# Skilled Construction Workers Forecast (2019 – 2023)

Objectives

- To assess the trends of manpower demand and supply in the HK construction industry

- To identify the discrepancies between the demand and supply of the labour market

- To provide information for policy makers on the changes likely to occur in the construction investment and occupational profile of the labour force, and on the broad implications of these changes for training and employment policies

- To help formulate short-term actions and long-term strategies in order to meet the future needs

Manpower plans can never be blueprints in any rigid sense. They should be treated as one among many pieces of information which planners need to assess before taking decisions and then used to help evaluate the risks which exist in the present circumstances (Holden et al., 1990).

Quarterly Gross Value of Construction Works Performed by Main Contractors (at constant (2000) market prices)

Legend: Private sector sites — Public sector sites — Locations other than sites — Total
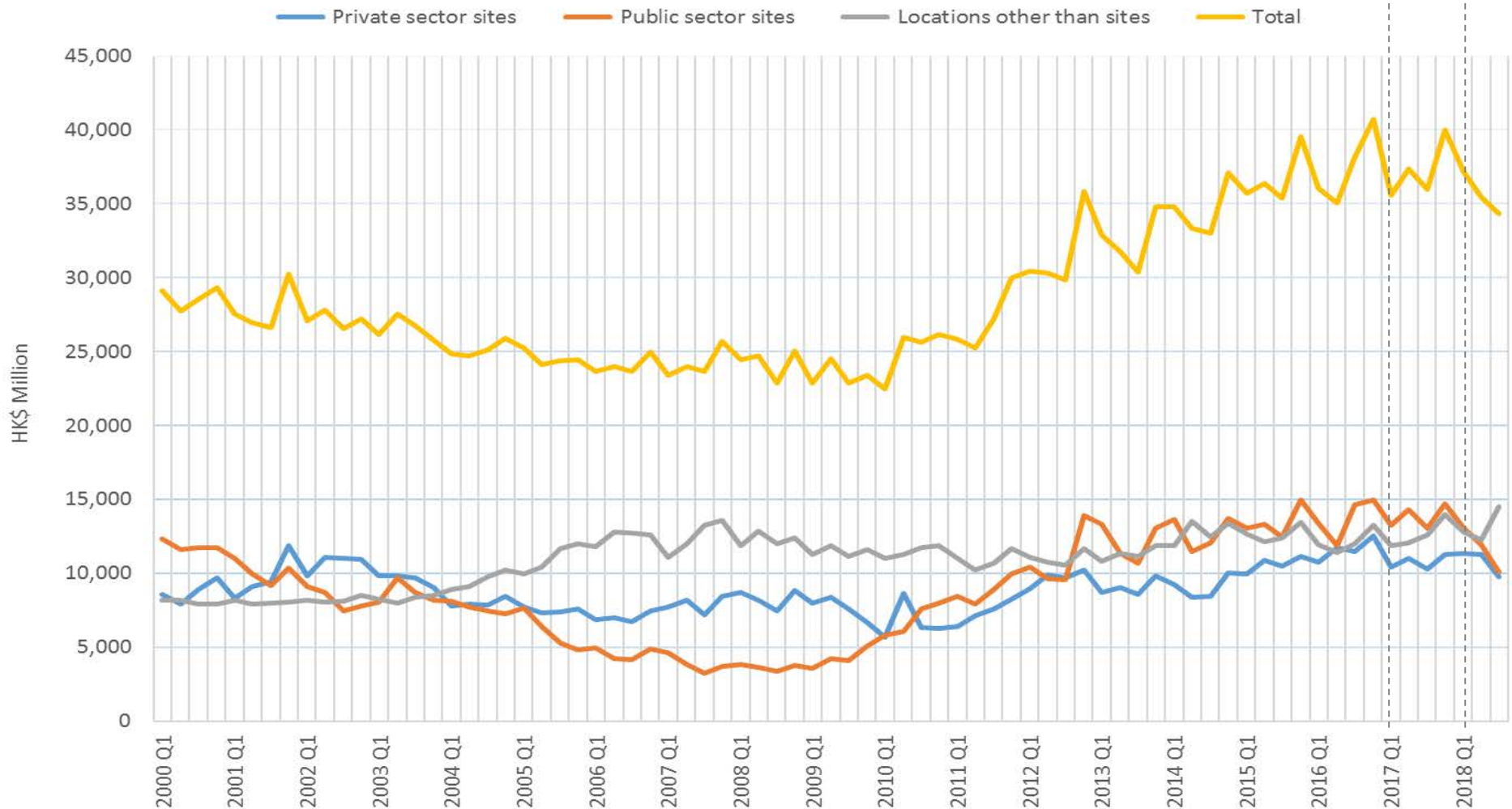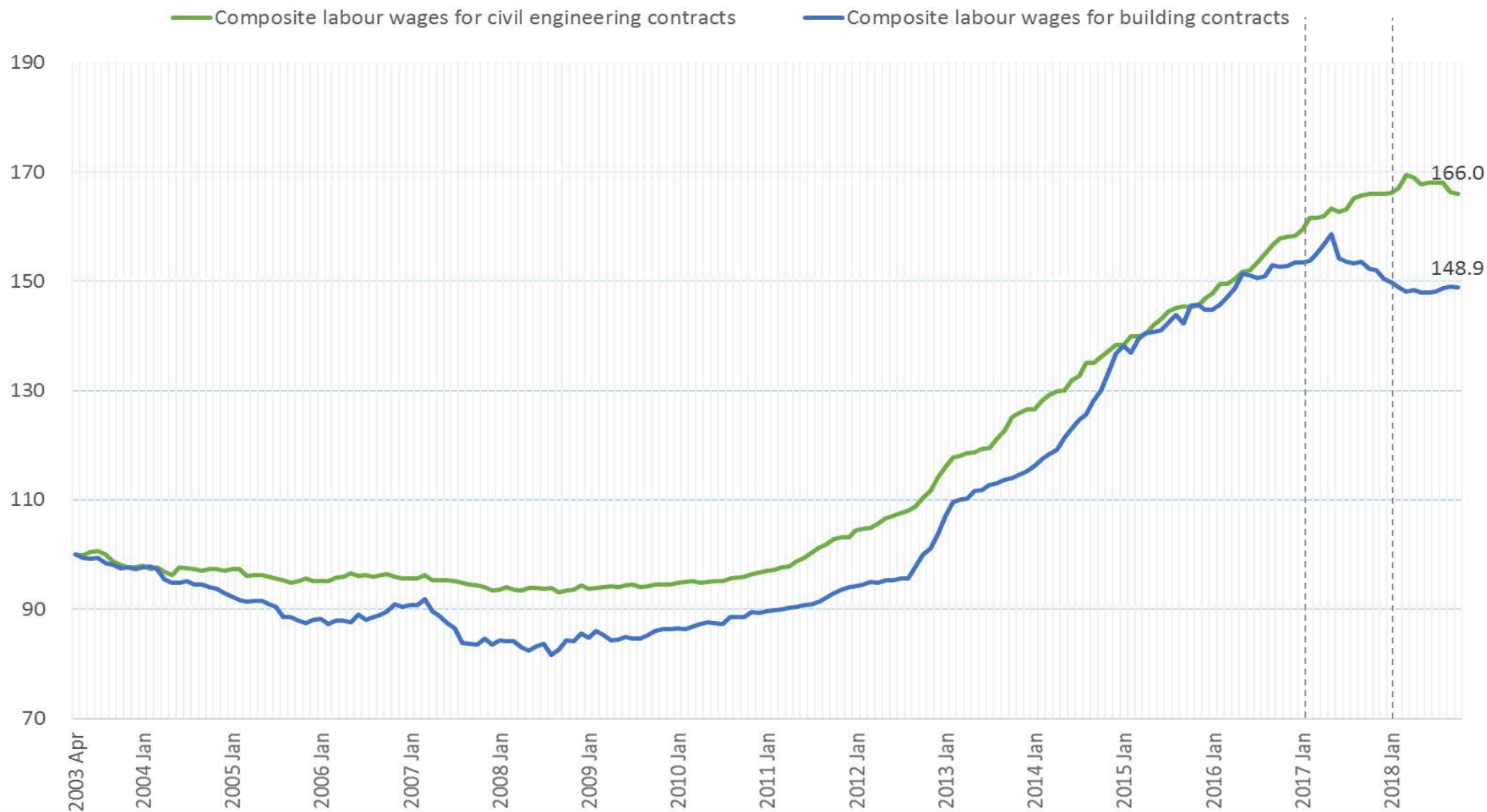
Source: Report on the Quarterly Survey of Construction Output, C&SD [2000 Q1 – 2018 Q3]

