

PORTAL FRAME STRUCTURE DESIGN

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ABSTRACT

The function of a modern industrial building is to support and house a manufacturing process or to store the raw materials for (or product of) a manufacturing process.

Many industrial plants are being located in small population centers expansion, and the opportunity for providing a pleasing environment away from congested city areas. Other factors which must be considered in the site selection are topography, subsoil conditions, transportation, and utilities.

With the site selected, the planning of the production process and the structure to house it can proceed. Using the total area and volume requirements established for the preliminary planning, the exterior dimensions can be developed. Square or nearly square areas are usually more economical because they require less exterior wall length.

Dimensions of individual bays within the structure are often dictated by the manufacturing process. Large, clear areas unobstructed by columns and partitions are desirable as to provide sufficient flexibility and to facilities later change in the production layout without major building alterations. The plan must also allow for future expansion, preferably by expanding the plant on any or all of its four sides without shifting existing production layouts.