HIGHWAYS DEPARTMENT

EIA for Salisbury Road Underpass and Associated Road Improvement Works including Middle Road Circulation System

Executive Summary
(English Version and Chinese Version)

June 1999

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MAUNSELL ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD

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The quality procedures are under continual review by Senior Management to ensure that the changing needs of the Company's Clients are met.

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REMARKS:

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EXECUTIVE SUMMARY

1. The Proposed Scheme

An underpass has been proposed along Salisbury Road at the junction with Chatham Road together with the Middle Road Traffic Circulation System. The underpass will allow Salisbury Road traffic to bypass the junction. The current design is a four-lane underpass (two lanes in each direction) passing under a widened junction.

This project comprises an underpass, approximately 130 m in length, along Salisbury Road and a traffic circulation system along Middle Road, Salisbury Road, Nathan Road and Kowloon Park drive. The location of the project is shown in Figures 1, 2(a) and 2(b). The underpass will provide grade separation at the junction of Salisbury Road and Chatham Road South. Due to the physical constraints, demolition and reprovisioning of an existing pedestrian subway across Salisbury Road will be required. The provision of the traffic circulation scheme requires significant modifications to the existing junction layout as well as traffic signs, traffic signals and road markings.

In addition to the underpass itself, Salisbury Road will be widened from the Shangri-La Hotel to Kowloon Park Drive (approximate 0.9 km in length). An additional lane for each direction from Shangri-La Hotel to Kowloon Park Drive would be provided. One lane on westbound direction from Kowloon Park Drive to Canton Road would be eliminated. A small amount of land is required to provide the road improvements including widening and underpass ramps. The improvement scheme is shown in Figures 1, 2(a) and 2(b).

Previous studies have identified the need for improvement to traffic flow along the Salisbury Road corridor. During peak hours, traffic flow at the junction of Salisbury Road / Chatham Road South has been predicted to be saturated with no reserve capacity by Year 2003. The predicted overloading will result in significant delays to peak hour commuting in the Tsim Sha Tsui south area. Without the underpass, acute traffic congestion could result in adverse economic, social and environmental implications.

The underpass is a designated project under the schedule 2 item A9 of the Environmental Impact Assessment Ordinance (i.e. a road fully enclosed by decking above and by structure on the sides for more than 100 m), and it is necessary to obtain the environmental permit prior to the construction and operation of the underpass.

The work area in this project would involve a busy road in an urban area. There are no recognized sites of conservation, no important habitats and species of conservation within the site. Therefore, it is highly unlikely that any significant ecological resources would be affected by the project. Ecological assessment is not required in this study, however, good construction practices and housekeeping measures are required to avoid or minimize nuisance and localized damage to the natural environment.

2. Previous Studies

A Preliminary Environmental Review (PER) undertaken in May 1995 concluded that air quality in the area will in general improve with reduced traffic queuing and congestion. It was recommended that impacts on air quality within the proposed underpass (which will have a 130m long covered section) as well as impacts due to portal emissions be assessed in the design review stage.

The PER also recommended to carry out a noise impact assessment for Middle Road Traffic Circulation System. In the design review stage, it was confirmed that Middle Road would not be widened. Therefore, the traffic noise assessment for the project was not necessary.

3. Air Quality Impact

Construction dust would not result in adverse impacts to the surrounding air sensitive uses in the short term. Adopting good site practices and dust reduction measures in accordance with the Air Pollution Control (Construction Dust) Regulation will be necessary to minimise the dust emission from the construction site. The standard air pollution control clause should be included in the construction contract. An environmental monitoring & audit programme for construction dust is required.

For operational phase, the air quality predictions are for 1.5m above ground level, being the average height of the human breathing zone. Additional modelling was undertaken at the average first floor level of 5m above ground. The assessment is based on the peak hourly traffic flow for year 2011.

Free-flow traffic conditions within the underpass are not expected to result in adverse air quality as travel times would be of the order of only 10 seconds. However, a worst-case condition was modelled where stationary traffic was assumed on one carriageway (it being highly unlikely that both carriageways would be simultaneously blocked). In addition, portal emissions were modelled under free-flow conditions and added to the pollutant load from the road traffic to predict the overall impact.

