Review of Land Requirement for Grade A Offices, Business and Industrial Uses

Final Consultancy Report

January 2017

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Final Consultancy Report

A report submitted by ICF Consulting Services Hong Kong Limited
in association with

CEPA, PPS, AECOM

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1   Introduction

Background

The Planning Department of the HKSAR Government (PlanD) commissioned the Review of Land Requirement for Grade A Offices, Business and Industrial Uses ("the Review" hereafter) in April 2014 to support the review of the territorial development strategy for Hong Kong (i.e. "Hong Kong 2030+: Towards A Planning Vision and Strategy Transcending 2030") (Hong Kong 2030+). The objectives of the Review are as below:

- In the light of the latest economic situation and technology advancement, to review and, where appropriate, revise the land use typology for Grade A offices, business and industrial uses. The land use typology should cater for market-driven rather than policy-driven uses, which are separately considered by the Government, and allow for the formulation and operation of reliable, simple and robust forecasting models for assessing the short to long term floor space and land requirement;

- To review and update the demand forecast and land requirement of Grade A offices, business and industrial uses based on the revised land use typology;

- To provide short term demand forecast for industrial floor space and land as inputs to PlanD's 2014 Area Assessments of Industrial Land in the Territory (2014 Area Assessments) so as to facilitate consideration of industrial land to be retained or rezoned[1]. This included but not limited to manufacturing, logistics and warehouse uses which had strong presence in industrial buildings, as well as data centres which had a growing presence in industrial buildings; and

- To review the supply, devise broad spatial strategies to meet the projected demand in the short, medium and long term, and identify potential solution spaces to address the projected shortfalls.

The Review was undertaken by ICF as the main Contractor with the support of three sub-contractors, namely AECOM Asia Co. Ltd., Professional Property Services Limited and Cambridge Economic Policy Associates (together referred to as "the Contractor" hereafter).

Land Use Typologies

A review of land use typologies formulated in the "Hong Kong 2030: Planning Vision and Strategy" (HK2030) completed in 2007 was undertaken to ensure the classifications to be used in the current Review were appropriate. The review took into account the rationale used in the HK2030, the distinction between market and policy driven land use demand, and the impact of data availability on the level of disaggregation to be used.

The principal findings of the review were to expand the number of typologies to five from the three typologies used in the HK2030: CBD Grade A Office, General Business and Special Industries. This involved disaggregating General Business into Non-CBD Grade A Offices, Industries, and General Business. Other revisions recommended were the exclusion of Housing Authority Flatted Factories due to a lack of data and the exclusion of policy driven economic land uses such as the Hong Kong Science Park and Industrial Estates.

Based on the revised economic land use typologies, the following five types of market-driven uses were adopted in the Review for all the short, medium and long term:

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[1] The 2014 Area Assessments was completed in August 2015. The Report is available in PlanD's website at http://www.pland.gov.hk/pland_en/p_study/comp_s/industrial_report_2014/index.htm.

- **Central Business District (CBD) Grade A Offices:** this type includes Grade A offices in CBDs which are usually at the meeting points of the city's transport systems and are perceived as prestigious areas of high quality public realm and a critical mass of high value-added economic activities and services as well as supporting businesses and amenities. They usually accommodate business operations of financial services, high value-added business and professional services requiring face-to-face contact, as well as the head offices of multi-national corporations. Such offices generally have high quality finishes, flexible layout and larger floorplates in terms of building specifications. In the short term, the CBD is defined as Sheung Wan, Central, Wan Chai, Causeway Bay and Tsim Sha Tsui (including West Kowloon Reclamation to the south of Jordon Road). In the medium to long term, the East Kowloon CBD2 developments (i.e. Kai Tak Development and Kowloon Bay and Kwun Tong Business Areas) are additionally included in the supply of CBD Grade A Offices[2].

- **Non-CBD Grade A Offices:** this type encompasses Grade A offices located outside the CBDs which may not provide the benefit of agglomeration effects. They usually accommodate supporting/back/split offices of major business undertakings or companies seeking relatively cost-effective premises or unique locations. Same as CBD Grade A Offices, Non-CBD Grade A Offices generally have high quality finishes, flexible layout and larger floorplates in terms of building specifications.

- **General Business:** this refers to non-Grade A offices, and business activities involving no industrial production, that have flexible floorspace requirements. General types of research and development (R&D) as well as testing and certification are under this categorisation. The floorspace preferences of these activities are sensitive to accommodation costs. General Business uses are now predominately found in industrial/industrial-office (I/O) buildings, followed by non-Grade A Office buildings.

- **Industries:** this type includes manufacturing, warehousing and other industrial activities, but other than "Special Industries". General logistics/warehousing, covering general storage and warehousing uses, is subsumed under this category. Facilities for modern logistics[3] are not included and should be subsumed under Special Industries.

- **Special Industries:** this type includes industries that have unique locational or/and operational requirements having regard to specific environmental or other considerations. They usually require purpose-built premises of more rigid building specifications (e.g. higher loading, higher ceiling, larger floor plate, highly reliable electricity supply with back-up supply, and dust free environment). Data centres, modern logistics, and special types of R&D as well as testing and certification are subsumed under this category.

Based on the land use typologies proposed above, the Contractor had established suitable models for short, medium and long term forecasting with a view to determining how much land should be reserved for various economic uses over the projection period.

In order to provide inputs to the 2014 Area Assessments and the Office of the Government Chief Information Officer, the Contractor had additionally produced separate demand projections for logistics, data centre and manufacturing uses in the short term (up to 2023).

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[2] In view that sufficient time is required to develop Kowloon East into a comparable CBD as the existing one of considerable scale and synergy, Kowloon East is only regarded as CBD from medium term onward.

[3] There is no set definition for modern logistics, but this typically entails higher value-added services that go beyond storage. These may include increased commercial responsibilities (e.g. shipment tracking, or management of the servicing and maintenance of products), or the provision of integrated packaging solutions/last minute activities (e.g. final components assembly, packaging, correct language labelling and inserts, compliance with end-market regulations, and the delivery of 'retail ready' products) with the aim of moving products efficiently.

No longer-ranged projections are specifically made for these three types of uses because of data availability and accuracy.

Current Employment-related Properties

Based on Rating and Valuation Department (RVD)'s records, the stock of major employment-related properties (including private offices, private I/O, private flatted factories, private storage and private specialised factories[4]) as at end of 2015 totalled about 47.2 million m^2 gross floor area (GFA)[5]. Compared with the stock at the end of 2001 when the previous round of similar review was commissioned, the total stock only increased by about 4% (about 1.9 million m^2 GFA) over 14 years (**Figure 1.1**). Private flatted factories remain a dominant type of employment-related properties, accounting for nearly 50% of the total stock. The stock of private flatted factories only dropped slightly from about 23.4 million m^2 GFA in 2001 to about 22.5 million m^2 GFA in 2015 (a decrease by about 4% over 14 years) despite the large scale rezoning of "Industrial" ("I") zones to "Other Specified Uses" annotated "Business" ("OU(B)"), "Residential (Group E)" and other non-industrial zones. New supply was primarily Grade A office. Its stock increased from about 6.9 million m^2 GFA in 2001 to about 9.6 million m^2 GFA in 2015 (about 39% over 14 years).

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[4] Definitions of various RVD property types are as follows:
Private office: comprises premises situated in buildings designed for commercial/business purposes, excluding non-domestic floors in composite buildings. Offices are graded in three categories: Grade A (modern with high quality finishes; flexible layout; large floor plates; spacious, well-decorated lobbies and circulation areas; effective central air-conditioning; good lift services zoned for passengers and goods deliveries; professional management; parking facilities normally available); Grade B (ordinary design with good quality finishes; flexible layout; average-size floor plates; adequate lobbies; central or free-standing air-conditioning; adequate lift services, good management; parking facilities not essential); and Grade C (plain with basic finishes; less flexible layout; small floor plates; basic lobbies; generally without central air-conditioning; barely adequate or inadequate lift services; minimal to average management; no parking facilities). It should be noted that location is not a feature of grade.
Private industrial/office: floorspace designed or certified for industrial/office uses.
Private flatted factories: comprise premises designed for general manufacturing processes and uses, including offices, directly related to such processes, and normally intended for sale or letting by the developers. Specialised factories, as described below, are excluded. Similar premises built by the Housing Authority are not included.
Private storage: comprises premises designed or adapted for use as godowns or cold stores, and includes ancillary offices. Premises located within container terminals are included.
Private specialised factories: comprise all other factory premises, primarily purpose-built for specialised manufacturing processes, usually for occupation by a single operator.
[5] Estimate based on the Internal Floor Area (IFA) figures in RVD's Hong Kong Property Review series, assuming an IFA/GFA conversion factor of 0.75.