Number of Manual Workers Engaged at Construction Sites
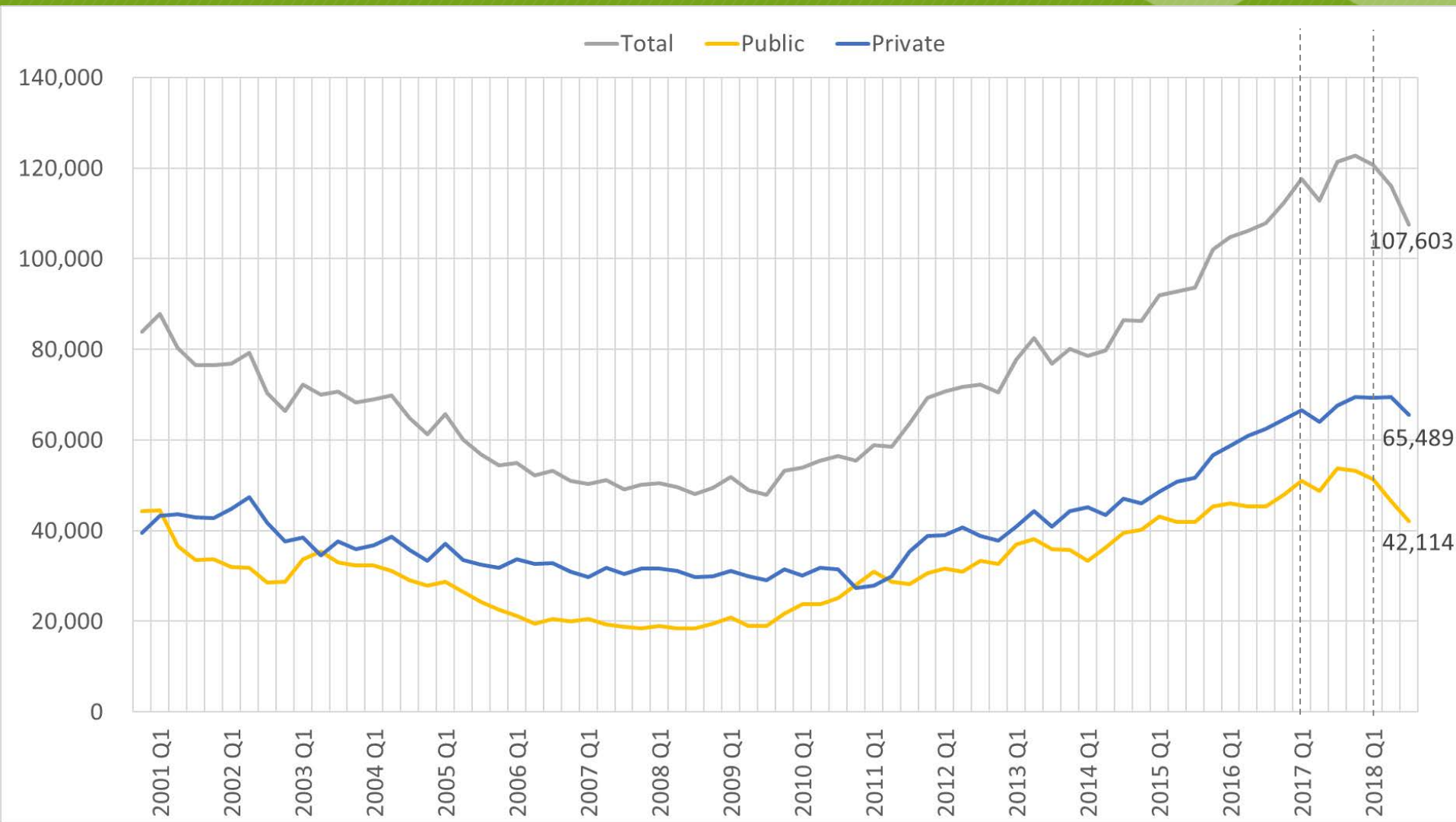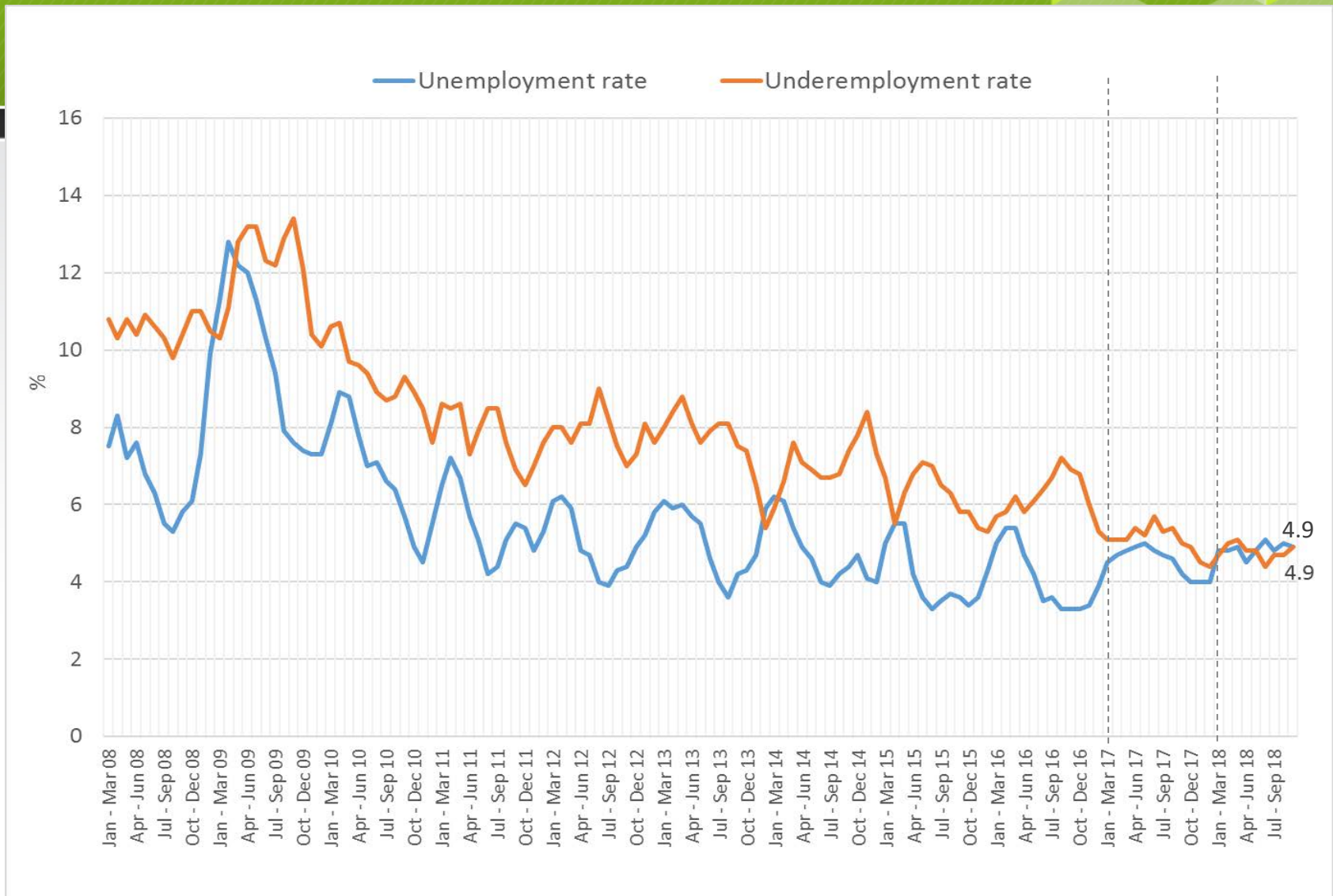

