



CONSTRUCTION INDUSTRY COUNCIL
建造業議會

Forecast of Manpower Situation of Skilled Construction Workers

December 2016



Disclaimer

All information or material on this report is for general reference purposes only and does not amount to any offer or invitation to treat or any direct or indirect responsibility to users. The Information only caters for the general situation and does not adapt for any particular circumstances of any particular individual. Users are responsible for making their own assessments of the Information and should verify the Information or seek appropriate independent professional advice relevant to their particular circumstances before acting on the Information. The Information is not a substitute for independent professional advice. The Construction Industry Council ("CIC") shall not be responsible for use of or reliance on, or decision made on the basis of, the Information.

Whilst CIC endeavours to ensure the accuracy of the Information, no statement, representation, warranty or guarantee of any kind, whether express or implied, is given by CIC as to its accuracy, timing, completeness, satisfactory quality, fitness for a particular purpose or appropriateness for use of the Information in any particular circumstances. CIC shall not be liable for any errors, misrepresentations or omissions in or in connection with the Information.

The Information relates to Hong Kong only and CIC makes no warranty or representation that the Information is appropriate for or in other places or jurisdictions.

To the extent permitted by law, CIC expressly excludes any liability for any expense, loss or damage including, without limitation, direct, indirect or consequential loss or damage, or any expense, loss or damage whatsoever arising from use of, or inability to use, the Information, whether caused by tort (including negligence), breach of contract or otherwise, even if foreseeable, provided that this condition does not affect CIC's liability for death or personal injury arising from CIC's negligence, nor CIC's liability for fraudulent misrepresentation, nor any other liability which cannot be excluded or limited under the laws of Hong Kong which shall apply to all matters, disputes or claims arising from or relating to the Information including this disclaimer.

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).