Figure 1.1   Comparison of Supply of Major Employment-related Properties between 2001 and 2015

Stock at the end of 2001: 45.3 million m^2 GFA
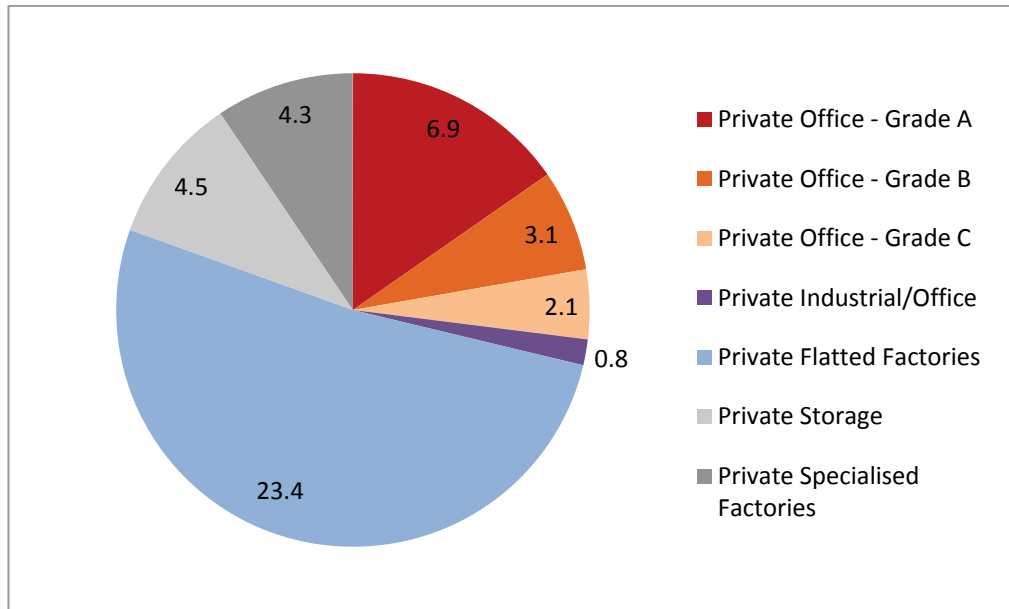
Stock at the end of 2015: 47.2 million m^2 GFA
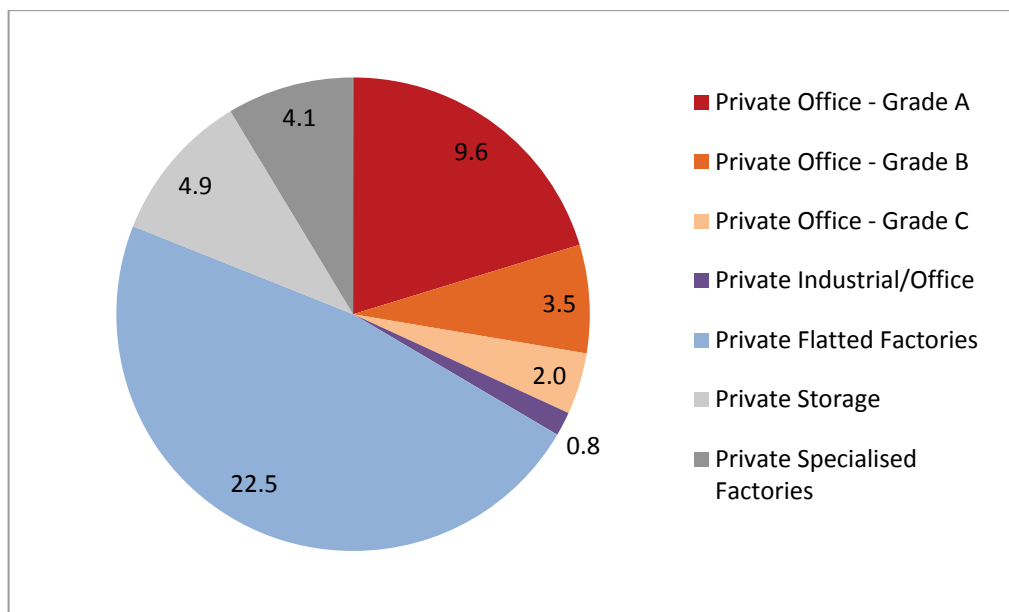
Data source: Estimates based on RVD's Internal Floor Area figures

2   Demand Modelling

Two modelling approaches had been undertaken in this Review. The Sectoral Models focused on bottom-up forecasts of the demand for three specific uses (i.e. logistics, data centre and manufacturing) in the short term up to 2023; while the Overall Demand Model was based on top-down forecasts to derive the overall employment floorspace demand of various typologies from short to long term up to 2041. Details of these two approaches are outlined below:

■ 10-year floorspace demand forecast (up to 2023) of specific uses (Sectoral Models)

Sectoral Models	Outputs from the Models
Logistics floorspace demand model	- Short term forecasts of floorspace demand for modern logistics, and general logistics/ warehousing uses - Short term forecast of floorspace demand for general logistics/ warehousing uses in flatted factory buildings, among the said forecast for general logistics/ warehousing uses
Data centre floorspace demand model	Short term forecast of floorspace demand for data centre use
Manufacturing floorspace demand model (for flatted factory buildings only)	Short term forecast of floorspace demand for manufacturing in flatted factory buildings

■ Short, medium and long term forecasts for total employment floorspace up to 2023, 2033 and 2041 respectively (Overall Demand Model)

Overall Demand Model	Outputs from the Model
Overall employment floorspace demand model, with two options: ■ Econometric ■ Demographic Employment Based (DEB)	Short /medium/long-term forecasts of overall use, broken down by the following land use types: ■ CBD Grade A Offices ■ Non-CBD Grade A Offices ■ General Business ■ Industries (manufacturing and general logistics/warehousing are subsumed under this category) ■ Special Industries (modern logistics facilities and data centres are subsumed under this category)

Sectoral Model Forecasts

Sectoral Model – Floorspace Requirement Results

The floorspace requirement results are obtained from each of the individual Sectoral Models. The logistics floorspace demand model projected floorspace demand for modern logistics and general logistics/warehousing uses by taking into account existing logistics uses, future demand drivers of domestic use (e.g. real GDP growth) and import/export use (e.g. air cargo volume growth). For data centre floorspace demand model, a projection was made by considering baseline stock and factors influencing data centre floorspace demand (e.g.

power consumption and possible size trend of server racks). Lastly, the manufacturing floorspace demand model projected manufacturing floorspace demand by adopting an elasticity calculation between current and past employment with floorspace demand. All the projected floorspace demands have been adjusted for the natural vacancy rate as shown in **Table 2.1** to allow for more buffer stock to cater for market friction[6]. Growth is expected for all concerned uses except manufacturing which is expected to decline continuously. Logistics and warehousing demand is expected to grow in line with the continued growth in import/export volumes and e-commerce, as well as Hong Kong's edge as a logistics centre in terms of its strategic location, free port status, sound legal system and world class transport infrastructure. Most of this growth in demand will be for modern logistics facilities as the industry seeks out the efficiency benefits of purpose built logistics buildings.

Growth in data centre demand has been strong in recent years. Given our strong data protection measures and good geographical location, Hong Kong will continue to be a data centre destination for the financial services industry and Mainland companies. Demand for manufacturing space is forecast to be relatively flat (falling marginally) over the 10 years to 2023, noting that the manufacturing sector has been contracting in Hong Kong for the past two decades and this trend is not expected to change in the short term.

Table 2.1   Cumulative additional floorspace requirements in 2018 and 2023 (compared to 2013) (m[2] GFA)

	Vacancy rate adjustment[7]	2018	2023
General logistics/ warehousing demand	5%	477,000	886,000
Modern logistics demand	5%	844,000	1,756,000
Data centre demand[8]	6%	237,000	474,000
Manufacturing demand (in flatted factory buildings)	8%	-56,000	-98,000

Sectoral Model - Land Requirement Results

The net land requirements for specific uses are shown in **Table 2.2** below.

It should be noted that these forecast figures are estimates representing the net site area only based on the assumed plot ratios (PRs) with reference to the latest planned developments. They have not yet included the land requirements for road networks and other supporting infrastructure. Besides, other factors such as site discounting factors and site constraints would have an impact on the actual land requirements. As these factors will change from site to site, only the net site area, which is the minimum land requirement, is reported.

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[6] The natural vacancy rate is a benchmark rate which acknowledges that even when a property market is in equilibrium, some level of empty space is 'natural'. This is due to frictions in matching different floorspace with the most appropriate tenant. Therefore to cater for a given level of demand, an additional amount of supply or 'buffer' is required for the market to function efficiently.

[7] The vacancy rate adjustments have made reference to the 20-year average vacancy rates of various types of property as well as Contractor's professional judgements.

[8] Data centre demand includes both market and policy driven demand as it is not possible to separate the two for this typology. Data centre development has relied heavily on land allocated for this purpose at Industrial Estates such as Tseung Kwan O and future growth is likely to be reliant on the continued provision of developable land.

From these forecasts, it can be seen that modern logistics will require the most additional land in the short term with an additional 44 hectares required by 2023. General logistics/warehousing will require only 9 additional hectares by 2023 as these buildings have a higher plot ratio. Data centres, like modern logistics facilities, tend to be of lower density than flatted factories and therefore the land requirement is relatively larger.

Table 2.2   Cumulative additional land requirements in 2018 and 2023 (compared to 2013) (net site area in ha)

	2018	2023
General logistics/ warehousing demand	5	9
Modern logistics demand	21	44
Data centre demand	6	12
Manufacturing demand (in flatted factory buildings)	-1	-1

Overall Demand Model for Employment Floorspace

Two different modelling approaches (namely econometric and demographic employment-based), were used for the Overall Demand Model. The econometric model takes into account the relationship between floorspace demand and projection of Hong Kong's and Guangdong's real GDP growth rates with adjustments for possible backlog of latent demand (to be further explained below)[9]. The major rationale behind the model is that there are close economic links between Hong Kong and Guangdong, and these links will affect Hong Kong's employment land use demand in terms of supporting office space for various types of industries as well as logistics/warehousing space to support cross-border trade. On the other hand, labour force and worker density are of more bearing in determining the projections in the demographic employment-based model.

