

space for amenities and other features of modern factory layout.

Standards of Industrial Density

To arrive at suitable standards of density for any area or for any type of industry it is necessary to analyse the requirements of individual factories and industries. A special survey was undertaken with the assistance of the Victorian Chamber of Manufactures to obtain the necessary basic information from which such standards could be determined. This involved forwarding a questionnaire to 4,000 selected industrial organisations covering all sections of industry. Twelve hundred of these questionnaires were returned, including a representative sample from each section of industry. This was augmented by a comprehensive series of personal contacts with leading executives in each field of industry.

From the information so obtained, standards were arrived at for different sections of industry on the assumption that the whole site area was fully developed in accordance with the best modern practice for the particular type of industry, and that all modern amenities and adequate parking and storage space were provided. Although such a complete state of development would not be reached by all establishments, the standards provide a basis for the assessment of land needs, allowance being made as necessary for partial site development.

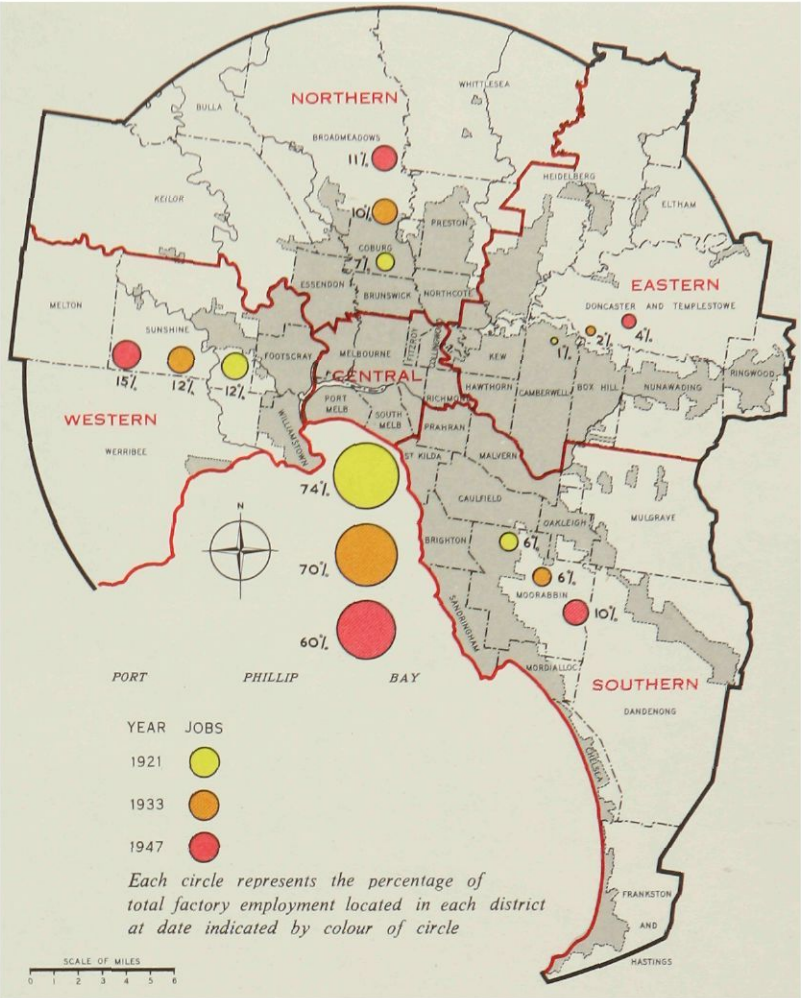
Because land is scarce and values higher in the inner areas, economic considerations necessitate a more intensive use of the land. Here the horizontal trend of factory development is frequently not practicable and must give way to vertical development. Certain industries requiring large land areas in relation to number of employees are already found in the outer areas, which lend themselves to more spacious development. It was found necessary, therefore, to establish different standards for the inner and outer areas.

In general, the inner suburban standards are based on two-thirds of the site area being built on while the outer suburban figures are based on not more than 50 per cent. of the site area being built on and in some cases, even less.

