

Report  
on  
The Supply and Demand  
of  
Professional Land Surveyors in Hong Kong  
by



The Royal Institution of Chartered Surveyors  
(Hong Kong Branch)



The Hong Kong Institute of Land Surveyors



The Hong Kong Institute of Surveyors

Revised February 1989

The Supply and Demand of  
Professional Land Surveyors in Hong Kong

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## 1. BACKGROUND

The three Institutes representing the Land Surveying profession in Hong Kong, that is, the Hong Kong Branch of the Royal Institution of Chartered Surveyors, the Hong Kong Institute of Land Surveyors, and the Hong Kong Institute of Surveyors, commissioned a joint Working Party to investigate the future supply and demand of professional Land Surveyors in Hong Kong. The Working Party was established in response to growing concern and controversy over the future provision of Land Surveyors. In particular concern was expressed by the President of the H.K.I.S. and the Chairman of the R.I.C.S.(H.K.) in their joint letter of 31 December 1985 to the Chairman of the Universities and Polytechnics Grants Committee. The letter was an outcome of a discussion forum jointly attended by the Education Committee of the two Institutes on 20 December 1985, and stated inter alia "..... the need to establish a degree course in Land Surveying cannot be overemphasised as there is a severe shortage of Land Surveyors in Hong Kong". This concern has been shared by others who feel that reliance on overseas training schemes should be reduced over the next few years, and that a locally established training route should be developed to meet the aspirations of prospective surveyors.

A difference of opinion has been expressed by other professions who questioned the justification in allocating resources to a course which may provide Hong Kong with an excessive number of Land Surveyors.

The Institutes therefore agreed that a more comprehensive investigation should be undertaken, and so formed the Working Party. A report was produced in July 1986. It was studied by individual Institutes and subsequently discussed between their Chairman/Presidents. The report in the present form has been agreed between the three Institutes.

This report has been revised and up-dated at the request of the Director of the Hong Kong Polytechnic, Dr John Clarke, as a direct result of his meeting with a joint HKIS/RICS party. The meeting was on Tuesday 24th January 1989 at Hong Kong Polytechnic. The HKIS/RICS party consisted of Mr C.N. Brooke, Chairman Education & Membership Committee, RICS (Hong Kong Branch), Professor A.

Branch), Professor A. Walker, Vice Chairman, RICS (Hong Kong Branch), Mr Lau Chung Tim, Chairman HKIS Land Surveying Division, Mr S.C. Leung, Vice President, HKIS.

## 2. TERMS OF REFERENCE

2.1 The terms of reference for the Working Party were agreed between the Presidents/Chairmen of the three Institutes, and were stated as:-

- a. "To investigate on the demand and supply of Land Surveyors (including estimate on potential development fields).
- b. Review on existing Land Surveying education facilities and make recommendations to cope with requirements."

2.2 The title "Land Surveyor" has been taken to be a person with a recognised qualification in the discipline of Land Surveying, which in Hong Kong normally means a person who has passed the final professional examinations or holds an accepted degree, together with a further pass in a test of professional competence.

2.3 It is noteworthy that the minimum time normally taken to achieve the professional qualification is five years, so that the output from any locally established course could not be fully qualified until the early 1990's. For this reason, and because the year 1997 provides a suitable threshold, projections were made to cover the next 12 years, while at the same time acknowledging the vagaries of any prediction over such a period.

2.4 The up-dated report attempts to project the supply and demand for Professional Land Surveyors forward ten years to 1998 using material that has become available since the original report was completed.

2.5 New data is shown in bold characters wherever added.

### 3. THE PRESENT LAND SURVEYING POPULATION IN HONG KONG

Before attempting to predict future requirements it is useful to outline the current number and distribution of Land Surveyors working in Hong Kong as in **January 1989:-**

	1986	1989
Government	68	84
Department of Buildings & Lands		
Engineering Development Department		
Other (including Housing, Water Supplies, Agric. & Fish., etc.)		
Private		
Private Practice Land Surveyors	6	7
Surveyors with Engineering Consultants/ Contractors/Utilities	8	12
Academic		
Land Surveyors in Academic Institutions with Professional Qualifications and/or Higher Degrees	9	9
Total	91	112

The figures indicate that the great majority of Land Surveyors are presently employed in the public sector. It is of interest to note that the Building and Civil Engineering Industry Manpower Survey Report of 1985 quotes the number of "Technologist" level Land Surveyors in the industry as 397. The "Technologist" definition in this survey includes Professionals, and Degree and Higher Diploma holders, but the number is nevertheless surprisingly large, and is indicative of a substantial number employed in the construction industry who are called Land Surveyors but who do not appear in professional listings. (Further details of the Manpower Survey are given in Appendix I(V))

The Building and Civil Engineering Industry Manpower Survey Report of 1987 quotes the number of "Technologist" level Land Surveyors in the industry as 269 compared to 397 in 1985. The classification is unchanged from the 1985 survey but the numbers have dropped significantly and the make up of the group has changed radically. In the 1985 survey 211 could be considered educationally equivalent to holding a professional qualification, the remaining 186

having qualifications that were actually of technician level. The 1987 survey shows to 214 have qualifications that could be considered comparable to professional status with the remaining 55 at technician level. (see appendix)

The percentage of staff that could be considered to have some parity with professional to status to those with technician qualifications was 53% in 1985 whereas in 1987 it was 80%.

The most significant change was in the number of graduates employed 46 in 1985 to 119 in 1987. That is 11% to 44% of total number employed.

The staff employed by the construction industry are not normally primarily qualified as land surveyors, holding in the main either civil engineering or building qualifications. Both disciplines offer some basic surveying training as part of their courses.

The cause of this significant change in level of qualifications required for those classified as Surveyors in the construction industry is probably a result of the labour shortage. This in turn has encouraged the use of higher technology which is more productive but demands better qualified staff.

#### 4. THE DEMAND

In attempting to predict the demand for qualified Land Surveyors over the next 10 years consideration must be given to:-

- i. the probable reduction in the existing population through retirement, localisation, and other factors; and
- ii. the probable increase in demand resulting from all likely growth factors.

##### 4.1 Reduction

###### Government

i.	Retirements (at 60) Local and Expatriate	12
ii.	Termination of Expatriate Contracts	24
iii.	Other Estimated Wastage - Emigration, Change of Job, Early Retirement, etc. (one per year)	12
	Total	48

(This amounts to 70% of the Government Total)

Other Employers (Wastage at 50%)	
iv. Private Practice	3
v. Consultants/Contractors/Utilities	4
vi. Academic	7
	7
Overall Total	62

It is recognised with respect to:

4.1.ii. that possibly not all expatriate officers will wish or be required to terminate their contracts by 1997;

4.1.iii. that the estimate of losses to Government for other reasons is very uncertain, but the figure is considered to err on the cautious side;

The figures quoted for wastage due to immigration are probably unduly conservative and should reflect the figures quoted for all professionals in Hong Kong.

4.1.iv. - v. that the losses to other employers is also very uncertain, but their mix (local/expatriate, age-range) follows the Government fairly closely, so a 50% estimate is also conservative, while taking account of the rather lower pressure for localisation in these areas.

4.1 vi. Academic losses due to emmigration in 1988 were 2, that is 22%, retirement will probably account for 4 persons over the 10 year period. In addition academic developement will inevitably create movement at least as great as the rate of retirement. These figures should also be seen against the increased numbers required to offer the degree programme.

#### 4.2 Reduction- Revised Figures

##### Government

i. Retirements (at 60) Local and Expatriate	14
ii. Termination of Expatriate Contracts	18
iii. Other Estimated Wastage - Emigration, Change of Job, Early Retirement, etc. (two per year)	<u>20</u>
Total	52

(This amounts to 62% of the Government Total)

Other Employers (Wastage at 50%)	
iv. Private Practice	3
v. Consultants/Contractors/Utilities	6
vi. Academic	<u>9</u>
	Total 18
	Overall Total 70

#### 4.2 Growth In Demand

It must be accepted that in a profession which has close links with the construction industry, and where fluctuations in fortune in the latter are common, that any future projections of demand stand the risk of being seriously in error. However logical reasons have already been put forward for the need for replacement of unqualified staff by professional staff which should indicate a small growth less dependent on expansion in the industry.

##### 4.2.1 Government Sector

Projections may be made in either of two ways. The first is to evaluate the past growth trend over as long a period as possible, and project this forwards. The second is to attempt to identify and quantify all the factors which are likely to contribute to the demand over the next 12 years. Both approaches will be taken account of here, by firstly evaluating a past rate of growth for the public sector, followed by an examination of whether identifiable future trends support this rate.

The table below shows the expansion of the two major Land Surveyor employer Departments of Government since 1950 at approximately 5 year intervals.



<u>Year</u>	<u>Level</u>		<u>Total</u>	<u>Annual Growth</u>
	<u>Direct</u>	<u>Profess.</u>		<u>%</u>
50/51	1	9	10	0.0
55/56	1	9	10	0.0
60/61	1	10	11	1.9
66/67	1	16	17	9.1
70/71	2	19	21	4.3
74/75	3	32	35	10.8
79/80	3	34	37	1.1
84/85	5	54	59	11.9
85/86			68	15.0
88/89			84	7.8
Average Annual Growth over 35 years				: 5.15%
Average Annual Growth over the past 10 years				: 5.18%
Average Annual Growth over 39 years				: 6.19%
Average Annual Growth over past 10 years				: 8.95%

It is significant that although growth rates have fluctuated between 1% and 11%, an average of about 5% growth per annum has been maintained overall, and further that this rate still applies if only the last 10 years are considered.

The Working Party considered whether an adoption of this rate is reasonable for forward projections of growth in the public sector. The following factors were taken into account:

4.2.1.1 At present there is virtually no growth in these Government Departments. However the present situation follows a period of rapid expansion, and is to be expected from the apparently common fluctuations in growth indicated by the Table. In fact the 5% growth was exceeded over the past three years..

4.2.1.2 The current standstill should be viewed with regard to the aftermath of political uncertainty and economic downturn during the 1983/84 Sovereignty talks between Britain and China. In the past 35 years covered by the Table, similar or more extreme periods of political uncertainty have been seen to cause only temporary setbacks in economic growth. Recent sales of land and property are

among several factors indicating that an upward trend in the economy is again underway.

4.2.1.3 A number of positive growth factors apply more specifically to the Land Surveying profession -

- i. The continued growth of Hong Kong's infrastructure - new towns, road and rail trunk routes, land reclamation and development, etc. For instance, during 1986/87 work will start on new projects funded from the Capital Work Reserve Fund to a value of about \$7,370 million, in addition to expenditure on ongoing projects of \$6,625 million. (See Appendix II.)

**At present several major projects are being put forward by a variety of interested parties. These include a new airport, several light rail systems, a new container terminal and major drainage works**

- ii. The proposal to improve the demarcation and registration of New Territories property boundaries either through a Boundaries Rectification Ordinance or under existing powers. It is believed that once underway, there will be a strong and growing public demand for this service.
- iii. The proposed Land Survey Ordinance will permit the private surveyor to carry out more cadastral surveys, particularly in sub-division surveys. All these cadastral plans will have to be scrutinized by the survey authority before registration, thereby demanding additional staff requirement.
- iv. The changing nature of the profession. The technology of Land Surveying is undergoing rapid change, apparently causing a greater demand for technologists at the higher level. A particular case is the collection, storage, and handling of land related data in digital form. The proposed establishment of a Land Information System in Hong Kong exemplifies this, with Land Surveyors being the prime activators. **This proposal has now become a fact and will undoubtedly create further demand from the major utilities.**

4.2.1.4 Possible negative factors affecting growth are considered to include-

- i. Another period of political uncertainty and fall in confidence as 1997 approaches.
- ii. A downturn in the economy of Hong Kong resulting from external factors. The likelihood of either factor cannot here be assessed.

4.2.1.5 Taking into account all these factors it was considered that an average growth rate in the public sector over the next 12 years can be conservatively estimated to continue at 5% per annum. The rate should be applied to the total number of Land Surveyors in Government service since many factors, but particularly the Land Information System proposal, affect most relevant departments.

The report of the Building and Civil Engineering Industry Training Board Manpower Survey (Conclusions, see Appendix I(ii)) stated, "..... the demand for properly trained workers at all skill levels will continue to grow .....". With regard to Technologist Land Surveyors they concluded that the average number of trainees to be taken on annually over the next 6 years should be 22 - 31. For a starting total in that category of 397 this represents a growth rate of 5.5% to 7.8%, further indicating that the rate here selected of 5% is on the conservative side. **The changed rates of the 1987 survey show that even with the change of emphasis in employment the growth rate is still over 5%.**

Applying a growth rate of 5% per annum to the 1986 total of 68 Government Land Surveyors over 12 years produced an establishment of 122. Furthermore, the new activities relating to Boundary Rectification Ordinance, Land Survey Ordinance and Land Information System will require 18 additional Land Surveyors. Thus a total establishment of 140 will be produced - an increase of 72. **The current evidence strongly supports the earlier assumptions.**

#### 4.2.2 Private Practice Sector

This sector is small in Hong Kong, which is a reflection of the large provision by Government of Land Surveying services.

There are at present 6 private Land Surveying companies which have professional Land Surveyors on their staff, although 11 companies listed in the Hong Kong telephone directory offer Land Surveying services.

The most significant factor prompting growth in this sector would be the enactment of the Land Survey Ordinance, permitting the registration of Land Surveyors, and their bidding for various surveying services currently provided by Government, including cadastral. Discussions on this Ordinance were begun in 1982, but no decisions are known to have yet been made. The enactment of the proposed Boundaries Rectification Ordinance would be an additional spur to growth.

The Institutes are optimistic, and consider that in 12 years time the private sector is likely to become more established, particularly since developments in South China are causing increasing demand for professional expertise from Hong Kong (see para. 3.3.i of the Manpower Survey 1985). They therefore estimate an increase of 25 in this sector by 1997.

Another small potential growth area in this sector is in support of the survey instrument manufacturing agencies. The status of the Hong Kong agencies is being enhanced as the importation of instruments to China continues to grow, so that there is a likelihood of professional Land Surveyors being employed here as occurs elsewhere. However, the numbers are considered too uncertain to be quantified in future estimates.

#### 4.2.3 Consultants, Contractors and Utilities Sector

This sector has the potential to significantly effect estimates since it is subject to many unquantifiable factors.

4.2.3.1 Four Consultancy firms have 6 of the 8 surveyors currently employed in this sector, with the M.T.R. and K.C.R. Companies employing the remaining 2. Listed in the Appendix III are some 20 other large consultants, contractors or utilities companies identified by the Working Party to undertake work which would be expected to require Land Surveyors, but which are not known to include professional Land Surveyors on their staff. The list is by no means complete, but suggests that for such companies either lower grade surveyors carry out the work, or it is done by staff trained in fields other than Land Surveying. As a result of analysis of the Manpower Survey data (1985), and consideration of recent budget allocations on major construction contracts, it is believed that both these reasons apply.

The effect of the past three years is for a the number of surveyors employed by consultants etc. to increase to 11. It is interesting to note that of these, two vacancies were filled by expatriates because suitable local staff could not be found.

4.2.3.2 The Manpower Survey provides information on education levels and salary levels for each job category, including "Technologist" Land Surveyors. Of the 397 "Land Surveyors" only 23 are trained to degree or higher level, while as many as 292 have earned their job title through on-the-job training. However 132 "Land Surveyors" receive salaries over \$10,000 per month, suggesting that many hold

high qualifications in some unspecified discipline. The 1988 survey shows that 188 "Land Surveyors" receive more than \$10,000.

4.2.3.4 On all Government Group A Contracts tendered for construction work, a mandatory clause is included which requires the contractor to employ a "competent and experienced surveyor" to do the survey work (see Appendix IV). While the "competent and experienced surveyor" is not specified as a professionally qualified Land Surveyor, evidence obtained on Statistics of Survey Costs in Public Works indicates that the surveyors employed are very much less than this, even though such staff are budgeted for. The Table following summarises these statistics:

<u>Department/ Office</u>	<u>Data Period</u>	<u>Contract Sum Totals</u> HK\$(M)	<u>Contractor's Setting-out Fee</u> HK\$(M)
Highways/H.K.	84/85	127.70	1.639
Highways/Kowloon	84/85	4.733	0.636
Highways/N.T.	84/85/86	441.40	4.628
Drainage/C.E.S.D.	84/85/86	117.30	3.421
Housing Department	85/86	243.00	1.860
Postworks/C.E.S.D.	84/85/86	229.20	3.785
TOTALS		1206.00	15.970

It is noted that the total fees allocated for setting out (about \$16M) are to include the provision of necessary survey instruments and labour costs in addition to the employment of qualified personnel for setting out. Nevertheless this sum, when averaged over the periods of all these contracts, gives an average provision of \$15,192 per month, a figure which should allow the utilisation of properly qualified Land Surveyors. However where information on the qualifications and experience of surveyors is provided with these statistics, of the 47 contracts listed it appears that two have employed surveyors which could be classified as "Technologist" (Manpower Survey) and none were professionally qualified. Most have Certificate level qualifications or merely several years of site experience, while a few have various qualifications in Civil Engineering or Building.

