

**Legislative Council
Panel on Manpower
Meeting on 22 April 1999**

**A Study on the Manpower Requirements
for Infrastructural Projects**

Introduction

This paper provides information on the Administration's latest assessment of the manpower requirements arising from major infrastructural projects to be carried out in Hong Kong over the next 3 years.

Background

2. A large number of infrastructural projects, which include major railway developments and projects in the Public Works Programme, will be carried out in Hong Kong over the next few years. It is anticipated that these works will generate a large demand for on-site construction workers.

3. With the assistance of public training bodies, the Mass Transit Railway Corporation and Kowloon-Canton Railway Corporation, and related government departments, we have attempted to assess, as accurately as possible, the manpower demand for infrastructural projects by trades within the construction industry. Our assessment concentrates on on-site workers only as this is the area where heaviest demand is likely to arise.

Manpower Demand

4. The major findings on the manpower demand side are highlighted as follows –

**Demand for on-site construction workers
in 1998-1999, 1999-2000 and 2000-2001**

	1998-1999	1999-2000	2000-2001
Demand arising from major railway developments ¹	1 780	15 150	22 250
Demand arising from public works programme ²	24 140	27 080	28 490
Total demand for infrastructural projects	25 920	42 240	50 740

The estimated overall manpower demand by trades for infrastructural projects is at Annex A, whereas the demand figures generated by the railway developments and public works programme by trades are at Annexes B and C respectively.

5. When projecting the forecast, the two railway corporations made reference to manpower requirements for past typical projects. These figures have been examined by the department concerned which has advised that the overall manpower demand for the five committed railway lines as submitted by the two corporations are not unreasonable. However, as only a small portion of the contracts have so far been issued, it is difficult at this stage to assess the accuracy of the manpower demand for each trade.

6. Figures relating to public works programme are supplied by the Works Bureau.

7. It should be noted that in addition to the manpower demand listed in paragraph 4 above, an additional 4,000 jobs in the construction industry is likely to be created between 2000 and mid 2007 when the Cyberport is scheduled to be built. However as the demand for construction workers is expected to reach its peak in 2002-03 and as detailed information on the types of workers required is not as yet available, we have not included the additional demand in our current

¹ Major railway projects include the West Rail Phase I, the Tseung Kwan O Extension, the Tsim Sha Tsui to Hung Hom Extension, the Man On Shan to Tai Wai Rail Link, the Sheung Shui to Lok Ma Chau Spur Line and improvement or extension of the existing railway network of MTR and KCR.

² Major public works programme includes expansion of road networks, improvement of drainage and sewage systems, improvement of water supply systems, port development, reclamation and site formation works, school improvement programme and building of other public facilities, but excludes maintenance works.

assessment.

Manpower Supply

8. Based on the following sources we have estimated the total supply of on-site workers for the construction industry in the coming 3 years at Annex D:

Category	Source
Number of On-site Workers in the Construction Industry (Electrical and Mechanical Workers are not covered in this quarterly site survey)	1998 Fourth Quarter figure, Quarterly Employment Survey of Construction Sites, Census & Statistics Department
Number of Electrical and Mechanical Workers	Electrical Industry 1997 Manpower Survey, Vocational Training Council
Number of currently unemployed persons with a previous job as on-site construction workers in the construction sector	Fourth Quarter 1998 General Household Survey, Census & Statistics Department
Planned Trainees Output	Construction Industry Training Authority
Planned Trainees Output	Vocational Training Council
Planned Trainees Output	Employees Retraining Board

Assessment

9. The figures at Annex A show that manpower demand for on-site construction workers arising from implementation of the infrastructural projects will rise from 25,900 in 1998/99 to 42,000 in 1999/2000 and further to 50,700 in 2000/2001 (i.e. by 16,300 in 1999/2000 and 8,500 in 2000/2001). The demand will increase across the board for all types of on site construction workers and in particular for pneumatic driller/excavators, riggers/metal frame erectors/metal scaffolders, structural steel erectors, fire services mechanics, concretors, bamboo scaffolders, etc.

10. On the other hand, the output of the training organisations during this period will average around 6,000 new workers per annum. The labour market situation for on site construction workers is therefore

expected to tighten in 1999/2000 and 2000/2001.

11. According to the 1998 Fourth Quarter General Household Survey carried out by the Census and Statistics Department, there were some 23,200 unemployed persons who had previously worked as on-site construction workers in the construction industry. The employment opportunities for these workers in the construction industry should significantly improve in the next two years as a result of the major infrastructural projects.