Source: Quarterly Report of Employment and Vacancies at Construction Sites, C&SD [2000 Q4 – 2018 Q3]

Index Numbers of the Costs of Labour Used in Public Sector Construction Projects (April 2003 = 100)

Source: Index Numbers of the Costs of Labour and Materials used in Public Sector Construction Projects, C&SD [2003 Apr – 2018 Oct]

Unemployment Rate and Underemployment Rate

Source: Quarterly Report on General Household Survey, C&SD [Jan-Mar 2008 – Sep-Nov 2018]

Estimated Vacancies of Skilled Workers by HKCA
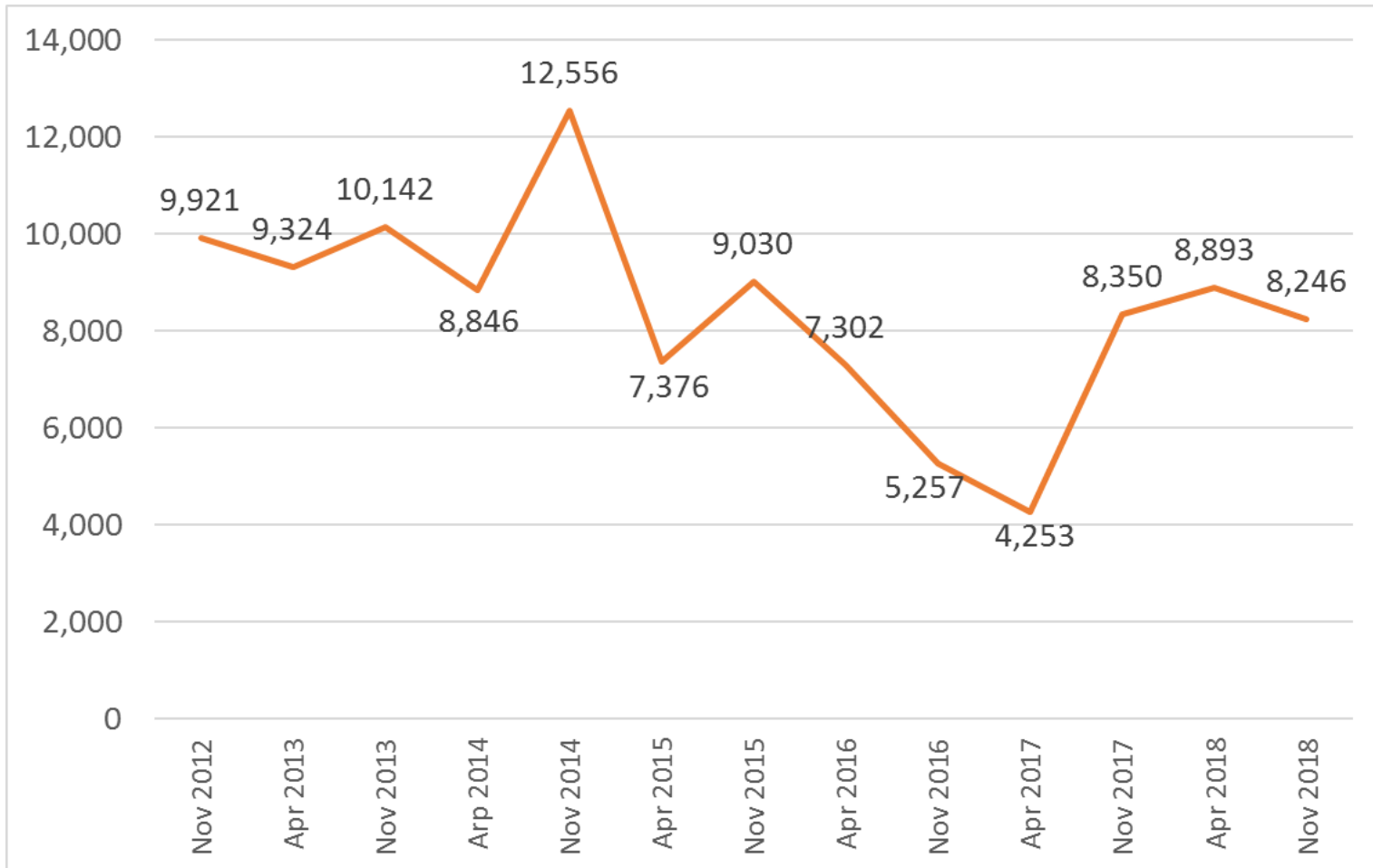
Source: Hong Kong Construction Association [Nov 2012 – Nov 2018]