In assessing the practicability of the projection models, the GDP-oriented econometric model is considered relatively more robust and appropriate to long term planning when compared with the demographic employment-based model. The declining trend of the labour force[10] is unprecedented and is not conducive to economic development of Hong Kong. This declining trend in labour force may be subject to policy changes in the future and for the purpose of long-term visionary planning, forecasts of future floorspace demand should better not be constrained by this factor.

It is worth noting that vacancy rates for employment floorspace are currently low and the lack of available space is likely to cause some demand to go unmet. Therefore, the 'true' demand

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[9] $\Delta\log(\text{Floorspace})_t = \alpha + \beta_1\Delta\log(\text{HKGDP})_t + \beta_2\Delta\Delta\log(\text{GDGDP})_t + \mu_t$

$\mu_t = \theta_1\varepsilon_{t-1} + \varepsilon_t$

$\triangle\log$ represents log-difference, which approximates to percentage change (or growth rates). The interpretation of β_1 is that a 1% increase in Hong Kong's real GDP leads to a β_1 % increase in floorspace. $\Delta\Delta\log$, or difference of log-difference, approximates to the change in growth rates. The results obtained would then be adjusted for backlog of latent demand.

[10] According to "Hong Kong Labour Force Projections for 2015 to 2064" by Census and Statistics Department (October 2015), labour force is anticipated to decline from 2018.

is likely being underestimated given the insufficient supply. For this reason, an adjustment was made for latent demand in the econometric model based on the current vacancy rate and the assumed natural vacancy rate (i.e. normal market friction).

Base Case forecasts were produced in the econometric model using the best estimates of input variables. A High Growth scenario and a Low Growth scenario were also developed for comparison[11].

■ The High Growth scenario assumes strong economic growth (relative to the base case), strong growth in both Hong Kong and Guangdong, high labour demand and strong development of high value-added services requiring floor space.

■ The Low Growth scenario assumes low economic growth (relative to the base case), weaker growth in both Hong Kong and Guangdong, lower labour demand and less high-value added services requiring floor space.

Due to the long lead time in land reservation, it is desirable to be more visionary in planning and at the same time takes into account the principle of prudent land utilisation. As such, it is suggested to reserve land according to the floorspace demand in the Base Case, and then scale back, if necessary and appropriate. In parallel, it is recommended that regular reviews to be conducted in the short-medium term to assess and monitor the evolving trends in floorspace demand.

Figure 2.1 shows the projections of the econometric model under three scenarios.

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[11]   For the Base Case, the assumed growth rates for Hong Kong real GDP are (i) 2.5% for 2014, (ii) 2% for 2015 (i.e. mid-point of the 1-3% government forecast), (iii) 3.5% for 2016-19, and (iv) 3.5% for 2020-21, 3% for 2022-25 and 2.5% for 2026-41 (i.e. the base case assumptions of the Working Group on Long-Term Fiscal Planning). The assumed growth rates for Guangdong real GDP are (i) gradual change from 8.5% to 6.5% from 2013 to 2023, and (ii) growth changes by -0.1 percentage point per annum from 2024 to 4.5% in 2041.
   For the High Growth Scenario, the assumed growth rates for Hong Kong real GDP are (i) same as the Base Case for 2014 and 2016-19, (ii) 3% for 2015, and (iii) growth is 0.5 percentage point per annum higher than the Base Case for 2020 and beyond. The assumed growth rates for Guangdong real GDP are (i) gradual change from 8.5% to 6.8% for 2013-23, and (ii) growth changes by -0.1 percentage point per annum to 5% for 2024-2041.
   For the Low Growth Scenario, the assumed growth rates for Hong Kong real GDP are (i) same as the Base Case for 2014-19, (ii) 1% for 2015, and (iii) growth is 0.5 percentage point per annum lower than the Base Case for 2020 and beyond. The assumed growth rates for Guangdong real GDP are (i) gradual change from 8.5% to 5.8% for 2013-23, and (ii) growth changes by -0.1 percentage point per annum to 4% for 2024-2041.

Figure 2.1   Econometric model results
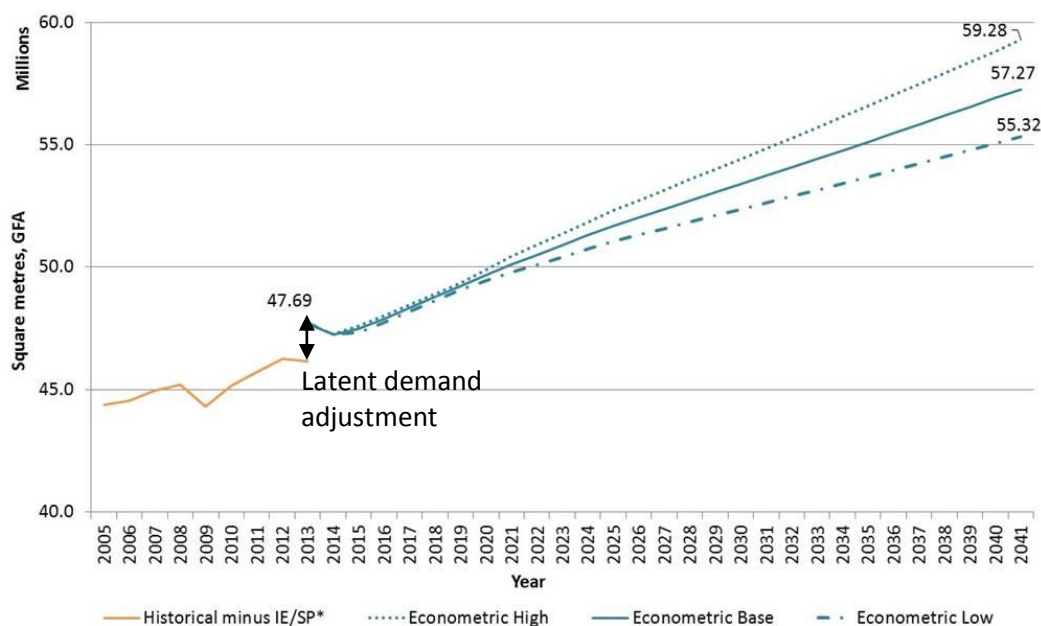
Historical line excludes Industrial Estates (IE) and Science Park (SP)

Splitting Aggregate Floorspace Forecasts According to Forecasting Typology

The econometric model only produces aggregate floorspace estimates, which need to be split into different land use typologies as discussed previously.

Both market forces and policy initiatives would have an impact on the split of land uses. These two factors have been taken into account when deriving splits shown in **Table 2.3.** For Grade A offices, Hong Kong's continued development, and strong edge as a financial centre, "gateway to China" and super-connector between Mainland and the world will continue to attract foreign and mainland firms to setup regional headquarters. The forecast growth in modern logistics demand is the key driver of the increase split for Special Industries. Given relatively large amount of baseline stock, the share of Industries has a relatively mild growth in percentage despite increasing demand for general logistics/warehousing uses. The decrease in General Business reflects competing demand for floorspace from other typologies, as well as conversion of space in industrial buildings to other higher value uses.

Table 2.3   Proposed splits for distributing aggregate forecast results

	2013 (base-line)	Short term (2023)	Medium term (2033)	Long term (2041)
CBD Grade A Offices[12]	10.5%	11.7%	12.9%	14.1%
Non-CBD Grade A Offices[13]	9.9%	9.9%	10.4%	10.9%
General Business[14]	32.8%	28.5%	26.4%	24.3%
Industries[15]	34.7%	34.7%	34.9%	35.1%
Special Industries[16]	12.1%	15.2%	15.4%	15.6%

Note: The figures may not be added up to 100% due to rounding.

Overall Demand Model – Floorspace Requirement Results

This section shows the cumulative additional floorspace required over the forecasting period for the econometric model, after the overall forecasts have been split into the land use typologies and adjusted for vacancy rates. Concerned projection results are shown in **Table 2.4**. For specific land uses, CBD Grade A Offices, Industries and Special Industries are expected to have the most growth.

With Hong Kong's competitive advantages in professional services and the Mainland's vigorous long term economic policy initiatives such as Guangdong Free Trade Zones and "Belt and Road" initiatives, Hong Kong has the potential to position itself as the financial and business hub of the Greater PRD Region and to perform the role of a "super-connector" between the Mainland and the world in terms of capital investment and services. Grade A Offices demand is thus expected to grow. The increase in modern logistics demand and to a lesser extent general warehousing is driving the growth in Industries and Special Industries floorspace in the long term. Both office and industrial floorspace growth will displace General Business, hence the decrease of over 1.7 million m^2 by 2041.

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[12] Assumed an increase by about 1.2 percentage point per decade, displacing General Business, due to factors such as expansion of Chinese financial services firms and increase Renminbi related financial services within Hong Kong, and increased demand for both core and non-core commercial office space for the expected increase in size and scale of Chinese and non-Chinese multinational corporations in Hong Kong.