4.2.3.5 It is the strongly felt opinion of the three Institutions that for the maintenance or attainment of satisfactory standards in the increasingly technological construction industry, Clause 19 of the Government's General Conditions of Contract should more specifically state the professional qualification requirement of the site

surveyor, and should be strictly adhered to an enforced. If there is a supply of suitably qualified Land Surveyors, we see no reason why it should not be.

4.2.3.6 Since it is expected that a proportion of such qualified surveyors would be at the professional level, since the projected development works referred to in para. 4.2.1.3.i and Appendix II would affect this sector also, and in consideration of the 20 companies in Appendix III without professional Land Surveyors, it has been concluded that a reasonable estimate for the demand in this sector after 12 years would be an additional 16 Land Surveyors.

#### 4.2.4 Academic Sector

The academic sector essentially comprises those Land Surveyors involved in the education and training of future surveyors. The Land Surveyor definition is here broadened to include Higher Degree holders since a Higher Degree is generally equated with professional status in academic institutions.

The existing total of 9 Land Surveyors in this sector are all based at the Hong Kong Polytechnic (Centre of Land and Engineering Surveying) and this is the only institution at present running courses primarily for Land Surveying personnel. The Morrison Hill Technical Institute has offered a part time Certificate in this discipline but has not as yet received sufficient response to inaugurate the course. Other institutions, including the Hong Kong University, the City Polytechnic, the Morrison Hill and Haking Wong Technical Institutes all teach land Surveying as a subsidiary part of other courses such as Civil Engineering or Building. At none of these institutions are Land Surveyors employed to teach this subject. However since these component parts are in most cases not enough to occupy a Land Surveyor full time, it is unlikely that there will be a significant change in this area.

Should a Land Surveying degree course be commenced, the Working Party estimates that an overall total of 14 surveyors in this sector would be required to meet the needs of Land Surveying training in Hong Kong in 12 years time. This is an increase of 5 over the present number.

4.3	<u>Summary of Demand</u>	<u>1986</u>	<u>1989</u>
	Government	72	72
	Private Practice	25	25
	Consultants/Contractors/Utilities	16	25
	Academic	5	6
	Total	118	128
	Total Wastage	62	69
	OVERALL TOTAL	<u>180</u>	<u>197</u>

## 5. THE SUPPLY

This estimate of supply will be based on the provision of Land Surveyors under existing training arrangements.

The anticipated supply over the next 12 years will come from prospective surveyors at many different stages of the training process. Some are close to full qualification, with only 2 final professional test to complete, some are in preparation for final written examinations, others are working at an intermediate stage, and in the 12 year period others will pass through a training process in its entirety.

5.1 Closest to qualification are those who have passed final examinations or hold an exempting Degree, and who are undertaking a test of professional competent (T.P.C.). In Government service these are identified as Assistant Land Surveyors in trainee posts, and they currently total 14. In addition to those sponsored by Government are candidates in Government service who have passed R.I.C.S. Finals through their own efforts - currently 6. These do not at present have the opportunity to embark on a T.P.C., part of which requires suitable experience under an approved supervisor. However it is considered probable that an opportunity will be given in the near future.

5.2 Outside Government service are some 15 graduates from overseas Land Surveying courses, most of whom are now working in fields other than Land Surveying. The Working Party estimate that no more than 5 of these are likely to fully qualify over the next 12 years, a major hurdle for them being acceptable supervision for the test of professional competence. **This source of staff was utilised by Government to satisfy demand for staff at the**

technologist level in the period 1986-1988. The implication is that employers are reluctant or unable to offer suitable post qualification training. Figures now available indicate that Hong Kong students who take advantage of overseas education whenever possible also take overseas employment opportunities.

5.3 A less easily quantified group are those in Government service who are now eligible to enter for R.I.C.S. Final Examinations as a result of either passing R.I.C.S. Intermediate (Part I/II) Examinations as private candidates, or via the alternative channel of Membership of the Society of Surveying Technicians. Now that the R.I.C.S. has stopped the first channel of qualification, serving technicians who want to qualify through self study will have to resort to the second channel. However there are still 15 candidates belonging to the first group who are attempting the Final Examination this year or will do so within one or two years. On past evidence of success rate, it is estimated that 12 will succeed.

The latter group, who by virtue of holding a B.T.E.C. validated Hong Kong Polytechnic Higher Certificate in Land Surveying have become members of the Society of Surveying Technicians, become eligible to enter for R.I.C.S. Finals after the age of 30, and having passed a practical test. This bridging facility for technicians has been used in the past, but because of the T.P.C. hurdle which still applies, and because the number gaining the required Higher Certificate is now declining owing to lack of support for the prerequisite Certificate course, and estimate of one per two years is considered realistic for this group, providing a further 6.

5.4 Trainees at an earlier stage on the qualification route include 5 currently on Government scholarships at overseas institutions, all of whom are expected to become fully qualified within the 12 years. **No further scholarships have been offered.**

5.5 Also in full time education are students at the Hong Kong Polytechnic studying for the Higher Diploma in Land Surveying. None have yet completed the course which commenced in 1984, but the number graduating is likely to be in the order of 20 per year from 1987. The course is aimed primarily at meeting the Land Surveying needs at the "Technologist" level. Present indications are that if the students achieve passes with merit in at least 8 subjects at the levels IV and V they are likely to be granted exemption from the R.I.C.S. I/II examination. They would then need to pursue self study for the R.I.C.S. Finals, and again overcome the T.P.C.



hurdle. The earliest they could thus achieve full professional status is in 1990. It is also considered probable that if a higher level degree course is instituted in Hong Kong, then the output and level of this Higher Diploma Course would come review. For these reasons it is estimated that the maximum number likely to gain full qualifications after 12 years is 20.

**Table Showing Success Rate for Government Employees Attempting RICS Examinations**

Year	PTI/II Numbers	1(a)	Final numbers
1983		1(a)	
1984		3(b)	
1985		3(c)	1(a) 1(b)
1986		9(d)	1(c)
2(b)			
1987			6(d)
1988			2(d)

Two members under group (c) obtained scolarships and achieved exemptions.

No students from the Higher Diploma in Land Surveying will achieve professional status by 1990. Two students went on to achieve Higher Degrees overseas and one student is away studying. The figure of 20 is unlikely to be met and a more realistic figure of 15 should be considered.

5.6 A final potential source of Land Surveyors are those at present undertaking or likely in the future to commence courses in overseas institutions through private financing. There has been interest in the past, as para. 5.2 indicates, although the success rate to full qualification is very low. It is estimated that the maximum number of probable qualifications via this route is two per year, and that if a local degree course is established then this output will decline because of the cheaper local alternative after 1990. It is considered that if such alternative does become available, then the overseas source of supply should not be taken into account as a matter of principle. They therefore estimate that the supply from this source will not exceed 10. The figure quoted is probably in excess of the number since likely candidates have recognised the difficulty of achieving success by this route.

### 5.7 Summary of Supply

	Original	Revised
Government		
Sponsored - (at T.P.C. stage)	14	12
Self Study - (at T.P.C. stage)	6	6
Scholarships - (before Finals)	5	5
Self Study - (with R.I.C.S. I/II)	12	10
Self Study - (bridging from M.S.S.T.)	6	6
Others		
Private - (at T.P.C. stage)	5	5
Future Higher Diploma Holders	20	15
Future Overseas Graduates	10	5
OVERALL TOTAL	<u>78</u>	<u>64</u>

## 6. CONCLUSIONS

We conclude that the demand for qualified Land Surveyors in 10 years time as a result of wastage of present numbers, of growth in surveying activities, and in anticipation of raised standards of Land Surveying in the construction industry, may be conservatively estimated to be 197.

We conclude that the supply of such Land Surveyors to come from existing training provision during the 12 years may be generously estimated to be 64

We therefore foresee a net deficit in 1998 of at least 133 professional Land Surveyors.

## 7. RECOMMENDATIONS

The following recommendations are made:-

- i. A degree course in Land Surveying is to be instituted in Hong Kong - chiefly because of the perceived shortage in 12 years time stated in para. 6, but also in recognition of the factor that as Hong Kong comes closer to being a Special Administrative Region of China it is important that it is seen to be capable of supplying its own professional needs. The present method of gain professional qualification mainly through passing R.I.C.S. examinations will gradually have to be replaced by that of gaining a local qualification. This is in line with other engineering and surveying disciplines which already have done so or are in the process of establishing local qualification channels. Although there may still be students going abroad to seek overseas qualifications in future, the three Institutions recognise that a local degree course will ensure a steady supply of professional Land Surveyors before and after 1997.
- ii. A local degree course, in conjunction with the Test of Professional competence organised locally, should be the future pattern of qualification of professional Land Surveyors.
- iii. The course is to be inaugurated if possible in 1990/91. With this date the first full qualifiers after a three year course of study and a two year professional attachment would appear in 1995/96.
- iv. An intake of 30 per year for 5 years would ensure that by 1999 the need is adequately but not excessively met.
- v. There is no preference for a particular institution to establish the degree course, but we recognise the fact that the Hong Kong Polytechnic already possesses to a large extent the required staffing and equipment. To initiate a course there would probably cost less than at other institutions.
- vi. In order to provide and monitor training leading to the T.P.C., a Graduate Training Scheme in Government should be established. Private practitioners should also be encouraged to participate in providing training places.
- vii. The Institutes want to emphasise the importance of employing qualified Land Surveyors in supervising the survey work of large civil engineering projects. Thus the clauses in the Government's Civil Engineering Manual regarding the employment of competent and experienced Land Surveyors should be modified to state more specifically the qualification requirement of site surveyors, with the eventual aim of requiring the employment of qualified Land Surveyors. The current manpower survey indicates that the construction industry has partially recognised the

need for better qualified staff. The provision of local graduates qualified to practise land surveying will satisfy the need of the construction industry to further utilise "high-tech" solutions for future major projects without the need to achieve this by bringing in contract employees from overseas.

## Appendices

- I. Building & Civil Engineering Industry Training Board Manpower Survey Report 1985 & 1987  
- Conclusion and Extracts from Tables
- II. Government Estimates of Expenditure 1986-87 & 1988- Extracts from Volume I & II  
  
Fund Allocation for New Projects  
    e.g. E.D.D. Estimates for Highways, para. 21 & 22  
  
Capital Works Reserve Fund  
    Buildings, para. 18  
    Engineering, para. 27  
    N.T. Development, para. 38
- III. Cross Section of Major Consultant, Contractor and Utility Companies Without Qualified Land Surveyors
- IV. Civil Engineering Manual of the C.E.S.D., Hong Kong Government - Copy from Chapter II5 Appendix 9 of the C.E. Manual

APPENDIX I - Building and Civil Engineering Industry Training Board  
Manpower Survey Report 1985  
Conclusion and extracts from tables

SECTION III

CONCLUSIONS

3.1 After carefully analyzing the findings of the present survey, the Training Board is of the opinion that they reflect a fairly reliable picture of the industry's manpower situation in March - April 1985 when the survey was conducted.

Manpower changes

3.2 The findings of the survey reveal that the technical manpower of the building and civil engineering industry has increased from 86,151 (excluding 3,380 trainees/apprentices) in April 1983 when the previous manpower survey was conducted, to 87,649 (excluding 1,789 trainees/apprentices) in March - April 1985, representing an annual growth rate of about 0.9% between 1983 and 1985. The growth seems insignificant, however, when compared with the annual reduction of 7% for the period between 1981 and 1983. It appears that the manpower of the industry has undergone a consolidation stage in the last two years.

3.3 In terms of individual job levels, there has been a relatively higher increase in the numbers of technologists and technicians, which, in the opinion of the Training Board, matches the technological changes and other development of the industry. In analysing the increase in the number of technologists and technicians as revealed by the survey, the Training Board has made the following observations:

- (i) More technologists and technicians are being employed by contractors and consulting firms for projects outside Hong Kong, mainly in China.
- (ii) Some employers might have mistakenly reported some of their technicians as technologists, e.g. surveying technicians (quantity) as quantity surveyors, engineering technicians as engineers.
- (iii) Expansions in the construction departments of certain public utilities companies were reported.

3.4 With regard to the total number of craftsmen, operatives and general workers, there has not been much change over the last two years. As suggested by the Training

Board, the industry has been undergoing a phase of consolidation with growing adoption of mechanization, resulting in advanced machinery and equipment replacing more manual workers, especially those unskilled and semi-skilled.

#### Future manpower demand

3.5 The Training Board feels strongly that with the rapid rising standard in construction projects, the demand for properly trained workers at all skills levels will continue to grow and that planning and design personnel will be the first ones to be in demand with the recovery of the property and building industry.

3.6 The Training Board wishes to emphasize that manpower training is a long-term process and should not be deterred by short-term business fluctuations. As reflected by the drop in the number of trainees/apprentices (from 3,380 in the 1983 survey to 1,789 in the 1985 survey) at the time of the survey, the industry was less willing to take on trainees/apprentices while it was experiencing certain difficulties. The Training Board urges employers in the industry not to slacken their efforts in manpower training because periods of low business activities are the best time to train and upgrade workers of the industry to meet demands for future recovery.

3.7 In assessing the future manpower demands of the construction industry, the Training Board has taken into consideration the following developments:

- (i) The recovery of the local property market and the building industry following the settlement of the 1997 issue;
- (ii) The continuous implementations of housing and other construction projects in the public sector against the completion of the MTR projects;
- (iii) The volume of construction projects in China planned, designed and undertaken by Hong Kong companies; and
- (iv) The complexity and methods of present day's construction which demand for more and better qualified personnel.

3.8 Using the data collected in the series of manpower surveys of the industry conducted to date, the "adaptive forecasting method" and the estimated expenditure on construction in the next several years the Training Board has projected up to and including 1,991 the industry's likely manpower requirement at the technologist, technician and craftsman levels respectively. Together with an estimated 3% natural wastage, the average annual demand for workers for the next six years would be as follows:

Table 1: Average annual demand for workers  
from 1986 to 1991

Job level	Average annual demand in the next 6 years
Technologist	420 - 590
Technician	810 - 1,000
Craftsman	1,700 - 2,200

3.9 In arriving at the above forecast, the Training Board wishes to point out that the demand for technologists would be met in part by Hong Kong students educated overseas and returning to Hong Kong for employment. Employers are urged to provide sufficient practical training places for both local and overseas graduates to enable them to complete their training.

3.10 The Training Board will conduct the next manpower survey in 1987 when the above forecast will be reviewed and updated.

