ▶ The process layout procedure that they follow involves six steps:

**STEP 1:** Construct a "from-to matrix" showing the flow of parts or materials from department to department (see Figure 9.4).

Department	Number of loads per week					
	Assembly (1)	Painting (2)	Machine Shop (3)	Receiving (4)	Shipping (5)	Testing (6)
Assembly (1)		50	100	0	0	20
Painting (2)			30	50	10	0
Machine Shop (3)				20	0	100
Receiving (4)					50	0
Shipping (5)						0
Testing (6)						

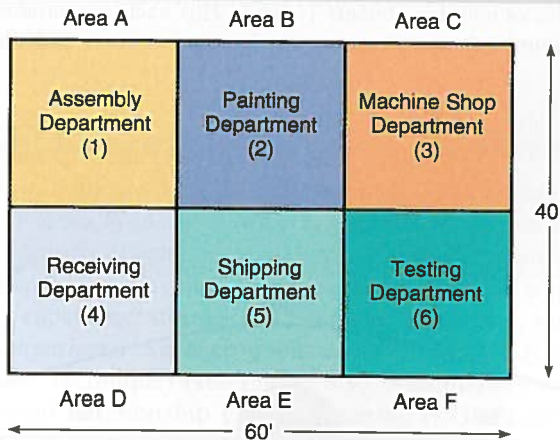
**EXAMPLE 1**

**Designing a process layout**

**FIGURE 9.4**  
Interdepartmental Flow of Parts

**AUTHOR COMMENT**  
The high flows between 1 and 3 and between 3 and 6 are immediately apparent. Departments 1, 3, and 6, therefore, should be close together.

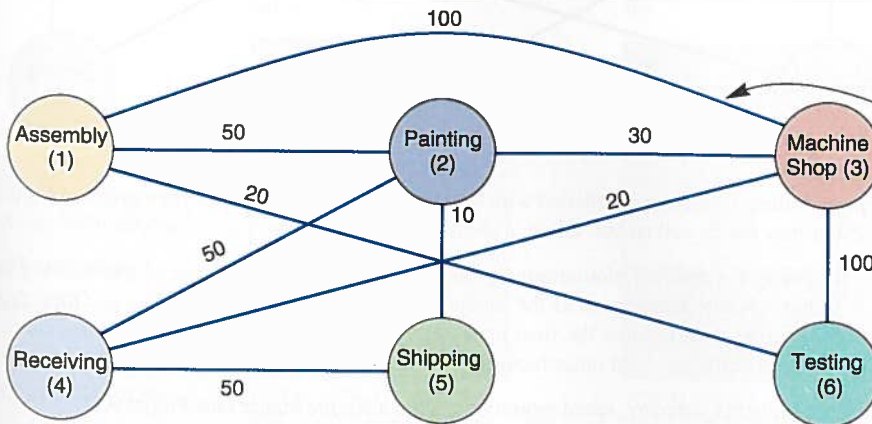
**STEP 2:** Determine the space requirements for each department. (Figure 9.5 shows available plant space.)



**FIGURE 9.5**  
Building Dimensions and One Possible Department Layout

**AUTHOR COMMENT**  
Think of this as a starting, initial, layout. Our goal is to improve it, if possible.

**STEP 3:** Develop an initial schematic diagram showing the sequence of departments through which parts must move. Try to place departments with a heavy flow of materials or parts next to one another. (See Figure 9.6.)



**FIGURE 9.6**  
Interdepartmental Flow Graph Showing Number of Weekly Loads

**AUTHOR COMMENT**  
This shows that 100 loads also move weekly between Assembly and the Machine Shop. We will probably want to move these two departments closer to one another to minimize the flow of parts through the factory.