

*What is conceived well is expressed well.*

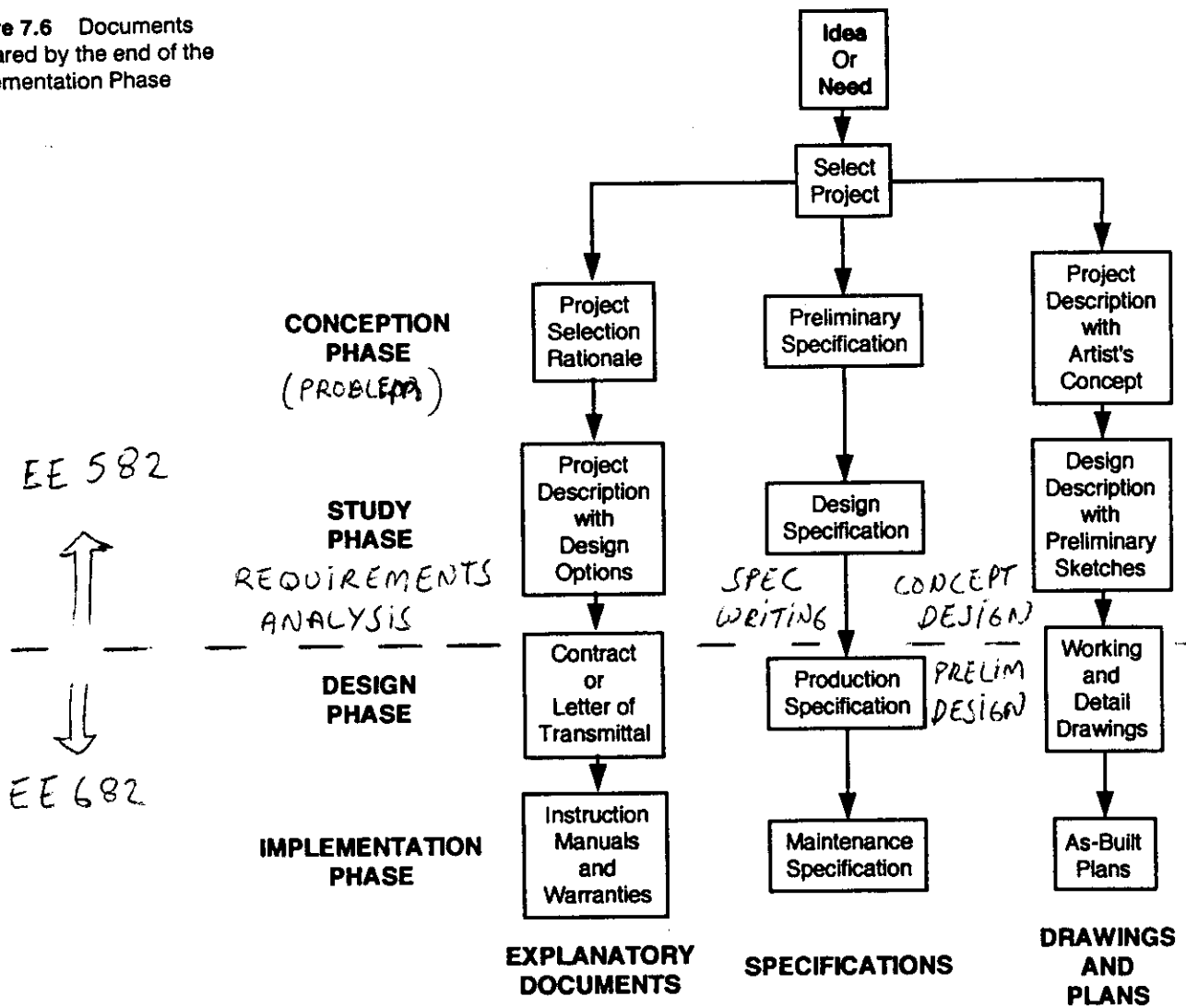
*Nicolas Boileau, 1674*

**D**ocumentation is required at the end of each phase of a project. The documents and their contents were described in a general way in chapters 2, 3, 4, and 5 as a part of the discussion of the phases. This chapter provides more detail on the drawings and written documents that are used to plan and define a project. It is essential that documentation must be both complete enough and clear enough so all those involved understand their responsibilities. With good documentation, workers can then perform their tasks promptly and efficiently; management teams can better monitor and control the project when using prepared schedules and budgets.

After you complete the study of this chapter, you should be able to accomplish the following:

- Participate in the preparation of written specifications.
- Formulate task descriptions that contain objectives.
- Comprehend the content of contracts and changes notices.
- Develop a family of tasks for an assigned project and write task descriptions.
- Contribute to the development of a schedule.
- Obtain costs for portions of a project cost estimate.
- Understand why budgeting is necessary.
- Recognize the value of charge-number assignments.
- Realize the complexities associated with the interaction of tasks, schedules, and budget.

Figure 7.6 Documents prepared by the end of the Implementation Phase



have occurred during construction (or manufacturing). The written material must explain why these changes occurred. Thus, both the client and the funding source(s) will have documentation that is correct and up to date and that also includes explanations as to why the changes occurred during the Implementation Phase.

The As-Built Plans describe the project as it was actually completed, with all revisions to plans included. These plans are valuable to the client as help in using the product and to the group that performed the project as records.