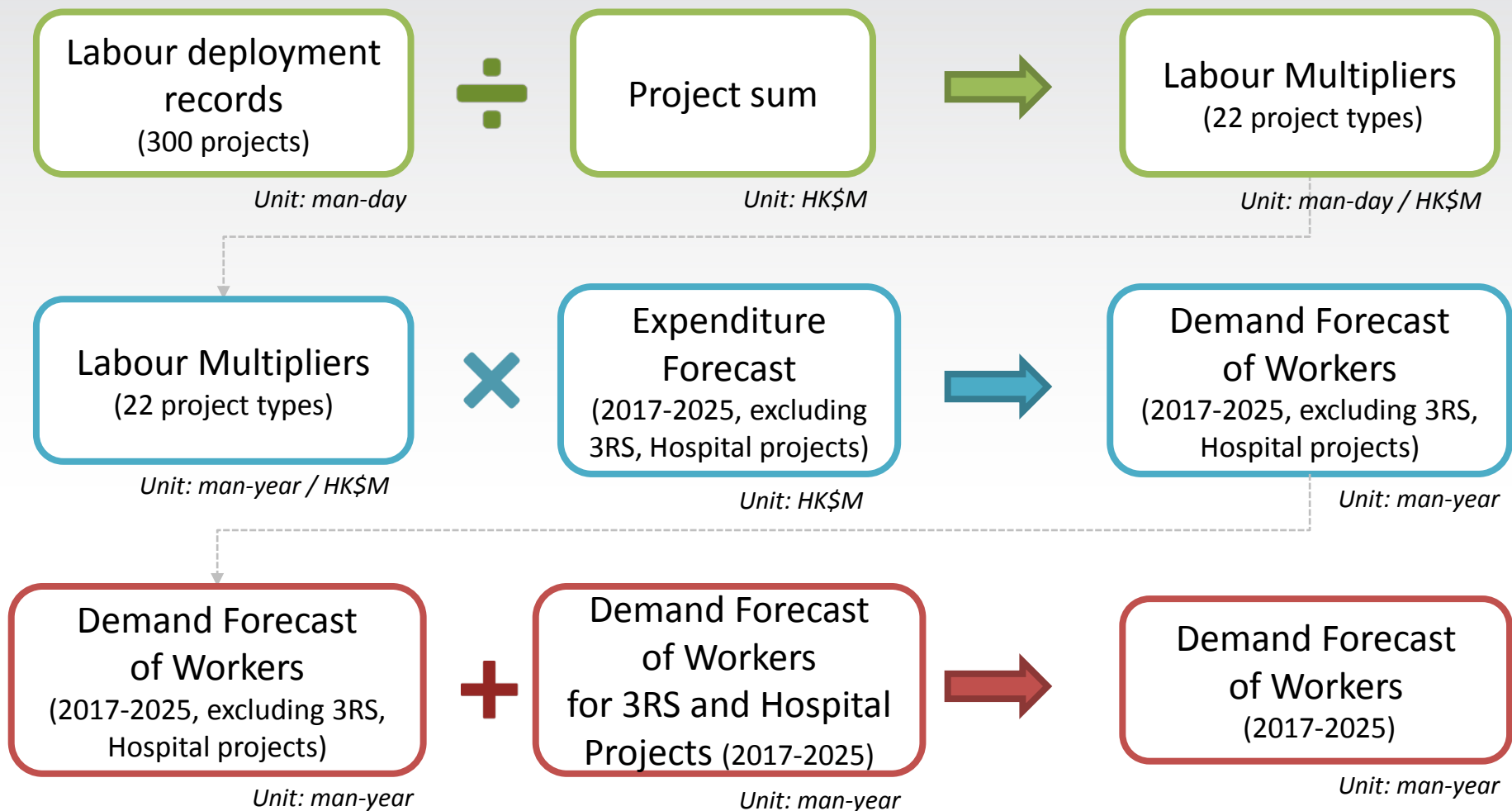
CONSTRUCTION INDUSTRY COUNCIL
建造業議會

DEMAND

