

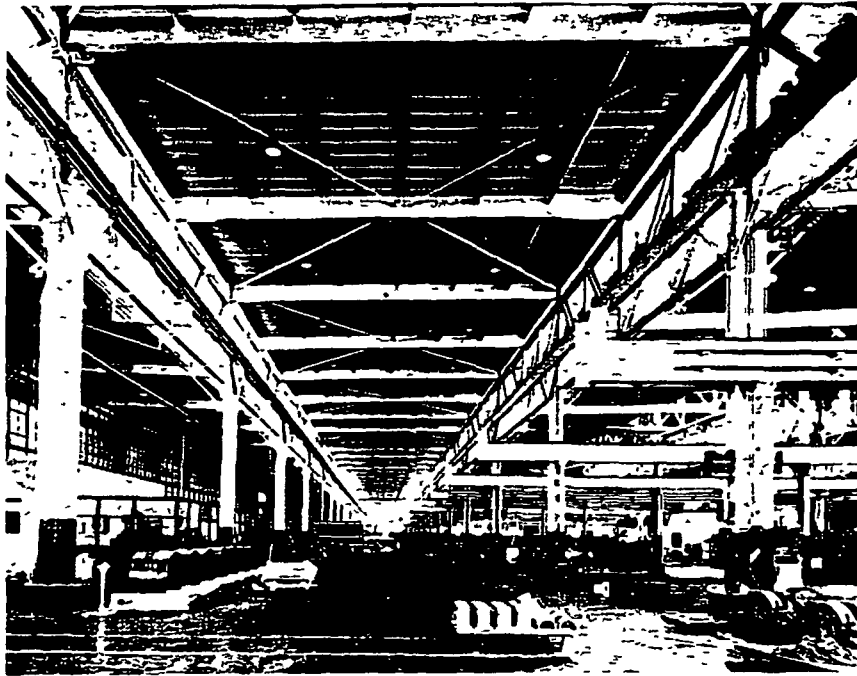


FIG 43-4 —Noncombustible building with low-hazard, metal-working occupancy

Courtesy National Fire Protection Association

by masonry walls, heavy timber columns and beams, and heavy plank floors (Fig 43-3). Although not immune to fire, the great mass of the wooden members slows the rate of combustion. Moreover, the char which forms on wooden surfaces serves as an insulator for the wood within.

Noncombustible construction includes all types of structures in which the structure itself (exclusive of trim, interior finish, and contents) is noncombustible but *not* fire resistant. Exposed steel beams and columns, and masonry, metal, or asbestos panel walls, are the most common forms (Fig 43-4).

Because of the tendency of steel to warp, buckle, and collapse under moderate fire exposure, noncombustible construction is relatively vulnerable to fire damage. It is, therefore, most suitable for low-hazard occupancies. If quantities of combustibles are present, the structure should be protected with automatic sprinklers.

Ordinary construction consists of masonry exterior bearing walls, or bearing portions of exterior walls, that are of noncombustible construction. Interior framing, floors, and roofs are made of wood or other combustible material whose "bulk" is less than that required for heavy timber construction.

If floor and roof construction and their supports have a one-hour fire-resistance rating, and all openings through floors (including stairways) are enclosed with partitions having a one-hour fire-resistance rating, then it is known as "protected ordinary construction." This type building dominates in congested areas of large cities. Its occupancy should be limited to light or moderate hazards, use of highly combustible interior finishes should be minimized.

Even when sheathed, ordinary construction (unlike fire-resistive or noncombustible construction) still has combustible materials in concealed wall and ceiling spaces. Fire frequently originates in these concealed spaces.