[13] Assumed an increase over the medium and long terms by about 0.5 percentage point per decade, displacing General Business, due to similar reasons for the CBD Grade A Offices mentioned above but Non-CBD Grade A Offices are expected to take some time to build up agglomeration and clustering effect before demand grows more significantly.

[14] Assumed that General Business is a flexible category which expands or contracts depending on relative demand coming from other land uses. The decreasing trend is expected to be taken by Industries (due to growing general logistics/warehousing demand), Special Industries (especially modern logistics) and Grade A Offices.

[15] Assumed to be flat over short term due to growing demand for general logistics/warehousing facilities but declining manufacturing activities. Increasing trend is expected over the medium and long terms mainly due to the continuously general logistics/warehousing demand.

[16] Assumed an increasing trend mainly due to growing modern logistics demand driven by the growths of local domestic economy and that of Guangdong. Besides, the development of regional distribution centres with value-added logistics services may also drive demand for modern logistics floorspace.

Table 2.4   Cumulative additional floorspace demand in 2023, 2033 and 2041 (compared to 2013) by splits under econometric model (base case scenario) (million m^2, GFA)

	Vacancy rate adjustment[7]	2023	2033	2041
CBD Grade A Offices	10%	0.97	2.04	3.11
Non-CBD Grade A Offices	10%	0.33	0.95	1.54
General Business	10%	-1.11	-1.25	-1.71
Industries	8%	1.09	2.41	3.52
Special Industries	6%	1.93	2.56	3.10
Total	-	**3.20**	**6.72**	**9.57**

Note: The above figures are subject to rounding errors.

Overall Demand Model – Land Requirements Results

When converted to land requirements, the econometric model forecasts an additional total of 138ha required for employment land by 2041 (**Table 2.5**).

Similar to the Sectoral Model, the forecast figures in **Table 2.5** are estimates representing the net site area only based on the assumed PRs with reference to the latest planned developments. They have not yet included the land requirements for road networks and other supporting infrastructure. Besides, other factors such as site discounting factors and site constraints would have an impact on the actual land requirements. As these factors will change from site to site, only the net site area, which is the minimum land requirement, is reported.

Table 2.5   Total cumulative additional net site area (compared to 2013) under econometric model (base case scenario) (net site area in ha)

	2023	2033	2041
CBD Grade A Offices	8	17	26
Non-CBD Grade A Offices	3	8	13
General Business	-10	-11	-16
Industries	11	25	37
Special Industries	48	64	78
Total	**60**	**103**	**138**

Note: The above figures are subject to rounding errors.

Demand to be compared to Supply Forecasts

Table 2.6 provides the existing and forecast demand from the econometric model. This will be compared to the supply forecasts to estimate the surplus/deficit for each land use typology.

Table 2.6   **Summary of Existing and Future Potential Demand of Employment Uses in GFA (million m^2)**

	Existing Demand	Short Term Demand (up to 2023)	Medium Term Demand (up to 2033)	Long Term Demand (up to 2041)
CBD Grade A Offices	5.1	6.0	7.1	8.2
Non-CBD Grade A Offices	4.8	5.1	5.7	6.3
General Business	15.8	14.7	14.5	14.1
Industries	16.5	17.5	18.9	20.0
Special Industries	5.6	7.5	8.2	8.7
Total	**47.8**	**50.8**	**54.4**	**57.3**

Note: The above figures are subject to rounding errors.

3 Supply and Demand Assessment

Supply Forecasts

Taking into account the existing and major future potential supply of employment uses[17], the supply results are summarised as follows (**Table 3.1**).

Table 3.1 **Summary of Existing and Future Potential Supply of Employment Uses in GFA (million m²)**

	Existing Supply	Short Term Potential Supply (up to 2023)	Medium Term Potential Supply (up to 2033)	Long Term Potential Supply (up to 2041)
CBD Grade A Offices[(1)]	4.9	5.6	6.8	7.1
Non-CBD Grade A Offices	4.5	5.6	7.5	7.6
Overall Grade A Offices	9.4	11.2	14.3	14.7
General Business	15.9[18]	16.1	17.5	17.6
Industries	16.5	16.7	15.2	14.9
Special Industries	3.2	4.2	5.4	8.0
Special Industries - Modern Logistics	*1.6*	*2.1*	*--*	*--*
Special Industries - Data Centre	*0.4*	*0.7*	*--*	*--*

(1) In the short term the CBD is defined as Sheung Wan, Central, Wan Chai, Causeway Bay, and Tsim Sha Tsui (including West Kowloon Reclamation to the south of Jordon Road). In the medium to long term, the East Kowloon CBD2 developments are included in the supply of CBD Grade A offices.

Major known or planned development projects are summarised as follows:

CBD Grade A Offices

In the short term, up to the year 2023, a number of major planned/on-going developments are identified to add to the CBD Grade A Office floorspace supply, which would increase the supply to about 5.6 million m². These new supply planned for the short term is focused around redevelopment projects in the existing CBD and new developments in West Kowloon. In the medium to long term, the majority of supply will come from the redevelopment of Wan Chai Government Offices and the Kowloon East CBD2 development, which will increase the total supply to about 7.1 million m².

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[17] Future potential supply includes development proposals in major studies and planned/committed developments such as Kwu Tung North New Development Area (NDA), Hung Shui Kiu NDA, Yuen Long South Development, Kai Tak Development, West Kowloon Cultural District, etc. Assumptions on major redevelopment projects have also been taken into account. However, it should be noted that the availability of the land and actual implementation programmes may be subject to change.

[18] About 9% or 1.43 million m² of General Business floorspace was categorised as "Other Uses" in the 2014 Area Assessments.

Non-CBD Grade A Offices

Short term supply of Non-CBD Grade A Offices, which mainly includes developments in Kai Tak, Kowloon Bay and Kwun Tong, will increase supply by over 1 million m^2. In the medium to long term, major sources of supply such as Tung Chung New Town Extension, Hung Shui Kiu NDA as well as potential redevelopments from industrial stock, are forecast to increase supply by a further 2 million m^2 to a total of about 7.6 million m^2 by 2041.

General Business

For General Business, in the short term, sales sites in Cheung Sha Wan and Kwai Chung for General Business use will provide about 28,000 m^2 of floorspace. In the medium to long term, the planned commercial zones at the Tung Chung New Town Extension and the Hung Shui Kiu NDA, as well as potential redevelopments from industrial stock, are expected to increase total supply to about 17.6 million m^2 by 2041.

Industries

For Industries, in the short term, sites zoned "Industrial" in Fanling, Kwai Chung/Tsuen Wan and Fo Tan are potential areas of industrial floorspace supply. On the other hand, in the medium to long term, increased redevelopment of the industrial space for higher value uses is forecast to decrease supply from 16.7 million m^2 in 2023 to 14.9 million m^2 by 2041.

Special Industries

For Special Industries, new supply in the short term will include a number of Government sites that have recently been sold specifically for Modern Logistics developments. In the medium and long term, additional supply for Special Industries will be created through the realisation of major planned development that includes the Kwu Tung North and Hung Shui Kiu NDAs, Topside Development at Hong Kong Boundary Crossing Facilities (HKBCF) Island of Hong Kong-Zhuhai-Macao Bridge (HZMB), Tuen Mun Areas 40 & 46 and the Lok Ma Chau Loop[19]. Together a total of 3.9 million m^2 of new floorspace supplies will be generated in the medium and long term.

Overview of Supply and Demand Assessment

Based on the base case scenario under the econometric model, a summary of the supply and demand assessments for all the assessed land use typologies is provided in **Table 3.2** below.

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[19] Including 411,000 m^2 floorspace for High-tech R&D/Cultural and Creative Industries.

Table 3.2   Summary of Findings of Supply and Demand Assessments of Economic Land Uses

		Short Term (By Year 2023)	Medium Term (By Year 2033)	Long Term (By Year 2041)
		Surplus or Shortfall after Deducting Major Planned/Committed/Under Advance Planning Supplies		
		Land Area in Net Site Area (ha) and Floorspace in GFA (m²)		
Grade A Offices	CBD	Deficit: 4.0 ha (0.48M m²)	Deficit: 2.6 ha (0.31M m²)	Deficit: 8.9 ha (1.06M m²)
	Non-CBD	Surplus:4.6 ha (0.55M m²)	Surplus:15.1 ha (1.81M m²)	Surplus: 10.5 ha (1.26M m²)
	Overall	Surplus: 0.6 ha (0.07M m²)	Surplus: 12.5 ha (1.50M m²)	Surplus: 1.6 ha (0.2M m²)
General Business		Surplus: 12.9 ha (1.42M m²)	Surplus: 27.1 ha (2.98M m²)	Surplus: 32.3 ha (3.55M m²)
Industries		Deficit: 8.4 ha (0.80 M m²)	Deficit: 38.0ha (3.61M m²)	Deficit: 53.6 ha (5.09M m²)
Special Industries		Deficit: 84.6 ha (3.39M m²)	Deficit: 70.0 ha (2.80M m²)	Deficit: 17.4 ha (0.7 M m²)
Total Land Area (Net Site)[(1)]		97.0 ha	110.6 ha	79.9 ha

(1)   The total deficit land area is the sum of deficit land area of CBD Grade A Offices, Industries and Special Industries.

Note: The above may not be added up to total due to rounding.

