

**Legislative Council Panel on Transport
Subcommittee on Matters related to the
Implementation of Railway Development Projects**

**Ma On Shan to Tai Wai Rail Link
and KCR Extension from Hung Hom to Tsim Sha Tsui
Essential Public Infrastructure Works**

Supplementary Information

PURPOSE

At the meeting on 4 January 2001, Members discussed an information paper on the Essential Public Infrastructure Works (EPIW) for the Ma On Shan to Tai Wai Rail Link (MOS Rail) and KCR Extension from Hung Hom to Tsim Sha Tsui (TST Extension), i.e. public works projects 47TR and 48TR. The main points raised by Members are summarized below -

On EPIW for MOS Rail

- (a) the public transport interchanges (PTI) should be carefully designed to ensure adequate provision of height, ventilation and lighting;
- (b) the reasons for adopting the on-cost percentage of 16.5% should be provided. This is also applicable to the EPIW for the TST Extension;
- (c) the Kowloon-Canton Railway Corporation (KCRC) should provide information on the measures to be undertaken to mitigate the noise impact arising from the construction works and railway operation, and remedial measures to be undertaken in case the actual noise level exceeded the stipulated standards;

On EPIW for TST Extension

- (d) feasibility of installing a pair of travelators along the Middle Road Subway and the Interchange Subway should be explored;
- (e) information on the services and facilities that will be provided to the disabled to facilitate their use of the subways should be provided;

- (f) Government should consider to construct a subway link from the Middle Road subway to the southern concourse of MTR Tsim Sha Tsui (TST) station; and
- (g) a plan showing the entrances/exits of the subways should be provided and a forecast on the pedestrian flow in the subways and their vicinity should be prepared.

We have carefully considered these points. This note sets out our response.

POINTS CONCERNING EPIW FOR MOS RAIL

Design of the Public Transport Interchanges

2. The detailed design of the PTI at Tai Wai Station and the PTI at Wu Kai Sha Station is underway. We will take into account Members' views on the height, ventilation and lighting of the PTIs.

On-cost Percentage of 16.5%

3. As set out in an information note for the Public Works Sub-Committee referenced PWSCI(2000-01)42 and issued on 5 January 2001, the 16.5% on-cost formula was derived on the basis of experience in the handling of design services, project management, site supervision, insurance and associated recurrent requirements, which are typical of entrustment assignments. The rough cost of these services or requirements averages at about 16.5% of the estimated capital cost of the works in question. The formula approach is a more pragmatic and convenient alternative to seeking reimbursement on an actual cost basis. Since the formula approach is meant to be applied on a reciprocal basis to projects which the Government intends to entrust to third parties (in this case the railway corporations) and vice versa, the on-cost percentage has been designed to be fair.

4. The Administration has recently completed an internal review on whether the 16.5% on-cost formula should continue to be applied to various entrustment works. Having compared the 16.5% on-cost formula for entrustment works with comparable on-costs for recently-completed and on-going government projects that have been outsourced to consultants, Government is of the view that the 16.5% on-cost for entrustment works remains appropriate.

Measures to mitigate the noise impact arising from the construction works and railway operation

5. KCRC will implement noise mitigation measures for construction activities throughout the construction period and railway operation in accordance with the relevant Environmental Impact Assessment (EIA) reports approved by the Environmental Protection Department (EPD) and the conditions stipulated in the Environmental Permit issued under the EIA Ordinance. Under the Noise Control Ordinance, the construction and maintenance of a railway are controlled similar to construction activities of other developments or projects, i.e. by means of a Construction Noise Permit. Depending on the type of area, the noise limits range from 45 to 55 dB(A) at night (11 pm to 7 am) and 60 to 70 dB(A) during the evening (7pm to 11 pm) and during daytime and evening of holidays. The noise mitigation measures to be adopted by KCRC for construction activities include the following –

- (a) use of low noise level plant and working method;
- (b) use of temporary and movable noise barriers where necessary; and
- (c) reduction in the number of plants operating at the same time in critical areas close to noise sensitive receivers.

6. The MOS Rail will operate under the control of the Noise Control Ordinance (NCO) and the relevant Technical Memorandum. The Technical Memorandum specifies the Acceptable Noise Levels (ANL) which are used as the noise criteria for railway operation. The ANL are dependent on the Area Sensitivity Rating (ASR) defined and the time period of the day. The following table shows the ANL corresponding to the assigned ASRs for the MOS Rail.

