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## Appreciating the Role of the Engineer in Building Science Research

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The engineering team will typically be brought into a science project, shortly before or just as the project is authorized by its funding agency. The project has thus been defined by studies and reports sufficiently to support a "Baseline Estimate" of the costs that will hopefully provide adequate funds for the completed science facilities. The engineering team can bring much to benefit the program. More than simply producing the required bidding documents and providing the non-scientific components of the new laboratory or observatory, the Engineer should be invited to become a part of the project team where he/she can bring the experience of the engineering team to the discussions. Matters such as how to plan, procure, sequence and construct, as well as how to control and report project costs and schedule performance would be useful topics. The common goal then becomes to provide a functioning facility within the budgeted funds to do the intended science. Along the way, lots of interesting issues, questions and challenges may emerge. These may or may not affect the outcome of the project, depending upon how they are handled. Some examples of personal experience of actual events that occurred on projects you may be familiar with, will be described and discussed.