### Extracts from the 1987 Manpower Survey.

2.4 The most populous principal job at each job level was:

<u>Job level</u>	<u>Job title</u>	<u>Number of employees</u>	<u>Percentage of employees at the same job level</u>
Technologist	Civil Engineer	1,959	24.0%
Technician	Foreman (Contractor's)	3,386	23.7%
Craftsman	Carpenter (Formwork)	6,265	19.1%
Operative	Bar-bender	4,582	36.2%
General Worker	Labourer	13,301	81.6%

Number of Trainees  
(Appendix 2)



- 2.5 At the time of the survey, 875 trainees (1% of the total number of employees) were employed in the industry. Their distribution at the various job levels is given below:

<u>Job level</u>	<u>Number of trainees</u>	<u>Percentage of employees at the same job level</u>
Technologist	363	2.7%
Technician	412	2.9%
Craftsman	100	0.3%
Operative	-	-
General Worker	-	-
<hr/>		
Total	875	

- 2.6 The jobs at the technologist, technician and craftsman levels with the greatest number of trainees were:

<u>Job level</u>	<u>Job title</u>	<u>Number of trainees</u>
Technologist	Civil Engineer	149
Technician	Surveying Technician (Land)	81
Craftsman	Leveller	74

Number of Vacancies  
(Appendix 2)

- 2.7 At the time of the survey, employers reported a total of 1,657 vacancies, representing about 2% of the total number of employees. These vacancies are summarized below:

<u>Job level</u>	<u>Number of vacancies at time of survey</u>	<u>Percentage of employees at the same job level</u>
Technologist	246	3.0%
Technician	484	3.4%
Craftsman	347	1.1%
Operative	68	0.5%
General Worker	512	3.1%
<hr/>		
Total	1,657	

2.8 The job at each level with the largest number of vacancies was:

<u>Job level</u>	<u>Job title</u>	<u>Number of vacancies</u>
Technologist	Civil Engineer	64
Technician	Clerk of Works/Inspector/ Foreman (Architect's/ Engineer's)	242
Craftsman	Leveller	157
Operative	Bar-bender	46
General Worker	Labourer	466

Appendix 1  
1985 Manpower Survey

Appendix 1

NUMBER EMPLOYED (EXCLUDING TRAINEES)

Level	Job Title	Number Employed				Total
		Permanent / Direct		Casual / Indirect		
		Male	Female	Male	Female	
Technologist	Land Surveyor	268	1	-	-	269
Technician	Surveying Technician (Land)	868	3	9	-	880
Craftsman	Leveller	2,251	23	1,426	-	3,700

Appendix 1  
1985 Manpower Survey

DISTRIBUTION OF EMPLOYEES BY MONTHLY INCOME RANGE

Level	Job Title	Under \$2,500	\$2,501- \$3,000	\$3,001- \$4,000	\$4,001- \$5,000	\$5,001- \$7,500	\$7,501- \$10,000	\$10,001- \$15,000	Over \$15,000	Unspecified
Technologist	Land Surveyor	-	-	1	31	75	106	50	132	2
Technician	Surveying Technician (Land)	-	7	210	241	156	211	153	-	-
Craftsman	Leveller	48	646	2057	800	14	2	-	-	109

Appendix 1  
1985 Manpower Survey

Appendix 3

PREFERRED EDUCATION OF EMPLOYEES

Job Title	Higher Degree		Degree		Associate-ship		Post-secondary		Profession Diploma		Higher Diploma		Diploma		Higher Cert.		Cert.		Form 5		Craft Cert.		Below Form 5	
	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W
**																								
TECHNOLOGIST LEVEL																								
Land Surveyor	-	-	20	46	12	30	17	43	22	135	24	52	2	2	18	75	4	13	1	1	-	-	-	-
TECHNICIAN LEVEL																								
Surveying Technician (Land)	-	-	-	-	1	4	10	32	8	28	9	16	28	110	22	182	50	428	38	171	1	3	2	5
CRAFTSMAN LEVEL																								
Leveller	-	-	-	-	-	-	-	-	-	-	-	-	2	3	1	15	22	90	233	1273	72	443	301	1853

\*\* F = No. of Firms      W = No. of Workers

Appendix 1  
1985 Manpower Survey

Appendix 4

PREFERRED MODE OF TRAINING OF EMPLOYEES

Level	Job Title	Graduate Traineeship		Off-the-job Training		On-the-job Training		Apprenticeship		Unspecified	
		No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers
Technologist	Land Surveyor	11	23	1	2	103	292	-	-	5	80
Technician	Surveying Technician (Land)	2	7	1	8	139	861	16	55	11	48
Craftsman	Leveller	-	-	-	-	552	3285	77	378	2	12

Appendix 1  
1985 Manpower Survey

PREFERRED PERIOD OF TRAINING OF EMPLOYEES

Job Title	Below 6 Months		6-11 Months		1 Year		2 Years		3 Years		4 Years		Unspecified	
	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers
TECHNOLOGIST LEVEL														
Land Surveyor	9	13	3	12	15	31	18	37	34	99	36	125	5	80
TECHNICIAN LEVEL														
Surveying Technician (LAND)	7	20	7	22	21	86	55	335	45	393	24	75	11	48
CRAFTSMAN LEVEL														
Leveller	10	29	18	111	117	710	207	1239	229	1315	46	259	2	12

Appendix 1  
1985 Manpower Survey

AVERAGE NUMBER OF TRAINEES TO BE  
TAKEN ON ANNUALLY BETWEEN 1986 AND 1991

Level	Job title	No. of employees at time of survey	Average no. of trainees to be taken on annually between 1986 and 1991
Technologist	Land Surveyor	397	22 - 31
Technician	Surveying Technician (Land)	978	56 - 70
Craftsman	Leveller	3,676	187 - 243



Appendix 1  
1985 Manpower Survey

JOB DESCRIPTIONS FOR PRINCIPAL JOBS  
OF THE BUILDING AND CIVIL ENGINEERING INDUSTRY

Level	Code	Job title	Job Description
Technologist	110	Land Surveyor	Undertakes the physical surveying of land and collates data for the preparation of plans and maps to particular requirements or specifications including large-scale surveying, cadastral surveying for land registration, topographical surveying by ground and/or air methods, geodetic surveying and hydrographic surveying.
Technician	214	Surveying Technician (Land)	Assists the land surveyor in carrying out surveys and setting-out work, and supervises chainmen and survey labourers.
Craftsman	303	Leveller	Reads and interprets drawings. Sets up job lines and levels and prepares templates.

Appendix 1  
1987 Manpower Survey

NUMBER EMPLOYED (EXCLUDING TRAINEES)

Level	Job Title	Number Employed				Total
		Permanent / Direct		Casual / Indirect		
		Male	Female	Male	Female	
Technologist	Land Surveyor	268	1	-	-	269
Technician	Surveying Technician (Land)	868	3	9	-	880
Craftsman	Leveller	2,251	23	1,426	-	3,700

Appendix 1  
1987 Manpower Survey

Appendix 3

PREFERRED EDUCATION OF EMPLOYEES

Job Title	Higher Degree		Degree		Associate-ship		Post-secondary		Profession Diploma		Higher Diploma		Higher Cert.		Cert.		Form 5		Craft Cert.		Below Form 5			
	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W		
**																								
TECHNOLOGIST LEVEL																								
Land Surveyor	-	-	51	119	14	25	11	15	4	70	16	27	1	1	6	8	1	3	1	1	-	-	-	-
TECHNICIAN LEVEL																								
Surveyng Technician (Land)	-	-	-	-	4	6	5	5	1	3	39	77	38	99	31	115	36	298	35	276	1	2	-	-
CRAFTSMAN LEVEL																								
Leveller	-	-	-	-	-	-	1	29	-	-	-	-	2	4	3	3	43	209	292	1629	68	403	213	1423

\*\* F = No. of Firms      W = No. of Workers

Appendix 1  
1987 Manpower Survey

PREFERRED MODE OF TRAINING OF EMPLOYEES

Level	Job Title	Graduate Traineeship		Off-the-job Training		On-the-job Training		Apprenticeship		Unspecified	
		No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers
Technologist	Land Surveyor	34	73	1	1	67	177	-	-	4	18
Technician	Surveying Technician (Land)	1	2	1	2	173	842	13	31	2	3
Craftsman	Leveller	-	-	1	1	546	3261	76	438	-	-

Appendix 1  
1987 Manpower Survey

DISTRIBUTION OF EMPLOYEES BY MONTHLY INCOME RANGE

Level	Job Title	Under \$2,500	\$2,501- \$3,000	\$3,001- \$4,000	\$4,001- \$5,000	\$5,001- \$7,500	\$7,501- \$10,000	\$10,001- \$15,000	Over \$15,000	Unspecified
Technologist	Land Surveyor	-	-	2	11	67	56	34	98	1
Technician	Surveying Technician (Land)	7	26	86	168	135	272	186	-	-
Craftsman	Leveller	3	305	1773	1480	135	4	-	-	-

Appendix 1  
1987 Manpower Survey

PREFERRED MODE OF TRAINING OF EMPLOYEES

Job Title	Below 6 Months		6-11 Months		1 Year		2 Years		3 Years		4 Years		Unspecified	
	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers	No. of Firms	No. of Workers
TECHNOLOGIST LEVEL														
Land Surveyor	2	28	1	1	3	4	13	22	35	138	47	58	4	18
TECHNICIAN LEVEL														
Surveying Technician (LAND)	5	15	1	9	11	33	69	164	67	580	36	76	2	3
CRAFTSMAN LEVEL														
Leveller	14	84	10	55	105	576	251	1711	189	1024	53	250	-	-

Appendix 1  
1987 Manpower Survey

AVERAGE NUMBER OF TRAINEES TO BE  
TAKEN ON ANNUALLY BETWEEN 1988 AND 1993

Level	Job title	No. of employees at time of survey	Average no. of trainees to be taken on annually between 1988 and 1993
Technologist	Land Surveyor	269	14 - 16
Technician	Surveying Technician (Land)	880	68 - 80
Craftsman	Leveller	3,700	283 - 350

Appendix 1  
1987 Manpower Survey

JOB DESCRIPTIONS FOR PRINCIPAL JOBS  
OF THE BUILDING AND CIVIL ENGINEERING INDUSTRY

Level	Code	Job title	Job Description
Technologist	110	Land Surveyor	Undertakes the physical surveying of land and collates data for the preparation of plans and maps to particular requirements or specifications including large-scale surveying, cadastral surveying for land registration, topographical surveying by ground and/or air methods, geodetic surveying and hydrographic surveying.
Technician	214	Surveying Technician (Land)	Assists the land surveyor in carrying out surveys and setting-out work, and supervises chainmen and survey labourers.
Craftsman	303	Leveller	Reads and interprets drawings. Sets up job lines and levels and prepares templates.



## Head 43—ENGINEERING DEVELOPMENT DEPARTMENT

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## Memorandum Note

## Summary of Expenditure

	Actual expenditure 1984-85 S	Approved estimate 1985-86 S	Revised estimate 1985-86 S	Estimate 1986-87 S
<b>Recurrent Account</b>				
Personal Emoluments .....	282,908,610	290,785,000	316,500,000	327,966,000
Departmental Expenses .....	230,287,902	239,484,000	225,000,000	308,911,000
Other Charges .....	152,000,255	144,566,000	144,500,000	58,066,000
<b>Capital Account</b>				
Plant, Equipment and Works .....	4,285,732	3,328,000	2,500,000	4,003,000
Other Non-Recurrent .....	980,287	4,021,000	3,600,000	1,055,000
<b>Total .....</b>	<b>670,462,786</b>	<b>682,184,000</b>	<b>692,100,000</b>	<b>700,001,000</b>

Controlling Officer: Director of Engineering Development

The estimate of the amount required in 1986-87 for the salaries and expenses of the Engineering Development Department is \$700,001,000. This represents an increase of \$17,817,000 on the approved estimate for 1985-86 and of \$29,538,214 on actual expenditure in 1984-85.

## Organization

2 The department comprises the Headquarters, the Civil Engineering Office, the Geotechnical Control Office, the Highways Office, the Mass Transit Office and the Railway Development Office.

3 The *Civil Engineering Office* is concerned primarily with the design and construction of marine works including reclamation, stormwater drainage and sewerage, sewage treatment and disposal systems as well as engineering works for solid waste disposal. Except in the new towns, it also undertakes the engineering feasibility investigation of planned development and major site formation works for such development.

4 The *Geotechnical Control Office* is concerned with a wide range of geotechnical engineering activities related to the safe and economic use and development of land, with particular emphasis on the stability of existing and future slopes associated with both buildings and engineering works. It is responsible for investigating the stability of existing slopes, for designing and executing landslip preventive works to public slopes and for making recommendations on the need for preventive works to private slopes. It exercises geotechnical control over public and private developments by checking geotechnical designs and standards of site supervision. The Office also manages the two government quarries and supervises contract quarries. It operates the public works laboratories, and it provides site investigation, terrain evaluation, geological survey and general geotechnical advisory services.

5 The *Highways Office* is responsible for planning, designing, constructing and maintaining the public road system and associated lighting, sewer and drainage works. It also provides advice on road and drainage matters relating to land sales and government and private developments.

6 The *Mass Transit Office* is responsible for formulating public works policies concerning the Mass Transit Railway and for monitoring and co-ordinating the performance of the various services provided by the lands and works group of departments in respect of the design, construction and operation of the Mass Transit Railway. It is responsible for the co-ordination of the Mass Transit Railway with public and private development and for its integration with existing and planned surface transport facilities. It also acquires land and buildings for the purpose of building the railway, assesses claims for loss of business, pays advance compensation to small businesses whose trade is affected by the construction of the railway, and processes private treaty grants of land to the Corporation for development purposes.

7 The *Railway Development Office* is responsible for the design and construction of the double-tracking and electrification of the Kowloon-Canton Railway from Hung Hom to Lo Wu, including new railway stations, the remodelling of existing stations and all associated works.

## Controlling Officer's Report

8 The department is responsible for nine main activities as follows—

*Civil engineering services*

1. Designing, constructing and maintaining public marine facilities, hydrographic surveying and checking private submissions.
2. Designing, constructing and maintaining civil engineering works at Hong Kong International Airport.
3. Designing and constructing stormwater drainage, sewerage and sewage treatment and disposal systems as well as facilities for solid waste disposal by means of controlled tipping and supervising public dumps.
4. Land development projects.

5. Investigating the stability of existing slopes and retaining walls; checking designs for geotechnical features connected with civil engineering and building works; setting standards for geotechnical works; providing site-investigation, materials-testing and geological and aerial-photography interpretation services.
6. Operating government quarries and supervising contract quarries.  
*Highway support services*
7. Planning, designing, constructing and maintaining the public highways system and associated road lighting, sewer and drainage work; advising on private developments; co-ordinating and reinstating trench works carried out by utility undertakings.  
*Mass Transit*
8. Co-ordinating construction of and acquiring land for the Mass Transit Railway.  
*Railway development*
9. Planning, designing and constructing engineering works for the Kowloon-Canton Railway.

9 The following table indicates how much of the total provision is expected to be spent on each activity compared with the two previous years—

	(1) <i>Actual expenditure 1984-85 \$ million</i>	(2) <i>Approved estimate 1985-86 \$ million</i>	(3) <i>Revised estimate 1985-86 \$ million</i>	(4) <i>Estimate 1986-87 \$ million</i>	<i>Increase of (4), over (2), \$ million</i>
<b>Activity 1</b>					
(Staff establishment)	(183)	(164)	(164)	(164)	(-)
Personal emoluments	11.7	12.0	13.7	14.2	2.2
Other recurrent	9.7	11.7	11.9	13.1	1.4
Capital	0.9	0.2	0.1	0.3	0.1
	<u>22.3</u>	<u>23.9</u>	<u>25.7</u>	<u>27.6</u>	<u>3.7</u>
<b>Activity 2</b>					
(Staff establishment)	(67)	(63)	(63)	(63)	(-)
Personal emoluments	5.2	5.5	5.9	6.0	0.5
Other recurrent	8.7	9.0	9.0	9.7	0.7
Capital	0.1	0.2	1.1	0.1	-0.1
	<u>14.0</u>	<u>14.7</u>	<u>16.0</u>	<u>15.8</u>	<u>1.1</u>
<b>Activity 3</b>					
(Staff establishment)	(342)	(341)	(341)	(341)	(-)
Personal emoluments	31.0	32.0	34.1	35.3	3.3
Other recurrent	0.8	1.2	1.2	1.3	0.1
Capital	0.1	0.2	0.5	—	-0.2
	<u>31.9</u>	<u>33.4</u>	<u>35.8</u>	<u>36.6</u>	<u>3.2</u>
<b>Activity 4</b>					
(Staff establishment)	(274)	(265)	(265)	(265)	(-)
Personal emoluments	21.7	23.2	25.6	26.7	3.5
Other recurrent	2.5	2.9	2.6	2.6	-0.3
Capital	—	0.1	—	—	-0.1
	<u>24.2</u>	<u>26.2</u>	<u>28.2</u>	<u>29.3</u>	<u>3.1</u>
<b>Activity 5</b>					
(Staff establishment)	(455)	(451)	(451)	(451)	(-)
Personal emoluments	48.3	49.0	53.6	56.5	7.5
Other recurrent	5.9	8.2	9.1	6.8	-1.4
Capital	2.3	2.3	1.4	2.0	-0.3
	<u>56.5</u>	<u>59.5</u>	<u>64.1</u>	<u>65.3</u>	<u>5.8</u>
<b>Activity 6</b>					
(Staff establishment)	(189)	(182)	(182)	(182)	(-)
Personal emoluments	11.1	11.1	11.4	11.4	0.3
Other recurrent	33.6	33.3	33.3	23.4	-9.9
Capital	—	—	—	—	—
	<u>44.7</u>	<u>44.4</u>	<u>44.7</u>	<u>34.8</u>	<u>-9.6</u>

	(1) <i>Actual expenditure 1984-85 \$ million</i>	(2) <i>Approved estimate 1985-86 \$ million</i>	(3) <i>Revised estimate 1985-86 \$ million</i>	(4) <i>Estimate 1986-87 \$ million</i>	<i>Increase of (4) over (2) \$ million</i>
<i>Activity 7</i>					
(Staff establishment)	(2 117)	(2 055)	(2 055)	(2 055)	(—)
Personal emoluments	131.3	134.7	149.5	155.3	20.6
Other recurrent	320.8	317.2	301.9	309.7	-7.5
Capital	1.9	4.4	3.0	2.6	-1.8
	<u>454.0</u>	<u>456.3</u>	<u>454.4</u>	<u>467.6</u>	<u>11.3</u>
<i>Activity 8</i>					
(Staff establishment)	(86)	(82)	(82)	(82)	(—)
Personal emoluments	11.1	11.5	11.1	11.0	-0.5
Other recurrent	0.2	0.3	0.3	0.3	—
Capital	—	—	—	—	—
	<u>11.3</u>	<u>11.8</u>	<u>11.4</u>	<u>11.3</u>	<u>-0.5</u>
<i>Activity 9</i>					
(Staff establishment)	(166)	(145)	(145)	(145)	(—)
Personal emoluments	11.5	11.8	11.6	11.6	-0.2
Other recurrent	0.1	0.2	0.2	0.1	-0.1
Capital	—	—	—	—	—
	<u>11.6</u>	<u>12.0</u>	<u>11.8</u>	<u>11.7</u>	<u>-0.3</u>
<b>Total</b>					
(Staff establishment)	(3 879)	(3 748)	(3 748)	(3 748)	(—)
Head	670.5	682.2	692.1	700.0	17.8

*Activity 1*

10 During 1985-86 the construction of the piers at Stonecutters Island was completed and work continued on the dredging of Shing Mun River at Sha Tin. Construction of a pedestrian covered-way between the two ferry piers at North Point, the helicopter landing site at Cheung Chau, new piers at Shek Pik, Yung Shue Wan and the Aberdeen Marine Base and improvement of facilities at Cheung Chau ferry pier commenced in 1985-86. The increase of \$3.7 million (15.5%) over the approved provision for 1985-86 is mainly due to the pay adjustments and awards approved during 1985-86 and increased requirements for seawall maintenance.