Graphs showing the supply and demand of for all the assessed land use typologies from now to long term are shown in **Figures 3.1 to 3.5** below.

It is concluded that CBD Grade A Offices, Industries and Special Industries will experience shortfalls over the whole projection period. On the other hand, there will be surplus of Non-CBD Grade A Offices and General Business over the whole projection period. A total of about **80ha** additional land (net site area) is estimated to be required in the long term to meet the shortfalls. An overview of the short term supply and demand comparison is summarised below.

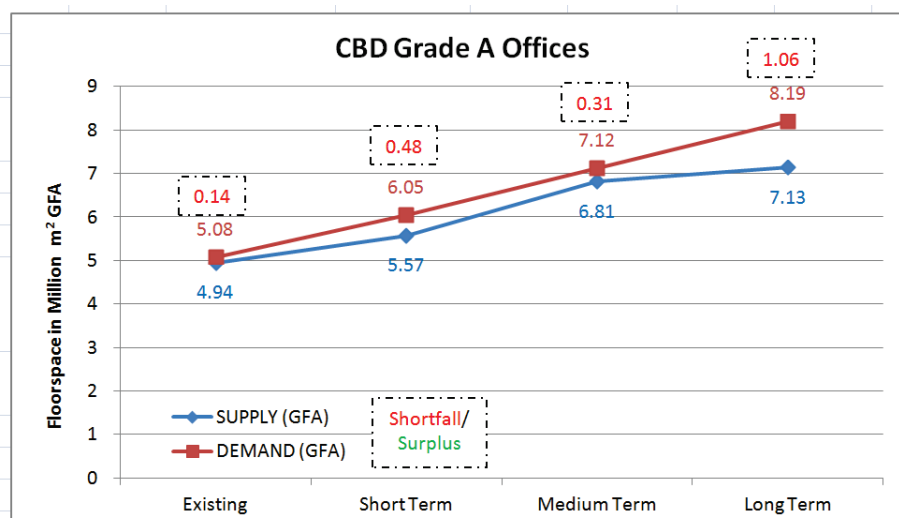**Figure 3.1   Supply and Demand of Floorspace for CBD Grade A Offices**

Figure 3.2   Supply and Demand of Floorspace for Non-CBD Grade A Offices
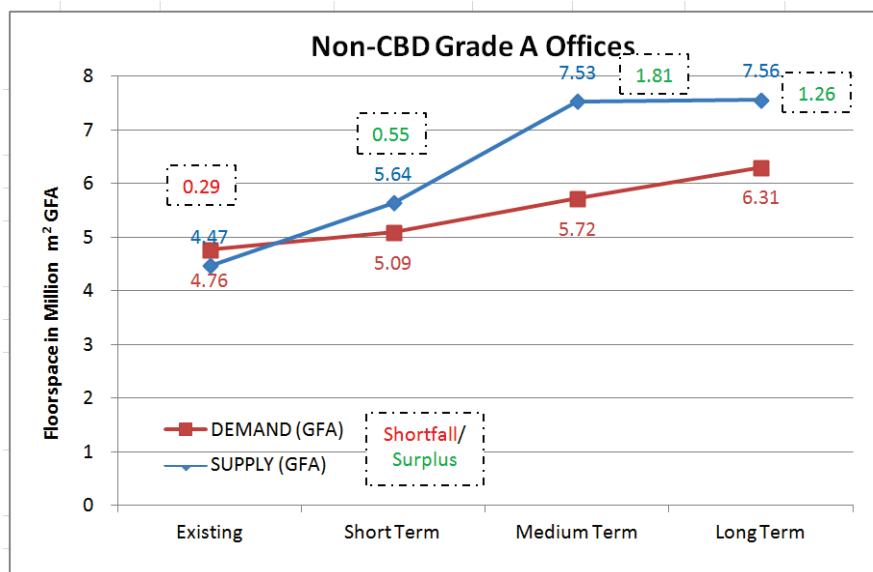

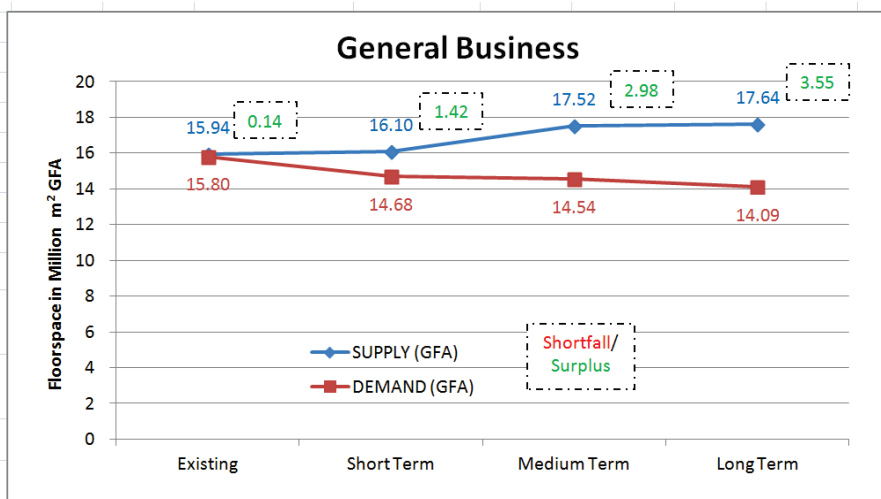**Figure 3.3   Supply and Demand of Floorspace for General Business**

Figure 3.4   Supply and Demand of Floorspace for Industries
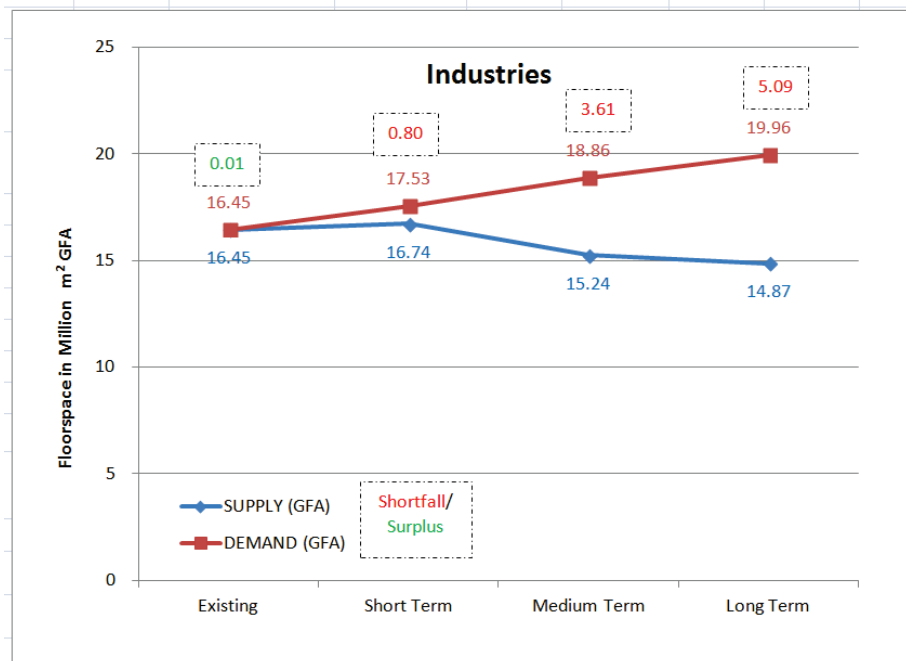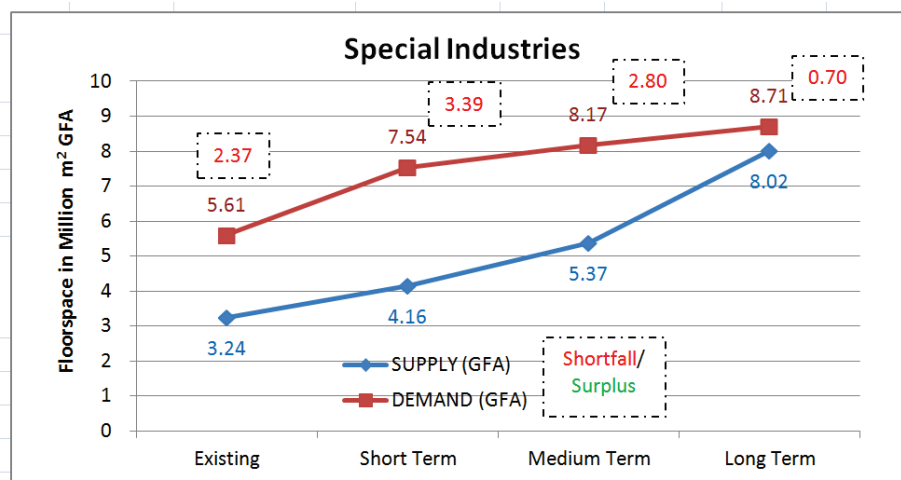

