FIGURE 1.10 A church housed in a pre-engineered building.

FIGURE 1.11 This community building utilizes a metal building system. (*Photo: Metallic Building Systems.*)

1.5 SOME DISADVANTAGES OF METAL BUILDINGS

An objective look at the industry cannot be complete without mentioning some of its disadvantages. As with any type of construction, metal building systems have a negative side that should be clearly understood and anticipated to avoid unwanted surprises.

- *Variable construction quality.* Most people familiar with pre-engineered buildings have undoubtedly noticed that all manufacturers and their builders are not alike. Major manufacturers tend to belong to a trade association or a certification program that promotes certain quality standards of design and manufacture. Some other suppliers might not accept the same constraints, and occasionally they provide buildings that are barely adequate, or worse. In fact, a structure can be put together with separately purchased metal-building components, but without any engineering—or much thought—involved. Such pseudo-pre-engineered buildings are prone to failures and give the industry a bad name. It is important, therefore, to know how to specify a certain level of performance, rather than to assume that every manufacturer will provide the quality desired for the project.
- *Lack of reserve strength.* The flip side of the fabled efficiency of the metal building industry is the difficulty of adapting existing pre-engineered buildings to new loading requirements. With every ounce of "excess" metal trimmed off to make the structure as economical as possible, any future loading modifications must be approached with extreme caution. Even the relatively small additional weight imposed by a modest rooftop HVAC unit or by a light monorail can theoretically overstress the structure designed "to the limit," unless structural modifications are considered.
- *Possible manufacturer's unfamiliarity with local codes.* When a metal building is shipped from a distant part of the country, its manufacturer might not be as familiar with the nuances of the applicable building codes as a local contractor. While most major manufacturers keep a library of national and local building codes and train their dealers to communicate the provisions of the local codes to them, a few smaller operators might not. Owners should make certain that the building they purchase complies in all respects with the governing building codes, a task that requires some knowledge of both the code provisions and manufacturing practices. (To be sure, some local codes might be based on obsolete editions of the model codes.)

The many advantages of metal building systems clearly outweigh a few shortcomings, a fact that helps explain the systems' popularity. Still, specifying pre-engineered buildings is not a simple process; it contains plenty of potential pitfalls for the unwary. Some of these are described in this book.

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