<u>Area Sensitivity Rating</u> <u>(ASR)</u>	<u>Acceptable Noise Level (ANL), Leq 30 min</u>	
	0700 – 2300 hours	2300 – 0700 hours
A	60 dB(A)	50 dB(A)
B	65 dB(A)	55 dB(A)
C	70 dB(A)	60 dB(A)

The locations of the noise sensitive receivers along the MOS Rail and the predicted operational noise level are summarized in Annexes F1 and Annex G of Volume 2 of the Environmental Impact Assessment (EIA) Report on MOS Rail¹ respectively. The education institutions near City One Station are of ASR C. With mitigation measures the operational noise levels will be 53-54 dB(A).

7. In accordance with the approved EIA report and the Environmental Permit, a series of noise mitigation measures will be implemented to bring the railway operational noise levels to within the required noise criteria. The mitigation measures include –

- (a) a specially designed noise abatement system for viaduct sections will be used to trap the noise arising from wheels/rails. The system comprises various noise-screening devices such as vehicle skirts and side panels underneath the side walkways, coupled with noise-absorptive linings and edge walls on the outer side of walkways. For twin viaducts, an additional central noise-screening device will be installed with a capped central wall, thereby further reducing airborne noise levels;
- (b) noise barriers and enclosures will be used on certain sections of the alignment. Floating slab track (i.e. track mounted on a soft baseplate upon a floating mini slab) will be installed to reduce vibration and re-radiated noise; and
- (c) noise from the Tai Wai Depot will be controlled using enclosure and the plant involved will be limited by maximum sound power levels defined by the EIA Report for MOS Rail.

8. Various measures will be put in place to ensure compliance with the Environmental Permit. KCRC has appointed an Independent Environmental Checker to provide an independent check on the environmental performance of construction works and to oversee the entire environmental protection process. To monitor the operational performance, KCRC is required by EPD under the Environmental Permit for MOS Rail to submit documents on the environmental performance of the railway. In case there are noise exceedances, KCRC will carry out remedial actions in accordance

¹ Two copies of the EIA report respectively on MOS Rail and TST Extension have been deposited at the LegCo Secretariat.

with the requirements in the Environmental Permit. KCRC may also be required under the Noise Control Ordinance to abate the exceedances such as a check of the plant and equipment for operating the railway to identify any associations with the exceedance for rectification, reduction of train speed and increase the height of noise barriers. The penalties for breach of the Environmental Permit are provided under section 26 of the EIA Ordinance which stipulates that the person concerned is liable to -

- (a) on a first conviction on indictment to a fine of \$2 million and to imprisonment for six months;
- (b) on a second or subsequent conviction on indictment to a fine of \$5 million and to imprisonment for two years;
- (c) on a first summary conviction to a fine at level 6 and to imprisonment for 6 months;
- (d) on a second or subsequent summary conviction to a fine of \$1 million and to imprisonment for one year; and
- (e) in any case where the offence is of a continuing nature, the court or magistrate may impose a fine of \$10,000 for each day on which he is satisfied the offence continued.

POINTS CONCERNING EPIW FOR TST EXTENSION

Feasibility of installing a pair of travelators along the Middle Road Subway and the Interchange Subway

9. The width of the subways is determined by existing building lines, street geometry and the premise that, where possible, construction operation is kept within the carriageway. Extending the construction works to pavement will necessitate diversion of utility services located thereunder, and more importantly obstruct the frontages of buildings and frustrate fire escape routes. The relationship between the buildings, carriageways and three main sections of the subways are indicated on the sketches at **Annex A**.

10. According to the pedestrian flow forecast (details at paragraph 13), during the morning peak the pedestrian flow in the Interchange Subway will be going mainly

from the KCR station to the MTR station. If a pair of bi-directional travelators is installed in the Mody Road subway, the usage of the two travelators will be uneven. More importantly, even if the walkway left behind is controlled to allow uni-directional flow to the MTR station, the total capacity of this walkway and a travelator will not be able to cope with the forecast morning peak flow westbound to the MTR station, and may thus lead to safety problems. The relevant technical assessment is at **Annex B**. The case in the Blenheim Avenue will be worse still as its internal subway width is less than that of the Mody Road section. The Middle Road Subway is further constrained by the existence of a large box culvert and the MTR tunnel under Nathan Road. The subway structure has to fit into the limited space between the underside of the culvert and at the same time keep the minimal clearance distance over the MTR tunnel. In doing so, ventilation and other equipment normally located above subway ceiling have to be accommodated at the sides of the subway which in turn will further reduce the width of the subway.