Only NO_2 concentrations were modelled as these have the most stringent statutory Air Quality Objectives (AQO) and also have higher emissions in vehicle exhausts than some other pollutants of concern. A future background concentration of 60 μgm^{-3} was adopted with the agreement of EPD. Modelling included all roads (subject to availability of data) within 500m of the underpass. For comparison purposes, the 'No Underpass' scenario was also modelled based on the same traffic flows and meteorological conditions, but with vehicles assumed to be travelling on the existing at-grade roads without the underpass.

The CALINE4 model was used to predict NO_2 concentrations from traffic emissions and the Industrial Source Complex Short Term (ISCST) model was used for the modelling of portal emissions. An in-house model was used to estimate the cumulative effects.

The study has shown that, with provision of the underpass, the worst-case 1-hour average concentrations of NO_2 would be in compliance with the AQO at both 1.5m and 5m heights. A decrease in NO_2 concentration at the junction of Salisbury Road / Chatham Road is predicted. The modelling results showed that there would be no exceedance of the 24-hour average AQO for NO_2 at the closest air quality sensitive locations along Salisbury Road. It is anticipated that CO and RSP would not exceed the limits in the AQO. Hence, it is expected that the provision of the underpass will not alter future local air quality in the area and adverse air quality impacts at sensitive receivers along Salisbury Road are not expected.

The maximum concentration of NO_2 within the underpass is predicted to be 424 μgm^{-3} under the worst-case situation. This would not result in exceedance of relevant air quality criteria. No mitigation measures or further assessment are required for the operational air quality impact.

4. Noise Impact

Taking into account of the surrounding NSRs provided with window insulation and central air-conditioning and the recommended noise pollution control clause, construction noise would not pose adverse impact on the NSRs and no construction noise monitoring and audit requirements are required.

5. Water Quality Impact

Water quality impacts arising from site runoff and sewage effluent arising from the on-site construction workforce would have the potential to cause water pollution. Mitigation measures such as provision of silt traps and sedimentation tanks will minimise such impacts. The standard water pollution control clause should be included in the construction contract and no environmental monitoring & audit requirements or further assessment for water quality impact are required.

6. Construction Waste Management

The contractor is required to sort the construction waste into construction & demolition (C&D) waste and public fill (inert waste) fraction in accordance with the New Disposal Arrangements for Construction Waste (1992). The contractor is also required to minimize and recycle their waste as far as possible. Waste management proposals including Good Site Practice for waste handling should be worked out. The standard construction waste management clause should be included in the construction contract, and environmental monitoring & audit is required for trip-ticket system on all solid waste transfer/disposal operations.