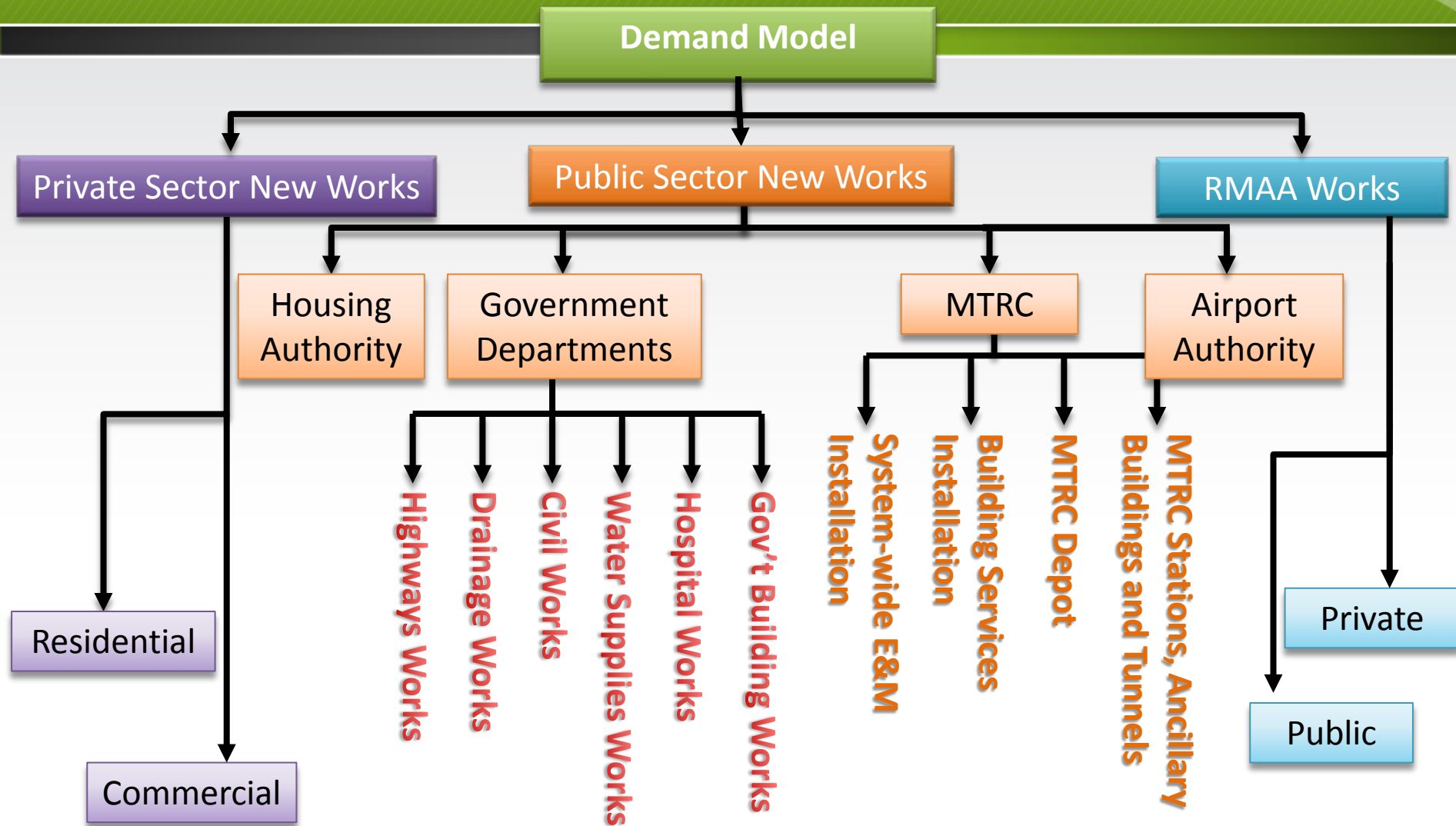
Skilled Construction Workers Forecasts (2017 – 2025)



