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23 May 2000

Mrs Sharon Tong
Clerk to the Panel on Manpower
Legislative Council Secretariat
3/F., Citibank Tower
No. 3 Garden Road
Central, Hong Kong

Dear Mrs Tong,

LegCo Panel on Manpower
Manpower Requirements for Major Infrastructural Projects

At the last meeting of the LegCo Panel on Manpower held on 27.4.2000, Hong Andrew Cheng requested the Administration to provide information on the manpower demand for each trade in the construction projects of the two railway corporations and major infrastructural projects.

Attached for the reference of Members is a paper (No. 15/1) prepared for the Working Group on Training and Retraining for the Construction Industry. The paper provided detailed breakdown of the manpower requirements by trade for four years from 1999 to 2002 based on the manpower demand assessment for the building and civil engineering industry (the industry). The assessment was last carried out in mid-1999 in consultation with the

Works Bureau, Housing Bureau, the Real Estate Developers Association of Hong Kong, the Kowloon-Canton Railway Corporation and Mass Transit Railway Corporation and covered manpower demand arising from public and private housing projects, public works, railway projects and private development projects (non-residential).

The paper also provided the manpower supply assessment based on Vocational Training Council (VTC) Manpower Survey of the industry carried out in March 1999 and the training output in the following years by the different training providers (viz Construction Industry Training Authority, VTC and Employees Retraining Board)

The overall manpower supply and demand of the industry was then estimated as follows :

Year end / Assessment	1999	2000	2001	2002
Manpower Supply (see note below)	82145	87806	93520	99293
Manpower Demand	91818	104695	108315	100427

(Note : The manpower figures did not take into account the unemployed workers which were estimated to be in the region of 30,000 in March 1999.)

For details, please refer to paragraphs 3 and 4 of the paper and its Annexes.

The paper was discussed by the Working Group on Training and Retraining for the Construction Industry on 14.10.99. The Working Group recommended the Construction Industry Training Authority to increase its full time course training places by 1 828 in 1999/2000 and the VTC to increase its electrical and mechanical training places by about 300 in 2000/01 so as to train up new blood to meet the demand of the industry. These recommendations have already been or are being implemented.

Members are invited to note that the assessment reflected in the Working Group paper attached had not included the manpower requirements arising from the land formation, infrastructural construction and construction of superstructure and facilities of Phase I of the Hong Kong Disneyland as the relevant details were not available at that time.

Yours faithfully,

(P W Wong)
for Secretary for Education and Manpower

Discussion Paper 15/1 for
the Working Group
on Training and Retraining
for the Construction Industry

Report of the Working Group on the Assessment of Manpower Demand in the Construction Industry in 1999-2002

1. Introduction

- Recently, the Education and Manpower Bureau (EMB) has assessed the impact on the manpower demand in the construction industry arising from the launching of major infrastructural and housing projects in Hong Kong over the next three years.

- The purpose of this paper is to inform Members of the results of the assessment and seek their advice on how to improve the provision of training and retraining for the construction industry so as to cope with future manpower requirements.

2. Background

- Earlier in March this year, EMB made an assessment on the impact of infrastructural projects and railway developments on the manpower demand in the construction industry. In the present assessment, apart from updating the above assessment, the EMB has also studied the possible impact of public and private housing projects as well as other private civil works on the manpower demand in the industry.

3. Focus and Methods of Assessment

3.1 Focus of Assessment

- The assessment was confined to the manpower supply and demand of on-site construction workers (including electrical and mechanical (E&M) workers). Maintenance, decoration and repair workers were not included in the assessment.

3.2 Method of Assessing Manpower Supply

- Based on the Vocational Training Council (VTC)'s Manpower Survey of the Building and Civil Engineering Industry and the Manpower Survey on the Electrical and Mechanical Services Industry, which were conducted in March 1999, EMB had adopted the actual stocktake of on-site manual workers in March 1999 as the base of assessment.

- The manpower supply at the end of 1999 was derived by adding to the above base the actual training outputs from training bodies in that year. The manpower supply in 2000 was derived by adding the training outputs from training bodies in that year to the projected manpower supply in 1999 which was adopted as the base of assessment for the year of 2000. The same approach was applied to the projection of manpower supply for subsequent years.

- Natural wastage arising from retirement, change of trade and other factors was not considered in the projection of manpower supply. New entrants to the industry, other than the training outputs from training bodies, were

not included either.

