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)

Number of Manual Workers Engaged at Construction Sites

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

Composite labour wages for civil engineering contracts
Composite labour wages for building contracts

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

CONSTRUCTION INDUSTRY COUNCIL 建造業議會
Unemployment Rate and Underemployment Rate

Estimated Vacancies of Skilled Workers by HKCA

Source: Hong Kong Construction Association [Nov 2012 – Nov 2018]
Age Profile of Registered Workers (Skilled & Semi-skilled)

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

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

Skilled Construction Workers Forecast (2019 – 2023)
CICMF Model - Demand

1. Labour deployment records (390 projects) → Project sum → Labour Multipliers (22 project types)
   - Labour deployment records: Unit: man-day
   - Project sum: Unit: HK$M
   - Labour Multipliers: Unit: man-days / HK$M

2. Labour Multipliers (22 project types) → Expenditure Forecast (2019-2023, excluding 3RS, hospital and public housing projects) → Demand Forecast of Workers (2019-2023, excluding 3RS, hospital and public housing projects)
   - Labour Multipliers: Unit: man-year / HK$M
   - Expenditure Forecast: Unit: HK$M
   - Demand Forecast of Workers: Unit: man-year

   - Demand Forecast of Workers: Unit: man-year
   - Demand Forecast of Workers for 3RS, Hospital, Public Housing Projects: Unit: man-year
   - Demand Forecast of Workers: Unit: man-year
Demand Model: Project Types Covered

Private Sector New Works
- Residential
- Commercial
- Housing Authority
  - Highways Works
  - Drainage Works
  - Civil Works
  - Water Works
  - Hospital Works
  - Gov’t Building Works

Public Sector New Works
- Government Departments
- MTRC
  - System-wide E&M Installation
  - Building Services Installation
  - MTRC Depot
  - MTRC Stations, Ancillary Buildings and Tunnels

RMAA Works
- Airport Authority
- Private
- Public
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)
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

<table>
<thead>
<tr>
<th>Items</th>
<th>2017 Update</th>
<th>2018 Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Registered Workers from CWRB database</td>
<td>Jul 2017</td>
<td>Nov 2018</td>
</tr>
<tr>
<td>+ Registered General Workers (RGW) possessing trade skills from phone surveys</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>+ New entrants projected from CIC Training</td>
<td>2017</td>
<td>2018</td>
</tr>
<tr>
<td>✐ Graduation &amp; Retention</td>
<td>By trades</td>
<td>By trades</td>
</tr>
<tr>
<td>– Workers currently not engaged in the construction industry (from CWRB phone surveys)</td>
<td>2017</td>
<td>2018</td>
</tr>
<tr>
<td>– Underemployed workers</td>
<td>Jun 2017</td>
<td>Nov 2018</td>
</tr>
<tr>
<td>– Workers in Macao</td>
<td>Jul 2017</td>
<td>Oct 2018</td>
</tr>
<tr>
<td>• Effect of population change (younger age group)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>• Age profile of trainees has been updated to better reflect the manpower situation (improvement)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The table above summarizes the updates made in 2017 and 2018, including changes in the number of registered workers, new entrants from CIC Training, and underemployed workers. It also notes changes in graduation and retention rates, as well as the effect of population change on the workforce.
Projected Manpower Situation

Skilled Construction Workers Forecast (2019 – 2023)
# Estimated Manpower Mismatch (Overall)

<table>
<thead>
<tr>
<th>Year end</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>LQ</td>
<td>-5,800 (5,000 -10,000)</td>
<td>-5,300 (5,000 -10,000)</td>
<td>-6,100 (5,000 -10,000)</td>
<td>-8,400 (5,000 -10,000)</td>
<td>-7,500 (5,000 -10,000)</td>
</tr>
<tr>
<td>2017 Update</td>
<td>-6,200 (5,000 -10,000)</td>
<td>-5,400 (5,000 -10,000)</td>
<td>-5,900 (5,000 -10,000)</td>
<td>-9,900 (5,000 -10,000)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Notes
- Figures are non-cumulative.

### 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.
## Estimated Manpower Mismatch (by Trade)

<table>
<thead>
<tr>
<th>Trade</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar Bender &amp; Fixer</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Concretor</td>
<td></td>
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<tr>
<td>Plumber</td>
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<tr>
<td>Scaffolder</td>
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<tr>
<td>Formwork Erector</td>
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<tr>
<td>Plant &amp; Equipment Operator (Load Shifting)</td>
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<td></td>
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<tr>
<td>General Welder</td>
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<tr>
<td>Metal Worker</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>≤ 500</th>
<th>501 – 1,000</th>
<th>1,001 – 1,500</th>
<th>1,501 – 2,000</th>
<th>&gt;2000</th>
</tr>
</thead>
</table>

CONSTRUCTION INDUSTRY COUNCIL 建造業議會
## Estimated Manpower Mismatch (by Trade) (cont.)

<table>
<thead>
<tr>
<th>Trade</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glazier</td>
<td></td>
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<tr>
<td>Plasterer Terrazzo &amp; Granolithic Worker</td>
<td></td>
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<tr>
<td>Electrical Fitter (incl. Electrician)</td>
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<tr>
<td>Refrigeration/AC/Ventilation Mechanic</td>
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<tr>
<td>Fire Service Mechanic</td>
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<tr>
<td>Lift and Escalator Mechanic</td>
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</tbody>
</table>

Note: The table uses different colors to indicate the estimated manpower mismatch by trade and year.
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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