

Assessment of Industrial Floor Space Requirement**Purpose**

To project the future requirement of industrial floor space for providing input to the review of the “Area Assessments of Industrial Land in the Territory”.

Change in Industrial Building Stock

2. The industrial sector of Hong Kong has undergone significant restructuring since the late 1970s when the Mainland adopted the “open door” policy. With the relocation of the manufacturing processes to the Mainland, a substantial amount of industrial floor space in Hong Kong has been converted to office and storage uses in support of the production lines on the Mainland. According to the information of the Rating and Valuation Department, the total stock of industrial floor space in flatted factories, Industrial-Office (I-O) buildings and Storage¹ as at end 2009 was 28.43 million m², with an overall vacancy rate of 7.6%.

	Flatted factories	I-O buildings	Storage	Total
Stock as at end 2009 (GFA, million m ²)	23.04 (81.0%)	0.82 (2.9%)	4.57 (16.1%)	28.43
Vacancy	8.0%	10.0%	5.2%	7.6%

With a moderate vacancy rate of 5.2%, storage performed better than flatted factories and I-O buildings. While flatted factories and I-O buildings recorded a higher vacancy rate, the usage of flatted factories has aroused concerns because of its large stock and the dwindling manufacturing industries.

3. I-O buildings and “Other Specified Uses (Business)” (“OU(B)”) zone were introduced in late 1980s and 2000 respectively to provide greater flexibility in the use and redevelopment of industrial buildings. However, there remains 302 ha of “Industrial” (“I”) land accommodating about 500 flatted factories, as at end 2009. How to manage and optimise the use of this large stock of flatted factories in “I” zones without compromising industries that remain in the territory merits special attention.

¹ “Storage” comprises premises designed or adapted for use as godowns or cold stores and include ancillary offices. Premises located within container terminals are included.

4. By type of economic activities, industrial floor space could be split into “manufacturing”, “non-manufacturing” and “storage”. Unlike manufacturing and storage, non-manufacturing activities such as import and export could be accommodated in a wide range of premises including offices, I-O buildings and flatted factories. According to PlanD’s assessment based on past surveys and statistics, about 17% of non-manufacturing activities were carried out in flatted factories. In view of the footloose nature of these activities, it is difficult to predict their requirements within industrial buildings and to cater for them in the long term.

5. For “storage industry”, only 5% of the floor space is within flatted factories whereas the remaining majority are in purpose-built storage buildings. Historical data on its floor space requirements show great fluctuations, rendering it difficult to estimate the future requirement. Most of the storage floor space is concentrated in Kwai Tsing and Tsuen Wan, probably because of its proximity to the port. In other words, apart from Kwai Tsing and Tsuen Wan, the rezoning of “I” sites elsewhere, except those with purpose-built warehouses, would not unduly affect the storage sector.

6. On the other hand, 64% of manufacturing floor space is within flatted factories and the rest are mainly located in specialised factories, purpose-built storage buildings and office buildings. The future requirement for manufacturing floor space would be highly dependent on the performance of manufacturing industries. In view of the above, the current exercise focuses on projecting the future requirement of manufacturing floor space² to serve as a broad indicator for possible rezoning of “I” sites for other uses.

The Manufacturing Sector

7. For the past three decades, the contribution of the manufacturing sector to the Gross Domestic Product (GDP) has declined from 21.8% of total GDP in 1981 to 2.5% in 2008. However, unlike that of the 1980s and 1990s, the rate of decline has slowed down in recent years, with a more gradual decline from 5.4% in 2000 to 2.5% in 2008. Its share remained at the level of 2.5% in both 2007 and 2008. (**Annex A**)

8. Notwithstanding the continuous decline in floor space demand, the manufacturing sector’s share to the GDP growth in a few industries is observed.

² Including space occupied by those storage activities related to manufacturing industries.