*Activity 2*

11 During 1985-86 work on extension of the cargo aircraft parking apron continued, and the survey of the airport pavement was substantially completed. Construction of the runway hardshoulders and taxiway resurfacing is expected to commence in 1986-87.

*Activity 3*

12 During 1985-86 sewage treatment works at Tai Po and Cheung Chau, river training works at Lo Wu, a screening plant at Chai Wan, three pumping stations at Kai Tak and one at Kowloon East, trunk stormwater drain extensions at Sham Shui Po, To Kwa Wan and Quarry Bay reclamations, a trunk sewer extension in Wong Tai Sin, a sewer syphon under Kwun Tong Road, and the dredging of the channel section of Kowloon Bay were completed.

13 Work continued on screening plants at Kwun Tong, Sham Shui Po, and Wanchai (west), sewage treatment works at Mui Wo and Tsing Yi, a submarine outfall for Central District, trunk stormwater drain extension at the Western reclamation, and works connected with water quality improvement schemes for Kowloon Bay.

14 Controlled tips managed by the department include tips at Junk Bay, Ma Yau Tong, Shuen Wan, Pillar Point Valley and Jordan Valley.

15 During 1986-87 construction of a sewage treatment works at Pillar Point, screening plants at North Point, Wanchai (east), Shau Kei Wan and To Kwa Wan, submarine outfalls at North Point, Shau Kei Wan and To Kwa Wan, trunk sewers in Java Road and Sung Wong Toi Road, extension of trunk stormwater drains at Cheung Sha Wan reclamation, the box culvert diversion for Clear Water Bay Road development, roads and drainage for Pak Keng village extension stage I, and site preparation work for Junk Bay controlled tip stage II are expected to start.

*Activity 4*

16 During 1985-86 construction of the seawalls at Cheung Sha Wan reclamation stage II phase B and Aldrich Bay reclamation Area C, the seawall and breakwater at Chai Wan reclamation and the remaining seawalls at Ap

Lei Chau east reclamation was completed. Work continued on reclamations at Stonecutters Island and Telegraph Bay, the seawall and reclamation at Siu Chai Wan stage I, site formation for Tai Po Industrial Estate stage III phase 2, and the seawall at Aberdeen reclamation stage II phase 2C. Construction of the new seawall extension at Sai Kung town and the breakwater at Stonecutters Island, site formation for Diamond Hill development stage I commenced in 1985-86. It is expected that work on Hung Hom Bay reclamation, Aldrich Bay reclamation Area D stage II, reclamation for the Tai Lam Chung Marine Police Base, seawall and reclamation at Sam Ka Tsuen, and part of Tai Lam Bay reclamation stage II will commence in 1986-87.

#### *Activity 5*

17 During 1985-86 the Geotechnical Control Office completed stabilization works on 15 fill slopes, 17 cut slopes and six retaining walls, one natural slope and an extensive boulder stabilization scheme. Work commenced on nine fill slopes, 18 cut slopes and one natural slope. Over 6 000 design submissions for government and private projects were checked by the Office. Reports on six geotechnical area studies were published, and detailed geological mapping continued on 440 square kilometres of Hong Kong. The preparation of three geoguides was in hand, 12 special research projects were completed and two further geotechnical publications were made available for sale to the public. Site investigations were carried out on more than 200 sites, and over 200 000 tests were carried out in the public works laboratories.

#### *Activity 6*

18 During 1985-86 the Geotechnical Control Office continued to operate two government quarries and to supervise eight contract quarries to ensure an adequate supply of quarry products to meet the territory's needs. The government quarries produced approximately 700 000 tonnes of aggregate and 180 000 tonnes of bituminous products.

#### *Activity 7*

19 During 1985-86, apart from routine maintenance, a number of major road projects were opened to traffic while some 140 road projects were under construction and about 85 were in an advanced stage of planning. The Highways Office was responsible for the maintenance of over 1 300 kilometres of roads which included three major road tunnels and about 540 flyovers and bridges. In addition, the Office also maintained about 230 footbridges and 150 subways. About 1 300 drainage plans and 400 development conditions were checked. The Office also co-ordinated and reinstated more than 27 000 trench works carried out by utility companies. Emergency organizations were set up to deal with emergency repairs to roads, landslips, and flooding during typhoons and rainstorms.

20 The revised expenditure for 1985-86 on projects undertaken by the Highways Office amounted to \$648,000,000. The major projects completed include the second stage of the Island Eastern Corridor, the road through Aberdeen, Tai Hang Road widening, King's Road realignment near Tai Koo Shing, the transport interchange at Mong Kok railway station, Canton Road widening, Cha Kwo Ling Road near Cha Kwo Ling Village, stage II roads and drains in Section B of Kowloon Bay development, the section of the New Territories trunk road from Tai Po to Wo Hop Shek and stage I phase I of roads and drains in Tong Yan San Tsuen, Yuen Long.

21 In 1986-87 the estimated expenditure on projects supervised by the Highways Office is expected to be about \$842,000,000, an increase of \$194,000,000 (29.9%) over the revised expenditure for 1985-86. Construction will continue on the following major projects in the Public Works Programme—

Roads and drainage works in Sai Wan Ho reclamation

Roads and drainage works in section D of Kowloon Bay development

Grade separated access to Wanchai reclamation which includes the construction of an elevated road from Hung Hing Road to Gloucester Road, a seafront road from Tonnochy Road to Fleming Road, the O'Brien Road footbridge and a transport interchange

Stage III of west Kowloon corridor

Flyover from Cheung Sha Wan Road to Boundary Street

Reconstruction of the Princess Margaret Road flyover to a dual two-lane carriage-way

Route 5 between Sha Tin and Tsuen Wan

Vehicular border link at Lok Ma Chau

New Territories circular road between Pak Shek Au and Fan Kam Road

New Territories circular road between Mai Po and Pak Shek Au

Widening of Man Kam To Road from Lin Ma Hang Road to the cross border control facilities

Lam Kam Road improvement stage I

Upgrading of Ngong Ping Road

Sha Tau Kok Road improvement

22 The following major projects are in category A of the Public Works Programme and construction is expected to start in 1986-87—

Upgrading of Connaught Road which includes construction of Pedder Street underpass, Rumsey Street flyover, Harcourt Road flyover and other ancillary works

Lau Sin Street flyover

Elevated road from Gloucester Road to Tonnochy Road

Widening of Carpenter Road

Stage I phase II roads and drains in Tong Yan San Tsuen

Tai Po Road improvement stage I

#### Activity 8

23 During 1985-86 the Mass Transit Office co-ordinated the construction and acquisition of land and expropriation of property for the Mass Transit Railway island line and the preparation of conditions of grant by private treaty of land to be developed by the Mass Transit Railway Corporation. Private treaty grants executed included the development above Chai Wan depot (Heng Fa Chuen) and six other above-station developments, namely, Fortress, North Point, Wanchai, Tin Hau, Chai Wan and Sheung Wan.

#### Activity 9

24 During 1985-86 the Railway Development Office completed the cross-border footbridge at Lo Wu, the foundations and structural steel frame for the new Lo Wu terminal building, the transport interchange at Mong Kok station and the subways under Chatham Road in connection with the provision of a shunt neck to improve the Kowloon Station goods yard. Construction of the superstructure over the Kowloon Station goods yard will begin in early 1986. The construction of the new Lo Wu terminal building, the permanent station at Tai Wai and the goods yard at Mong Kok are in progress. The Office also commenced planning and design work for the Hung Hom Bay reclamation which will provide land for the Kowloon-Canton Railway goods yard expansion and other developments.

#### Ambit and provision

##### Recurrent Account

##### Personal Emoluments

25 Provision of \$327,966,000 for personal emoluments represents an increase of \$37,181,000 on the approved provision for 1985-86, and takes into account pay adjustments and awards approved during 1985-86.

26 The 1985-86 Estimates showed 3 876 permanent posts and three supernumerary posts, from which a net 129 permanent posts and two supernumerary posts have been deleted. The approved establishment shown in the Estimates is 3 747 permanent posts and one supernumerary post.

27 Subject to certain conditions, the Controlling Officer may under delegated powers create or delete non-directorate posts during 1986-87, but the notional annual mid-point salary value of all such posts must not exceed \$269,927,000. The notional annual mid-point salary value of non-directorate posts shown in the Estimates is \$269,927,000.

28 Provision of \$23,653,000 under *Subhead 002 Allowances* is for standard allowances and the following non-standard allowance—

	<i>Rate</i>
post allowance for Survey Officers and Senior Survey Officers in the land and engineering streams	monthly allowance equal to the officer's next increment

##### Departmental Expenses

29 Provision of \$42,123,000 under *Subhead 104 Light and power* includes provision for the payment of electricity bills for offices, street lighting and traffic signals. The increase of \$41,013,000 (3 694.9%) over the approved provision for 1985-86 is mainly due to the inclusion of provision of \$41,000,000 for street lighting and traffic signals previously shown under a subhead entitled Lighting of streets and traffic signals.

30 Provision of \$272,000 under *Subhead 106 Temporary staff* includes provision for the remuneration of post-secondary students employed during the summer vacation. The increase of \$27,000 (11.0 %) over the approved provision for 1985-86 is mainly due to the increased rate of allowance paid to temporary staff.

31 Provision of \$200,000 under *Subhead 109 Training expenses* is for training courses and the purchase of publications, equipment and teaching aids for departmental training of technical staff. The increase of \$190,000 (1 900.0%) over the approved provision for 1985-86 is mainly due to the inclusion of requirements for external training courses.

32 Provision of \$4,155,000 under *Subhead 111 Hire of services and professional fees* includes provision for the engagement of professional assistance to undertake work which the department is not able to carry out in-house because of a shortage of staff, employment of public accountants to assess claims for pecuniary losses arising from resumption of land for the Mass Transit Railway and contracting out soil and steel tests to commercial laboratories.

## CAPITAL WORKS RESERVE FUND

2 In accordance with the Resolution, all revenue from land transactions, other than those transactions decided upon before the coming into force of the Joint Declaration and those not conferring a benefit after 1997, is paid into the suspense account of the Fund. Sharing and calculation of the cost of land production is carried out by the Sino-British Land Commission at the end of each quarter. The interest accruing to the suspense account is shared once a year at the beginning of the financial year. It is estimated that sharing in 1985-86 will result in \$572 million being transferred to the works account. In 1986-87 the estimate of the Government's share is \$2,000 million and a further \$38 million is expected to come from interest earned on the suspense account balances in 1985-86 and the works account balances in 1986-87. Details of the financial position of the three accounts are shown in tabular form after the detailed estimates of expenditure from the Fund.

3 Expenditure from the Fund is limited in respect of each subhead by the allocation shown under the column headed 'Estimate 1986-87' in the Fund estimates, and this may not be exceeded in 1986-87 without the prior approval of the Financial Secretary. Where an approved project estimate is shown in respect of any project, the total commitment incurred may not exceed the approved estimate, and the estimate may not be altered without the prior approval of Finance Committee or the Financial Secretary under delegated powers.

4 The balances available in the works and reserve accounts of the Fund at 1 April 1986 are estimated to total \$5,807.8 million. During 1986-87, it is estimated that \$4,390 million from the general revenue and \$2,007.8 million from the suspense account will be transferred to the reserve and works accounts. The estimated transfer from the suspense account represents the Government's share of revenue from land transactions in 1986-87 and interest earned on suspense account balances during 1985-86. In addition, \$30 million is expected to accrue to the works account from interest on its balances during 1986-87 and an arbitrary amount of \$15 million has been included for donations and for contributions by the Urban Council towards joint venture projects. The Fund will thus have available \$12,250.6 million to meet estimated payments of \$6,625.1 million during 1986-87. The Fund will therefore have estimated balances in the works and reserve accounts at 31 March 1987 totalling \$5,625.5 million.

5 The estimate of the amount required in 1986-87 for expenditure on projects in category A of the Public Works Programme and on those projects which it has been agreed will be upgraded to category A during the year together with land acquisition and minor works of a non-recurrent nature funded from block allocations, is \$6,625.1 million. This figure includes all donations and Urban Council contributions to joint venture projects, but does not include the cost of projects undertaken by the Government on behalf of and wholly financed by the Urban Council.

6 The selection of new projects to start in 1986-87 from among all projects in category AB of the Public Works Programme was undertaken initially by the Public Works Priorities Committee, having regard to the limit on total new commitments laid down by the Financial Secretary and the readiness of projects to proceed. Public Works Sub-Committee subsequently endorsed this selection, and all selected items are shown in the Fund estimates.

7 The outstanding commitment in respect of projects in hand in the Public Works Programme and in respect of land acquisition on 1 April 1985 was \$18,061 million. This was increased by the injection of new projects during 1985-86 by \$4,719 million giving a total outstanding commitment of \$22,780 million. The revised estimate of expenditure during 1985-86 is \$6,024 million, and so the outstanding commitment at 31 March 1986 will be about \$16,756 million.

8 During 1986-87 work will start on new projects the total value of which is about \$7,370 million. After allowing for estimated expenditure in 1986-87 of \$6,625 million, the outstanding commitment at 31 March 1987 will be about \$17,501 million.

#### Head 701—Land Acquisition

9 The Financial Secretary has delegated to the Director of Lands power to authorize expenditure from Head 701 of the Fund.

10 The estimate of the allocation required in 1986-87 for expenditure on compensation and *ex-gratia* allowances for the acquisition and associated clearance of all land and property reverting to the Crown and *ex-gratia* allowances for clearance of Crown Land for projects in the Public Works Programme, is \$1,200 million. *Ex-gratia* allowances for clearance of Crown Land not required for projects in the Public Works Programme are charged to Head 91 Lands Department Subhead 221 Clearance of Crown land—*ex-gratia* allowances.

11 The allocation of \$48,000,000 for 1002CA—*Compensation for surrenders and resumptions: urban improvement districts: Yau Ma Tei, Wan Chai and Western* is for payment of compensation for the acquisition of properties and for payment of *ex-gratia* compensation to owners within the urban improvement districts. It also provides for the acceptance of voluntary surrenders of properties frozen under the outline zoning plans. The cost of properties resumed in connection with the Hong Kong Housing Society's urban improvement scheme will continue to be borne by the Society.

12 The allocation of \$140,000,000 for 1004CA—*Compensation for surrenders and resumptions: miscellaneous* is a block allocation for resumption costs for proposed sites in connection with the implementation of statutory outline zoning plans, for projects to be undertaken by non-government or quasi-government bodies including Regional and Urban Councils and the Housing Authority and for projects undertaken under the Foreshore and Seabed (Reclamation) Ordinance 1985 not being projects covered by any other funding arrangements. This allocation is intended to cover resumptions in connection with the implementation of an outline zoning plan for area 25, Tsuen Wan, resumptions in connection with the new Eastern Harbour Crossing and a number of small resumptions connected with the Urban Council, Private Sector Participation Scheme and Home Owners' Scheme sites amongst others.