Services and facilities to facilitate the use of subways by the disabled

11. We recognize the importance of providing adequate facilities for the disabled to use the subways. Lifts at the junction of Mody Road and Hanoi Road and at the entrance in Centennial Garden will be installed to facilitate access to the subways. The lifts at the railway stations may also be used to access the subways as all the subways and stations connected are purposely designed at the same level. The subways and lifts will be installed with “Help Phones” through which KCRC staff can be contacted in case of need.

Subway link between the Middle Road Subway and MTR TST Station

12. We are considering the further expansion of the subway network in the Tsim Sha Tsui area. The Nathan Road subway link as suggested by Members is one of the schemes being considered. The relevant technical assessment is underway and will be completed by mid-2001. Whilst we need to take time to go through the planning and design processes, the planned modification works at MTR TST station will not exclude the possibility of pursuing the Nathan Road subway link proposal.

Forecast of the Pedestrian Flow in the Subways

13. The relevant drawings showing the locations of the entrances/exits of the subways and the forecast pedestrian flow are at **Annex C**. A table showing the forecast of the hourly flow of both rail and non-rail users is as follows -

Subway	Year 2004		Year 2011	
	AM Peak	PM Peak	AM Peak	PM Peak
Mody Road	14,300 (westbound) 4,900 (eastbound)	9,300 (westbound) 7,000 (eastbound)	15,300 (westbound) 5,000 (eastbound)	10,900 (westbound) 7,400 (eastbound)
Blenheim Avenue	11,600 (northbound) 1,900 (southbound)	7,700 (northbound) 4,900 (southbound)	13,700 (northbound) 3,400 (southbound)	9,900 (northbound) 5,000 (southbound)
Middle Road	4,200 (westbound) 2,800 (eastbound)	3,200 (westbound) 4,100 (eastbound)	7,100 (westbound) 3,500 (eastbound)	4,300 (westbound) 5,300 (eastbound)

OTHER POINTS

14. Members also made comments on the MOS Rail and TST Extension projects at the meeting on 4 January 2001. The main points are –

- (a) a copy of the EIA report and feasibility study reports on the MOS Rail and TST Extension should be provided²;
- (b) KCRC should consider reviewing the monitoring mechanism for construction works for MOS Rail and TST Extension and forming an independent panel to assess claims for compensation; and
- (c) KCRC should provide a forecast on the loading of East Rail during morning peak hours and take measures to ensure that passengers at the Tai Wai station would normally be able to board on the first train arriving at the platform before the commissioning of the Shatin to Central Link.

The response from KCRC is set out below.

Monitoring mechanism for construction works

15. KCRC has set up an East Rail Extensions (ERE) Division which is a dedicated team of some 400 professional engineers, functional specialists and supporting staff. The design and supervision of ERE construction contracts is also supported by

² Two copies of the relevant EIA reports and feasibility study reports have been deposited at the LegCo Secretariat.

appointed consultants. There will be intensive construction supervision with ultimate responsibility on KCRC to deliver the railway on time, in a safe manner, with minimum disturbance to the public and compliance with all statutory requirements. The construction supervision will be provided by resident site staff and KCRC's project management staff.

16. KCRC will continue to consult the relevant District Councils and the local communities on the railway projects throughout the construction stage. In addition, community liaison groups and community liaison offices will be set up by KCRC to provide a direct and effective channel of communication between KCRC, the local communities and the relevant government departments, and at the same time ensure speedy response to public views.

17. KCRC and its contractors have put in place mechanisms to handle claims for compensation. Pre-construction condition surveys of the existing buildings, structures and slopes adjacent to the sites are being carried out by both KCRC and its contractors. The conditions of these structures will be continuously monitored using strategically placed instruments throughout the construction period. The Corporation is committed to expediting both the investigation into the cause and effect of construction-related incidents and the payment of compensation. It will continue to work closely with its contractors and independent loss adjustors to bring about speedy response to claims. KCRC is aware of Members' concern regarding the timely settlement of construction-related claims and is considering any need to set up an independent body on this matter.

Forecast on passenger demand and train service of the East Rail

18. Using the latest population data, KCRC has estimated the average weekday patronage figures for the East Rail and the MOS Rail for the years 2004, 2006 and 2011, which are shown below -