CICMF Model - Demand



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
- For the private RMAA works, a combination of LMs was used based on the followings:
 - Public maintenance works;
 - Renovation works of Airport Authority; and
 - RMAA projects of private stakeholders

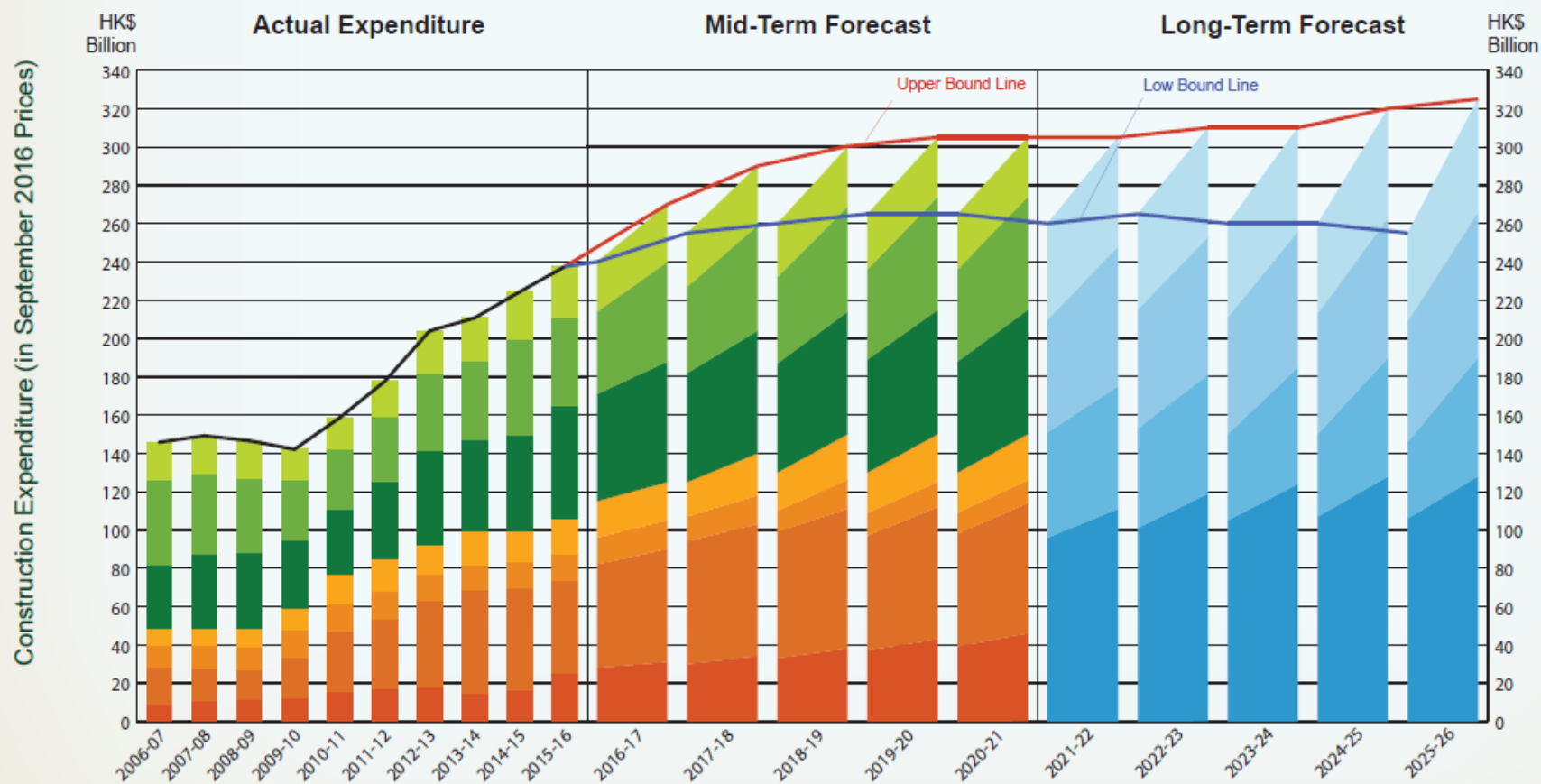
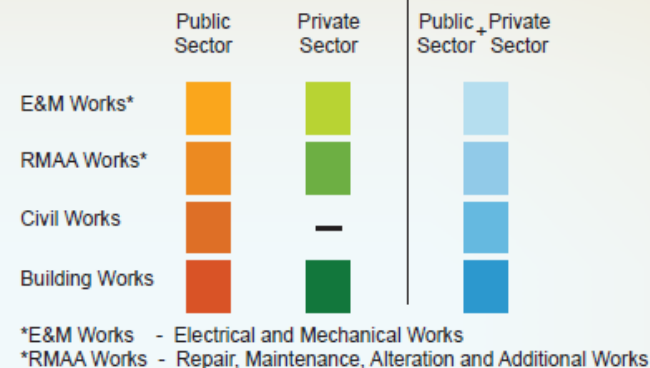
Updates