Three out of 26 manufacturing industries recorded an expansion in both the value-added to the GDP and the share of GDP within the manufacturing sector (**Annex B**). These industries are “Printing, publishing and allied industries” (“printing”) and “Food manufacturing” (“food”), and “Transport equipment, manufacturing” (“transport”), with their aggregate contribution to manufacturing GDP rising from 11% to 57% from 1988 to 2008. In terms of number of persons engaged, “food” recorded a noticeable increase from 17,900 to 22,600 from 1997 to 2008, an increase of 26%.³ The persons engaged in the “transport” industry mainly work in Chek Lap Kok while those engaged in the “printing” industry mainly work in the Eastern, Kwun Tong and Tai Po districts and those engaged in the “food” industry mainly work in the Tai Po, Yuen Long, Kwun Tong and Islands districts. (**Annex C**)

9. The growth in manufacturing industries mentioned above points to the need to adopt a prudent approach in rezoning industrial land. Certain manufacturing activities will continue to remain in a predominantly service economy like Hong Kong for various reasons including operational and market needs. The “food” and “printing” sectors are notable examples. Besides, in line with the Administration’s policy to promote knowledge-based economy, we have to cater for the need of the high value-added, technology- or information-based production and related activities, although some of these activities are likely to be accommodated in special premises like the Science Park and industrial estates. In rezoning “I” sites, the spatial distribution of these manufacturing activities should be taken into account.

Projected Floor Space Requirement for Manufacturing Industries

10. The total floor space occupied by manufacturing industries has declined from a total GFA of 26.98 million m² in 1983 to 8.91 million m² in 2008 (i.e. a reduction of 18.07 million m² or 67%). While the decrease continued, the average annual rate of decrease was becoming lower, with 3.6% for the period from 1998 to 2008 against 7.4% for the period from 1988 to 1998. The projected floor space requirements are derived by fitting different trend curves. The detailed methodology and projections are at **Annex D**. Within the manufacturing sector, the “printing” and “food” industries have already constituted about 39% of the total floor space occupied by manufacturing industries in 2008. These industries mainly cater for local consumption and did not show decreasing trend in the past ten years⁴. For other

³ Based on data obtained from C&SD’s Quarterly Survey of Employment and Vacancies.

⁴ The total floor space taken up by these two industries was 2.60 million m² in 2008, which was higher than that of 2.02 million m² and 2.01 million m² in 1998 and 1988 respectively.

manufacturing industries, their floor space requirements were also shrinking at a decreasing rate⁵. It is projected that the floor space requirement of manufacturing industries would continue to decrease, but at a lower rate : reducing from 8.91 million m² in 2008 to 7.58 million m² in 2020 (i.e. a further drop of 1.33 million m² or 15% or reducing 1.3% per annum).

Potential Scope for Rezoning

11. As mentioned in para. 10, the overall requirement for manufacturing floor space is estimated to decrease by 1.33 million m² GFA by 2020. As explained in paragraph 6, about 64% of manufacturing floor space is within flatted factories and the rest are in other types of premises. It is therefore estimated that the requirement for flatted factories would decrease by 0.85 million⁶ to 1.33 million m² GFA by 2020. The above figures could serve as broad indicators for rezoning “T” sites for other uses.

12. In rezoning individual “T” sites, factors such as the conditions and utilization of individual buildings, the spatial distribution of those more vibrant manufacturing industries and the local context, should be taken into account. Priority could be given to rezoning those vacant sites or sites with temporary uses for other uses as it is unlikely that there would be interests in developing these sites for industrial purposes.

Attachments

- Annex A** Components of Hong Kong’s GDP
- Annex B** Contribution of different sectors of manufacturing industries to the GDP of manufacturing industries
- Annex C** Change in spatial distribution of the food manufacturing and printing industries by employment
- Annex D** Note on projecting floor space requirements of manufacturing industries