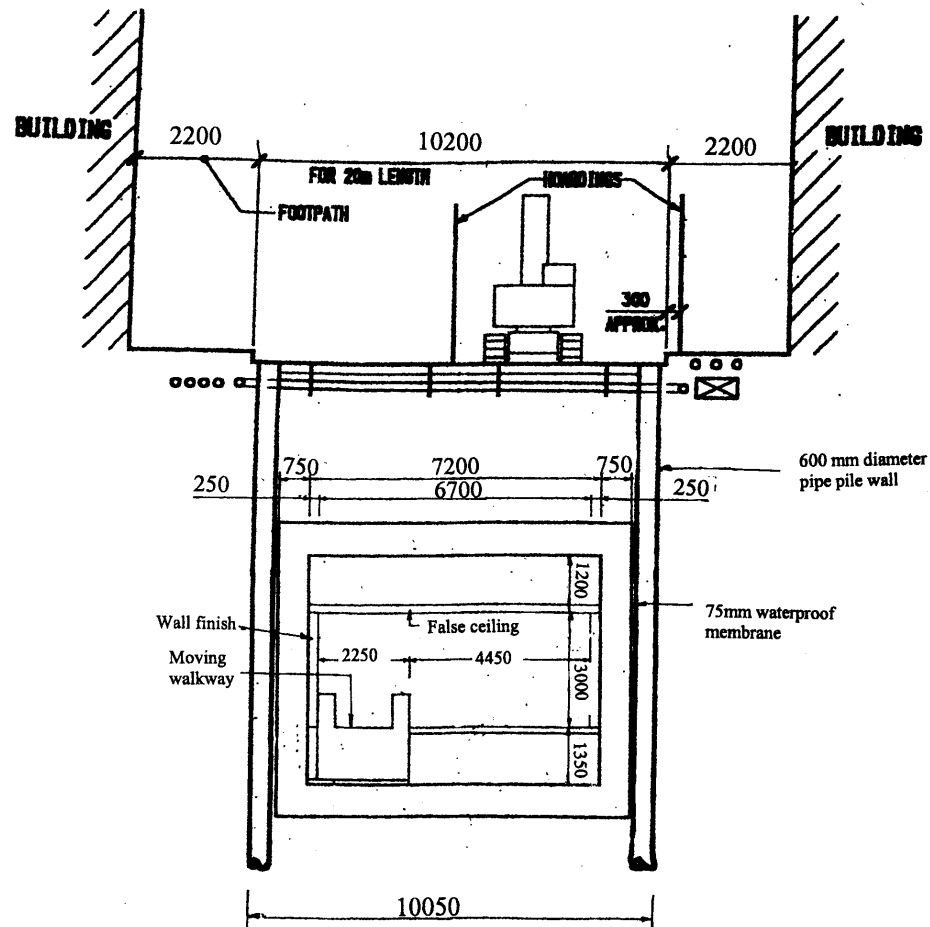
<u>Year</u>	<u>East Rail</u>	<u>MOS Rail</u>
2004	1,032,000	264,000
2006	1,082,000	284,000
2011	1,232,000	295,000

19. Comparing with the 1999 average weekday patronage of 748,000, the East Rail is forecast to have an additional patronage of 284,000, 334,000 and 484,000 in the years 2004, 2006 and 2011 respectively. On the section between the Tai Wai and Kowloon Tong stations, the forecast southbound passenger flows during the morning peak hours for the years 2004, 2006 and 2011 are shown in the table below -

<u>Year</u>	<u>No. of passengers for the Tai Wai - Kowloon Tong section</u>
2004	60,000
2006	69,000
2011	78,000

