Location, climate, and terrain

Plants producing or using highly flammable or toxic substances in bulk should be located so as not to cause damage to a city or town, either generally or in case of a disaster or some unexpected happening

Study of the climate of the area may be required It may reveal that, if a certain site is selected, the prevailing winds will cause noxious fumes or dusts to settle on a neighboring community or plant, thereby doing severe harm to people or property or creating a nuisance The prevailing winds may also determine the best location for processing equipment in relation to administration offices—especially their air conditioning air intakes Drainage and waste disposal problems must also be anticipated

In a hurricane, tornado, or flood area, plans and specifications should include suitable protective measures and safety factors must be designed into the operation (See Chapter 35, "Emergency Action Plans.")

If site plans call for bridges over streams, ditches, and outdoor stairways, be sure they are adequately protected by fence or by handrails 42 in high and intermediate rails

Space requirements

Size of a site is determined by both present and future space requirements In the past the growth of business and population has resulted in serious crowding, and the resulting congestion of buildings and other facilities has increased fire, accident, and health hazards

New developments may figure in the size of the plant site Some companies, anticipating increased use of air transportation, are allowing space for landing fields or heliports as they acquire new property. Plans for such installations should include all necessary safety precautions

Fire prevention codes specify minimum distances between buildings according to their size, type, and occupancy Laws governing storage of explosives and of highly flammable materials specify minimum distances between manufacturing and storage facilities for various quantities of such materials, as well as minimum distances of the materials from adjoining property.

Ample space for outdoor storage areas is essential When the area for storing such materials as steel, pipe, and lumber adjacent to shops proves insufficient, space must be provided elsewhere This necessitates added handling and transportation and increases both costs and accident risk.

Parking lots are best located inside the plant fence for convenience, protection, and safety. Since a considerable area may be necessary to accommodate employee and visitor cars, space requirements are important in site planning

In some cases, well located disposal areas for solid wastes also must be provided when a site is being laid out

Scale relief models of the site in addition to maps can be of much help to the planner in predesign, and will help in spotting potential safety problems

Outside Facilities

In the planning of outside facilities, safety considerations must be kept in mind in order to reduce the future accident potential

Enclosures

Fenced yards and grounds have many advantages Fencing keeps out trespassers who may interfere with work or be injured on the property. Fencing protects transformer stations, pits, sumps, stream banks under certain circumstances, and similar dangerous places A galvanized woven wire fence makes a good enclosure Enough entrances should be provided to accommodate the volume of traffic, with clearance for loaded trucks and for switchmen riding on the sides of railroad cars

Since it is unsafe for pedestrians to use the entrances for railroads and motor vehicles, separate gates for pedestrians, convenient to their transportation and to their work places, should be provided If a pedestrian entrance must be located near railroad tracks, part of the right of way should be fenced to keep employees from short-cutting along the tracks Good visibility in all directions is essential at entrances

If pedestrian entrances must be located on busy thoroughfares or if workers cross railroad tracks on which trains are operated frequently, traffic signals should be installed and subways or pedestrian bridges built Such precautions are especially important where parking lots must be located opposite entrances