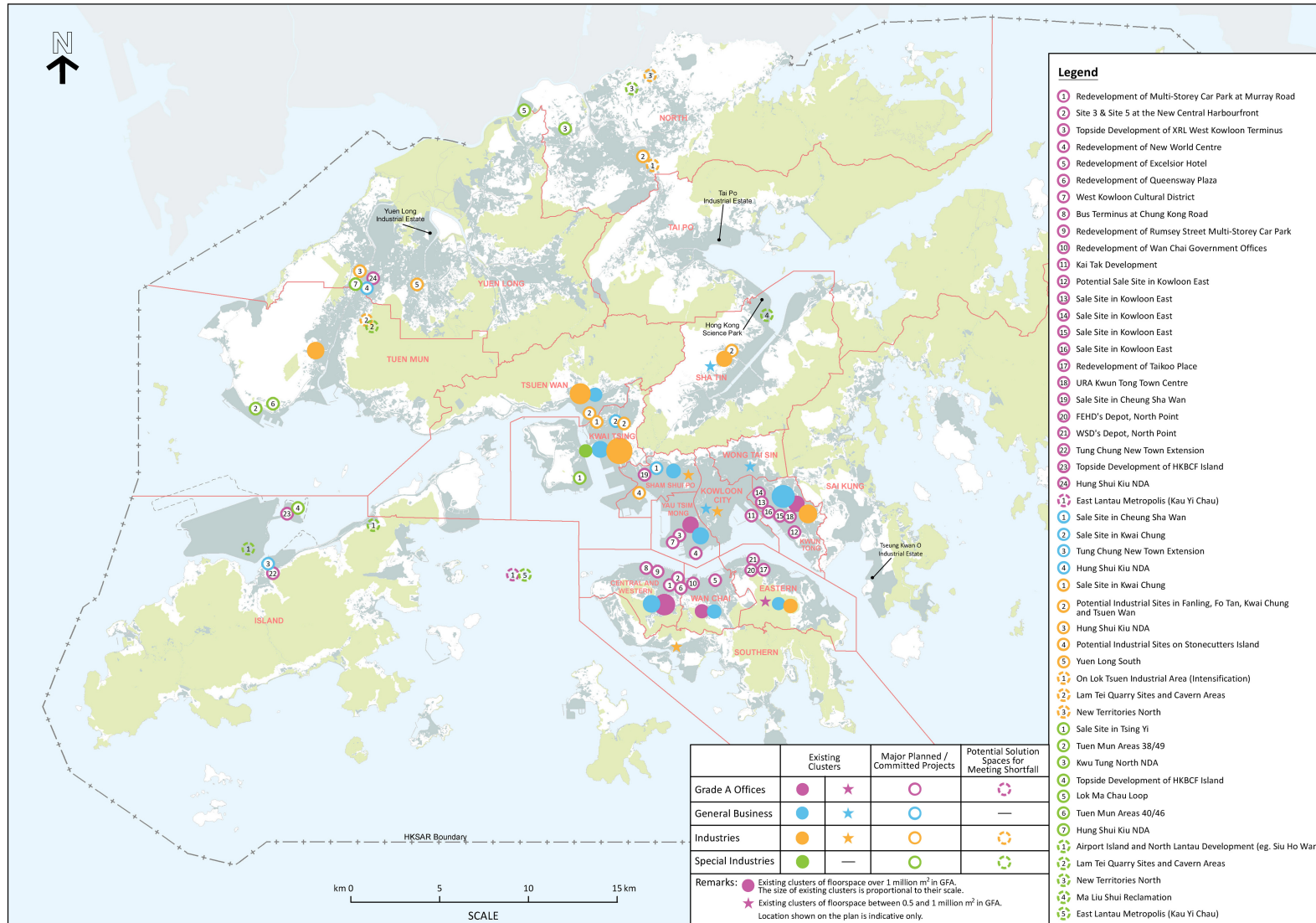**Figure 3.5   Supply and Demand of Floorspace for Special Industries**

Overview of Supply and Demand Assessment in the Short Term

Comparison of the short term supply and demand projections reveals that there will be shortages across several employment land use typologies, including CBD Grade A Offices, Industries and Special Industries. An overview of the short term supply and demand comparison is summarised below:

■ For CBD Grade A Offices, there is currently a shortfall of about 0.14 million m^2 GFA. With the projected growth of Hong Kong's overall economy and continual development of the financial services sector riding on the Central Government's economic policy (such as "Belt and Road" initiative and Asian Infrastructure Investment Bank), steady increase in demand for CBD Grade A Offices floorspace is expected. Despite a number of CBD Grade A Office projects that are expected to be realised (e.g. Topside Development of Express Rail Link (XRL) Terminus at West Kowloon, redevelopment of Queensway Plaza and multi-storey car park at Murray Road), a shortage of about 0.48 million m^2 in GFA is anticipated by 2023.

■ For Non-CBD Grade A Offices, there is currently a shortfall of about 0.29 million m^2 GFA. While a steady increase in demand is projected, a number of projects (including Kai Tak Development, several government sale sites in Kwun Tong and Kowloon Bay Business Areas, and redevelopments in Taikoo Place and Kwun Tong Town Centre) will contribute to the short term supply, resulting in a surplus of about 0.55 million m^2 GFA by 2023.

■ General Business shows an existing surplus of about 0.14 million m^2 GFA. The surplus is expected to increase to about 1.42 million m^2 in the short term. The supply will remain stable with only 0.16 million m^2 increase mainly from redevelopment of existing industrial buildings and government sale sites in Cheung Sha Wan and Kwai Chung. On the demand side, a drop of about 1.12 million m^2 GFA is projected, noting that such uses are by nature very footloose and not locational sensitive.

■ The demand for Industries is forecast to experience a considerable increase in the short term, mainly driven by the demand for general logistics/ warehousing uses. A short term shortage of supply of about 0.80 million m^2 GFA is anticipated despite the new supply from a government tender site in Kwai Chung and other potential industrial sites in Tsuen Wan, Fo Tan and Fanling.

■ Special Industries currently have a shortfall of about 2.37 million m^2 GFA and the shortfall is expected to increase to about 3.39 million m^2 in the short term. A significant increase in demand is expected, mainly driven by the growth in modern logistics. On the supply side, limited new land would be available, except for a few logistics sites in Tsing Yi and Tuen Mun as well as some sites for data centres.

Major planned/committed/potential sites for development of Grade A Offices, General Business, Industries and Special Industries are shown in **Figure 3.6**.

Legend

1. Redevelopment of Multi-Storey Car Park at Murray Road
2. Site 3 & Site 5 at the New Central Harbourfront
3. Topside Development of XRL West Kowloon Terminus
4. Redevelopment of New World Centre
5. Redevelopment of Excelsior Hotel
6. Redevelopment of Queensway Plaza
7. West Kowloon Cultural District
8. Bus Terminus at Chung Kong Road
9. Redevelopment of Rumsey Street Multi-Storey Car Park
10. Redevelopment of Wan Chai Government Offices
11. Kai Tak Development
12. Potential Sale Site in Kowloon East
13. Sale Site in Kowloon East
14. Sale Site in Kowloon East
15. Sale Site in Kowloon East
16. Sale Site in Kowloon East
17. Redevelopment of Taikoo Place
18. URA Kwun Tong Town Centre
19. Sale Site in Cheung Sha Wan
20. FEHD's Depot, North Point
21. WSD's Depot, North Point
22. Tung Chung New Town Extension
23. Topside Development of HKBCF Island
24. Hung Shui Kiu NDA
25. East Lantau Metropolis (Kau Yi Chau)

1. Sale Site in Cheung Sha Wan
2. Sale Site in Kwai Chung
3. Tung Chung New Town Extension
4. Hung Shui Kiu NDA

1. Sale Site in Kwai Chung
2. Potential Industrial Sites in Fanling, Fo Tan, Kwai Chung and Tsuen Wan
3. Hung Shui Kiu NDA
4. Potential Industrial Sites on Stonecutters Island
5. Yuen Long South
1. On Lok Tsuen Industrial Area (Intensification)
2. Lam Tei Quarry Sites and Cavern Areas
3. New Territories North

1. Sale Site in Tsing Yi
2. Tuen Mun Areas 38/49
3. Kwu Tung North NDA
4. Topside Development of HKBCF Island
5. Lok Ma Chau Loop
6. Tuen Mun Areas 40/46
7. Hung Shui Kiu NDA
1. Airport Island and North Lantau Development (eg. Siu Ho Wan)
2. Lam Tei Quarry Sites and Cavern Areas
3. New Territories North
4. Ma Liu Shui Reclamation
5. East Lantau Metropolis (Kau Yi Chau)

	Existing Clusters		Major Planned / Committed Projects	Potential Solution Spaces for Meeting Shortfall
Grade A Offices	●	★	○	⬭
General Business	●	★	○	—
Industries	●	★	○	⬭
Special Industries	●	—	○	⬭

Remarks: ● Existing clusters of floorspace over 1 million m² in GFA. The size of existing clusters is proportional to their scale.

★ Existing clusters of floorspace between 0.5 and 1 million m² in GFA. Location shown on the plan is indicative only.

SCALE

km 0   5   10   15 km

HKSAR Boundary

19

Overview of Supply and Demand Assessment in the Medium and Long Term

In the medium term, a number of major projects are anticipated to be implemented to provide new supply for a number of employment uses.

■ For CBD Grade A Offices, a steady increase in demand is expected to continue. On the supply side, there is an estimated increase of a total of about 1.24 million m^2 GFA in the medium and long term (mainly from Kai Tak Development by phases). The shortage is expected to increase from about 0.31 million m^2 GFA in the medium term to about 1.06 million m^2 in the long term.

