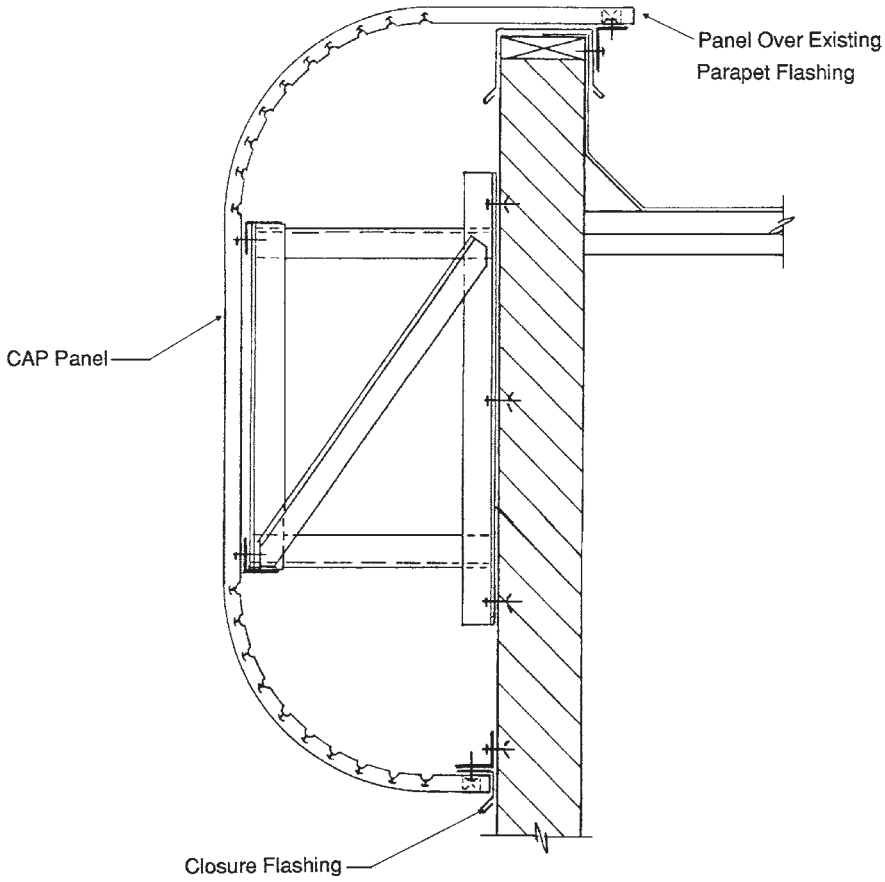

FIGURE 13.7 Double-curve eyebrow fascia. (*Centria.*)

The steel composition most favorable for curving, according to Curveline, is ASTM A 446 grade D carbon steel G-90 with a tensile strength of 50,000 lb/in^2.[3] Panels made of galvanized steel, aluminum, and stainless steel may be curved.

Curved panels are structurally more efficient than the straight ones and can often be made of thinner metal, affording some material savings. For a continuous support, curved girts and purlins conforming to the panel's outline can be produced at the same source.

Wherever curves follow straight panel runs, as in building corners, a separate curved piece may or may not be required, depending on the supplier. According to Curveline, Inc., a separate curved connector piece is usually not needed, and the curve can be built into an end of the straight panel. For both aesthetic and functional reasons, an extra joint is just as well avoided. A notable exception is the mitered corner (Fig. 13.11), which turns out better if shop-fabricated separately.

When factory curving is not practical, field curving is possible. Some companies, such as Berridge Manufacturing of Houston, Tex., offer both roll-forming and curving of the panels on-site. Alternatively, a rounded corner may be obtained without crimp-curving if the panel is bent *parallel* to the ribs, a relatively easy operation.

While curved panels are visually attractive, the panel finish might be severely compromised during curving. Some fabricators that had gotten into the curving business during the 1980s could

FIGURE 13.8 Curved fascia adds interest to an office building. (*Curveline, Inc.*)

not overcome the technical difficulties and survive. To this date, some major manufacturers, such as Butler, not only do not offer curved panels themselves but also advise against curving their products by others. For the same reason, many architects avoid specifying curved panels in corrosive climates.

Before specifying crimp-curved panels, designers should contact some local fabricators engaged in this business to inquire about available panel profiles, finishes, bending radii, and product warranties. It is instructive to view some of their past projects, preferably at least several years old, to look for signs of corrosion. During inspection, one should look for any incomplete bending and dimpling of panels, for proper curving of all the trim pieces, and for acceptability of tolerances.

In addition to the firms mentioned above, some other companies involved in production of curved panels include ATAS Aluminum Corp. of Allentown, Pennsylvania; Floline Architectural Systems of St. Louis, Missouri; Petersen Aluminum Corp. of Elk Grove Village, Illinois; Centria of Moon Township, Pennsylvania; and BHP Steel Building Products USA, Inc., of West Sacramento, California.

13.3 STEEL-FRAMED HOUSES

Always looking for new opportunities, the metal building industry has begun supplying pre-engineered framing for residential construction at a spectacular pace. According to AISI, 13,000 steel-framed houses were built in this country in 1993, compared to only 500 built in the two prior years. In 1994, 40,000 steel homes were expected to be built in North America.[4]

Historically, steel has been prohibitively expensive for residential applications, but with wood prices escalating sharply in the early 1990s, steel suddenly became cost-competitive. Apart from