Age Profile of Registered Workers (Skilled & Semi-skilled)

37.7% of skilled and semi-skilled workers with age ≥ 55

Source: Construction Workers Registration Board, CIC [Nov 2018]

DEMAND

Skilled Construction Workers Forecast (2019 – 2023)

CICMF Model - Demand

Labour deployment records
(390 projects)
Unit: man-day

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Project sum
Unit: HK$M

→

Labour Multipliers
(22 project types)
Unit: man-days / HK$M

Labour Multipliers
(22 project types)
Unit: man-year / HK$M

×

Expenditure Forecast
(2019-2023, excluding 3RS, hospital and public housing projects)
Unit: HK$M

→

Demand Forecast of Workers
(2019-2023, excluding 3RS, hospital and public housing projects)
Unit: man-year

Demand Forecast of Workers
(2019-2023, excluding 3RS, hospital and public housing projects)
Unit: man-year

+

Demand Forecast of Workers
for 3RS, Hospital, Public Housing Projects (2019-2023)
Unit: man-year

→

Demand Forecast of Workers
(2019-2023)
Unit: man-year

Demand Model: Project Types Covered
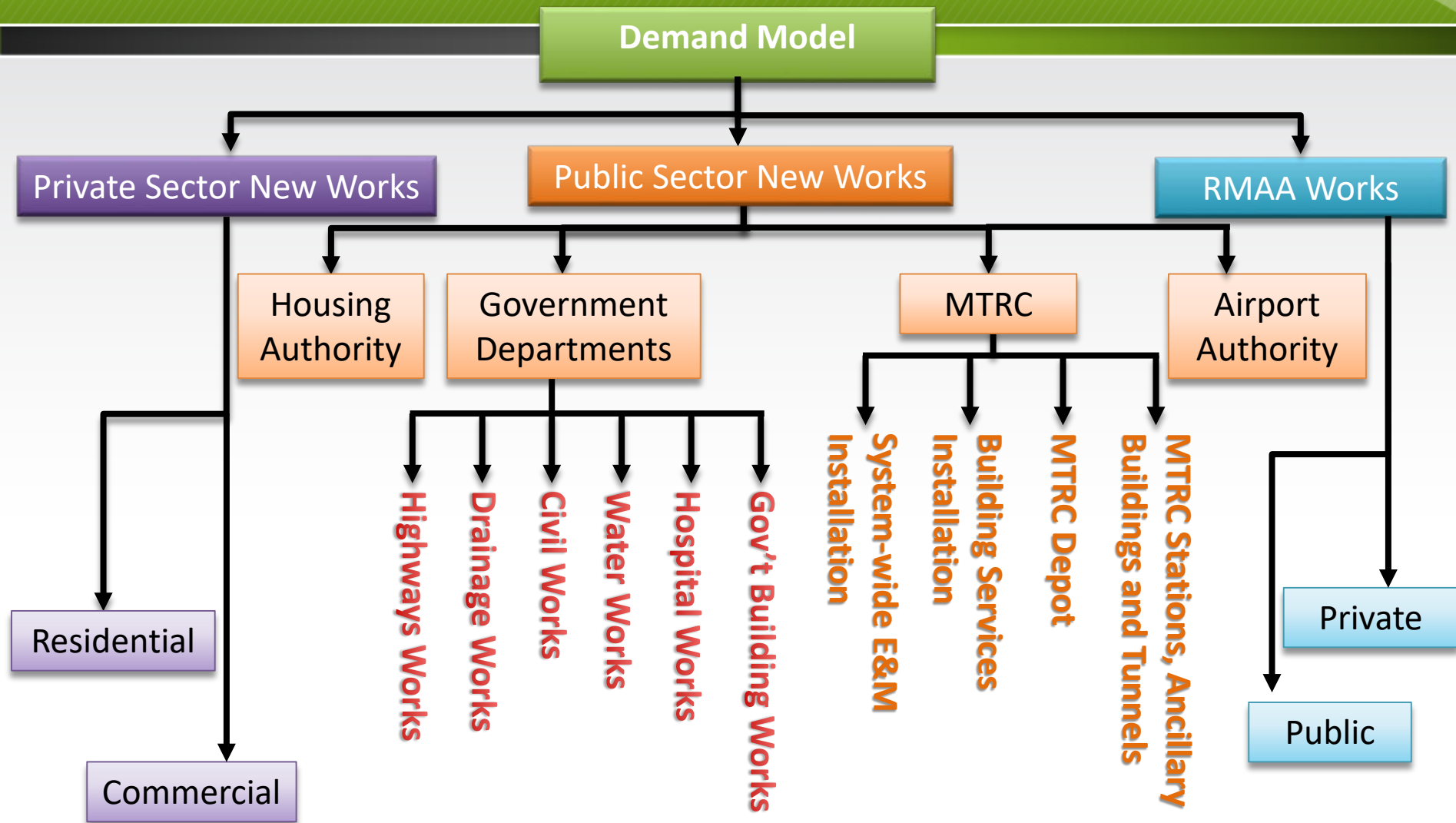
Assumptions