13 The allocation of \$500,000 for 1006CA—*Mass Transit Railway: land acquisition* is for expenditure on land acquisition for the Modified Initial System, the Tsuen Wan Extension and the Island Line not directly recoverable from the Mass Transit Railway Corporation (i.e. expenditure to be incurred on acquiring sites, and on making them available for granting permanently to the Corporation or for temporary use as works areas for which rentals will be charged). The Corporation pays premia for rentals in respect of land granted or leased to it. These are credited to general revenue. All expenditure on land acquisition which is directly reimbursable by the Corporation has been charged to an advance account with effect from 1 April 1980. Expenditure on land acquisition in respect of the Island Line was previously charged to a separate subhead. Accounts for the two subheads were combined with effect from 1 April 1985.

14 The allocation of \$5,000,000 for 1007CA—*Mass Transit Railway: route protection* is for government contributions to development costs for sites lying along Mass Transit Railway routes (including some along the Island Line and the potential East Kowloon Line) which have not yet been agreed, but in respect of which special foundation works are required in anticipation of possible future railway extensions. With effect from 1 April 1985, accounts for this subhead were combined with those for the subhead for Mass Transit Island Line: route protection.

15 A total of \$1,000,000,000 for *Subheads 1010CA to 1018CA* is for meeting all land acquisition costs other than direct works costs and all *ex-gratia* allowances in respect of projects in the Public Works Programme in the nine development areas: Tsuen Wan; Kwai Chung; Tsing Yi; Sha Tin; Tuen Mun; Tai Po/Fanling; Sheung Shui; Yuen Long/Tin Shui Wai; Junk Bay/Sai Kung; Urban Kowloon; Urban Hong Kong Island; and Islands.

#### Head 703—Buildings

16 The Financial Secretary has delegated to the Director of Building Development power to authorize expenditure from Head 703 of the Fund.

17 The estimate of the amount required in 1986–87 for expenditure on a variety of government building projects is \$918,500,000. This does not include provision for building items related to public housing and the new towns.

18 Significant building projects to start in 1986–87 include 3014FS—*Wholesale market at Kennedy Town*, 3019GO—*Government Offices block, Wan Chai*, 3051LP—*New Territories Regional Headquarters*, 3119LP—*New Police Headquarters complex, phase 1, works*, 3026MH—*Queen Elizabeth Hospital, Block B, extension* and the piling works of the Shau Kei Wan Hospital under 3030MH—*Shau Kei Wan Hospital, polyclinic and staff quarters—piling and superstructure works*.

19 Allocation of \$2,500,000 for 3001GX—*Minor investigations for building projects* is a block allocation to which expenditure on minor site investigation works costing not more than \$250,000 in respect of each site is charged.

20 Allocation of \$300,000 for 3002GX—*Minor outstanding building items* is a block allocation with an arbitrary amount which may be used initially for urgent payments in respect of minor outstanding works to a value not exceeding \$100,000 on any building project which has been substantially completed and which is no longer shown in the Fund estimates. Approval will be sought from the Financial Secretary under delegated powers to reinstate such projects in the Fund estimates during the year and once this approval has been obtained, expenditure will be transferred to the original project.

21 Allocation of \$30,100,000 for 3003GX—*Minor building works selected from items in category D of the Public Works Programme* is a block allocation to which expenditure on minor building items selected from category D of the Public Works Programme is charged.

22 Allocation of \$12,000,000 for 3004GX—*Refurbishment of government buildings* is a block allocation to which expenditure on works estimated to cost less than \$1,500,000 for refurbishment of government buildings is charged.

23 Expenditure on furniture and equipment for government buildings was charged to a block allocation prior to 1983–84. With effect from 1 April 1983, it has been charged to each building project, and the estimated cost is included within the approved project estimate for each project, and not shown separately.

#### Head 705—Engineering

24 The Financial Secretary has delegated to the Director of Engineering Development power to authorize expenditure from Head 705 of the Fund.

25 The estimate of the amount required in 1986–87 for expenditure on civil engineering and highways projects, other than waterworks and new towns development projects, is \$1,176,940,000. Of this allocation, \$452,940,000 is for civil engineering projects and \$724,000,000 is for highways projects.

26 Electrification works on the Kowloon Canton Railway from Kowloon Station to Lo Wu are now complete. The Kowloon Canton Railway Corporation was statutorily established in February 1983 and is a financially independent body. Outstanding projects for railway modernization works remaining in the Public Works Programme will, however, continue to be carried out by Government. Allocations totalling \$105,940,000 are provided for carrying out such modernization works in 1986–87.

27 Significant civil engineering and highways projects to start in 1986–87 include 5033AA—*Kai Tak Airport—runway shoulders and taxiway resurfacing*, 5024CD—*Improvement to Shenzhen River bends at Lok Ma Chau and Liu Pok*, stage 1 of the *Hung Hom Bay reclamation (5228CL)*, the construction of a dual 2-lane carriageway



between Mai Po and Au Tau under 5172TH—*New Territories circular road improvements, Au Tau to Fan Kam Road—Au Tau to Mai Po and remaining works* and 5197TH—*upgrading and dualling of Connaught Road and ancillary roadworks.*

28 Allocation of \$1,250,000 and \$800,000 respectively for 5001CX—*Minor investigations for civil engineering projects* and 5001TX—*Minor investigations for highways projects* are block allocations for expenditure on minor site investigation works costing not more than \$250,000 in respect of each site.

29 Allocation of \$200,000 each for 5002CX—*Minor outstanding civil engineering items* and 5002TX—*Minor outstanding highway items* are block allocations for minor outstanding works for civil engineering and highways items. They are for use in a similar manner to the block allocation described in paragraph 20 above.

30 Allocation of \$3,500,000 and \$8,300,000 respectively for 5003CX—*Minor civil engineering works selected from items in category D of the Public Works Programme* and 5003TX—*Minor highway engineering works selected from items in category D of the Public Works Programme* are block allocations to which expenditure on minor civil engineering and highway works selected from category D of the Public Works Programme, including improvements to existing facilities, in Hong Kong, Kowloon and the rural New Territories is charged.

31 Allocation of \$12,000,000 for 5004TX—*Minor roads and bridges* is for minor reconstruction, minor improvements (street widening, bus bays and traffic islands) and construction of footpaths in Hong Kong, Kowloon and the rural New Territories.

32 Allocation of \$26,000,000 for 5005TX—*Traffic engineering works* is for installation of street lighting on existing roads and in villages, purchase of parking meters, pedestrian and vehicular aids and Mass Transit Railway traffic management and associated works.

33 Allocation of \$11,000,000 for 5006TX—*Works contingent on development* is a block allocation to which expenditure on modifications to public roads, drains and sewers contingent on development is charged.

34 Allocation of \$58,000,000 for 5001BX—*Landslip preventive measures* is a block allocation to which expenditure on landslip preventive works and related studies (other than those directly related to specific development projects in the Public Works Programme) is charged.

#### Head 707—New Towns and Public Housing (other than Housing Authority)

35 The Financial Secretary has delegated to the Director of New Territories Development power to authorize expenditure from Head 707 of the Fund.

36 The estimate of the amount required in 1986–87 for expenditure on development in the new towns of Tsuen Wan, Sha Tin, Tuen Mun, Tai Po, Fanling, Shek Wu Hui, Yuen Long, Junk Bay and rural townships is \$2,814,190,000. \$109,270,000 is allocated for temporary housing, improvements to squatter areas and public housing not funded by the Housing Authority, \$615,680,000 for Tsuen Wan new town, \$436,720,000 for Sha Tin new town, \$500,650,000 for Tuen Mun new town, \$496,060,000 for Tai Po/Fanling development, \$208,180,000 for Yuen Long and rural development (including Tin Shui Wai), \$378,600,000 for Junk Bay new town and \$69,030,000 for the block allocations. Of the allocation of \$2,704,920,000 for the new towns and rural townships developments (excluding temporary housing, squatter area improvements and public housing not funded by the Housing Authority), \$730,050,000 is for community facilities, \$1,388,260,000 for civil engineering, \$431,930,000 for highways and \$154,680,000 for waterworks projects.

37 The Government's direct commitments for the provision of public housing in the urban area through the Public Works Programme is reducing as projects left in the Programme when the present Housing Authority was formed in 1973 are completed. The allocation of \$109,270,000 for public housing includes \$640,000 for the conversion and redevelopment of Shek Kip Mei estate, \$91,000,000 for temporary housing areas constructed by the Housing Department and \$17,630,000 for improvements to squatter areas.

38 Significant New Territories development projects to start in 1986–87 include 7113TH—*Widening of Kwai Chung Road and grade-separated intersection at Kwai On Road*, 7288TH—*Route 5—section between Wo Yi Ho and Shek Wai Kok*, 7046MH—*Public mortuary, Sha Tin*, 7044WC—*Water supply for Ma On Shan development, stage I*, 7239CL—*Tuen Mun New Town engineering development, stage IIB, package 20, phase IV (part I)*, 7244CL—*Sha Tau Kok development, site formation and servicing—phase II*, 7227CL—*Tin Shui Wai development, package 3, part II—land formation and main drainage*, 7157RO—*Yuen Long town park*, 7187CL—*Junk Bay development, head of Bay, stage II engineering works*, 7194TH—*Junk Bay development—principal access road at 7045WC—Water supply to Junk Bay—stage II.*

39 Allocation of \$1,800,000 for 7004CX—*Minor investigations for new towns and public housing (other than Housing Authority) projects* is a block allocation to which expenditure on minor site investigation works costing not more than \$250,000 in respect of each site is charged.

40 Allocation of \$500,000 for 7005CX—*Minor outstanding new towns and public housing (other than Housing Authority) items* is a block allocation for minor outstanding works to be used in a similar manner to the block allocation described in paragraph 20 above.

41 Allocation of \$16,500,000 for 7006CX—*Minor new towns and public housing (other than Housing Authority) works selected from items in category D of the Public Works Programme* is a block allocation to which expenditure on minor works within the new town lay-outs selected from category D of the Public Works Programme is charged.



42 Allocation of \$5,230,000 for 7007CX—*Minor landscaping works in the new towns* is a block allocation to which expenditure on minor amenity planting and landscaping of unallocated Crown land within the new town lay-outs costing less than \$200,000 for each site is charged.

43 Allocation of \$25,000,000 for 7008CX—*Consultants' fees and charges for new towns and public housing (other than Housing Authority) projects* is a block allocation to which expenditure on consultant architects' and engineers' fees for the design of works projects in category AB of the Public Works Programme is charged. Site investigations undertaken as part of such consultancy agreements are also funded under this block allocation.

44 Allocation of \$20,000,000 for 7009WX—*Fresh and salt water distribution systems contingent upon New Towns engineering works* is a block allocation to which expenditure on fresh and salt water main-laying works carried out in conjunction with civil engineering and roadworks in the new towns of Tsuen Wan, Tuen Mun, Sha Tin, Tai Po and Fanling, Junk Bay and the rural townships is charged.

#### Head 709—Waterworks

45 The Financial Secretary has delegated to the Director of Water Supplies power to authorize expenditure from Head 709 of the Fund.

46 The estimate of the amount required in 1986-87 for expenditure on waterworks projects is \$514,620,000.

47 Significant projects underway or due to start in 1986-87 include 9072GG—*Waterworks centralized workshop at Lung Cheung Road*, 9070WF—*Pak Kong treatment works and water transfer facilities, stage I*, 9074WF—*Future increase of water supply from China—stage II*, 9085WF—*Additional fresh water supply to Chai Wan*, 9101WF—*Improvement of the fresh water supply to Quarry Bay and Shau Kei Wan* and 9011WS—*Improvement to Kwun Tong/Jordan Valley salt water flushing system*.

48 Allocation of \$1,000,000 for 9001WX—*Minor investigations for waterworks projects* is a block allocation to which expenditure on minor site investigation works costing not more than \$250,000 in respect of each site is charged.

49 Allocation of \$100,000 for 9002WX—*Minor outstanding waterworks items* is a block allocation for minor outstanding works to be used in a similar manner to the block allocation described in paragraph 20 above.

50 Allocation of \$3,000,000 for 9003WX—*Minor waterworks selected from items in category D of the Public Works Programme* is a block allocation to which expenditure on minor waterworks projects selected from category D of the Public Works Programme is charged.

## Memorandum Note

## Summary of Expenditure

	Actual expenditure 1985-86 \$	Approved estimate 1986-87 \$	Revised estimate 1986-87 \$	Estimate 1987-88 \$
<b>Recurrent Account</b>				
Personal Emoluments .....	—	—	195,000,000	199,092,000
Departmental Expenses .....	—	—	57,200,000	64,969,000
Other Charges .....	—	—	19,200,000	12,531,000
<b>Capital Account</b>				
Plant, Equipment and Works .....	—	—	1,300,000	3,957,000
Other Non-Recurrent .....	—	—	600,000	650,000
<b>Total</b> .....	—	—	<b>273,300,000</b>	<b>281,199,000</b>

**Controlling Officer: Director of Civil Engineering Services**

The estimate of the amount required in 1987-88 for the salaries and expenses of the Civil Engineering Services Department is \$281,199,000. This represents an increase of \$7,899,000 over the revised estimate for 1986-87. Provision was previously shown under the Head entitled Engineering Development Department.

2 The Civil Engineering Services Department was established on 1 June 1986 when the Engineering Development Department was reorganized. The department comprises the Headquarters, the Civil Engineering Office, the Geotechnical Control Office and the Railway Development Office.

3 The *Civil Engineering Office* is concerned primarily with the design, construction and maintenance of marine works including reclamation, stormwater drainage and sewerage, sewage treatment and disposal systems as well as engineering works for solid waste disposal. It provides advice on marine and drainage matters relating to land sales and allocation for government and private developments. Except in the new towns, it also undertakes the engineering feasibility investigation of planned development and major site formation works for such development. It is also responsible for the design, construction and maintenance of civil engineering works at Hong Kong International Airport.

4 The *Geotechnical Control Office* is concerned with a wide range of geotechnical engineering activities related to the safe and economic use and development of land, with particular emphasis on the stability of existing and future slopes associated with both buildings and engineering works. It is responsible for investigating the stability of existing slopes, for designing and executing landslip preventive works on public slopes, and for making recommendations on the need for preventive works on private slopes. It exercises geotechnical control over public and private developments by checking geotechnical designs and standards of site supervision. The Office also manages the Mount Butler government quarry and supervises the contract quarries. It operates the public works laboratories, and it provides site investigation, terrain evaluation, geological survey and general geotechnical advisory services.

5 The *Railway Development Office* is responsible for the design and construction of the double-tracking and electrification of the Kowloon-Canton Railway from Hung Hom to Lo Wu, including new railway stations, the remodelling of existing stations and all associated works.

**Controlling Officer's Report**

6 The department is responsible for seven main activities as follows—

*Civil engineering services*

1. Designing, constructing and maintaining public marine facilities, hydrographic surveying and checking private submissions.
2. Designing, constructing and maintaining civil engineering works at Hong Kong International Airport.
3. Designing and constructing stormwater drainage, sewerage and sewage treatment and disposal systems as well as facilities for solid waste disposal by means of controlled tipping and supervising public dumps; maintaining stormwater and sewerage systems, river training and checking private submissions.
4. Land development projects.

*Geotechnical engineering services*

5. Investigating the stability of existing slopes and retaining structures; designing and constructing landslip preventive measures; checking geotechnical aspects of designs for civil engineering and building works; setting standards for geotechnical works; providing site investigation, materials testing, terrain evaluation, geological survey and geotechnical advisory services.
6. Operating the Mount Butler government quarry and supervising contract quarries.