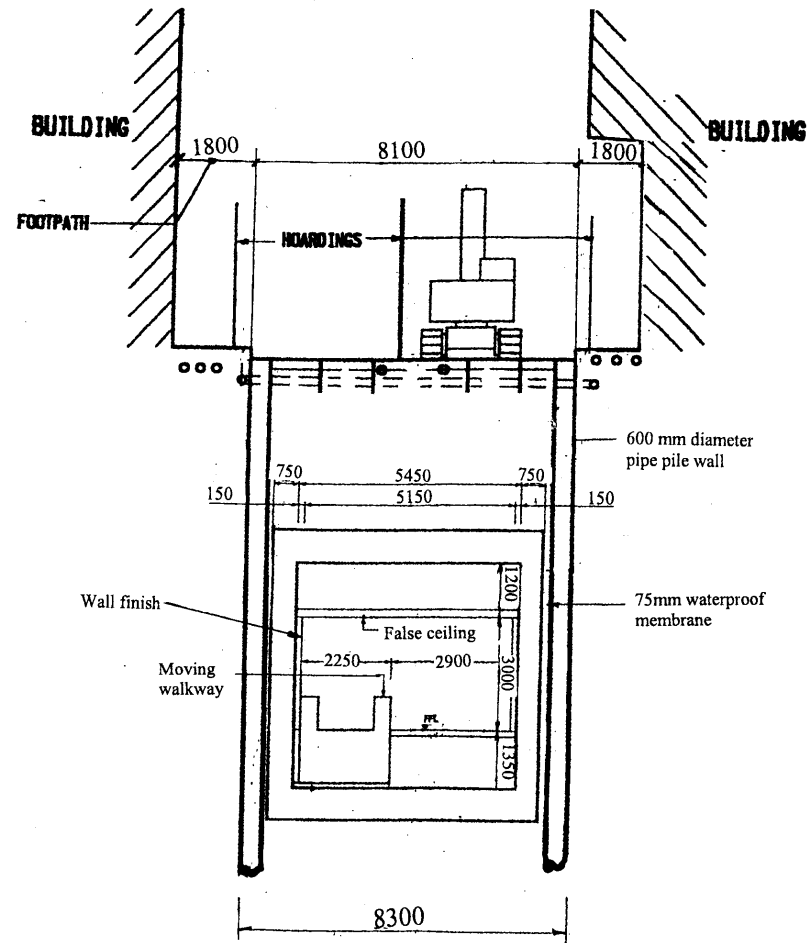
20. With signal system upgrading and train car refurbishment, the capacity of the East Rail has been increased by more than 35%. The above forecast peak hourly flows are within the capacity of the East Rail of 90,000 passengers per hour per direction. KCRC is implementing a project to further increase the capacity of the East Rail vis-à-vis advancement of signalling technology. KCRC will also expand and modify the Tai Wai station to facilitate MOS Rail passengers to board on the first train arriving at the Tai Wai station during the morning peak period. The patronage growth of the East Rail will be closely monitored as part of the on-going planning process for railway development.

Annex A
(Sheet 1 of 3)



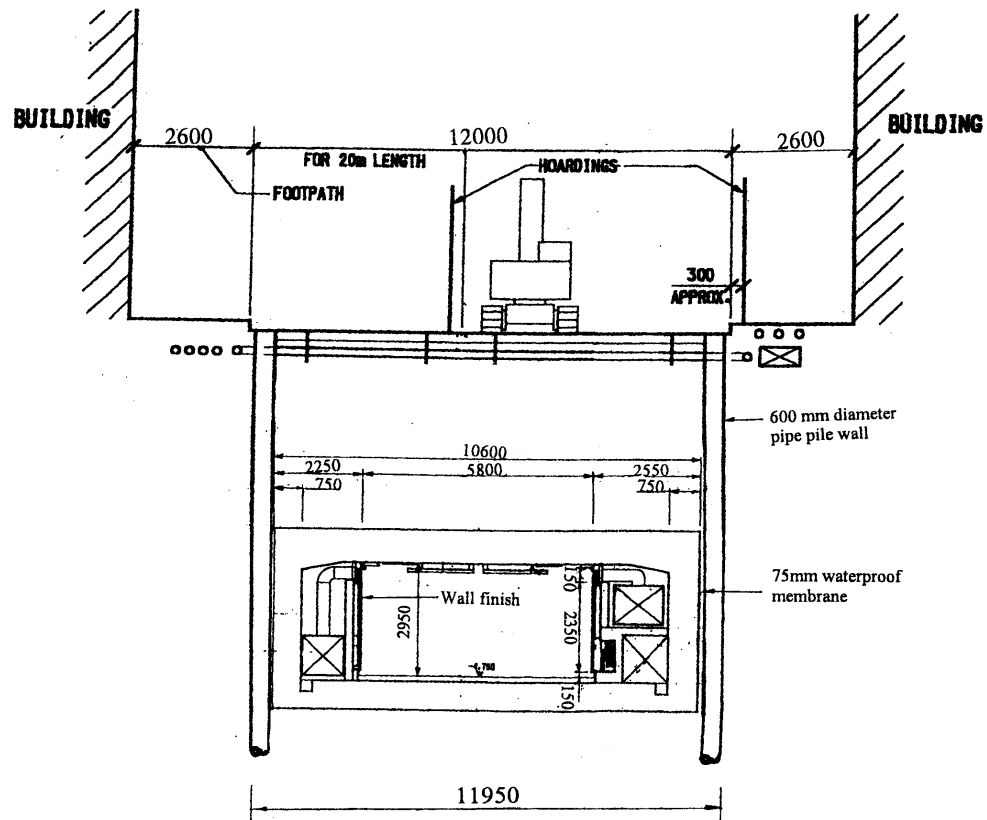
Relationship between the Buildings, Carriageway and the Subway
Section of the Subway at Mody Road

Annex A
(Sheet 2 of 3)



Relationship between the Buildings, Carriageway and the Subway
Section of the Subway at Blenheim Avenue

Annex A
(Sheet 3 of 3)



