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Source: METAL BUILDING SYSTEMS

CHAPTER 13
SOME CURRENT DESIGN TRENDS

Metal building systems represent one of the youngest and most dynamic sectors of the construction industry. New materials and design applications of metal buildings continue to emerge, expanding the architect's palette of choices. This chapter examines some latest trends in specifying metal buildings, a few winning design solutions, and factors that further increase competitiveness of pre-engineered buildings.

13.1 FACADE SYSTEMS: MANSARDS AND CANOPIES

As metal building systems expand their acceptance into commercial, institutional, and community environments, the old bland, utilitarian look of metal-sheathed gable buildings gives way to more interesting and diverse design solutions. Visual interest can be added not only by the wall materials discussed in Chap. 7 but also by various facade treatments ranging from basic canopies to sophisticated fascia panels.

13.1.1 Canopies

A functional and aesthetically pleasing canopy is perhaps the most common facade treatment. The simplest way to build a canopy is to provide a cantilevered extension of the primary frame at the eave level and to continue the roof framing onto the canopy (Fig. 13.1). The eave-line canopy is most appropriate for continuous and wide—up to 10 ft—canopy coverage that extends the full length of the building. For this solution to work, the building exterior must be visually compatible with exposed cantilevered rafter framing, which stays in full view even when soffit panels cover the underside of the canopy's roofing.

A more refined option is a flush-framing canopy, where all the framing is hidden from view (Fig. 13.2*a*). At sidewalls, parallel to roof purlins, this canopy is supported by a special cantilevered canopy rafter at each column (Fig. 13.2*b*), while at the endwalls roof purlins can simply be extended past the wall line (Fig. 13.2*c*). A flush-framing canopy, while sleek in design, is limited to the maximum width of 3 to 5 ft, or about one-half to one-third that of the eave-line canopy.

For an even more sophisticated treatment, a bullnose canopy can be specified (Fig. 13.3). A bullnose canopy looks and functions best when located some distance below the roof level and attached to a contrasting wall material. Rather than being supported by a roof extension, it is carried by closely spaced frames attached to the building wall, with hat or channel steel members in between. Obviously, the supporting wall must be strong enough and is best made of masonry or concrete,

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