*Railway development*

7. Planning, designing and constructing building and engineering works for the Kowloon-Canton Railway.

## Head 43—CIVIL ENGINEERING SERVICES DEPARTMENT

7 The following table indicates how much of the total provision is expected to be spent on each activity compared with the previous year -

	(1) <i>Actual expenditure 1985-86 \$ million</i>	(2) <i>Approved estimate 1986-87 \$ million</i>	(3) <i>Revised estimate 1986-87 \$ million</i>	(4) <i>Estimate 1987-88 \$ million</i>	<i>Increase of (4) over (3) \$ million</i>
Activity 1					
(Staff establishment)	(—)	(—)	(214)	(215)	(1)
Personal emoluments	—	—	19.8	20.3	0.5
Other recurrent	—	—	13.2	13.7	0.5
Capital	—	—	0.2	0.6	0.4
			33.2	34.6	1.4
Activity 2					
(Staff establishment)	(—)	(—)	(49)	(58)	(9)
Personal emoluments	—	—	5.7	6.3	0.6
Other recurrent	—	—	11.2	11.2	—
Capital	—	—	0.1	0.2	0.1
			17.0	17.7	0.7
Activity 3					
(Staff establishment)	(—)	(—)	(651)	(682)	(31)
Personal emoluments	—	—	58.7	62.1	3.4
Other recurrent	—	—	23.3	30.2	6.9
Capital	—	—	0.1	1.6	1.5
			82.1	93.9	11.8
Activity 4					
(Staff establishment)	(—)	(—)	(245)	(243)	(-2)
Personal emoluments	—	—	25.8	26.0	0.2
Other recurrent	—	—	2.5	2.6	0.1
Capital	—	—	—	0.1	0.1
			28.3	28.7	0.4
Activity 5					
(Staff establishment)	(—)	(—)	(527)	(541)	(14)
Personal emoluments	—	—	63.2	65.6	2.4
Other recurrent	—	—	6.6	6.9	0.3
Capital	—	—	1.5	2.1	0.6
			71.3	74.6	3.3
Activity 6					
(Staff establishment)	(—)	(—)	(172)	(115)	(-57)
Personal emoluments	—	—	11.4	8.4	-3.0
Other recurrent	—	—	19.4	12.7	-6.7
Capital	—	—	—	—	—
			30.8	21.1	-9.7
Activity 7					
(Staff establishment)	(—)	(—)	(98)	(97)	(-1)
Personal emoluments	—	—	10.4	10.4	—
Other recurrent	—	—	0.2	0.2	—
Capital	—	—	—	—	—
			10.6	10.6	—
Total					
(Staff establishment)	(—)	(—)	(1 956)	(1 951)	(-5)
Head			273.3	281.2	7.9

*Activity 1*

8 During 1986-87, the construction of the pier for the Aberdeen marine base and the pedestrian coverways between the two ferry piers at North Point were completed. Work continued on the construction of the helicopter landing site at Cheung Chau, pier extensions at Yung Shue Wan and Cheung Chau, a pier at Shek Pik, and the dredging of the Shing Mun River at Sha Tin. Construction of piers for the Western Wholesale Market phase I and the extension to Blake Pier in Central will commence in 1987-88.

*Activity 2*

9 During 1986-87, the extension of the cargo aircraft parking apron and the survey of the airport pavement were completed. Construction of the runway hardshoulders and taxiway surfacing commenced in 1986-87. The extension of the passenger apron is expected to commence in late 1987-88.

*Activity 3*

10 During 1986-87, a screening plant at Wan Chai (West), a trunk stormwater drain extension at the Western reclamation and work on mechanical screens at Wong Tai Sin and an oxygen injection scheme in connection with water quality improvement schemes for Kowloon Bay were completed.

11 Work continued on screening plants at Kwun Tong, Sham Shui Po, Wan Chai (East) and North Point, sewage treatment works at Mui Wo, Tsing Yi and Pillar Point, submarine outfalls for Central District, North Point and To Kwa Wan, trunk sewers in Java Road and the To Kwa Wan reclamation, the extension of trunk stormwater drains at the Cheung Sha Wan reclamation, the box culvert diversion for the Clear Water Bay Road development and works connected with the water quality improvement scheme for Kowloon Bay.

12 Controlled tips managed by the department include tips at Junk Bay, Ma Yau Tong, Shuen Wan, Pillar Point Valley and Jordan Valley.

13 Construction of a screening plant at To Kwa Wan, a submarine outfall for Shau Kei Wan, main drainage channels for the Tin Shui Wai hinterland, roads and drainage for Pak Kong village extension stage I and site preparation works for Junk Bay controlled tip stage II and Nim Wan controlled tip initial phase are expected to start in 1987-88.

14 The Civil Engineering Office was responsible for the maintenance of over 1 400 kilometres of public sewers and drains and their branch connections including some 50 kilometres of drains completed in the year. During 1986, about 1 500 sets of drainage plans and 950 sets of development conditions were processed. Some 1 000 drainage diversion and connection works were carried out. About 50 000 drainage clearance exercises were carried out during the period. Emergency organizations were set up to deal with blocked or damaged public sewers and stormwater drains during typhoons and rainstorms. The increase of \$11.8 million (14.4%) over the revised estimate for 1986-87 is mainly due to the increase in maintenance works and contract rates for such works.

*Activity 4*

15 During 1986-87, construction of the seawall and reclamation at Siu Chai Wan stage I was completed and site formation for the Tai Po Industrial Estate stage III phase 2 was nearing completion. Work continued on site formation for Diamond Hill development stage I, reclamations at Stonecutters Island and Telegraph Bay, and Aberdeen reclamation stage II phases 2B and 2C, Aldrich Bay reclamation Area D stage II, Tai Lam Bay reclamation stage II, Sai Kung Town reclamation, seawall and reclamation at Sam Ka Tsuen and improvement to the Clear Water Bay Road anchor wall commenced in 1986-87. It is expected that the construction of the seawall, reclamation and site formation at Siu Chai Wan stage II, Hung Hom Bay reclamation phase II, reclamation for Tai Lam Chung Marine Police Base and Ap Lei Chau North reclamation phases I and II, and reclamation for the back-up area to Container Terminal No. 6 at Kwai Chung will commence in 1987-88.

*Activity 5*

16 During 1986, the Geotechnical Control Office completed stabilization works on seven fill slopes, 34 cut slopes and one retaining wall. Work commenced on seven fill slopes, 53 cut slopes and one retaining wall. Over 4 400 design submissions for government and private projects were checked by the Office, and geotechnical advice was given on 168 government projects. The Geotechnical Area Studies Programme was completed with the publication of four reports, and preparations were made for the 1:20 000 regional reports from this programme to be made available to the public. There was good progress regarding the new geological survey of the whole territory, with two maps and two accompanying memoirs being made available for sale to the public. The preparation of three geoguides is in hand, six special research projects were completed, and two further geotechnical publications were produced for sale. Site investigations were carried out on more than 280 sites, and over 220 000 material tests were carried out in the public works laboratories.

*Activity 6*

17 During 1986-87, the government quarry at Diamond Hill was closed to make way for building development and its large asphalt producing plant was transferred to the other government quarry at Mount Butler. The two government quarries produced approximately 440 000 tonnes of aggregate and 152 000 tonnes of bituminous products in 1986. The Geotechnical Control Office also continued to supervise seven contract quarries.

*Activity 7*

18 During 1986-87, the Railway Development Office completed the Tai Wai permanent station, the Mong Kok goods yard, the Lo Wu terminal building except for auxiliary works which will continue up to the end of 1987, and the demolition of Tai Wai temporary station. Construction commenced during 1986-87 on the superstructure over the Kowloon Station goods yard, the footbridges to improve access to Mong Kok Station, and the Hung Hom Bay reclamation which will provide land for the expansion of the Kowloon-Canton Railway goods yard and other developments.

**Ambit and provision***Recurrent Account*

## Personal Emoluments

19 Provision of \$199,092,000 for personal emoluments represents an increase of \$4,092,000 over the revised estimate 1986-87, and takes into account new posts likely to be created during 1987-88.

20 The approved establishment shown in the Estimates is 1 954 permanent posts and two supernumerary posts.

21 Subject to certain conditions, the Controlling Officer may under delegated powers create or delete non-directorate posts during 1987-88, but the notional annual mid-point salary value of all such posts must not exceed \$160,830,000. The notional annual mid-point salary value of non-directorate posts shown in the Estimates is \$158,667,000.

22 Provision of \$15,732,000 under *Subhead 002 Allowances* is for standard allowances and the following non-standard allowance—

	<i>Rate</i>
post allowance for Survey Officers and Senior Survey Officers in the land and engineering streams	monthly allowance equal to the officer's next increment

## Departmental Expenses

23 Provision of \$140,000 under *Subhead 104 Light and power* includes provision for the payment of electricity bills for offices and drainage related facilities. The increase of \$20,000 (16.7%) over the revised estimate for 1986-87 is mainly due to the inclusion of provision for electricity for sewer gauging and dry weather flow-interception installation.

24 Provision of \$145,000 under *Subhead 106 Temporary staff* includes provision for the remuneration of post-secondary students employed during the summer vacation. The increase of \$15,000 (11.5%) over the revised estimate for 1986-87 is mainly due to the increased rate of remuneration paid to temporary staff.

25 Provision of \$200,000 under *Subhead 109 Training expenses* is for training courses and the purchase of publications, equipment and teaching aids for departmental training of technical staff. The increase of \$50,000 (33.3%) over the revised estimate for 1986-87 is mainly due to the inclusion of requirements for training courses on management and the maintenance of sewers and drains.

26 Provision of \$3,500,000 under *Subhead 111 Hire of services and professional fees* includes provision for the engagement of professional assistance to undertake works which the department is not able to carry out in-house because of a shortage of staff and contracting out soil and steel tests to commercial laboratories.

27 Provision of \$270,000 under *Subhead 115 Fuel and lubricating oil* is for expenditure on fuel and lubricants for vessels operated by the department.

28 Provision of \$100,000 under *Subhead 117 Data processing* includes provision for the purchase of software for engineering design and engineering management.

29 Provision of \$700,000 under *Subhead 119 Specialist supplies and equipment* includes provision for the purchase of chemicals and laboratory equipment for the materials testing laboratories. The increase of \$63,000 (9.9%) over the revised estimate for 1986-87 is mainly due to the need for more chemicals and laboratory equipment to meet the growing demand for laboratory testing services.

30 Provision of \$680,000 under *Subhead 120 Maintenance materials* includes provision for materials and consumable items for maintenance works carried out by direct labour at piers, seawalls, sewers and stormwater drains.

31 Provision of \$54,044,000 under *Subhead 121 Contract maintenance* includes provision for the employment of contractors for maintenance and minor improvement works to sewers and stormwater drains, runway and apron pavements at the airport, public dumps, seawalls, piers and navigational channels and dredging at drainage outfalls and typhoon shelters. The increase of \$7,384,000 (15.8%) over the revised estimate for 1986-87 is mainly due to the increase in maintenance works and in contract rates for such works.

## Other Charges

32 Provision of \$31,000 under *Subhead 222 Pneumoconiosis compensation scheme—levies* is for levies payable to the Pneumoconiosis Compensation Scheme in respect of workers in the government quarry.

33 Provision of \$12,500,000 under *Subhead 237 Production and processing of quarried stone* is for the expenses of operating the government quarry, excluding staff.

*Capital Account*

Plant, Equipment and Works

34 Provision of \$400,000 under *Subhead 661 Minor equipment (block vote)* is for the purchase of items of testing and surveying equipment the unit cost of which falls between \$50,000 and \$75,000.

Capital Account commitments

	<i>Approved commitment</i> \$	<i>Accumulated expenditure to 31.3.86</i> \$	<i>Revised estimated expenditure for 1986-87</i> \$	<i>Balance</i> \$
Total	12,574,000	5,374,000	830,000	6,370,000

## Memorandum Note

## Summary of Expenditure

	Actual expenditure 1985-86 \$	Approved estimate 1986-87 \$	Revised estimate 1986-87 \$	Estimate 1987-88 \$
<b>Recurrent Account</b>				
Personal Emoluments .....	—	—	152,500,000	161,618,000
Departmental Expenses .....	—	—	255,800,000	262,629,000
Other Charges .....	—	—	34,500,000	36,118,000
<b>Capital Account</b>				
Plant, Equipment and Works .....	—	—	2,300,000	3,161,000
Other Non-Recurrent .....	—	—	600,000	10,000
<b>Total</b> .....	—	—	<b>445,700,000</b>	<b>463,536,000</b>

Controlling Officer: Director of Highways

The estimate of the amount required in 1987-88 for the salaries and expenses of the Highways Department is \$463,536,000. This represents an increase of \$17,836,000 over the revised estimate for 1986-87. Provision was previously shown under the Head entitled Engineering Development Department.

### Organization

2 The Highways Department, formerly the Highways Office of the Engineering Development Department, was established on 1 June 1986. The department is organized into a Headquarters, three Regional Offices and an Eastern Harbour Crossing Section.

3 The *Headquarters* comprises the departmental administration, six technical support units and two speciality divisions: the Departmental Administration for personnel, financial and general administration; the Planning Unit for planning and controlling the programme of and expenditure on capital projects; the Maintenance Accounts Unit for maintaining a computerized billing system for term contract payments and the checking of measurements; the Landscape Unit for advising on landscape treatment associated with the highway system; the Land Survey Unit for administering the staff and work of the engineering survey and advising on matters pertaining to land surveying; the Contract Advisory Unit for giving advice to the Regions on matters pertaining to contracts and claims and also performing technical audits on contracts let by the department; the Research and Development Unit for improving the standards of highway engineering and maintenance techniques; the Lighting Division for planning and designing the installation and maintenance of public lighting; and the Structures Division for planning, designing and maintaining all public highway structures.

4 Three *Regional Offices* have been established covering Hong Kong, Kowloon and the New Territories. They are responsible for all aspects of public highway construction and maintenance works within their geographical areas.

5 The *Eastern Harbour Crossing Section* is responsible for co-ordinating the technical requirements of the Eastern Harbour Crossing project and advising on matters in connection with the Mass Transit Railway.

### Controlling Officer's Report

6 The department is responsible for three main activities as follows:—

1. *Highway construction*  
Planning, designing and constructing the public highway system and associated drainage, landscaping and road lighting works.
2. *Highway maintenance*  
Maintaining the public highway system, including public lighting and street furniture; advising on the highways' aspects of private developments; co-ordinating and reinstating trench works carried out by utility undertakings.
3. *Co-ordination of major infrastructure projects*  
Co-ordinating the technical requirements of the Eastern Harbour Crossing project in accordance with the project agreement; and advising on matters in connection with the Mass Transit Railway.

7 The following table indicates how much of the total provision is expected to be spent on each activity compared with the previous year.

## Head 60—HIGHWAYS DEPARTMENT

	(1) Actual expenditure 1985-86 \$ million	(2) Approved estimate 1986-87 \$ million	(3) Revised estimate 1986-87 \$ million	(4) Estimate 1987-88 \$ million	Increase of (4) over (3) \$ million
Activity 1					
(Staff establishment)	—	—	(663)	(687)	(24)
Personal emoluments	—	—	63.4	67.7	4.3
Other recurrent	—	—	36.9	38.7	1.8
Capital	—	—	1.1	2.6	1.5
	—	—	101.4	109.0	7.6
Activity 2					
(Staff establishment)	—	—	(935)	(975)	(40)
Personal emoluments	—	—	84.8	89.5	4.7
Other recurrent	—	—	253.2	259.8	6.6
Capital	—	—	1.8	0.6	-1.2
	—	—	339.8	349.9	10.1
Activity 3					
(Staff establishment)	—	—	(23)	(23)	(—)
Personal emoluments	—	—	4.3	4.4	0.1
Other recurrent	—	—	0.2	0.2	—
Capital	—	—	—	—	—
	—	—	4.5	4.6	0.1
Total					
(Staff establishment)	—	—	(1 621)	(1 685)	(64)
Head	—	—	445.7	463.5	17.8

*Activity 1*

8 During 1986, a number of roads and footbridges were opened to traffic whilst some 70 separate road projects were under construction with another 80 projects under active planning.

9 The section of the New Territories circular road from Fan Kam Road to Pak Shek Au was completed in early 1987, increasing the completed sections of the road by 3.5 kilometres. A feasibility study on the second road link between Sha Tin and East Kowloon, known as the Tate's Cairn Tunnel, was completed at the end of 1986. The improvement works to the Sha Tau Kok Road and the section of the Man Kam To Road from the Lin Ma Hang Road to the Cross Border Control Facilities were also completed to cope with the increasing cross border traffic at Sha Tau Kok and Man Kam To. Other road projects completed in 1986-87 include—

Elevated walkway along Connaught Road Central between Gilman Street and Rumsey Street

Footbridge across Connaught Road Central at Rumsey Street

Five footbridges across King's Road in North Point and Quarry Bay

O'Brien Road footbridge

Footbridge across Wong Chuk Hang Road

Footbridge across New Clear Water Bay Road, south of Choi Wan Estate

Lam Kam Road improvement, stage I

Upgrading of Ngong Ping Road

Roads and drainage works in Sai Kung reclamation, stage III, phase 3 and stage IV

10 Construction of many major projects continued in 1986-87. The three kilometres section of the New Territories circular road from Pak Shek Au to Mai Po, together with a major 1.8 kilometres vehicular border link at Lok Ma Chau progressed despite problems associated with land disputes and other external influences. It is expected that the project will be completed by late 1988. Much headway was made on the construction of the western section of the West Kowloon Corridor. Upon its completion at the end of 1987, this corridor will consist of a total of five kilometres of elevated road. Work also continued on the construction of a one-way two-lane flyover running from Cheung Sha Wan Road over Maple Street to Boundary Street near Fa Yuen Street, which should be completed in late 1987. Progress was made on the construction of the grade separated access facilities to the Wan Chai reclamation, which are expected to be completed at the end of 1987. This project involves the construction of a flyover from Fenwick Pier Street to Harcourt Road, a flyover from Hung Hing Road to Gloucester Road, a seafront road from Tonnochy Road to Fleming Road, a new transport interchange at the Wan Chai Ferry Pier and several new footbridges.