- Adopt latest construction expenditure forecast
- Multipliers updated: 156 projects added
- Incorporated manpower demand estimation of
 - Three-runway System (3RS)
 - Hospital Projects

CONSTRUCTION EXPENDITURE FORECAST FOR PUBLIC AND PRIVATE SECTORS (2016/17 TO 2025/26)

Actual Expenditure & Mid-Term

Long-Term





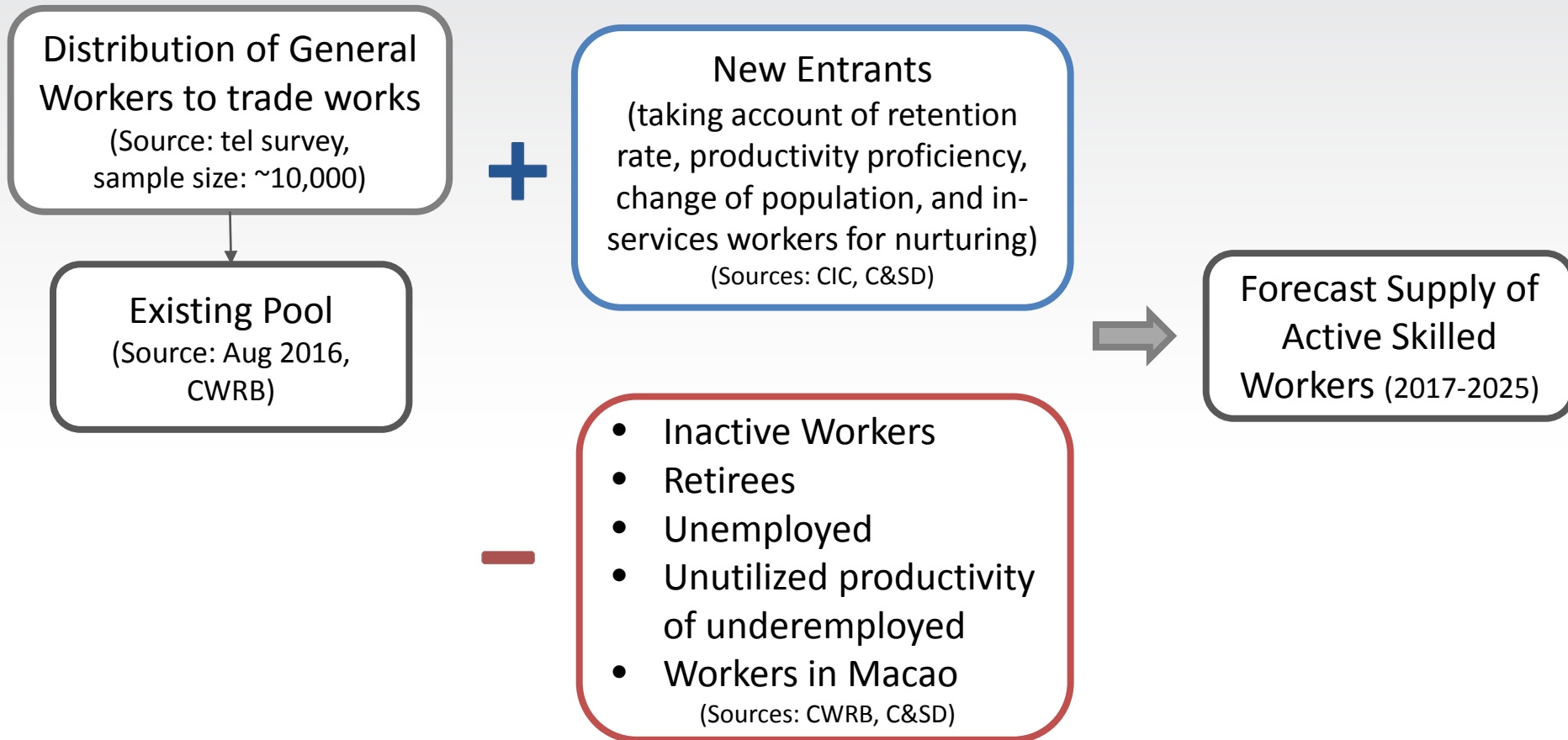
CONSTRUCTION INDUSTRY COUNCIL
建造業議會

SUPPLY

Skilled Construction Workers Forecasts (2017 – 2025)



CICMF Model - Supply



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 required in nurturing new entrants in 1st and 2nd years is 25% of new entrants.
- Discounted productivity of underemployed workers is 50% of fully employed workers.
- Retirement profile of skilled workers for individual trades is determined based on the registration record over the past few years.

Updates

Items	2015 Update	2016 Update
• Registered Workers from CWRB database	Jun 2015	Aug 2016
+ Registered General Workers (RGW) possessing trade skills from phone surveys	2014	2016
+ New entrants projected from CIC Training places	2015	2016
↳ Graduation & Retention	By trades	By trades
– Workers currently not engaged in the construction industry (from CWRB phone surveys)	2015	2016
– Underemployed workers	Jun 2015	Jun 2016
– Workers in Macao	Jul 2015	Jul 2016
• Effect of population changes (younger age group)	✓	✓



CONSTRUCTION INDUSTRY COUNCIL
建造業議會

Projected Manpower Situation

Skilled Construction Workers Forecasts (2017 – 2025)



Estimation of Additional Skilled Workers Required in Coming Years

Year end	2017	2018	2019	2020	2021
2016 Update	About 10,000 - 15,000	About 10,000 - 15,000	About 10,000 - 15,000	About 10,000 - 15,000	About 15,000
2015 Update	About 10,000 – 15,000	About 10,000 – 15,000	About 10,000 – 15,000	About 10,000 – 15,000	N/A

Notes

- Figures are in absolute at the end of corresponding years and are non-cumulative.
- With potential workforce better utilised, including unemployed workers, underemployed workers and industry leavers.

Attention: Readers are encouraged to seek appropriate independent advice from their professional advisers where possible and should not treat or rely on this publication as a substitute for such professional advice for taking any relevant actions.

Skilled Workers (new works oriented) with Demand > Supply

		Year								
No.	Trade Classification	2017	2018	2019	2020	2021	2022	2023	2024	2025
1	Bar Bender & Fixer [or Steelbender] *									
2	Concretor *									
3	Drainlayer									
6	Scaffolder *									
7	Carpenter *									
9	Plant & Equipment Operator (Load Shifting [or Plant Operator (exc. Driver, bulldozer driver, etc.)])									
13	Metal Worker *									

≤ 500

501 –
1,000

1,001 –
1,500

1,501 –
2,000

>2000

* On the list of shortage trades provided by Task Force on Short-term Labour Supply

The above table only reflects the ballpark manpower forecast for individual trades and only serves as one of the references in formulating manpower measures.