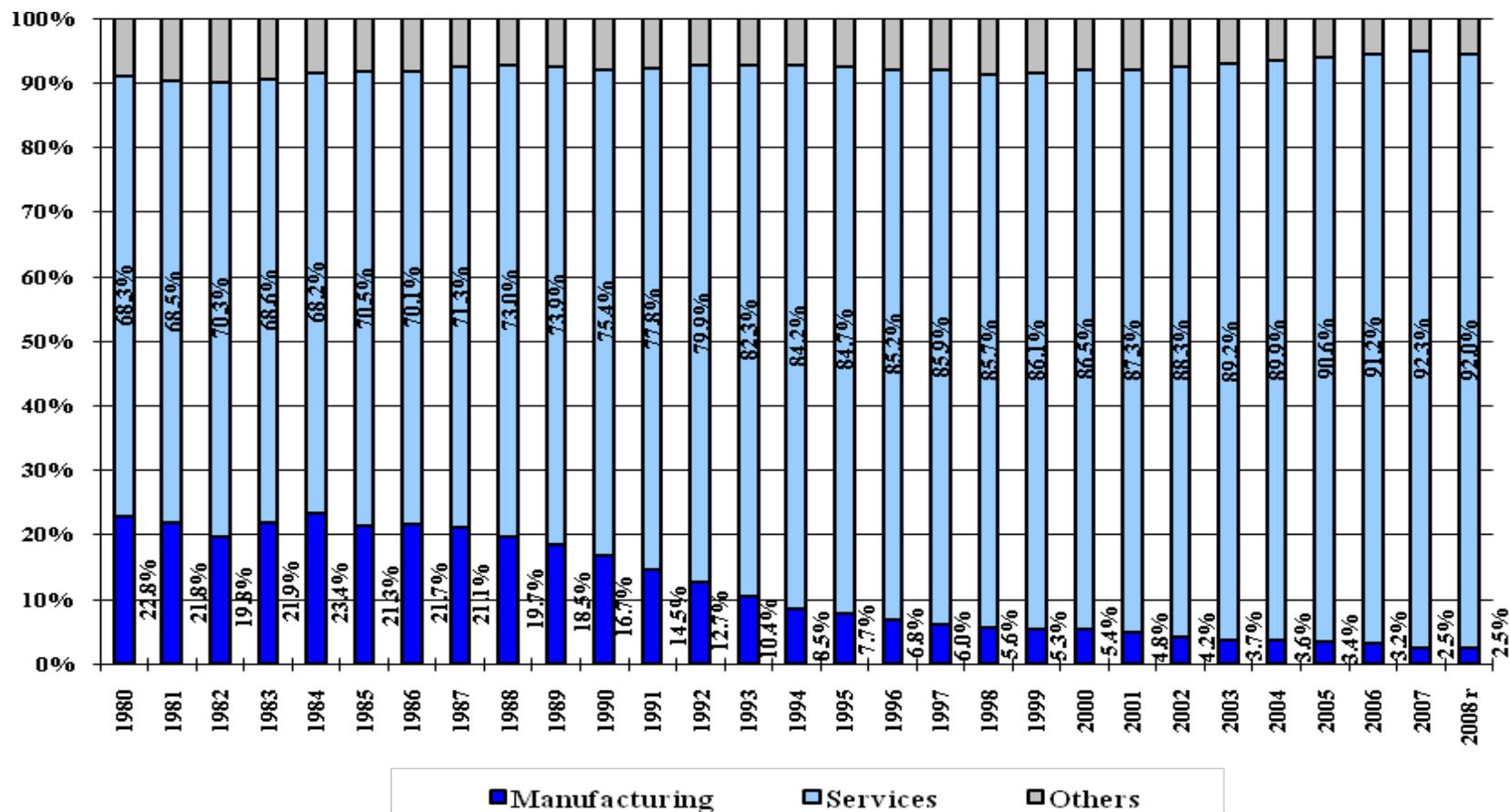
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⁵ For other manufacturing industries, the average annual change in total floor space taken up between 1998 and 2008 was -6.0%, lower than that of -8.6% between 1988 and 1998.