■ For Non-CBD Grade A Offices, steady increase in demand is projected throughout the medium to long term. On the supply side, several major planned projects such as Hung Shui Kiu NDA, Tung Chung New Town Extension and Topside Development at HKBCF Island of HZMB are expected to contribute supply in the medium term. In addition, redevelopment of existing industrial buildings will be another major source of new supply. It is anticipated that there will be a surplus of about 1.81 million m^2 and about 1.26 million m^2 GFA in the medium and long term respectively. It is worth noting that in reality a considerable amount of service trades (such as clinics and health/beauty parlours) and even some educational/religious institutions can be found in this type of premises, the demand of which has not been taken into account in the current projection. As such, the actual surplus of non-CBD Grade A offices could be less.

■ For General Business, a surplus is anticipated in the medium and long term because of the continuous increase in supply from redevelopments of industrial buildings in addition to new office developments in the Hung Shui Kiu NDA and Tung Chung New Town Extension. The surplus is estimated to be about 2.98 million m^2 and about 3.55 million m^2 in the medium and long term respectively. The rental prices for General Business floorspace are expected to be driven down by market forces in view of excessive supply. Due to the increasing demand for industrial floorspace (as mentioned in the bullet below), fewer industrial buildings may eventually be redeveloped compared to current trends, resulting in less surplus of General Business floorspace.

■ For Industries, with the anticipated growing demand for industrial floorspace and continuous displacement or redevelopment of industrial buildings for non-Industrial uses, the gap between supply and demand is expected to continue to widen. Shortfalls of about 3.61 million m^2 and about 5.09 million m^2 GFA are anticipated in the medium and long term respectively despite the new supply from the Hung Shui Kiu NDA, Yuen Long South and Stonecutters Island. In view of such continuous shortfall in industrial floorspace and the continuous surplus of General Business floorspace (as mentioned in the bullet above), redevelopments of industrial buildings may be reduced in the future.

■ For Special Industries, the demand is anticipated to increase steadily in the medium to long term. Meanwhile, supply is expected to catch up with the realisation of some planned developments, including Kwu Tung North and Hung Shui Kiu NDAs, Topside Development at HKBCF Island of HZMB, Tuen Mun Areas 40 and 46, and Lok Ma Chau Loop. Shortage in supply is expected to reduce to about 2.80 million m^2 and about 0.70 million m^2 GFA in the medium and long term respectively.

Proposed Broad Spatial Strategies

Broad spatial strategies are proposed having regard to the supply and demand assessments, the spatial distribution of existing/planned/committed developments and transport infrastructure, two long term strategic growth areas contemplated by the Government (i.e. East Lantau Metropolis (ELM) and New Territories North (NTN) Development), the locational advantages of new development nodes in Hong Kong in local and regional context, and other relevant factors (such as the environmentally/ecologically sensitive areas in Hong Kong). There broad spatial strategies focus on one business core and three primary axes (**Figure 3.7**).

Metropolitan Business Core

This will cover the traditional CBD and Kowloon East (CBD2), which would remain the centroid of Hong Kong, and the ELM with a CBD3 in the distant future. ELM could become an extended urban core near Hong Kong Island and capitalise on the new economic infrastructure in North Lantau. The three CBDs could serve different functions complementing one another. The traditional CBD would likely focus on high value-added financial services and advanced producer services, while CBD2 in Kowloon East may provide locational choices for enterprises which are more cost sensitive. The CBD3 at ELM may offer modern, innovative and quality premises, creating a financial and producer services hub which is strongly tied with the airport and Hong Kong's regional functions, capitalising on the new economic infrastructure on Lantau. The planning mindset for developing CBD2 in Kowloon East and the proposed CBD3 in ELM are to provide more economic and employment generating land use developments away from the urban area with a view to redressing the current home-job imbalance, particularly in the New Territories.
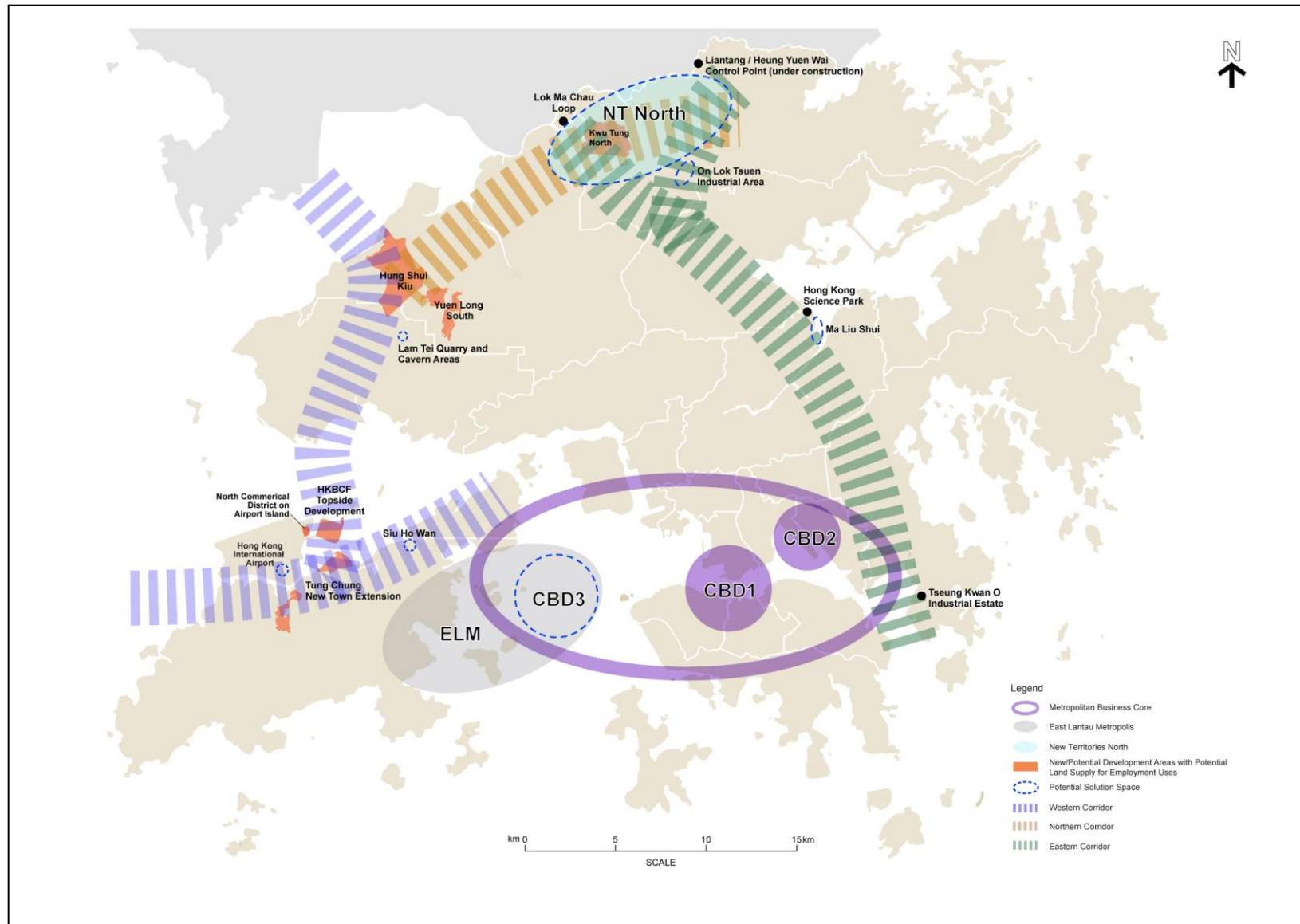
Western Corridor

With various existing and future strategic transport infrastructure (such as the existing Hong Kong International Airport and Hong Kong-Shenzhen Western Corridor, and the Tuen Mun-Chek Lap Kok Link (TM-CLKL), HZMB and Three-Runway System under construction/planning), the western part of the territory will become an unparalleled international and regional gateway of Hong Kong. Coupled with strategic economic developments such as the Airport North Commercial District, Topside Development at HKBCF Island of HZMB, business/commercial hub in Tung Chung New Town Extension, commercial/logistics development in Hung Shui Kiu NDA, and logistics uses in Tuen Mun West, this Western Corridor will be well-placed to embrace the future economic opportunities arising from the Guangdong Free Trade Zones and the "Belt and Road" initiatives. The large population in the Northwest New Territories will also provide the necessary labour supply.

Eastern Corridor

The Eastern Corridor comprises new development of high technology and knowledge based industries such as data centres, research and development (R&D), innovation and technology and other related uses in the eastern part of Hong Kong such as Tseung Kwan O, Sha Tin, Kwu Tung North and Lok Ma Chau Loop. The Corridor also reinforces the existing development and facilities in the Tseung Kwan O Industrial Estate, Science Park and tertiary education institutes. As mentioned in the 2016 Policy Address, a site near the future Liantang/Heung Yuen Wai Boundary Control Point (LT/HYW BCP) would be considered for a possible science park/industrial estate. The potential Ma Liu Shui Reclamation together with the site to be vacated by the Sha Tin Sewage Treatment Works would offer further potential for development of R&D, higher education, housing and/or other uses. The Corridor is in close proximity to the CBD2 in Kowloon East which would support the development of the technological sector.