11 During 1986–87, the construction of many major road projects commenced. In April 1986, work on the Route 5 (Sha Tin to Tsuen Wan) tunnel drive commenced. Upon the completion of this route in late 1989, the travelling time between Sha Tin and Tsuen Wan will be reduced to about ten minutes. Reconstruction of the Princess Margaret Road flyover to a dual two-lane flyover started in July 1986. The construction of the Lam Kam Road flyover which will carry traffic using the New Territories trunk road over the present at-grade junctions at Lam Kam Road and at Hong Lok Yuen also commenced in July. Major works regarding the Connaught Road upgrading scheme, which will provide a dual two-lane free flow facility along Connaught Road, commenced in September 1986. This scheme involves the construction of two new flyovers at Harcourt Road and Rumsey Street, an underpass at Pedder Street, Connaught Road West widening, associated bridges and ancillary road works. Other projects commenced in 1986–87 include—

- Tai Po Road improvement, Sha Tin to Tai Wo Ping interchange, stages I and II
- Widening of Man Kam To Road from Jockey Club Road to Lin Ma Hang Road, stages I and II
- Extension of vehicle holding area—Man Kam To
- Access roads for Ma Chai Hang and Chuk Yuen—eastern access
- Realignment and extension of Tonkin Street
- Carpenter Road widening
- Roads and drainage works in Sai Wan Ho reclamation.

12 In 1987–88, the estimated expenditure on projects supervised by the department is expected to be about \$912,000,000, an increase of \$235,000,000 (34.7%) over the revised expenditure for 1986–87. Design of the final stage of the Island Eastern Corridor from Shau Kei Wan to Chai Wan has been completed and construction will commence in early 1987. This stage will continue from the completed section in Shau Kei Wan by way of an elevated structure along the eastern side of Aldrich Bay, through A Kung Ngam to Lyemun Barracks before continuing at ground level to Chai Wan. The design of phase III of the New Territories circular road between Fairview Park and Mai Po was completed and construction will commence in early 1987. Construction of phase IV between Mai Po and Au Tau is planned to start in late 1987. Construction of a project to increase the road capacity of the section of Gascoigne Road and Chatham Road between Wylie Road and the Hung Hom interchange will commence in 1987. This involves the construction of a grade separated intersection at the junction of Gascoigne Road and Wylie Road and some ground level improvement works. To cope with the traffic demand generated by the development of large housing estates at Ma Chai Hang, Chuk Yuen and Diamond Hill, construction of a grade separated interchange across Lung Cheung Road linking Ma Chai Hang to a major intersection with Broadcast Drive and Junction Road will also commence in 1987. Other projects now in Category A or Category AB of the Public Works Programme on which work is planned to start in 1987–88 include—

- Vehicular border link at Lok Ma Chau, stage II—construction of two vehicle holding areas
- Lam Kam Road improvement, stage II
- Kam Tin Road improvement
- Ma On Shan to Nai Chung link road
- Southern access to Nim Wan controlled tip
- Tong Yan San Tsuen roads and drainage, stage I, phase II
- Engineering works for San Hing Tsuen
- Kai Tak Airport passenger terminal building, east and west flyovers
- Victoria Road improvements, stage I, phase II

The increase of \$7.6 million (7.5%) over the revised estimate for 1986–87 is mainly due to an increase in engineering, technical and site supervision staff to cope with the increase in road projects.

#### Activity 2

13 The department was responsible for the maintenance of over 3 380 lane-kilometres of roads which included three major road tunnels and 540 flyovers and bridges. In addition, the department also maintained about 250 footbridges and 150 subways. Emergency organizations were set up to deal with emergency repairs to roads, landslips, and flooding during typhoons and rainstorms. During 1986, about 400 development conditions were checked and the department co-ordinated and reinstated more than 27 000 items of trench works carried out by the utility companies.

14 In 1986–87, the department established a computerized inventory of roads which stores information on the pavement characteristics of each road so that priorities for maintenance and reconstruction can be accurately based on sound technical data. A deflectograph survey involving the measurement of deflections under a standard load, covering more than 500 kilometres of roads and an axle load survey were also completed. The results of these surveys will be used to determine the residual life of the bituminous pavement and the best means of extending its life by establishing soundly based resurfacing programmes. They also produce design parameters for maintenance and reconstruction applicable to the bituminous road system.

*Activity 3*

15 In 1986, an Eastern Harbour Crossing Section was set up to organize, co-ordinate and oversee the necessary administrative, technical and legislative arrangements for the Eastern Harbour Crossing project. Construction of the project started soon after the Eastern Harbour Crossing Ordinance was enacted in August 1986. During 1986-87, the Section also dealt with the residual engineering works of the Mass Transit Railway after its full commissioning in May 1986.

**Ambit and provision***Recurrent Account*

## Personal Emoluments

16 Provision of \$161,618,000 for personal emoluments represents an increase of \$9,118,000 over the revised estimate for 1986-87, and takes into account new posts likely to be created during 1987-88.

17 The approved establishment shown in the Estimates is 1 620 permanent posts and one supernumerary post.

18 Subject to certain conditions, the Controlling Officer may under delegated powers create or delete non-directorate posts during 1987-88, but the notional annual mid-point salary value of all such posts must not exceed \$132,852,000. The notional annual mid-point salary value of non-directorate posts shown in the Estimates is \$127,425,000.

19 Provision of \$11,710,000 under *Subhead 002 Allowances* is for standard allowances and the following non-standard allowance—

	<i>Rate</i>
post allowance for Survey Officers and Senior Survey Officers in the land and engineering streams	monthly allowance equal to the officer's next increment

The increase of \$1,220,000 (11.6%) over the revised estimate for 1986-87 is mainly due to increased acting appointments in 1987-88.

## Departmental Expenses

20 Provision of \$1,412,000 under *Subhead 100 Stores and equipment* represents an increase of \$95,000 (7.2%) over the revised estimate for 1986-87. This is mainly due to the replacement of office equipment for the drawing offices.

21 Provision of \$44,000,000 under *Subhead 104 Light and power* includes provision for the payment of electricity bills for offices, street lighting, traffic signals, escalators for footbridges and ventilation equipment at bus termini. The increase of \$2,574,000 (6.2%) over the revised estimate for 1986-87 is mainly due to an increase in new installations.

22 Provision of \$137,000 under *Subhead 106 Temporary staff* includes provision for the remuneration of post-secondary students employed during the summer vacation.

23 Provision of \$54,000 under *Subhead 109 Training expenses* is for specialized external training courses for professional and technical staff.

24 Provision of \$123,000 under *Subhead 111 Hire of services and professional fees* includes provision for the engagement of consultants in assessing route protection claims in connection with the Mass Transit Railway.

25 Provision of \$2,592,000 under *Subhead 114 Transport and travelling* represents an increase of \$399,000 (18.2%) over the revised estimate for 1986-87. This is mainly due to an increase in capital projects and maintenance works to be supervised.

26 Provision of \$60,000 under *Subhead 117 Data processing* includes provision for the purchase of software for engineering design and engineering management. The increase of \$25,000 (71.4%) over the revised estimate for 1986-87 is mainly due to the increased requirement for microcomputers.

27 Provision of \$16,000,000 under *Subhead 120 Maintenance materials* includes provision for materials for maintenance works carried out by direct labour at roads, pavements and associated installations.

28 Provision of \$197,350,000 under *Subhead 121 Contract maintenance* includes provision for the employment of contractors for maintenance and minor improvement works to bridges, roads, tunnels, pavements and associated installations and street lighting.

## Other Charges

29 Provision of \$36,118,000 under *Subhead 260 Installation of street lighting—residual payments* is for amortization and interest payments in respect of lighting installations in streets and public places installed prior to 1 April 1985 by the two power companies. The capital cost of public lighting installations installed after 1 April 1985 in Kowloon and the New Territories is charged to the Capital Works Reserve Fund on an outright payment basis. At present, the amortization and interest payments in respect of public lighting installations on Hong Kong Island after 1 April 1985 are also charged to this subhead.

## Memorandum Note

The Capital Works Reserve Fund was established on 20 January 1982 by Resolution of the Legislative Council for the purpose of financing the Public Works Programme and acquisitions of land. The first Resolution was subsequently replaced by a second on 27 July 1983. For the purpose of giving effect to arrangements for implementing paragraph 6 of Annex III to the Joint Declaration of the Government of the United Kingdom and the Government of the People's Republic of China signed in Peking on 19 December 1984, the 1983 Resolution was replaced by a third Resolution passed by the Legislative Council on 15 May 1985, to the effect that—

- (a) the Fund be administered by the Financial Secretary, who may delegate his power of administration to other public officers;
- (b) the Fund comprise a suspense account, a works account and a reserve account;
- (c) there be credited to the suspense account—
  - (i) premium income obtained from land transactions covered by paragraph 6 of Annex III to the Joint Declaration, pending deduction of the average cost of land production and sharing in accordance with paragraph 6 of Annex III to the Joint Declaration;
  - (ii) all moneys received by way of interest or dividends earned in respect of moneys held in the suspense account;
- (d) there be credited to the works account—
  - (i) the amount deducted from premium income held in the suspense account that represents the average cost of land production;
  - (ii) the amount of premium income held in the suspense account that represents the Government's share;
  - (iii) all moneys received arising from works or commitments entered into for the purposes of the Fund;
  - (iv) unclaimed deposits in respect of moneys referred to in sub-paragraph (iii) which have been unpaid for 5 years;
  - (v) all moneys received by way of interest or dividends earned in respect of moneys held in the works account;
  - (vi) such donations and other moneys as may be received for the purposes of the Fund;
  - (vii) such transfers from the reserve account as the Financial Secretary may authorize;
- (e) there be credited to the reserve account such appropriations from general revenue as may be approved by the Legislative Council;
- (f) all moneys received by way of interest or dividends earned in respect of moneys held in the reserve account shall form part of the general revenue;
- (g) the Financial Secretary shall transfer from the suspense account to the works account—
  - (i) the amount deducted from premium income held in the suspense account that represents the average cost of land production;
  - (ii) the amount of premium income held in the suspense account that represents the Government's share;
- (h) the Financial Secretary shall pay from the suspense account to banks incorporated in Hong Kong the amount of premium income held in the suspense account that represents the future Hong Kong Special Administrative Region Government's share;
- (i) the Financial Secretary shall at the beginning of each financial year, for the purpose of sharing all moneys credited to the suspense account under paragraph (c)(ii) during the preceding financial year between the Government and the future Hong Kong Special Administrative Region Government—
  - (i) divide such moneys in the proportion according to which transfers and payments were made under paragraphs (g) and (h) respectively during that preceding financial year;
  - (ii) transfer the Government's share from the suspense account to the works account and pay the future Hong Kong Special Administrative Region Government's share from the suspense account to banks incorporated in Hong Kong;
- (j) the Financial Secretary may expend moneys from the works account for the purposes of the Government's Public Works Programme and for the acquisition of land, in accordance with such conditions, exceptions and limitations as may be specified by the Finance Committee;
- (k) the Financial Secretary may from time to time—
  - (i) transfer from the reserve account to the works account such sums as may be required for the purposes of the Fund;
  - (ii) pay from the reserve account to general revenue any balance in the reserve account which is not required for the purposes of the Fund;
- (l) the Director of Accounting Services shall, under the authority of a funds warrant issued by the Financial Secretary, pay from the Fund such sums as may be required to meet expenditure from the Fund;
- (m) the Financial Secretary in his discretion may authorize the investment in such manner as he may determine of any moneys held in the Fund at any time;

- (n) all moneys held in the Fund on the date on which the Joint Declaration enters into force shall be deemed to be held in the works account;
- (o) paragraphs (a), (b), (c), (d), (e) and (f) of the Resolution made and passed by the Legislative Council on 27 July 1983 shall cease to apply.

2 In accordance with the Resolution, all revenue from land transactions, other than those transactions decided upon before the coming into force of the Joint Declaration and those not conferring a benefit after 1997, is paid into the suspense account of the Fund. Sharing and calculation of the cost of land production is carried out by the Sino-British Land Commission at the end of each quarter. The interest accruing to the suspense account is shared once a year at the beginning of the financial year. It is estimated that sharing in 1986-87 will result in \$2,159 million and \$1,798 million being transferred to the works account and the future Hong Kong Special Administrative Region Government's account respectively. In 1987-88, the estimate of the Government's share is \$2,140 million and the estimate of the future Hong Kong Special Administrative Region Government's share is \$1,698 million.

3 Expenditure from the Fund is limited in respect of each subhead by the allocation shown under the column headed 'Estimate 1987-88' in the Fund estimates, and this may not be exceeded in 1987-88 without the prior approval of the Financial Secretary. Where an approved project estimate is shown in respect of any project, the total commitment incurred may not exceed the approved estimate, and the estimate may not be altered without the prior approval of Finance Committee or the Financial Secretary under delegated powers.

4 The balances available in the works and reserve accounts of the Fund at 1 April 1987 are estimated to be \$1,000 million and \$5,081 million respectively, totalling 6,081 million. During 1987-88, it is estimated that \$5,080 million from the general revenue will be transferred to the reserve account, and it is further estimated that \$2,140 million and \$4,830 million will be transferred from the suspense account and reserve account respectively to the works accounts. In addition, \$40 million is expected to accrue to the works account from interest on its balances during 1987-88 and an arbitrary amount of \$40 million has been included for donations and for contributions by the Urban Council towards joint venture projects. The works account will thus have available \$8,050 million to meet estimated payments of \$7,050 million during 1987-88. The Fund will therefore have estimated balances in the works and reserve accounts at 31 March 1988 of \$1,000 million and \$5,331 million respectively, totalling \$6,331 million.

5 The estimate of the amount required in 1987-88 for expenditure on projects in Category A of the Public Works Programme and on those projects which it has been agreed will be upgraded to Category A during the year, together with land acquisition and minor works of a non-recurrent nature funded from block allocations, is \$7,050 million. This figure includes all donations and Urban Council contributions to joint venture projects, but does not include the cost of projects undertaken by the Government on behalf of and wholly financed by the Urban Council.

6 The selection of new projects to start in 1987-88 from among all projects in Category AB of the Public Works Programme was undertaken initially by the Public Works Priorities Committee, having regard to the limit on total new commitments laid down by the Financial Secretary and the readiness of projects to proceed. Public Works Sub-Committee subsequently endorsed this selection, and all selected items are shown in the Fund estimates.

7 The outstanding commitment in respect of projects in hand in the Public Works Programme and in respect of land acquisition on 1 April 1986 was \$19,356 million. This was increased by the injection of new projects and by increases in approved project estimates during 1986-87 by \$3,605 million and \$790 million respectively giving a total outstanding commitment of \$23,751 million. The revised estimate of expenditure during 1986-87 is \$6,500 million, and so the outstanding commitment at 31 March 1987 will be about \$17,251 million.

8 During 1987-88 work will start on new projects the total value of which is about \$9,837 million. After allowing for estimated expenditure in 1987-88 of \$7,050 million, the outstanding commitment at 31 March 1988 will be about \$20,038 million.

#### Head 701—Land Acquisition

9 The Financial Secretary has delegated to the Director of Buildings and Lands power to authorize expenditure from Head 701 of the Fund.

10 The estimate of the allocation required in 1987-88 for expenditure on compensation and *ex-gratia* allowances for the acquisition and associated clearance of all land and property reverting to the Crown and on *ex-gratia* allowances for clearance of Crown Land for projects in the Public Works Programme, is \$1,200 million. *Ex-gratia* allowances for clearance of Crown Land not required for projects in the Public Works Programme are charged to Head 91 Buildings and Lands Department Subhead 221 Clearance of Crown land—*ex-gratia* allowances.