- Linear relationship between labour demand and construction output.

- Analogous labour deployment within a specific project type.

- Labour multipliers remain unchanged in the forecast period.

- The 25th percentile scenario of the expenditure forecast is adopted to reflect the potential effect of filibustering and economic uncertainties.

- Productivity enhancement has been considered by approximately 25% of the productivity growth in the construction industry of Singapore.

Updates

- Adopt latest construction expenditure forecast

- Incorporated manpower demand estimation of

  ➢ Three-runway System (3RS)

  ➢ Public Housing Projects

  ➢ Hospital Projects

CONSTRUCTION EXPENDITURE FORECAST FOR PUBLIC AND PRIVATE SECTORS (2018/19 TO 2027/28)
公營界別及私營界別建造工程量預測 (2018/19 至 2027/28)
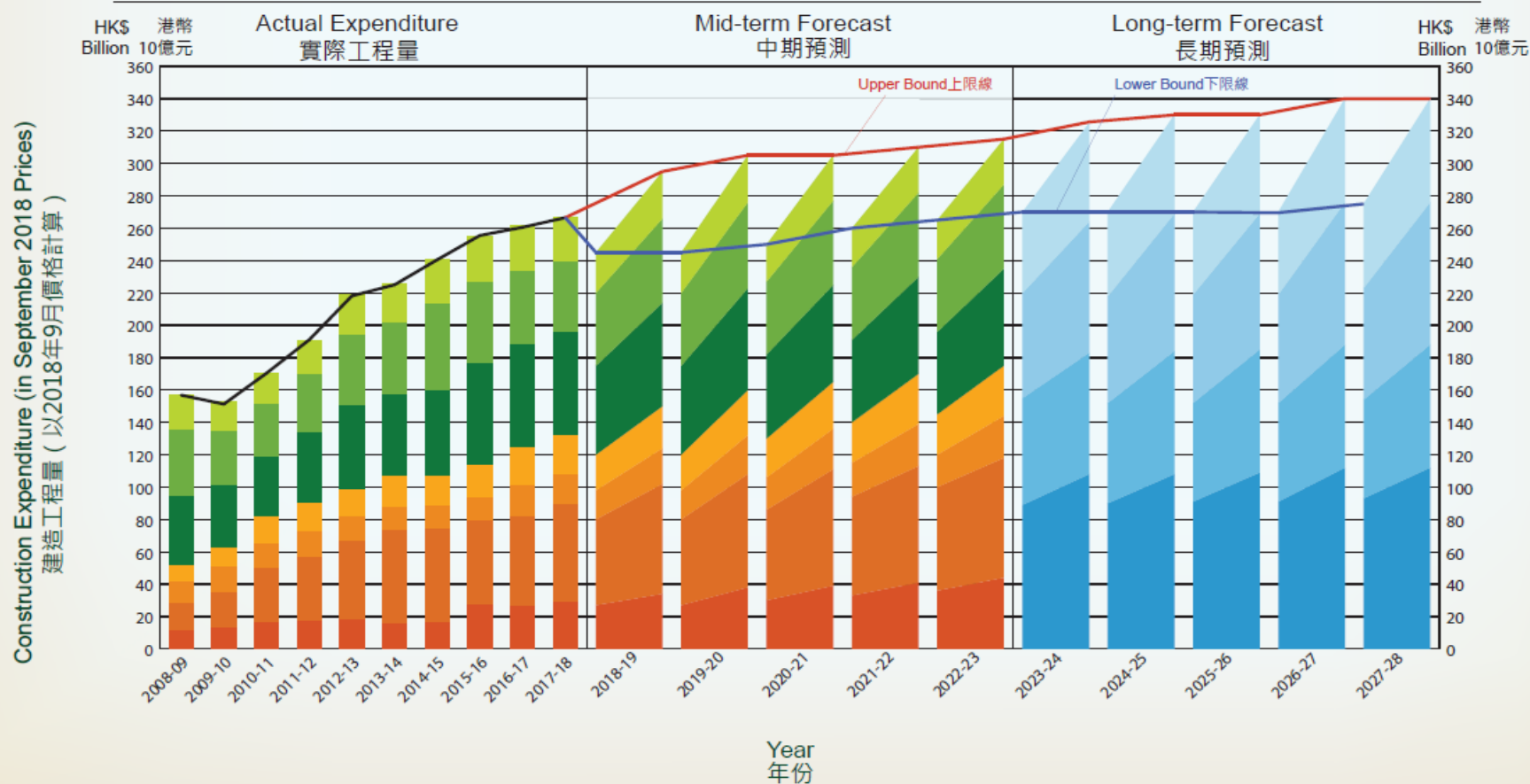
SUPPLY