Figure 3.7   Proposed Broad Spatial Strategies

Northern Corridor

The Northern Corridor essentially covers the boundary areas. It commands a strategic location with the presence of six existing boundary crossings[20] and LT/HYW BCP under construction and being in close proximity to Shenzhen, which is strong in R&D and technological development. This axis spanning from Lok Ma Chau to the future LT/HYW BCP will be most suited to provide space for warehousing, R&D, and other logistics support, facilitate growth of emerging industries and create employment opportunities for existing and future communities living in the areas. The Corridor includes the NTN Development which is under study for residential, commercial and industrial developments.

Potential Solution Spaces for Shortfall Land Use Typologies

Based on the broad spatial strategies proposed above, the following potential solution spaces are suggested for CBD Grade A Offices, Industries and Special Industries to meet projected shortfalls as depicted above.

CBD Grade A Offices

Competitiveness of our economy hinges heavily on the ability to attract multinational corporations (MNCs) to set up their offices, in particular regional headquarters, in Hong Kong. Noting that regional corporations and MNCs always aspire to anchor their offices at prime and prestigious locations, they are less willing to compromise at locations outside CBDs. As such, ample and timely supply of CBD Grade A Offices is crucial for Hong Kong to continue to attract MNCs. It is therefore important to provide sufficient space to address the continuous strong demand.

The proposed CBD3 at ELM within the Metropolitan Business Core is considered to be a potential solution space to meet the shortfall of 9 ha in the long term. Being just 4km from the Hong Kong Island West, ELM could efficiently connect with the existing CBD and hence reinforce the existing two CBDs around the Victoria Harbour as well as create a new metro area in the territory. Being developed on reclaimed land, ELM could allow the greatest flexibility to apply the latest planning ideas, smart city and low-carbon concepts.

Industries and Special Industries

Given the limited supply of suitable and readily available land in the territory, it would be difficult to meet all the short-term shortfall. In the medium to long term, supply is expected to catch up through provision of land in the following proposals:

■ On Lok Tsuen in Fanling (intensification of existing industrial area) – Making reference to the 2014 Area Assessments, it has proposed to explore the possibility of relaxing the existing development restrictions under the Outline Zoning Plan at the "I" zone of On Lok Tsuen in Fanling with a view to increasing industrial floorspace supply and better utilising the land resource[21].

■ NTN – Given the scale of the potential development areas identified in the ongoing study and their close proximity to the boundary, a major hub comprising conventional industrial uses as well as special industries can potentially be developed with the focus for cross-boundary businesses/operations. This would bring synergy and agglomeration effects to make NT North a growth area for modern industries and high-tech employment. This would allow sufficient employment opportunities to be created to serve the existing and future population.

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[20] The six existing boundary crossings area Shenzhen Bay Port, Lok Ma Chau Spur Line, Lok Ma Chau, Lo Wu, Sha Tau Kok and Man Kam To.

[21] The enhancement initiatives for On Lok Tsuen "I" areas including the relaxation of building height restriction from 25m to 65m (excluding basements) were gazetted in January 2016.

- <u>ELM</u> – With potential for large scale development, the Government positions ELM as CBD3. Part of the land in the area could also meet the demand for low-pollution industries/special industries. Smart production and modern logistics activities could also anchor on the ELM to capitalise on the location advantage of airport and regional traffic infrastructure in the west part of Hong Kong. This would enable a more balanced and self-contained development in the strategic growth area.

- <u>Lam Tei Quarry Sites and Cavern Areas</u> – After the completion of the current quarrying contract in 2022, the Lam Tei Quarry site and its adjoining cavern areas could potentially accommodate industrial and special industrial uses given its location between the Tuen Mun and Yuen Long New Towns and the proximity to other potential development such as Hung Shui Kiu NDA and Yuen Long South, which gives the site good development potential and ample labour supply

- <u>Airport Island and North Lantau</u> – There is potential scope to utilise some yet-to-be-developed land on the Airport Island and North Lantau (e.g. Siu Ho Wan) for modern logistics development which can capture the business opportunities of increased air cargo flows, particularly after the Three Runway System is in place.

- <u>Proposed Ma Liu Shui Reclamation</u> – The proposed reclamation was identified in the study on "Enhancing Land Supply Strategy - Reclamation outside Victoria Harbour and Rock Cavern Development". Given the proximity of the site to the Science Park and Chinese University of Hong Kong and its position along the Eastern Corridor, the sites are considered well-suited for high-tech and clean special industries as well as data centre facilities for supporting the growth of technology industries.

- <u>Possible new quarry site(s) to be recommended in ongoing "Identification of New Quarry Sites in Hong Kong – Feasibility Study"</u> - Subject to further investigations, the identified quarry site(s) could be considered for long-term modern logistics development or other special industries upon the closing of the quarry. On the implementation side, it would be beneficial to explore phased closing and rehabilitation of the future quarry to enable early delivery of developable land.

4   Conclusions and Recommendations

Given the forecast growth of Hong Kong's GDP and the decline in Hong Kong's labour force in the forthcoming decades, the long term models of employment floorspace provide divergent results depending on the use of the labour force or GDP as the key driver. The econometric model mainly based on GDP suggests sustained growth in overall employment floorspace demand.

For planning purposes, it is advisable to place more emphasis on demand forecasts from the econometric model – due to the long lead time in land reservation, it is more prudent to be more visionary in planning, i.e. to reserve land for higher floorspace demand, and then scale back if appropriate. It is recommended that regular reviews be conducted in the short-medium term to assess evolving trends in floorspace demand.

Comparisons of demand and supply forecasts suggest a deficit of CBD Grade A Offices, Industries and Special Industries floorspace in the short, medium and long term. A total of about **80 ha** additional land is estimated to be required in the long term to meet the shortfalls.

Four broad spatial strategies have been proposed in order to resolve the long term supply shortage:

- **Metropolitan Business Core**: This will cover the traditional CBD and Kowloon East (CBD2), which would remain the centroid of Hong Kong, and the ELM with a CBD3 in the distant future.

- **Western Corridor**: With various existing and future strategic transport infrastructure, the western part of the territory will become an unparalleled international and regional gateway of Hong Kong. Coupled with strategic economic developments this Western Corridor will be well-placed to embrace the future economic opportunities arising from the Guangdong Free Trade Zones and the "Belt and Road" initiatives.

- **Eastern Corridor**: The Corridor comprises new development of high technology and knowledge based industries such as data centres, R&D, innovation and technology and other related uses in the eastern part of Hong Kong such as Tseung Kwan O, Sha Tin, Kwu Tung North and Lok Ma Chau Loop.

- **Northern Corridor**: The Corridor essentially covers the boundary areas between the West Axis and East Axis. It commands a strategic location with the presence of six existing and one proposed boundary crossings and being in close proximity to Shenzhen, which is strong in R&D and technological development.

Within these broad strategies a range of specific projects and solution spaces have been suggested for CBD Grade A Offices, Industries and Special Industries to meet projected shortfalls.

In addition to the proposed broad spatial strategies, the following key findings and recommendations are made in response to addressing the overall needs of Hong Kong's employment use land supply:

- For Grade A Offices, the distinction between CBD and Non-CBD Grade A Offices floorspace is to a certain extent inter-changeable, depending largely on rental values under market conditions. In view of the shortage of CBD Grade A Offices, their rental would likely be driven up by market forces to a level that the less affordable users would be forced to move to the Non-CBD Grade A Offices. This would to a certain extent help address the shortfall of CBD Grade A Offices in the short and medium term. On the other hand, certain Grade A office users such as MNCs would tend to be locational sensitive (for prestige and/or embedded synergy), and would normally choose to stay in the CBD despite the rising rental. Hence, it will be of vital importance to ensure a steady supply of CBD Grade A Offices to capture this group of users.

- In view of the shortfalls in land supply for Industries and Special Industries, mainly arising from the logistics sector, there is a need to retain the existing "I" zones, particularly those in the vibrant Industrial areas to meet the short to long term demand. On the other hand, action should be taken to identify new sites for Industrial uses, and to facilitate better use of underutilised "I" sites to help increase the supply.

- It is noted that the requirement for economic land use cannot be met merely through provision of land. In realising better and quicker utilisation of the identified potential solution spaces, sufficient "pull factors" or incentives should be provided to attract the market to develop their business from scratch.

- More flexibility should be provided in the land use planning system to allow the business sector to make quicker response to the changing market situation. For instance, land provision for Special Industries could be planned flexibly to suit different types of special Industrial uses, e.g. modern logistics, data centre as well as research and development uses. Furthermore, review on land requirements should be regularly conducted to keep abreast of the market situation.

- Notwithstanding a number of potential solution spaces proposed above, the two strategic growth areas are indispensable since they provide sufficient amount of land, instead of scattered sites in the developed area, for comprehensive development. This is particularly essential in the formation of a new CBD and development of clusters for business activities to foster synergy and agglomeration effect.

- In identifying solution spaces to meet shortfall in economic floorspace, consideration should be given to other land requirement assessments, technical assessment and other factors (such as cost-effectiveness and compatibility with other developments).

- Unpredictable technological breakthroughs, change in business model and mode of production as well as change in policies and social/economic structures could have implications on future demand and land use planning. As such, continuous monitoring of demand should be undertaken to keep abreast of and ensure timely response to the latest market situation.

- It should be noted that long-ranged projections by using econometric model have limitations. The trend of the projection, rather than the precise figures, is more important when interpreting the results.