11 The allocation of \$6,000,000 for 1002CA—*Compensation for surrenders and resumptions: urban improvement districts: Yau Ma Tei, Wan Chai and Western* is for payment of compensation for the acquisition of properties and for payment of *ex-gratia* compensation to owners within the urban improvement districts. It also provides for the acceptance of voluntary surrenders of properties frozen under the outline zoning plans.

12 The allocation of \$182,000,000 for 1004CA—*Compensation for surrenders and resumptions: miscellaneous* is a block allocation for resumption costs for proposed sites in connection with the implementation of statutory outline zoning plans, for projects to be undertaken by non-government or quasi-government bodies including the Regional and Urban Councils, the Housing Society, the Housing Authority and for projects undertaken under the Foreshore and Seabed (Reclamation) Ordinance 1985 not being projects covered by any other funding arrangements. The allocation is intended to cover the cost of acquiring private lots involved in assembling sites required for the Housing Society's Urban Improvement Schemes, the Housing Authority's Home Ownership Schemes, the implementation of planned layouts and various other miscellaneous purposes.

13 The allocation of \$500,000 for 1006CA—*Mass Transit Railway: land acquisition* is for expenditure on land acquisition for the Modified Initial System, the Tsuen Wan Extension and the Island Line not directly recoverable from the Mass Transit Railway Corporation (i.e. expenditure to be incurred on acquiring sites, and on making them available for granting permanently to the Corporation or for temporary use as works areas for which rentals will be charged). The Corporation pays premia for rentals in respect of land granted or leased to it. These are credited to general revenue. All expenditure on land acquisition which is directly reimbursable by the Corporation has been charged to an advance account with effect from 1 April 1980. Expenditure on land acquisition in respect of the Island Line was previously charged to a separate subhead. Accounts for the two subheads were combined with effect from 1 April 1985.

14 The allocation of \$4,500,000 for 1007CA—*Mass Transit Railway: route protection* is for government contributions to development costs for sites lying along Mass Transit Railway routes (including some along the Island Line and the potential East Kowloon Line) which have not yet been agreed, but in respect of which special foundation works are required in anticipation of possible future railway extensions. With effect from 1 April 1985, accounts for this subhead were combined with those for the subhead for Mass Transit Island Line: route protection.

15 A total of \$1,000,000,000 for *Subheads 1010CA to 1018CA* is for meeting all land acquisition costs other than direct works costs and all *ex-gratia* allowances in respect of projects in the Public Works Programme in the nine development areas: Tsuen Wan/Kwai Chung/Tsing Yi; Sha Tin; Tuen Mun; Tai Po/Fanling/Sheung Shui; Yuen Long/Tin Shui Wai; Junk Bay/Sai Kung; Urban Kowloon; Urban Hong Kong Island; and Islands.

#### Head 703—Buildings

16 The Financial Secretary has delegated to the Director of Architectural Services power to authorize expenditure from Head 703 of the Fund.

17 The estimate of the amount required in 1987–88 for expenditure on a variety of government building projects is \$1,256,910,000. This does not include provision for building items related to public housing and the new towns.

18 Significant building projects to start in 1987–88 include 3046BF—Wong Tai Sin ambulance depot and 288 rank and file married quarters, 3004GB—Border control facilities at Lok Ma Chau, 3031GO—New office for Architectural Services Department, Maintenance Branch, 3033LC—Additional departmental quarters on Lantau Island, 3051MH—Sha Tin infirmary and quarters and 3030MH—Eastern District Hospital—superstructure.

19 Allocation of \$2,500,000 for 3001GX—*Minor investigations for building projects* is a block allocation to which expenditure on minor site investigation works costing not more than \$250,000 in respect of each site is charged.

20 Allocation of \$300,000 for 3002GX—*Minor outstanding building items* is a block allocation with an arbitrary amount which may be used initially for urgent payments in respect of minor outstanding works to a value not exceeding \$100,000 on any building project which has been substantially completed and which is no longer shown in the Fund estimates. Approval will be sought from the Financial Secretary under delegated powers to reinstate such projects in the Fund estimates during the year and, once this approval has been obtained, expenditure will be transferred to the original project.

21 Allocation of \$14,000,000 for 3003GX—*Minor building works, other than fitting-out works, selected from items in Category D of the Public Works Programme* is a block allocation to which expenditure on minor building items selected from Category D of the Public Works Programme is charged.

22 Allocation of \$23,500,000 for 3004GX—*Refurbishment of government buildings* is a block allocation to which expenditure on works estimated to cost less than \$1,500,000 for refurbishment of government buildings is charged.

23 Allocation of \$23,000,000 for 3005GX—*Fitting out works selected from items in Category D of the Public Works Programme* is a block allocation to which expenditure on minor fitting out works for government leased or owned premises estimated to cost less than \$1,500,000 is charged.

24 Expenditure on furniture and equipment for government buildings was charged to a block allocation prior to 1983–84. With effect from 1 April 1983, it has been charged to each building project, and the estimated cost is included within the approved project estimate for each project, and not shown separately.

#### Head 705—Engineering

25 The Financial Secretary has delegated to the Director of Civil Engineering Services power to authorize expenditure from Head 705 of the Fund.

26 The estimate of the amount required in 1987–88 for expenditure on civil engineering projects, other than waterworks and new towns development projects, is \$456,670,000.

27 Electrification works on the Kowloon Canton Railway from Kowloon Station to Lo Wu are now complete. The Kowloon Canton Railway Corporation was statutorily established in February 1983 and is a financially independent body. Outstanding projects for railway modernization works remaining in the Public Works Programme will, however, continue to be carried out by Government. Allocation of \$56,790,000 is provided for carrying out such modernization works in 1987–88.

28 Significant civil engineering projects to start in 1987–88 include 5024AA—Extension of aircraft parking apron and taxiways, Hong Kong Airport, Stage IV, 5029AP—Kwai Chung container port area

development, stage II—back up area for container terminal No. 6, 5260CL—Siu Sai Wan development—works, stage II, 5028DR—Controlled tipping of refuse at Nim Wan—initial phase and 5039DS—Sewage treatment and disposal, North West Kowloon, stage I—phase II.

29 Allocation of \$65,700,000 for 5001BX—*Landslip preventive measures* is a block allocation to which expenditure on landslip preventive works and related studies (other than those directly related to specific development projects in the Public Works Programme) is charged.

30 Allocation of \$1,000,000 for 5001CX—*Minor investigations for civil engineering projects* is a block allocation for expenditure on minor site investigation works costing not more than \$250,000 in respect of each site.

31 Allocation of \$200,000 for 5002CX—*Minor outstanding civil engineering items* is a block allocation for minor outstanding works for civil engineering items. It is for use in a similar manner to the block allocation described in paragraph 20 above.

32 Allocation of \$3,000,000 for 5003CX—*Minor civil engineering works selected from items in Category D of the Public Works Programme* is a block allocation to which expenditure on minor civil engineering works selected from Category D of the Public Works Programme, including improvements to existing facilities, in Hong Kong, Kowloon and the rural New Territories is charged.

33 Allocation of \$7,700,000 for 5004CX—*Works contingent on development* is a block allocation to which expenditure on modifications to public drains and sewers contingent on development is charged.

#### Head 706—Highways

34 The Financial Secretary has delegated to the Director of Highways power to authorize expenditure from Head 706 of the Fund.

35 The estimate of the amount required in 1987–88 for expenditure on highways projects, other than waterworks and new towns development projects, is \$825,500,000.

36 Significant highways projects to start in 1987–88 include 6035TH—Hong Kong Island eastern corridor stage III—Shau Kei Wan to Pak Chai Wan, 6069TH—Gascoigne Road and Chatham Road improvements (Wylie Road to Hung Hom interchange) and 6172TH—New Territories circular road improvements, Au Tau to Fan Kam Road—Au Tau to Mai Po and remaining works.

37 Allocation of \$1,000,000 for 6001TX—*Minor investigations for highways projects* is a block allocation for expenditure on minor site investigation works costing not more than \$250,000 in respect of each site.

38 Allocation of \$200,000 for 6002TX—*Minor outstanding highways items* is a block allocation for minor outstanding works for highways items to be used in a similar manner to the block allocation described in paragraph 20 above.

39 Allocation of \$16,000,000 for 6003TX—*Minor highways engineering works selected from items in Category D of the Public Works Programme* is a block allocation to which expenditure on minor highways works selected from Category D of the Public Works Programme including improvements to existing facilities in Hong Kong, Kowloon and the rural New Territories is charged.

40 Allocation of \$23,000,000 for 6004TX—*Minor roads and bridges* is for minor reconstruction, minor improvements (street widening, bus bays and traffic islands) and construction of footpaths in Hong Kong, Kowloon and the rural New Territories.

41 Allocation of \$30,700,000 for 6005TX—*Traffic engineering works* is for installation of street lighting on existing roads and in villages, purchase and installation of parking meters and pedestrian and vehicular aids, and Mass Transit Railway traffic management and associated works.

42 Allocation of \$16,000,000 for 6006TX—*Works contingent on development* is a block allocation for expenditure on roadworks, including ancillary minor drainage works to be carried out in conjunction with roadworks contingent on development.

#### Head 707—New Towns and Public Housing (other than Housing Authority)

43 The Financial Secretary has delegated to the Director of Territory Development power to authorize expenditure from Head 707 of the Fund.

44 The estimate of the amount required in 1987–88 for expenditure on development in the new towns of Tsuen Wan, Sha Tin, Tai Po, Fanling/Shek Wu Hui, Tuen Mun, Yuen Long, Junk Bay, rural townships and urban area development is \$2,752,440,000. \$126,500,000 is allocated for temporary housing, improvements to squatter areas and public housing not funded by the Housing Authority, and improvements to urban fringe and rural areas in the New Territories, \$456,460,000 for Tsuen Wan development, \$301,090,000 for Sha Tin development, \$462,400,000 for New Territories/ North East development (Tai Po and Fanling), \$688,550,000 for New Territories/North West development (Tuen Mun), \$173,250,000 for New Territories/North West development (Yuen Long and Tin Shui Wai), \$402,840,000 for New Territories/South development (Junk Bay, Sai Kung and Islands), \$64,350,000 for Urban Area development and \$77,000,000 for the block allocations. Of the allocation of \$2,625,940,000 for the new towns and rural townships and urban area developments (excluding temporary housing, squatter area improvements and public housing not funded by the Housing Authority), \$873,520,000 is for community facilities, \$1,174,870,000 for civil engineering, \$453,100,000 for highways and \$124,450,000 for waterworks projects.



45 The Government's direct commitments for the provision of public housing in the urban area through the Public Works Programme is reducing as projects left in the Programme when the present Housing Authority was formed in 1973 are completed. The allocation of \$126,500,000 for public housing includes \$25,000,000 for improvements to urban fringe and rural areas in the New Territories, \$85,000,000 for temporary housing areas constructed by the Housing Department and \$16,500,000 for improvements to squatter areas.

46 Significant territory development projects to start in 1987-88 include 7284TH—New Container Port Road, phase I in Kwai Chung area, 7292TH—Road T6 and interchanges, Sha Tin New Town, 7270CL—Tin Shui Wai development, package 3, part II A—village flood protection, 7228CL—Hung Hom Bay reclamation, phase II, 7148RO—District open space, area 9, Shek Wu Hui, 7143RS—Indoor recreation centre in area I, Tuen Mun and 7047RM—Cheung Chau market complex.

47 Allocation of \$2,500,000 for 7004CX—*Minor investigations for new towns and public housing (other than Housing Authority) projects* is a block allocation to which expenditure on minor site investigation works costing not more than \$250,000 in respect of each site is charged.

48 Allocation of \$500,000 for 7005CX—*Minor outstanding new towns and public housing (other than Housing Authority) items* is a block allocation for minor outstanding works to be used in a similar manner to the block allocation described in paragraph 20 above.

49 Allocation of \$18,000,000 for 7006CX—*Minor new towns and public housing (other than Housing Authority) works selected from items in Category D of the Public Works Programme* is a block allocation to which expenditure on minor works within the new town lay-outs selected from Category D of the Public Works Programme is charged.

50 Allocation of \$6,000,000 for 7007CX—*Minor landscaping works in the new towns* is a block allocation to which expenditure on minor amenity planting and landscaping of unallocated Crown land within the new town lay-outs costing less than \$200,000 for each site is charged.

51 Allocation of \$30,000,000 for 7008CX—*Consultants' fees and charges for new towns and public housing (other than Housing Authority) projects* is a block allocation to which expenditure on consultant architects' and engineers' fees for the design of works projects in Category AB or, subject to the Deputy Financial Secretary's approval, Category B of the Public Works Programme is charged. Site investigations undertaken as part of such consultancy agreements are also funded under this block allocation.

52 Allocation of \$20,000,000 for 7009WX—*Fresh and salt water distribution systems contingent upon new towns engineering works* is a block allocation to which expenditure on fresh and salt water main-laying works carried out in conjunction with civil engineering and roadworks in the new towns of Tsuen Wan, Tuen Mun, Sha Tin, Tai Po and Fanling, Junk Bay and the rural townships is charged.

#### Head 709—Waterworks

53 The Financial Secretary has delegated to the Director of Water Supplies power to authorize expenditure from Head 709 of the Fund.

54 The estimate of the amount required in 1987-88 for expenditure on waterworks projects is \$558,530,000.

55 Significant waterworks projects to start in 1987-88 include 9049GG—Operational and service centre for Water Supplies Department on Hong Kong Island, 9107WF—Further extension to New Kowloon East high level fresh water supply system, 9108WF—Laying of the eastern cross harbour main and the remaining associated land mains, 9114WF—Treatment and disposal of sludge from the Sha Tin water treatment works and 9117WF—Improvement to Junk Bay hinterland (north) water supply system, stage I.

56 Allocation of \$500,000 for 9001WX—*Minor investigations for waterworks projects* is a block allocation to which expenditure on minor site investigation works costing not more than \$250,000 in respect of each site is charged.

57 Allocation of \$100,000 for 9002WX—*Minor outstanding waterworks items* is a block allocation for minor outstanding works to be used in a similar manner to the block allocation described in paragraph 20 above.

58 Allocation of \$3,400,000 for 9003WX—*Minor waterworks selected from items in Category D of the Public Works Programme* is a block allocation to which expenditure on minor waterworks projects selected from Category D of the Public Works Programme is charged.

Cross section of major Consultant, Contractor, and Utility Companies  
without qualified Land Surveyors :-

Binnie & Partners  
Freeman Fox & Partners  
Wilbur Smith & Associates  
Paul Y Construction  
Kumagai Gumi  
Gammon (Hong Kong)  
Leighton Contractors  
Kier International  
Costain International  
Vianini Lavori  
Peter Pun & Associates  
Watson  
Hong Kong Electric  
Hong Kong Telephone  
China Light & Power  
Hong Kong Gas  
Palmer & Jurner  
Henry Boot  
Franki  
Shun Shing Construction



According to the Hong Kong Government's Civil Engineering Manual, Chapter 5 Appendix 9, the following clause specifying the employment of a surveyor is to be included in all Government Group A Contracts :-

Setting-out of Works

The Contractor's attention is drawn to Clause 19 of the General Conditions of Contract. The Contractor shall submit for approval within 7 days from the day of acceptance of his tender the name and particulars of the person employed by him for setting-out of all the works under the Contract. This person shall be competent and experienced and shall preferably possess an acceptable degree/diploma or other suitable qualification or experience appropriate to the works of his Contract. He shall be authorized to receive from the Engineer and the Engineer's Representative all survey data relevant to the Contract and shall be available on site for this purpose when necessary. The Contractor shall ensure that all necessary equipment and labour for setting-out is available when required. The Contractor shall be supplied with a drawing showing the location of any points, levels and lines of reference on which the setting out of the Works is to be based.

Clause 19 of the General Conditions of Contract states :

- (1) The Contractor shall be responsible for the true and proper setting-out of the Works in relation to original points, lines and levels of reference given by the Engineer in writing or shown on any Drawings and for the correctness, subject as above-mentioned, of the position, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labour in connection therewith.

- (2) If at any time during the progress of the Works any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor on being required so to do by the Engineer or the Engineer's Representative shall, at his own expense, rectify such error to the satisfaction of the Engineer or the Engineer's Representative unless such error is based on incorrect data supplied in writing or shown on any document by the Engineer or the Engineer's Representative in which case the expense of rectifying the same shall be borne by Government.
  
- (3) The checking of any setting-out or of any line or level by the Engineer or the Engineer's Representative shall not in any way relieve the Contractor of his responsibility for the correctness thereof and the Contractor shall carefully protect and preserve all bench-marks, site-rails, pegs and other things used in setting out the Works.