Relationship between the Buildings, Carriageway and the Subway Section of the Subway at Middle Road

Technical Assessment of Mody Road Subway Capacity

Hourly Pedestrian Flow

2011 AM Peak - one traveller

Capacity	-	Travellator	=	10080 westbound
		Walkway 3.450*x3360	=	11600 two way
Demand	-	15300 westbound/5000 eastbound		
Demand for walkway = (15300-10080+5000)			=	10220
			=	88% capacity

2011 AM Peak - two travellers

Capacity	-	Travellator	=	10080 westbound
			=	10080 eastbound
		Walkway 1.200*x3360	=	4000 two way
Demand	-	15300 westbound/5000 eastbound		
Demand for walkway = (15300-10080)			=	5220
			=	130% capacity <u>unacceptable</u>

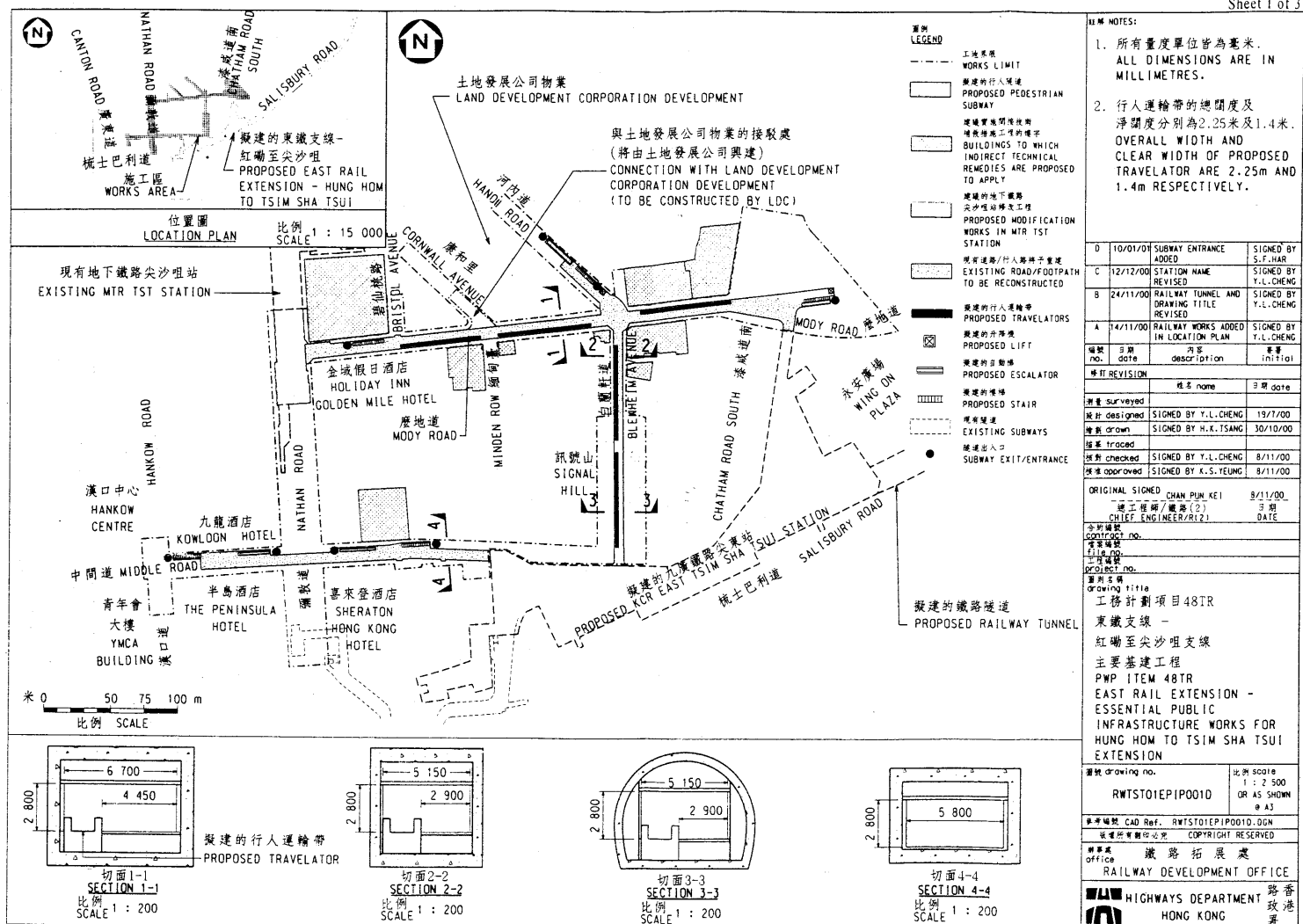
2011 PM Peak - one traveller

Capacity	-	Travellator	=	10080 westbound
		Walkway 3.450*x3360	=	11600 two way
Demand	-	10900 westbound/7400 eastbound		
Demand for walkway = (10900-10080+7400)			=	8220
			=	71% capacity