- As the manpower demand of the construction industry might vary greatly, and it was hard to assess the number of workers switching between trades, it would be inevitable to have errors in projecting the total manpower supply by trades.

- According to the latest Quarterly General Household Survey (Second Quarter 1999) of the Census and Statistics Department (C&SD), there were 26 900 unemployed persons in the construction industry [(Note 1)]. However, there was no breakdown by trades for the unemployment figure. Therefore, the number of unemployed persons in the construction industry was not taken into account in the projection of manpower supply [(Note 2)].

3.3 Method of Assessing Manpower Demand

- EMB had consulted the Works Bureau (WB), the Housing Bureau (HB), the Real Estate Developers Association of Hong Kong (REDA), the Kowloon-Canton Railway Corporation (KCRC) and the MTR Corporation (MTRC) in assessing the manpower demand.

- In projecting future demands, EMB had taken into account the manpower

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(Note 1) As indicated by the Survey, there were 44 600 unemployed persons in the construction sector. 15 600 of them had been previously engaged as decoration and maintenance workers and were not included in the assessment. The remaining 29 000 unemployed persons, including professionals/technologists and technicians, had been previously engaged in foundation and superstructure works. Discounting the professionals/technologists and technicians, there were 26 900 unemployed persons with a previous job as on-site construction workers.

(Note 2) In an attempt to obtain unemployment figures in different trades of the construction industry, the C&SD has agreed with EMB to include an additional question in the Quarterly General Household Survey to be conducted by the end of this year to find out the trades in which the unemployed in the construction sector were previously engaged. However, as the sample size is rather small, individual trades with a smaller population of workers may not be covered in the Survey.

requirements arising from public housing projects, public works, railway projects, private housing projects and other development projects.

- Reference was made to the information provided by HB and REDA in projecting the manpower required for various housing projects and private development projects. Information on manpower requirements of public works projects was supplied by WB. Figures relating to railway projects were supplied by KCRC and MTRC. These projects include the West Rail Phase I, KCR Tai Wai to Ma On Shan Extension, Hung Hom to Tsim Sha Tsui Extension and Sheung Shui to Lok Ma Chau Extension, MTR Tseung Kwan O Extension and Quarry Bay Congestion Relief Works as well as the Lantau and Airport Railway Further Capital Works.

- It is estimated that around 4 000 construction workers are required for the development of the Cyberport. However, manpower demand arising from this project was not included in the assessment because detailed information was not yet available for obtaining breakdowns of the demand by years and by trades.

- The manpower demand for constructing the Hong Kong Disneyland was not included in the assessment because discussions on the development plan were still underway and the deal had yet to be closed.

4. Results of the Assessment

4.1 Supply

- According to the Manpower Survey of the Building and Civil Engineering Industry as well as the Manpower Survey of the Electrical and

Mechanical Services Industry conducted by the VTC in March 1999, there were 77 335 on-site construction workers at that time.

- The training outputs from CITA, ERB and VTC were taken into account in projecting the total training outputs from training bodies.

Projected training outputs				
	1999	2000	2001	2002
CITA	3 631	4 429	4 429	4 429
VTC	808	689	689	689
ERB	371	543	596	655
Total	4 810	5661	5 714	5 773

- The number of on-site construction workers in supply by the end of 1999, 2000, 2001 and 2002 as projected by EMB was 82 145, 87 806, 93 520 and 99 293 respectively.

4.2 Demand

- Based on the projected manpower demand arising from housing projects, public works, railway projects and private development projects, the number of workers required in 1999, 2000 and 2001 as projected by EMB was 91 818, 104 695, and 108 315 respectively. The number would drop to 100 427 in 2002.

	1999	2000	2001	2002
Manpower Supply (See Note)	82145	87 806	93 520	99 293
Total Manpower Demand	91 818	104 695	108 315	100 427

(Note: While the training outputs from various training bodies were included in the projection of manpower supply for each year, unemployed persons in the construction industry were not taken into account.)

- The drop in manpower demand in 2002 might be a superficial phenomenon only because the manpower requirements for certain major infrastructural projects (such as MTR East Kowloon Line and the Hong Kong Disneyland), which might commence later, were not included in the projection as decisions had yet to be made on the launching of these projects. Upon approval for the commencement of these works, there would be a sharp rise in manpower demand. In view of this, EMB would update its manpower assessment regularly on the basis of the latest information.