Way Forward

12. As the manpower demand for on-site construction workers will be increasing rapidly in the next two years, the Government recognises the need to plan ahead in order to respond to the demand promptly. We will proceed along the following lines :

- (i) We will monitor the labour supply and demand situation closely through the Working Group on Training and Retraining for the Construction Industry. This Working Group comprises representatives from trade associations, trade unions, training service providers and government departments. It enables manpower problems in the industry to be identified early and for solutions to be jointly worked out. It also ensures that training services are geared up to meet the demands of the industry.
- (ii) Since February 1998 the Working Group has introduced an intermediate trade test for construction workers. The purposes of the test are to provide opportunities for potential and in-service workers to certify their skills so as to facilitate their placement and to establish an objective standard of skill level in the industry. So far some 8000 workers have passed the test. A complete list of such workers is kept by the Labour Department. Employers who have need to engage additional construction workers will be able to do so through the list. The list will help ensure that priority is given to local construction workers when new jobs are created under the various infrastructural projects.
- (iii) We will continue to liaise with the Construction Industry Training Authority (CITA) closely to ensure that their

training capacity is flexibly deployed to meet the needs of the industry. Plans are in place to enable CITA to increase its training capacity by 1 000 through the temporary use of an additional training site. In addition, CITA will be able to increase training places for particular trade types through internal adjustment and increasing the number of short courses.

Education and Manpower Bureau
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Total manpower requirement for all infrastructure projects

No. Works code	Trade	Manpower requirement (Nos. of site manual workers)		
		98/99	99/00	00/01
1 0406/0402/0405	Labourer/Concreting Labourer/Heavy Load Labourer	7 750	10 170	12 480
2 0338/0404	Pneumatic Driller/Excavator	230	1 040	1 340
3 0303	Bamboo Scaffold	240	590	680
4 0337/0347/0305	Plasterer/Tiler/Bricklayer	1 880	2 830	2 800
5 0326/0324	Mason/Marble Worker	120	260	410
6 0304	Bar Bender & Fixer	1 210	2 820	3 320
7 0307	Carpenter (Formwork)	2 450	4 860	5 530
8 0322	Joiner	810	1 350	1 420
9 0309	Concretor	550	1 600	1 840
10 0328/0318/0319	Metal Worker/General Welder/Welder	730	980	1 030
11 0338	Plumber	1 130	1 610	1 690
12 0314	Drainlayer	430	630	790
13 0319	Glazier	110	190	340
14 0329	Leveller	830	960	1 050
15 0329	Painter & Decorator	500	680	660
16 0310	Construction Plant Mechanic	790	1 180	1 340
17 0348	Structural Steel Welder	150	210	380
18 0345	Structural Steel Erector	70	230	540
19 0341/0327	Rigger/Metal Formwork Erector/Metal Scaffold	200	680	990
20 0349	Truck Driver	1 080	1 550	2 030
21 0333/0334/0332/ 0335/0330/0325	Plant & Equipment Operator/Marine Construction Plant Operator/Piling Operative	1 290	2 360	2 890
22 E305	Electrician/Electrical Fitter	1 610	2 400	2 600
23 E314	Refrigeration/AC Mechanic	270	370	490
24 E310	Mechanical Fitter	80	180	450
25 E315	Sheet Metal Worker	330	480	660
26 E308/E309	Lift Electrician/Lift Mechanic	70	80	270
27 E302	Building Services Mechanic	500	710	890
28 E308	Fire Services Mechanic	40	120	210
29 -	All others	460	1 150	1 620
	Total	25 920	42 240	50 740

All figures are rounded to the nearest ten and may not add up to the total.

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Total manpower requirement for all railway projects

