FIGURE 7.38 EIFS makes possible achieving a variety of shapes economically.

- Avoid using EIFS on sloped surfaces with a pitch less than 1:1.
- To guard against delamination, attach EIFS to the substrate with both mechanical fasteners and adhesives.

While some of these recommendations might be argued with, they highlight the evolving state of the art in the EIFS industry as well as large differences between the available products. Do not treat this wall system as a commodity.

7.8.3 Thin-Veneer Panels on Steel Framing

Occasionally, architects wish to use a wall system that looks and feels like stone, brick, or precast concrete but weighs much less. Thin-veneer panels might provide an answer. A typical panel consists of thin sheets of veneer supported on light-gage steel studs or on structural-steel frames. Thin veneer, which can be stone, precast concrete, and thin-plate brick, is attached to the framing by steel anchors and clips. The panels can be insulated.

Thin-veneer panels have been developed primarily for mid- and high-rise buildings and for building retrofit applications, where light weight and speedy erection of cladding are highly valued. The system is no less appropriate for metal building systems that value the same attributes.

The main disadvantage of thin-veneer construction—as well as of GFRC, EIFS, and any other single-leaf systems—is the absence of an air cavity. Not conforming to the rain-screen principle, all these systems depend on joint sealants for moisture protection and are vulnerable to fastener corrosion, thus requiring periodic inspections and maintenance. To be sure, many EIFS manufacturers now offer so-called drainable assemblies, also known as water-managed or rain screen systems, in which the rigid insulation sheets are supplied with factory-carved grooves. The grooves are intended

to function as drainage channels that allow moisture to escape. However, a true cavity wall should include flashing and weep holes; these are missing from some of the drainable systems. Both of those elements could compromise the wall appearance if they were provided at each panel wherever it happens to be on the facade. The long-term performance of these assemblies needs further study.

7.9 CHOOSING A WALL SYSTEM

Selection of exterior wall materials logically fits into an overall assessment of the available building systems outlined in Chap. 3. Throughout this chapter, advantages and disadvantages of various wall materials have been discussed. Often, the surrounding environment will dictate the choice of finish, color, and texture; sometimes the client will have a major input by insisting on easy-to-maintain finishes, for example. The functional requirements will often dictate whether a "hard" wall is needed, at least at the base, and whether the wall should be insulated.

A building with a lot of forklift traffic may need hard walls unless some kind of wall protection is employed. Similarly, a warehouse storing valuable goods will not be well protected by metal siding. A food-processing plant, as already mentioned, requires a hard and smooth interior finish, best achieved with precast concrete. Fire-resistance criteria may also limit the choice to masonry or concrete. Beyond these considerations, the trade-off is between aesthetics and cost.

It is critically important to remember that exterior walls are a part of the metal building system; they must be compatible with it visually, structurally, and functionally. Nonferrous wall systems, and especially their connections, should be carefully reviewed for compatibility with metal framing. Unfortunately, low-rise curtain walls seem to have more problems than their high-rise counterparts, perhaps owing to the limited design budgets usually available. Yet the potential liability of the designer for a poor coordination or an unwise product selection knows no such limits.

A helpful reservoir of ideas on combining various materials to achieve the desired effect can be found in *Metal Architecture* and other publications of the metal building industry.

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