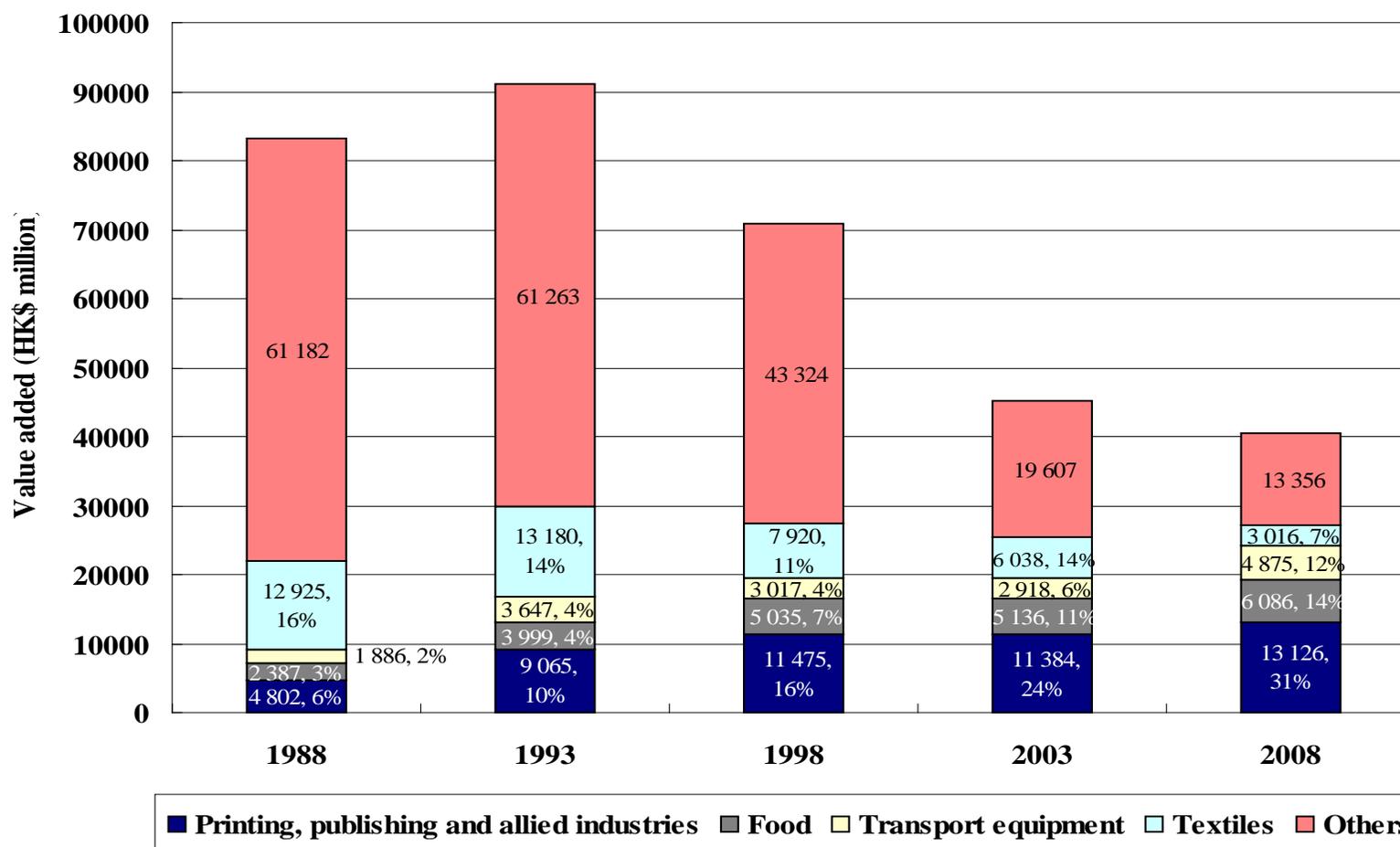
⁶ The figure of 0.85 million is derived by assuming a ratio of 64% of manufacturing floor space within flatted factories based on past surveys would continue, i.e. 1.33 million x 64% = 0.85 million.