No.	Works code	Trade	Manpower requirement (Nos. of site manualworkers)		
			98/99	99/00	00/01
1	c406/c402/c405	Labourer/Concreting Labourer/Heavy Load Labourer	310	2 730	3 960
2	c338/c404	Pneumatic Driller/Excavator	140	990	1 280
3	c303	Bamboo Scaffolder	20	340	440
4	c337/c347/c305	Plasterer/Tiler/Bricklayer	20	260	360
5	c326/c324	Mason/Marble Worker	10	100	240
6	c304	Bar Bender & Fixer	100	1 420	1 850
7	c307	Carpenter (Formwork)	150	2 120	2 620
8	c322	Joiner	20	240	350
9	c309	Concretor	80	1 060	1 240
10	c328/c318/E318	Metal Worker/General Welder/Welder	30	170	270
11	c338	Plumber	30	160	290
12	c314	Drainlayer	30	150	310
13	c319	Glazier	10	60	220
14	c323	Leveller	30	220	230
15	c328	Painter & Decorator	30	150	250
16	c310	Construction Plant Mechanic	40	270	350
17	c348	Structural Steel Welder	20	110	260
18	c345	Structural Steel Erector	20	200	500
19	c341/c327	Rigger/Metal Formwork Erector/Metal Scaffolder	100	600	890
20	c349	Truck Driver	80	630	860
21	c323/C324/c332/ c335/c330/c325	Plant & Equipment Operator/Marine Construction Plant Operator/Piling Operative	90	1 210	1 400
22	E305	Electrician/Electrical Fitter	80	540	950
23	E314	Refrigeration/AC Mechanic	50	120	300
24	E310	Mechanical Fitter	50	170	460
25	E315	Sheet Metal Worker	0	30	220
26	E308/E309	Lift Electrician/Lift Mechanic	10	10	260
27	E302	Building Services Mechanic	60	130	320
28	E306	Fire Services Mechanic	30	100	190
29	-	All others	140	840	1 360
		Total	1 780	15 150	22 250

All figures are rounded to the nearest ten and may not add up to the total.

Total manpower requirement for all Public Works Programmes (excluding maintenance works)

No. Works code	Trade	Manpower requirement (Nos. of site manualworkers)		
		98/99	99/00	00/01
1 c408/c402/c405	Labourer/Concreting Labourer/Heavy Load Labourer	7 450	7 440	8 520
2 c338/c404	Pneumatic Driller/Excavator	90	60	60
3 c309	Bamboo Scaffolder	220	250	240
4 c337/c347/c305	Plasterer/Tiler/Bricklayer	1 860	2 570	2 440
5 c338/c324	Mason/Marble Worker	110	160	160
6 c304	Bar Bender & Fixer	1 110	1 400	1 470
7 c307	Carpenter (Formwork)	2 300	2 740	2 910
8 c322	Joiner	790	1 110	1 070
9 c306	Concretor	470	540	600
10 c328/c318/c319	Metal Worker/General Welder/Welder	710	810	770
11 c338	Plumber	1 100	1 450	1 400
12 c314	Drainlayer	400	480	480
13 c318	Glazier	90	130	120
14 c323	Leveller	810	740	820
15 c328	Painter & Decorator	470	520	410
16 c310	Construction Plant Mechanic	750	910	990
17 c346	Structural Steel Welder	130	100	120
18 c345	Structural Steel Erector	50	30	40
19 c341/c327	Rigger/Metal Formwork Erector/Metal Scaffolder	100	80	100
20 c348	Truck Driver	1 000	920	1 170
21 c333/c334/c332/ c336/c330/c325	Plant & Equipment Operator/Marine Construction Plant Operator/Piling Operative	1 200	1 150	1 490
22 E305	Electrician/Electrical Fitter	1 530	1 860	1 650
23 E314	Refrigeration/AC Mechanic	220	250	190
24 E310	Mechanical Fitter	30	0	- 10
25 E315	Sheet Metal Worker	320	440	440
26 E308/E309	Lift Electrician/Lift Mechanic	70	60	10
27 E302	Building Services Mechanic	440	580	570
28 E306	Fire Services Mechanic	0	20	20
29 -	All others	320	290	240
	Total	24 140	27 080	28 490

All figures are rounded to the nearest ten and may not add up to the total.

Summary of Supply of Construction On-site Workers, 1998/99 - 2000/01

	<i>1998/99</i>	<i>1999/00</i>	<i>2000/01</i>
(a) Basic Supply			
(i) On-site manual workers	72 253	-	-
(ii) Electrical & mechanical workers	2 556	-	-
(iii) Unemployed persons	23 200	-	-
Sum of basic supply	98 009*	98 914	104 962
Plus			
(b) Net output of Training Organisations			
(i) Construction Industry Training Authority	799	4 429	4 429
(ii) Vocational Training Council	0	1 125	1 125
(iii) Employees Retraining Board	106	494	543
Sum of training output	905	6 048	6 097
Projected Total Supply = (a) + (b)	98 914	104 962	111 059

Notes:

* Figure as at 31 December 1998

- (1) The following factors are not considered:
 - (a) one-way entrants from Mainland of China
 - (b) retirement of existing workers
 - (c) conversion between on-site workers and decoration workers
- (2) Training output for 1998/99 covers the three months of Jan - Mar 1999 only.