2011 PM Peak - two travellers

Capacity	-	Travellator	=	10080 westbound
			=	10080 eastbound
		Walkway 1.200*x3360	=	4000 two way
Demand	-	10900 westbound/7400 eastbound		
Demand for walkway = (10900-10080)			=	820
			=	21% capacity

Note:* Effective width of walkway is based on net width less 500mm each side as "friction coefficient".



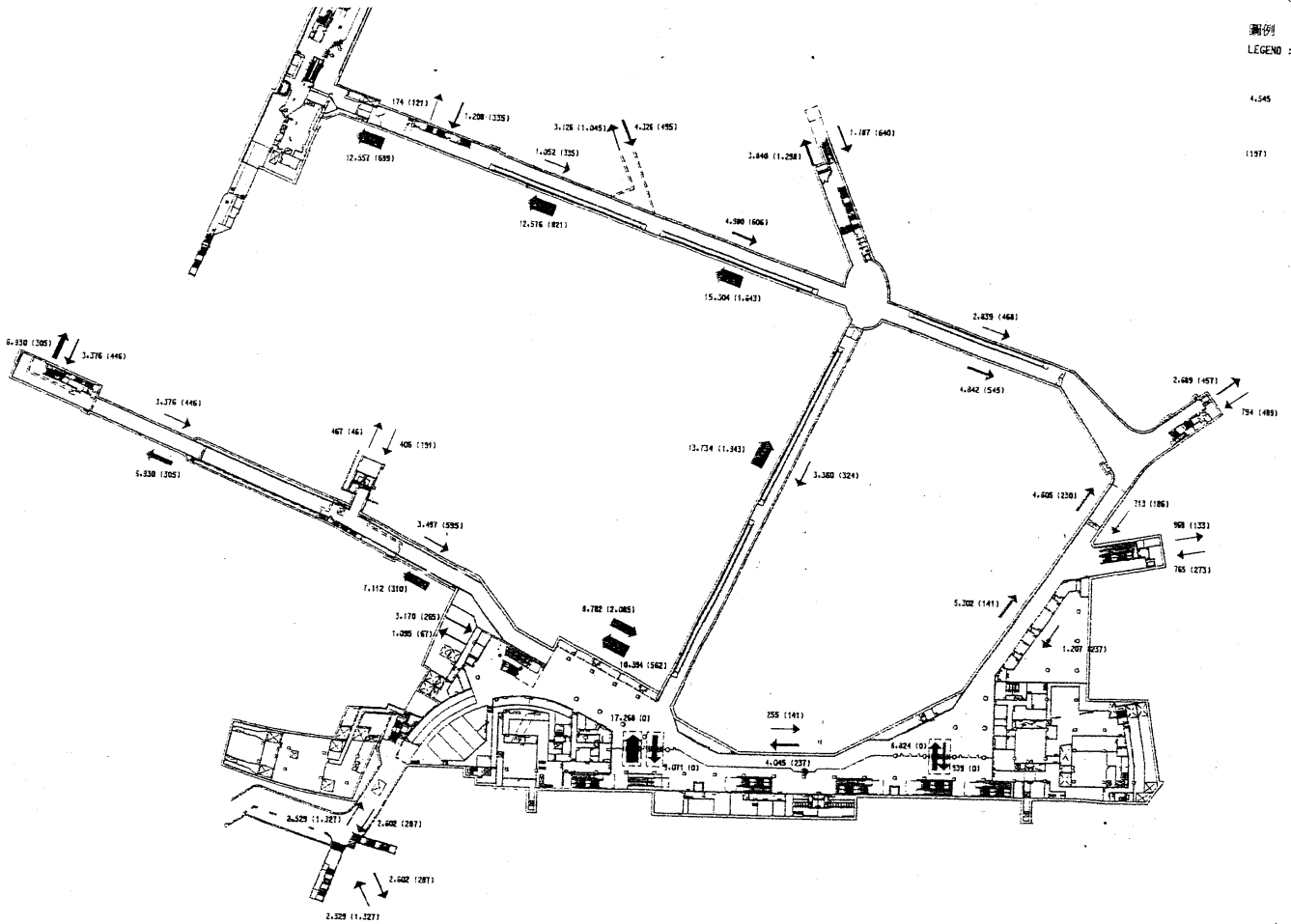
圖例
LEGEND :

