Programming is a process during which information about a problem is collected, analyzed, and clearly stated to provide a basis for design. It defines a problem before a solution is attempted. Programming is problem analysis, whereas design is problem synthesis.

Programming involves gathering information about the client’s specific needs as well as identifying broader issues of human factors, environmental responsibility, and social and cultural influences on the design.

Thorough programming includes a wide range of information. In addition to stating the client’s goals and objectives, a program should contain an analysis of the existing building, aesthetic considerations, space needs, adjacency requirements, organizing concepts, code review, budget requirements, and scheduling requirements.

THE PROGRAMMING PROCESS

There are several methods of programming, all of which can be used to establish the guidelines and information on which the design process can be based. For residential projects and small commercial jobs, a program may simply consist of a few sentences stating the goals of the project and a list of the required spaces and the furniture to be accommodated. On very large projects, like the headquarters for a corporate office, the program may be a bound volume containing very detailed information about current and future needs of the organization. If a program has not already been completed, it is the responsibility of the interior designer to determine how much information is required before design can begin and to collect and analyze that information.

One popular programming method uses a five-step process in relationship to the four major considerations of form, function, economy, and time. This method is described in Problem Seeking, by William M. Peña and Steven A. Parshall.

The Five-Step Process

The five-step process involves establishing goals, collecting and analyzing facts, uncovering and testing concepts, determining needs, and stating the problem.

Establishing goals: Goals indicate what the client wants to achieve and why. They are important to identify because they establish the directions of programmatic concepts that ultimately suggest the physical means of achieving the goals. It is not enough simply to list the types of spaces and required square footages the client needs; it is important to also know the objectives the client is trying to reach with those spaces and square footages. For example, a goal for a restaurant owner might be to increase revenues by increasing turnover, so the owner may want a design that discourages people from lingering over their meals.

Collecting and analyzing facts: Facts describe the existing conditions and requirements of the problem, such as the number of people to be accommodated, space adjacencies, user characteristics, the existing building within which the interiors will be constructed, equipment to be housed, expected growth rate, money available for construction and furnishings, and building code requirements. There are always many facts; part of the programmer’s task is not only to collect them but also to organize them so they are useful. Information gathering is discussed at length later in this chapter.

Uncovering and testing concepts: The programming process should develop abstract ideas that are functional solutions to the client’s performance problems, without defining the physical means that could be used to solve them. These ideas are called programmatic concepts and are the basis for later design concepts. It is important to understand the difference between programmatic concepts and design concepts. A programmatic concept is a performance
requirement related to methods of solving a problem or satisfying a need. A design concept is a specific physical response that attempts to achieve a programmatic concept.

For example, the following might be one of many programmatic concept statements developed for a retail store: Provide a medium level of security to protect against theft of merchandise without making the security methods obvious.

This statement identifies and responds to a particular problem (security), narrows the problem focus (security of property from theft, as opposed to security of people or security from fire, for instance), and establishes a way of evaluating how well the goal was reached (are the security methods obvious or not?). There could be many possible design concepts that satisfy this programmatic concept, including the following.

1. Provide a central cash-wrap station at the entry/exit point to the store.
2. Tag all merchandise with concealed electronic identifiers, and incorporate the detection device in the design of the entry.
3. Display only samples of merchandise as a basis for buying, and have purchases delivered to the customer from a storage room.

An example involving the programming and design of a residential project might include the clients telling the designer that they entertain a lot and would like a place to hold parties, but that the children are always in the way. From that need the following programmatic concept could be developed: Because the parents entertain frequently apart from the children's activities, the design should provide for functional separation of the children's spaces from the entertainment areas.

If this programmatic concept were approved by the client, the designer would later develop several design concepts for consideration and testing against other requirements of the problem. For example, Fig. 4.1 shows five possible design concepts (diagrams that have actual physical implications) that respond to the programmatic concept. Diagram (a) shows splitting the parents' and children's areas into two wings of the house, each with its own

Figure 4.1
Design Concepts
entrance but connected with a corridor. Diagram (b) shows another physical response, with both areas in the same building but separated by some type of buffer zone. Diagrams (c), (d), and (e) show other possibilities. Because the various options are also concepts, there is still much detailed design work to do with whichever concept is selected.

Determining needs: This step of the programming process balances the desires of the client against the available budget or establishes a budget based on the defined goals and needs. It is during this step that “wants” have to be separated from “needs.” Because most clients want more than they can afford, clear statements of true needs at this early stage can help avoid problems later. At this time, one or more of the four elements of cost (quantity, quality, budget, and time) may have to be adjusted to balance needs against available resources.

Stating the problem: The previous four steps are a prelude to succinctly stating the essence of the problem. The problem statements are the bridge between programming and the design process. They are statements, agreed upon by both the client and the programmer, that describe the most important aspects of the problem and serve as the basis for design and as the criteria by which the solution can be evaluated. There should be a minimum of four problem statements—one for each of the major considerations of form, function, economy, and time.

Four Major Considerations During Programming

The four major considerations of any design problem are form, function, economy, and time. Form relates to the existing conditions in a space, the physical and psychological environment of the interior, and the quality of construction. Function relates to the people using a space, the activities to be performed there, and the relationship of spaces to each other. Economy concerns money: the initial cost of the interior, operating costs (if applicable), and life-cycle costs. Finally, time describes the ideas of past, present, and future as they affect the other three considerations. For example, the required schedule for construction is often a time consideration, as is the need for expansion.

Programmatic Concepts

As stated in the previous section, the interior designer must develop abstract ideas about how to view and solve the client’s performance problems (i.e., programmatic concepts) before attempting to solve those problems with three-dimensional design ideas. Later in the design process, the interior designer develops design concepts, which are physical solutions to the client’s problems and which reflect approaches to satisfying the programmatic concepts. For example, expandability is a programmatic concept. Two corresponding design concepts that might be used to respond to this are (1) lease more space in a building than currently required and sublease it until it is required or (2) plan and design the space for low-cost, short-term occupancy, and move the entire business when additional space is required.

The book Problem Seeking identifies 24 programmatic concepts that tend to recur in all types of buildings, although they generally do not all occur in the same building or interior space. These include the following.

- **Priority** establishes the order of importance of things such as size, position, or social values. For example, an entrance and reception area may have higher priority than individual offices, to reflect the goal of enhancing a company’s image.
- **Hierarchy** relates to the idea of the exercise of authority and is expressed in physical symbols of authority. For example, to reflect the hierarchy of a traditional law firm,