- The total supply and demand of manpower by trades in 1999-2002 is at Annex 1.

- Annex 2 sets out the changes in manpower demand arising from public and private housing projects, public works, KCRC/MTRC projects and other private projects in 1999-2002.

5. Conclusion

- The demand arising from public works, public housing projects and private development projects for on-site construction workers is relatively steady.

- According to the projections made by MTRC and KCRC, the manpower demand arising from MTRC's projects will peak between late 2000 and early 2001 while that of KCRC's projects will peak between late 2001

and early 2002.

- It is necessary to consider the ways to cope with the increasing manpower demand between late 2000 and early 2002.

- The data arising from this assessment are essentially for reference. It is still necessary for EMB to seek inputs from representatives in the industry and conduct regular reviews on the trades with possible manpower shortage so that responsive training and re-training measures may be put in place at an early date. CITA and VTC have compiled their respective reports on the manpower supply and demand situation in the construction industry (Discussion Papers No. 15/2 and 15/3) for Members' reference.

6. The Way Forward

- With reference to the views of the Working Group, EMB will continue to liaise closely with the training bodies such as CITA and VTC to ensure that their training capacity is flexibly deployed to meet the needs of the market.

7. Advice Sought

- Members are asked to give their advice on the manpower demand and supply in the construction industry and related manpower policies to ensure an adequate supply of workers to meet the manpower requirements arising from various projects.

Education and Manpower Bureau

September 1999

Total Demand
for Housing Projects, Public Works, Railway Projects and private development projects

No.	Works code	Trade	Manpower requirement (Nos. of site manual workers) *(Notes 1 & 2)*			
			1999	2000	2001	2002
1	E301	Automatic Equipment Mechanic *(Note 4)*	0	0	0	25
2	C303	Bamboo Scaffolder	1 292	1 359	1 374	1 249
3	C304	Bar Bender & Fixer	5 585	7 146	6 599	5 311
4	C305 / C337 / C347	Bricklayer / Plasterer / Tiler	10 905	11 661	12 308	11 790
5	E302	Building Services Mechanic	467	564	821	1 268
6	C307 / C322	Carpenter (Formwork) / Joiner	11 897	14 255	14 094	12 230
7	C402 / C404 / C405 / C406	Concreting Labourer / Excavator / Heavy Load Labourer/ Labourer	20 566	23 001	22 835	20 763
8	C309	Concretor	2 027	3 633	3 839	2 602
9	C310	Construction Plant Mechanic	2 081	2 223	2 265	2 234
10	C314	Drainlayer	1 564	1 897	1 996	1 738
11	E305	Electrician/Electrical Fitter	6 101	6 169	6 543	6 530
12	E306	Fire Services Mechanic	953	879	1 232	1 521
13	C319	Glazier	853	850	955	947
14	C323	Leveller	5 668	5 652	5 127	4 747
15	E308/E309	Lift Electrican/Lift Mechanic	1 192	1 095	1 284	1 421
16	C324 / C326	Marble Worker / Mason	1 549	1 515	1 800	1 884
17	E310	Mechanical Fitter	188	221	330	271
18	C341	Metal Formwork Erector / Rigger	474	1 350	1 304	967
19	C328	Metal Worker	2 310	2 684	2 768	2 778
20	E311	Overhead Linesman *(Note 4)*	0	8	13	74
21	C329	Painter & Decorator	2 330	2 504	2 687	2 573
22	C332 / C333 / C334	Plant & Equipment Operator (Builder's Lift, Earthmoving Machinery, Hoist & Crane)	2 802	3 450	3 802	3 279
23	C336	Plant & Equipment Operator (Tunnelling) *(Note 4)*	70	40	0	0
24	C338	Plumber	3 795	3 950	3 806	3 683
25	C339	Pneumatic Driller	573	755	887	720
26	E314	Refrigeration/AC Mechanic	1 113	1 165	1 749	1 786
27	E315	Sheet Metal Worker	525	560	400	388
28	E316 / E317	Sign Installer / Fabricator *(Note 4)*	0	3	0	65
29	C345	Structural Steel Erector	323	379	508	505
30	C346	Structural Steel Welder	245	271	287	272
31	C348	Track Worker *(Note 4)*	3	32	182	91
32	C349	Truck Driver	1 323	1 598	1 859	1 877
33		Others *(Note 3)*	3 047	3 829	4 668	4 841
		Total	91 818	104 695	108 315	100 427

Note: Figures may not added up due to rounding.