Skilled Workers (new works oriented) with Demand > Supply

		Year								
No.	Trade Classification	2017	2018	2019	2020	2021	2022	2023	2024	2025
16	Plasterer Terrazzo & Granolithic Worker *									
20	Structural Steel Welder *									
21	Structural Steel Erector *									
22	Rigger/Metal Formwork Erector*									
28	Refrigeration/AC/Ventilation Mechanic *									

≤ 500	501 – 1,000	1,001 – 1,500	1,501 – 2,000	>2000
-------	-------------	---------------	---------------	-------

* On the list of shortage trades provided by Task Force on Short-term Labour Supply

The above table only reflects the ballpark manpower forecast for individual trades and only serves as one of the references in formulating manpower measures.

Way Forward

- To enrich and constantly update relevant data (incl. multipliers, CWRB data, telephone survey results, ratio of workers performing RMAA works, number of workers in Macao, training data, etc.).
- To liaise with relevant organisations to solicit relevant project data in the RMAA sector.
- Better utilise CWRB database for forecasting purpose.

Trade Classification

Trade No.	Trade Name (English)	工種名稱 (中文)
1	Bar Bender & Fixer [or Steelbender]	鋼筋屈紮工
2	Concretor	混凝土工
3	Drainlayer	地渠工
4	Plumber	水喉工
5	Leveler	平水工
6	Scaffolder	棚架工
7	Carpenter	木模板工
8	Joiner	細木工
9	Plant & Equipment Operator (Load Shifting) [or Plant Operator (exc. driver, bulldozer driver, etc.)]	機械設備操作工
10	Truck Driver	貨車駕駛員
11	Rock-Breaking Driller [or Pneumatic Driller]	鑽破工

Trade Classification

Trade No.	Trade Name (English)	工種名稱 (中文)
12	General Welder	普通焊接工
13	Metal Worker	金屬工
14	Glazier	玻璃工
15	Painter & Decorator	髹漆及裝飾工
16	Plasterer Terrazzo & Granolithic Worker	批盪工
17	Bricklayer	砌磚工
18	Marble Worker	雲石工
19	Mason (incl. rubble mason, splitting mason and ashlar mason)	砌石工
20	Structural Steel Welder	結構鋼材焊接工
21	Structural Steel Erector	結構鋼架工
22	Rigger / Metal Formwork Erector	索具工 (叻㗎) / 金屬模板裝嵌工

Trade Classification

Trade No.	Trade Name (English)	工種名稱 (中文)
23	Asphalter (Road Construction)	瀝青工 (道路建造)
24	Construction Plant Mechanic [or Fitter]	建造機械技工
25	Diver	潛水員
26	Electrical Fitter (incl. Electrician)	電氣裝配工
27	Mechanical Fitter	機械打磨裝配工
28	Refrigeration / AC / Ventilation Mechanic	空調製冷設備技工
29	Fire Service Mechanic	消防設備技工
30	Lift and Escalator Mechanic	自動梯技工 / 升降機技工
31	Building Services Maintenance Mechanic	樓宇工程設備維修技工
32	Cable Jointer (Power)	強電流電纜接駁技工
33	Asphalter (Waterproof)	瀝青工 (防水)

Trade Classification

Trade No.	Trade Name (English)	工種名稱 (中文)
34	Tiler	鋪瓦工
35	Roofer	屋面工
36	Waterproofers	防水工
37	Material Lab Labour	物料實驗室技工
38	Gas Piper	氣體裝置技工
39	Drywall	清水牆工
40	False Ceiling Worker	假天花工
41	Landscape Worker	園藝工
42	Track worker	鋪軌工
43	Piling Worker	打樁工
44	Pipelayer	敷喉管工

Trade Classification

Trade No.	Trade Name (English)	工種名稱 (中文)
45	Shotfirer	爆石工
46	Tunnel Worker	隧道工
47	Marine Craft Crew	海面建造機械操作工
48	Diver's Linesman	潛水架線工
49	Miner	礦工
50	Shotcretor (Nozzleman)	噴射混凝土工
51	Stevedore	搬運工人
52	General Worker	普通工人
53	General ABWF Workers	普通樓宇及翻新工人
54	General E&M Workers	普通機電工人
55	General Civil / Airfield Workers	普通土木/機場工人

Trade Classification

Trade No.	Trade Name (English)	工種名稱 (中文)
56	Specialist Plant Operator - Marine (Reclamation)	專門機械設備操作工 - 海上(填海)
57	Specialist Plant Operator - Land (Reclamation)	專門機械設備操作工 - 陸上(填海)
58	APM/BHS/Airport System Workers	旅客捷運系統/行李處理系統/機場系統工人