總人流量

4,545 TOTAL FLOW

非鐵路乘客流量

1,197 NON-RAIL FLOW

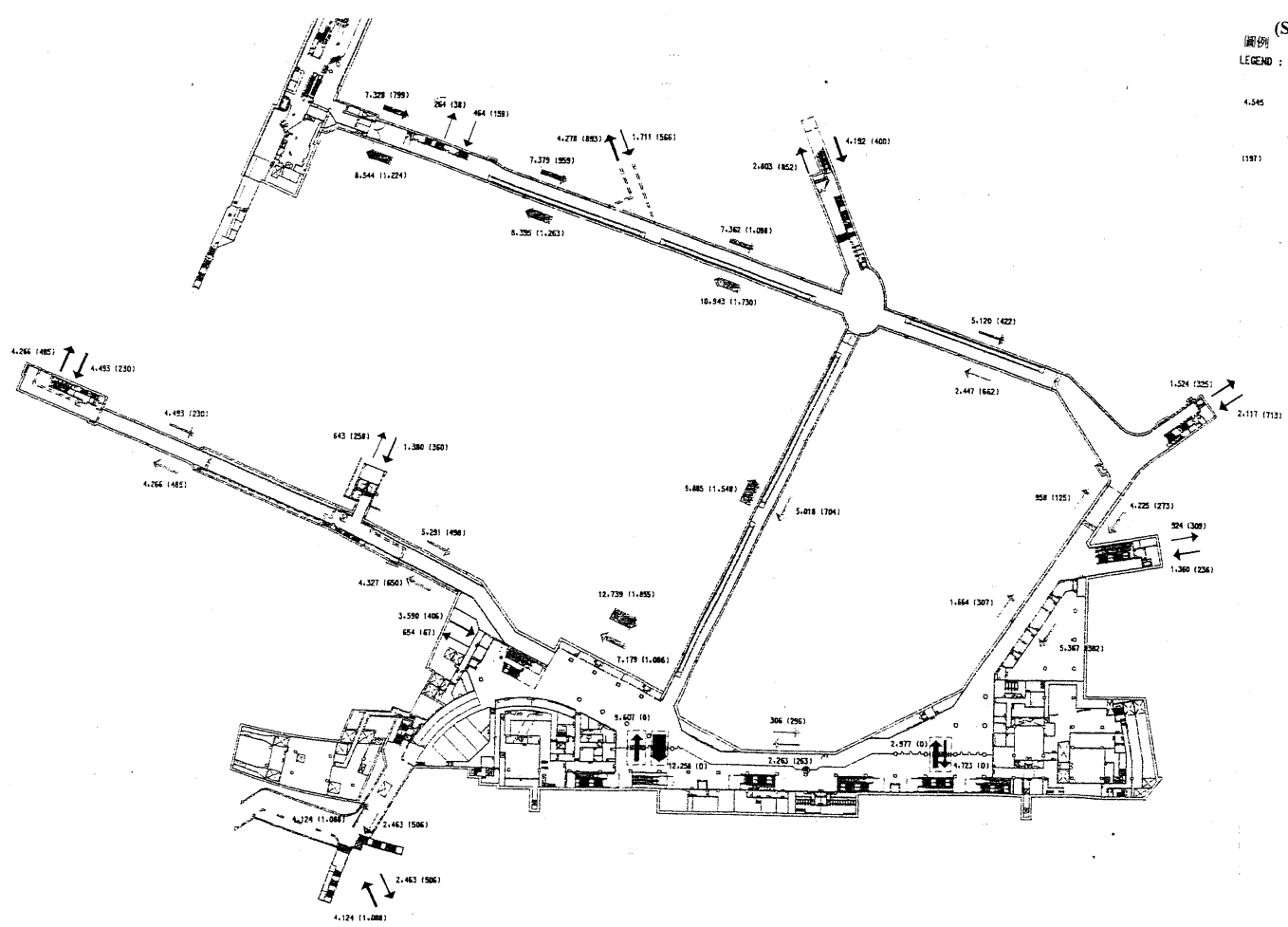


行人隧道系統在 2011 年早上繁忙時段行人流量預測

Year 2011 AM Peak Forecast Pedestrian Flow in the Subways

圖例

LEGEND :
總人流量
TOTAL FLOW
4,545
非鐵路乘客流量
NON-RAIL FLOW
1,197



行人隧道系統在 2011 年下午繁忙時段行人流量預測
Year 2011 PM Peak Forecast Pedestrian Flow in the Subways