Upon completion of a project, a final report should be prepared. It should contain a description of the project as it evolved and progressed. It should also include information regarding how the final design became the specific product that was implemented. The physical and electronic location of all related data and documents should be noted if it becomes necessary to refer to them at a later time.

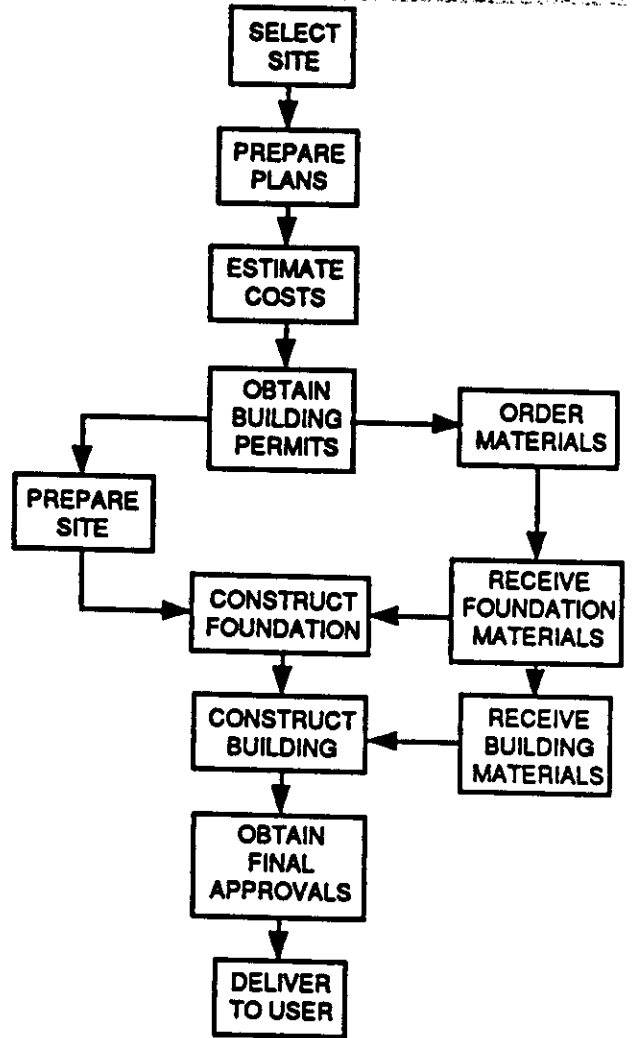
## SECTION 7.5

## TASKS, SCHEDULES, COSTS, AND BUDGETS

In this section, we separately discuss task descriptions, schedules, costs, and the associated budgets that are prepared as part of a project.

Documentation of tasks, schedules, and budgets does not just happen. As the project progresses, it arises in a logical manner from tasks and activities, and it evolves through the various phases of the project into a final product, as noted in figure 7.7.

Figure 2.9 Sequence of events for activity center



INITIAL TASKS	MAR	APR	MAY	JUN	JUL	AUG
Prepare Site	█					
Excavate Site	█					
Erect Foundation		█				
Cap Foundation		█				
Erect Rough Framing			█			
Shingle Roof			█			
Install Windows				█		
Finish Exterior Siding				█		
Install Sheetrock™				█		
Plaster Interior				█		
Lay Floors				█		
Install Interior Finish				█		
Paint Interior Finish					█	

PHASE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
Conception	█	█									
Study			█	█	█						
Design				█	█	█	█	█	█		
Implementation						█	█	█	█	█	█

Figure 2.10 Overall schedule of project phases

**Who** will be responsible for various portions of the work? Ellery, with the assistance of Alice and Kim, will be responsible for the design and construction of the activity center foundation and walls. Jose, with the assistance of Laura, will be responsible for the design layout and installation of the activity center wiring.

**What** is to be accomplished? The team next devises a set of tasks that start with the study of potential activity center design directions (chapter 3) and end with the delivery of the completed activity center (chapter 5). The tasks are the following:

- Prepare Site
- Excavate Site
- Erect Foundation
- Cap Foundation
- Erect Rough Framing (and Sheathing)
- Shingle Roof
- Install Windows
- Install Heating
- Finish Exterior Siding
- Install Sheetrock™
- Plaster Interior
- Lay Floors
- Install Interior Finish
- Paint Interior Finish

Laura is assigned the responsibility for determining the risks for each of these potential tasks.

**When** is it to be implemented? A date is established for the official groundbreaking ceremony. The completion and delivery dates are planned to occur during week 25. Week 26 is saved for the final project documentation effort.

**Where** is the activity center to be constructed? Steps made of concrete will be fabricated at a supplier's site; activity center construction and assembly will occur at the Bedford Park site location. (When a circuit, device, building, or system is constructed, it is often divided into several portions, each of which is fabricated at a different location.)

**Why** should it be constructed? The activity center, when complete, will have provided training for each team member who has participated in the project. The activity center will add to the quality of life in Bedford by offering a place for young people of the community to exercise, play, and learn.

**How** will the performance of the project be controlled? Coordination and control of the entire effort will be the responsibility of Roger. All projects require that people learn to work together. All persons involved must understand their portion of the total assignment and how those portions relate to all other portions of the project. Professor Hulbert notes that Northeastern requires the responsible faculty member to review—on a weekly basis—the status, problems, and plans for resolving the problems for each project.