Total Supply of Manual Workers at Construction Site

No.	Works code	Trade	Total Supply (Nos. of site manual workers) *(Notes 1 & 2)* 1999	2000	2001	2002
1	E301	Automatic Equipment Mechanic *(Note 4)*	0	0	0	0
2	C303	Bamboo Scaffolder	1 029	1 077	1 125	1 173
3	C304	Bar Bender & Fixer	4 196	4 550	4 904	5 258
4	C305 / C337 / C347	Bricklayer / Plasterer / Tiler	8 360	9 159	9 958	10 757
5	E302	Building Services Mechanic	130	161	192	223
6	C307 / C322	Carpenter (Formwork) / Joiner	8 270	8 993	9 720	10 453
7	C402 / C404 / C405 / C406	Concreting Labourer / Excavator / Heavy Load Labourer/ Labourer	18 526	19 137	19 748	20 359
8	C309	Concretor	1 452	1 592	1 732	1 872
9	C310	Construction Plant Mechanic	1 122	1 314	1 506	1 698
10	C314	Drainlayer	1 017	1 068	1 119	1 170
11	E305	Electrician/Electrical Fitter	5 390	6 095	6 836	7 617
12	E306	Fire Services Mechanic	1 157	1 157	1 157	1 157
13	C319	Glazier	408	408	408	408
14	C323	Leveller	2 529	2 937	3 345	3 753
15	E308/E309	Lift Electrican/Lift Mechanic	826	954	1 083	1 213
16	C324 / C326	Marble Worker / Mason	1 275	1 323	1 371	1 419
17	E310	Mechanical Fitter	319	443	567	691
18	C341	Metal Formwork Erector / Rigger	1 940	2 025	2 110	2 195
19	C328	Metal Worker	2 506	2 564	2 622	2 680
20	E311	Overhead Linesman *(Note 4)*	0	0	0	0
21	C329	Painter & Decorator	3 220	3 583	3 951	4 325
22	C332 / C333 / C334	Plant & Equipment Operator (Builder's Lift, Earthmoving Machinery, Hoist & Crane)	3 131	3 420	3 709	3 998
23	C336	Plant & Equipment Operator (Tunnelling) *(Note 4)*	15	15	15	15
24	C338	Plumber	3 886	4 145	4 409	4 678
25	C339	Pneumatic Driller	319	319	319	319
26	E314	Refrigeration/AC Mechanic	1 548	1 690	1 832	1 974
27	E315	Sheet Metal Worker	221	221	221	221
28	E316 / E317	Sign Installer / Fabricator *(Note 4)*	4	4	4	4
29	C345	Structural Steel Erector	182	182	182	182
30	C346	Structural Steel Welder	322	322	322	322
31	C348	Track Worker *(Note 4)*	3	3	3	3
32	C349	Truck Driver	1 157	1 157	1 157	1 157
33		Others *(Note 3)*	7 685	7 788	7 893	7 999
		Total	82 145	87 806	93 520	99 293

Notes

1 The figures are based on the assumption that each worker works 74 days a quarter (or 295 days a year).

2 The assessment covers manual workers at the tradesman level and semi-skilled worker/general worker in construction sites only.
The manpower requirement of construction professionals/technologist and technicians are not included.

3 Others may include: Asphalter (Roadworks), Borer/Driller/Ground Investigation Operator, Cable Jointer (Power), Demolition Worker, Diver, Diver's Linesman, Floor Layer, Gas Plumber, General Welder, Grouting Worker, Marine Construction Plant Operator, Metal Scaffolder, Piling Operative, Pipelayer, Plant & Equipment Operator (Piling), Prestressing Operative, Sewerman, Shotcretor, Shotfirer, Welder etc.

4 These trades are mainly related to railway construction projects.

Annex 2

Construction manpower demand arising from various projects

from 1999 to 2002

Project/Year	1999	2000	2001	2002
Public works	30 992	37 958	37 861	33 689
Public housing projects	16 931	15 344	12 814	13 584
private housing projects	29 240	28 483	30 373	29 373
MTRC's railway projects and related residential development	3 725	6 103	4 800	1 287
KCRC's railway projects	1 519	9 260	15 651	16 154
Private non-residential development projects	9 412	7 546	6 816	6 339
Total	91 818	104 695	108 315	100 427

Note: Figures may not added up due to rounding