Components of Hong Kong's GDP



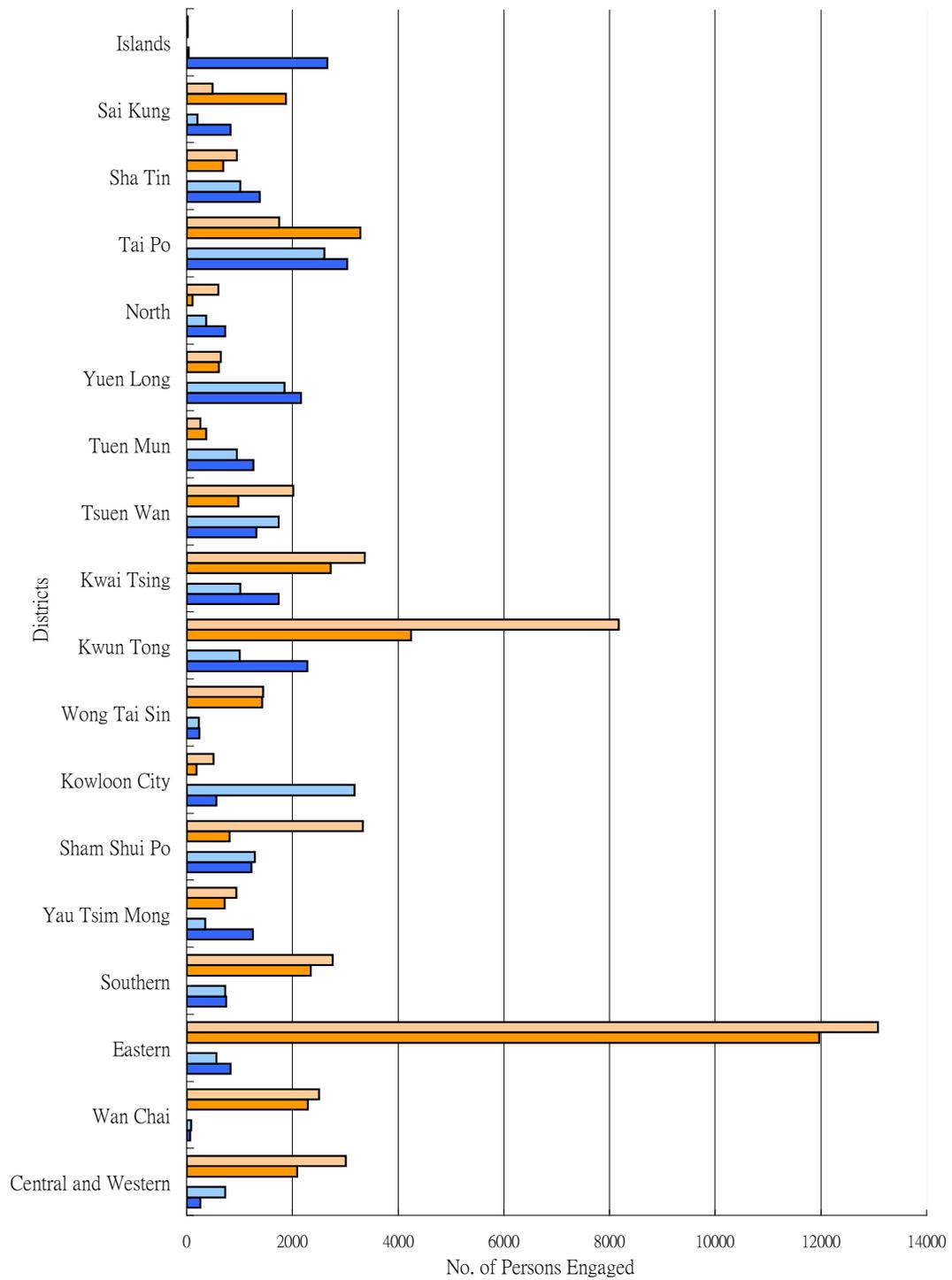
Based on data obtained from "GDP by Economic Activity - Percentage Contribution to GDP", C&SD

Contribution of different sectors of manufacturing industries to the GDP of manufacturing industries



Based on data obtained from "GDP by Economic Activity - Percentage Contribution to GDP", C&SD

Change in Spatial Distribution of the Food Manufacturing and Printing Industries by Employment



■ Food manufacturing (08) ■ Food manufacturing (97)
■ Printing, publishing and allied industries (08) ■ Printing, publishing and allied industries (97)

Based on Data obtained from Quarterly Survey of Employment and Vacancies, C&SD

**Note on Projecting Floor Space Requirements of
Manufacturing Industries**

1. Estimates of total floor space¹ used by manufacturing industries are available from the Annual Survey of Industrial Production conducted by the Census and Statistics Department (C&SD). The floor space includes different types of premises, such as flatted factories, specialised factories, storage premises and offices.