The density figures for each section of industry naturally vary considerably according to the number of storeys considered desirable for each type of factory layout as well as the proportion of the site area covered. In this respect,

Table 36
TREND IN INDUSTRIAL LOCATION
(Percentage of Total Industrial Employment by Districts)

District	1921	1933	1947
Central	74	70	60
Western	12	12	15
Northern	7	10	11
Eastern	1	2	4
Southern	6	6	10



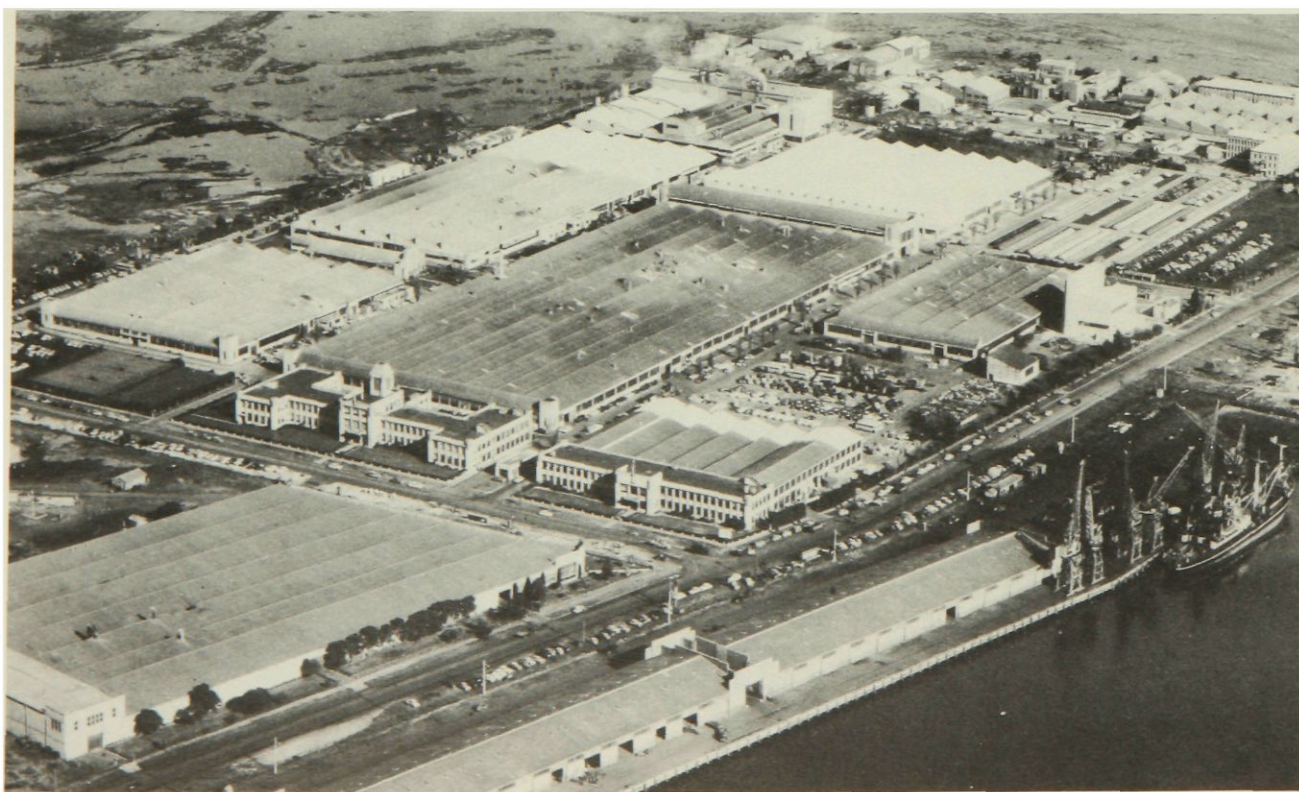
33 TREND IN INDUSTRIAL LOCATION

it has been found that most industries today seem to favour a single-storey factory with two-storey administrative offices attached, and up to two-thirds of the site built over when fully developed. However, some industries such as sections of the clothing and printing trades, require more than one storey to function effectively. Breweries require certain sections of their layout to be not less than four storeys. Some industries that can function equally well with one or more storeys are governed by the cost and size of the site occupied. On small sites in the inner suburbs they would tend to build upwards, whereas if they were located in the outer suburbs they would favour one storey. Certain industries, such as oil refining, explosive manufacture, meat slaughtering and processing, and timber yards, naturally require large areas of uncovered land in proportion to built-on areas and have a low employee density.

All these factors need to be taken into account in arriving at suitable standards for each section of industry. To be representative, density figures for industrial development must take into account the size and importance of the various types of industries. For example, in the engineering field, the heavy engineering trades such as foundries, heavy machinery or structural steel establishments generally require a lower density standard than the light engineering trades such as manufacture of tools, fittings or light electrical



Intensely developed factory area adjoining the city centre



*Factory development
at Fishermen's Bend*