Skilled Construction Workers Forecast (2019 – 2023)

CICMF Model - Supply

Existing Pool
(Source: Nov 2018, CWRB)

+

New Entrants
(taking account of retention rate, productivity proficiency, change of population, and in-services workers for nurturing)
(Sources: CIC, C&SD)

–

- Inactive Workers
- Retirees
- Unemployed
- Unutilized productivity of underemployed
- Workers in Macao

(Sources: CWRB, C&SD)

Forecast Supply of Active Skilled Workers (2019-2023)
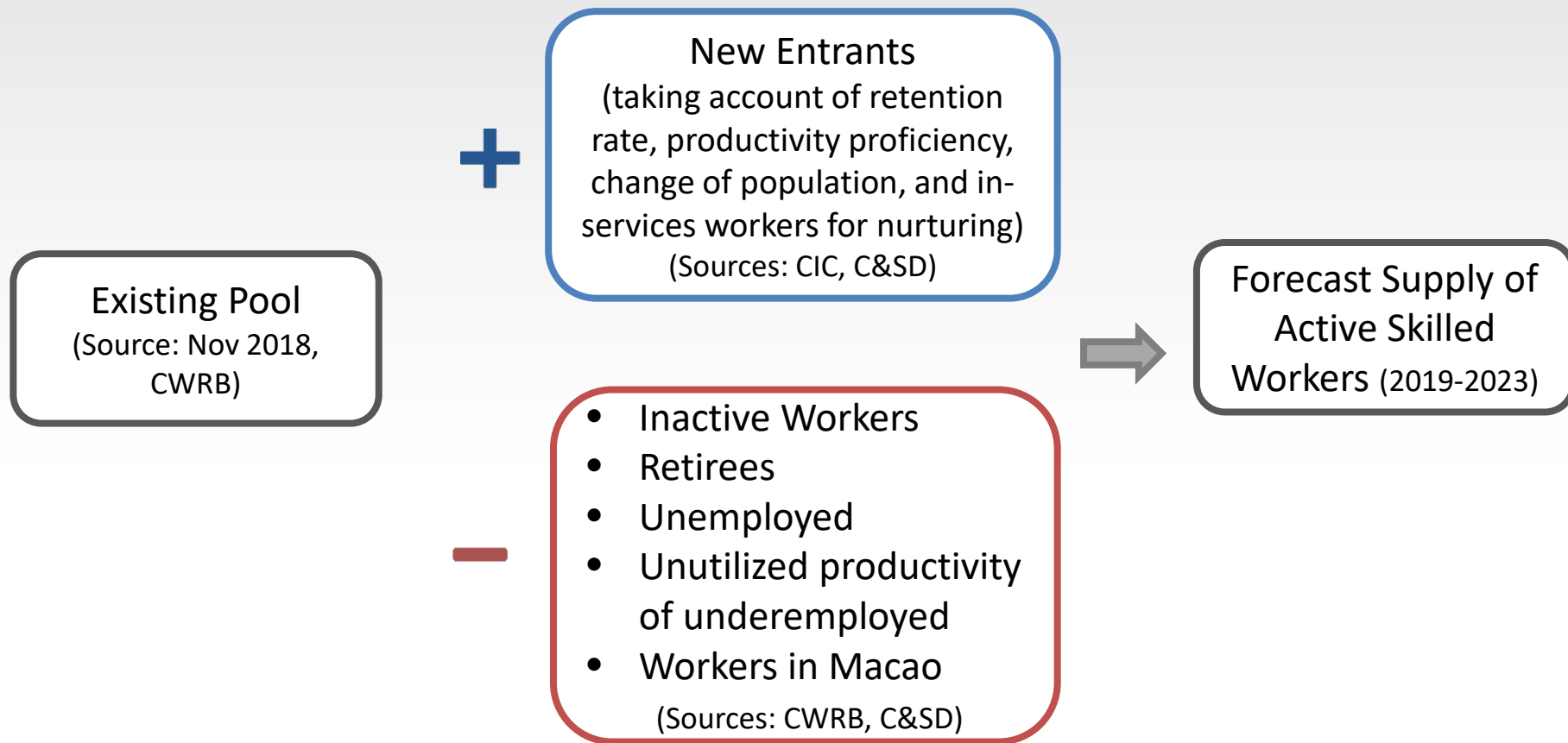
Assumptions

- Training places and retention rates remain unchanged in the forecast period.