2. The total floor space used by manufacturing industries decreased from 26.98 million m² in 1983 to 8.91 million m² in 2008. While the decrease continued, the average annual rate of decrease was becoming lower, with 3.6% for the period from 1998 to 2008 against 7.4% for the period from 1988 to 1998.

3. The projected floor space requirements of manufacturing industries are derived by fitting different trend curves to the past data and selecting the one considered most appropriate, taking into account the statistical properties of the fitted curves as well as other qualitative factors. In particular, it is observed that the floor space requirements taken up by “Printing, publishing and allied industries” and “Food manufacturing” have already constituted about 39% of the total floor space occupied by manufacturing industries in 2008. These industries mainly cater for local consumption and did not show decreasing trend in the past ten years². For other manufacturing industries, their floor space requirements were also shrinking at a decreasing rate³. It is therefore projected that the floor space requirements of manufacturing industries would continue to decrease, but at a lower rate.

4. The trend curve selected for projection is:

$$Y^{-2} = -0.98168 + 0.00049 T$$

where Y = Floor space area (million m², GFA)

T = Year

5. According to this model, the total floor space requirement of manufacturing

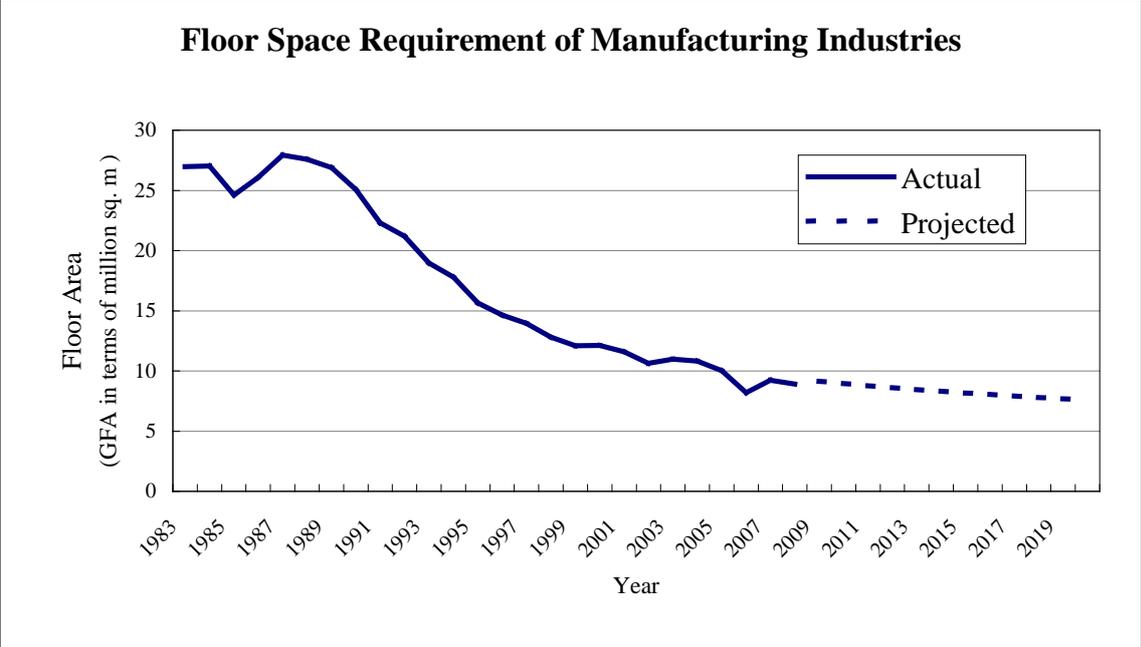
¹ The data obtained by C&SD refer to IFA. They are converted to GFA by multiplying a constant conversion factor of 4/3.

² The total floor space taken up by these two industries was 2.60 million m² in 2008, which was higher than that of 2.02 million m² and 2.01 million m² in 1998 and 1988 respectively.

³ For other manufacturing industries, the average annual change in total floor space taken up between 1998 and 2008 was -6.0%, lower than that of -8.6% between 1988 and 1998.

industries is projected to decrease from 8.91 million m² in 2008 to 7.58 million m² in 2020, i.e. a reduction of 1.33 million m² at an average annual rate of -1.3%.

6. The results are shown in the following graph and table :



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