- Results of phone surveys for registered general workers (RGW) reflect the real situation of RGW conducting skilled work on sites.

- Productivity of new entrants after graduation is 63.2% in 1st year, 81.2% in 2nd year and 100% in 3rd year (based on proficiency tests of CIC graduates).

- Discounted productivity of in-service skilled workers as trainers are required in nurturing new entrants in 1st and 2nd year is 25% of new entrants.

- Discounted productivity of underemployed workers is 50% of fully employed workers.

- Number of retirees is estimated based on the retirement pattern of individual trades with age ≥ 60 by making reference to registration records over the past three years.

Updates

Items	2017 Update	2018 Update
• Registered Workers from CWRB database	Jul 2017	Nov 2018
+ Registered General Workers (RGW) possessing trade skills from phone surveys	nil	nil
+ New entrants projected from CIC Training	2017	2018
⤷ Graduation & Retention	By trades	By trades
− Workers currently not engaged in the construction industry (from CWRB phone surveys)	2017	2018
− Underemployed workers	Jun 2017	Nov 2018
− Workers in Macao	Jul 2017	Oct 2018
• Effect of population change (younger age group)	✓	✓

- Age profile of trainees has been updated to better reflect the manpower situation (improvement)

Projected Manpower Situation

Skilled Construction Workers Forecast (2019 – 2023)

Estimated Manpower Mismatch (Overall)

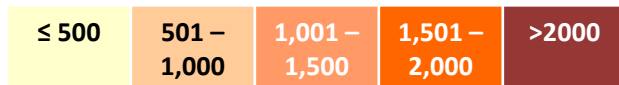| Year end	2019	2020	2021	2022	2023
LQ	− 5,800 (5,000 -10,000)	− 5,300 (5,000 -10,000)	− 6,100 (5,000 -10,000)	− 8,400 (5,000 -10,000)	− 7,500 (5,000 -10,000)
2017 Update	− 6,200 (5,000 -10,000)	− 5,400 (5,000 -10,000)	− 5,900 (5,000 -10,000)	− 9,900 (5,000 -10,000)	N/A

Notes
• Figures are non-cumulative.

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Estimated Manpower Mismatch (by Trade)

Trade	2019	2020	2021	2022	2023
Bar Bender & Fixer	≤ 500	≤ 500	≤ 500	501 – 1,000	
Concretor	≤ 500	501 – 1,000	501 – 1,000	501 – 1,000	501 – 1,000
Plumber	≤ 500	≤ 500	≤ 500	≤ 500	≤ 500
Scaffolder	501 – 1,000	≤ 500	≤ 500	≤ 500	≤ 500
Formwork Erector	≤ 500	501 – 1,000	1,001 – 1,500	1,001 – 1,500	1,001 – 1,500
Plant & Equipment Operator (Load Shifting)	≤ 500	≤ 500	≤ 500	≤ 500	≤ 500
General Welder	≤ 500	501 – 1,000	501 – 1,000	1,001 – 1,500	1,001 – 1,500
Metal Worker	≤ 500	≤ 500	501 – 1,000	501 – 1,000	501 – 1,000

Legend: ≤ 500 | 501 – 1,000 | 1,001 – 1,500 | 1,501 – 2,000 | >2000

Estimated Manpower Mismatch (by Trade) (cont.)

Trade	2019	2020	2021	2022	2023
Glazier	≤ 500	≤ 500	≤ 500	≤ 500	501 – 1,000
Plasterer Terrazzo & Granolithic Worker	≤ 500	≤ 500	501 – 1,000	501 – 1,000	501 – 1,000
Electrical Fitter (incl. Electrician)	501 – 1,000	1,001 – 1,500	1,001 – 1,500	1,501 – 2,000	1,501 – 2,000
Refrigeration/AC/Ventilation Mechanic	≤ 500	≤ 500	≤ 500	≤ 500	501 – 1,000
Fire Service Mechanic	≤ 500	≤ 500	≤ 500	≤ 500	501 – 1,000
Lift and Escalator Mechanic	501 – 1,000	501 – 1,000	501 – 1,000	501 – 1,000	501 – 1,000

Legend: ≤ 500 | 501 – 1,000 | 1,001 – 1,500 | 1,501 – 2,000 | >2000
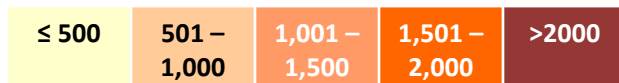
Way Forward

- To enrich and constantly update relevant data (incl. multipliers, CWRB data, ratio of workers performing RMAA works, number of workers in Macao, training data, etc).

- To engage a Consultant to review the methodology and better utilise CWRB database for forecasting purpose.

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