7. Visual, Landscape and Townscape Impacts

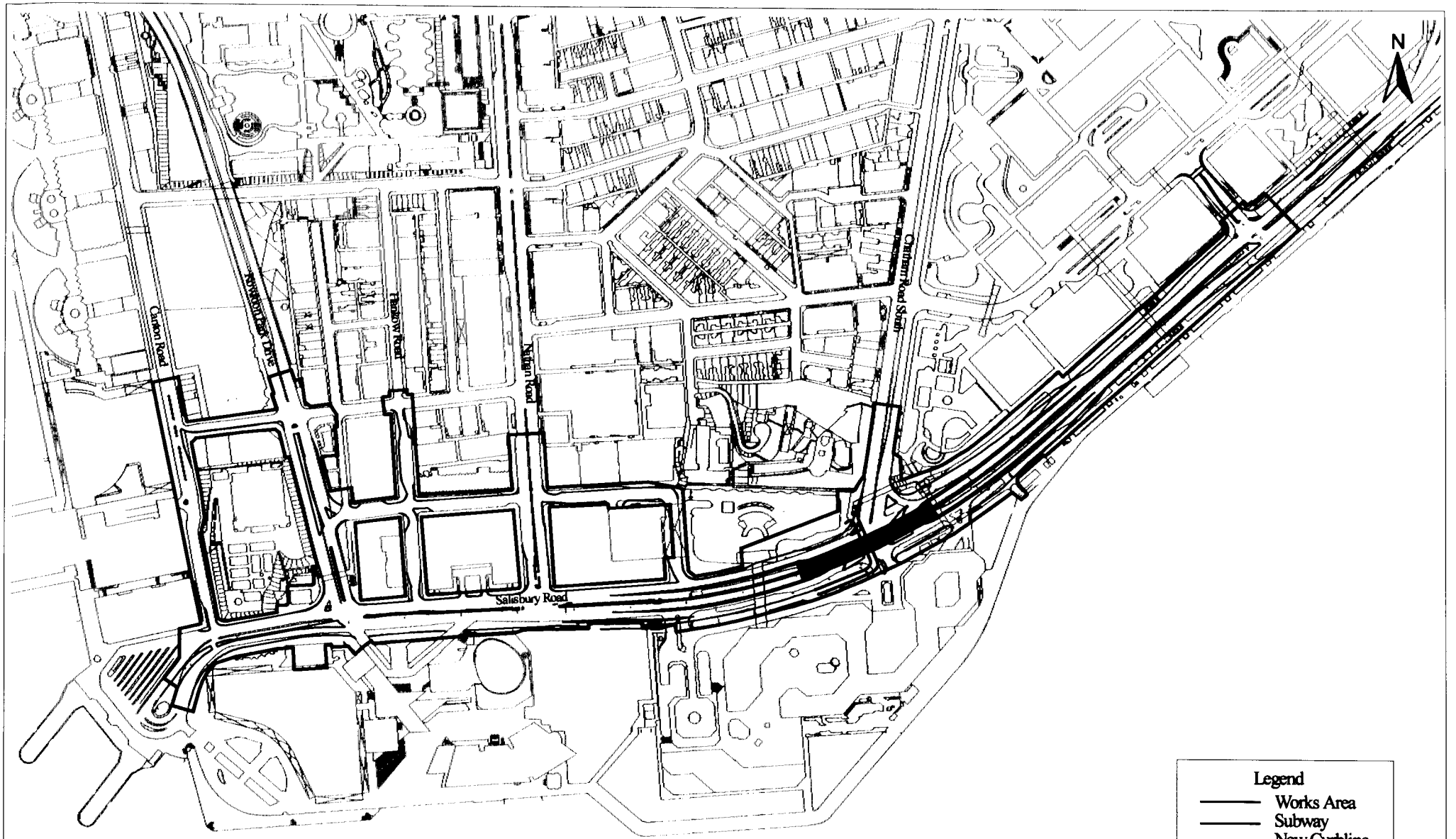
The visual envelope for the proposed underpass scheme includes recreational areas, in Middle Road Children's Playground and Wing On Plaza Garden, the buildings of New World Centre, Wing On Plaza and Sheraton Hotel Hong Kong together roadside around the junction of Salisbury Road and Chatham Road South. The proposed works would pose some visual,

landscape and townscape impacts to the vicinity of the working area during construction stage. Due to limited space available, a small strip of land at the south eastern corner of Middle Road Children's Playground will be required to be permanently alienated to allow for the carriageway widening of Salisbury Road and the provision of an entrance to the pedestrian subway located at the junction of Salisbury Road and Chatham Road South. Potential mitigation measures are recommended in order to minimise the impacts to the affected areas. In the operation stage, there will be no residual impacts in most areas after mitigation measures have been adopted. The loss of existing tree screens on the central divider of Salisbury Road will have a low level of residual impact, which will be mitigated by heavy tree screens on the footpaths. Planting will be designed to soften and mitigate any impacts from proposed works. Moreover, this construction project would take full opportunity to develop a more effective landscape planting scheme for this area in Tsim Sha Tsui by adopting a well designed landscape proposal. The overall significance of the proposed underpass scheme will in general result in beneficial impacts to the local landscape / townscape and visual character. Several minor areas will be subjected to acceptable levels of impacts.

Existing vegetation will be retained/transplanted to other locations within the site where possible to retain the landscape and visual context of the area. As recommended in the Tree Survey Report, 66 nos. (i.e. 27.4%), 165 nos. (i.e. 68.5%) and 10 nos. (i.e. 4.1%) of trees will be retained, transplanted and felled respectively. Of the trees to be felled, 4 nos. are in bad condition and unsuitable for transplanting. The remaining 6 nos. are common varieties (Juniperus chinensis and Thevetia peruviana) and were chosen based on their relative attractiveness of form and habit. Around 4 times the number of trees felled will be planted along the footpaths on Salisbury Road to compensate the loss from tree-felling. HyD will take up a normal maintenance period of 12 months after the completion of the planting and transplanting works, and USD will take up the maintenance responsibility after expiry of the normal maintenance period.

8. Land Use Impact

Land resumption of an area of 460 m^2 would be required on the south-eastern part of the Middle Road Children's Playground near to the junction of Salisbury Road and Chatham Road South owing to limited space. The proposed construction project would have nominal land use impact within the area concerned.



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TITLE

Salisbury Road Underpass and Associated Works

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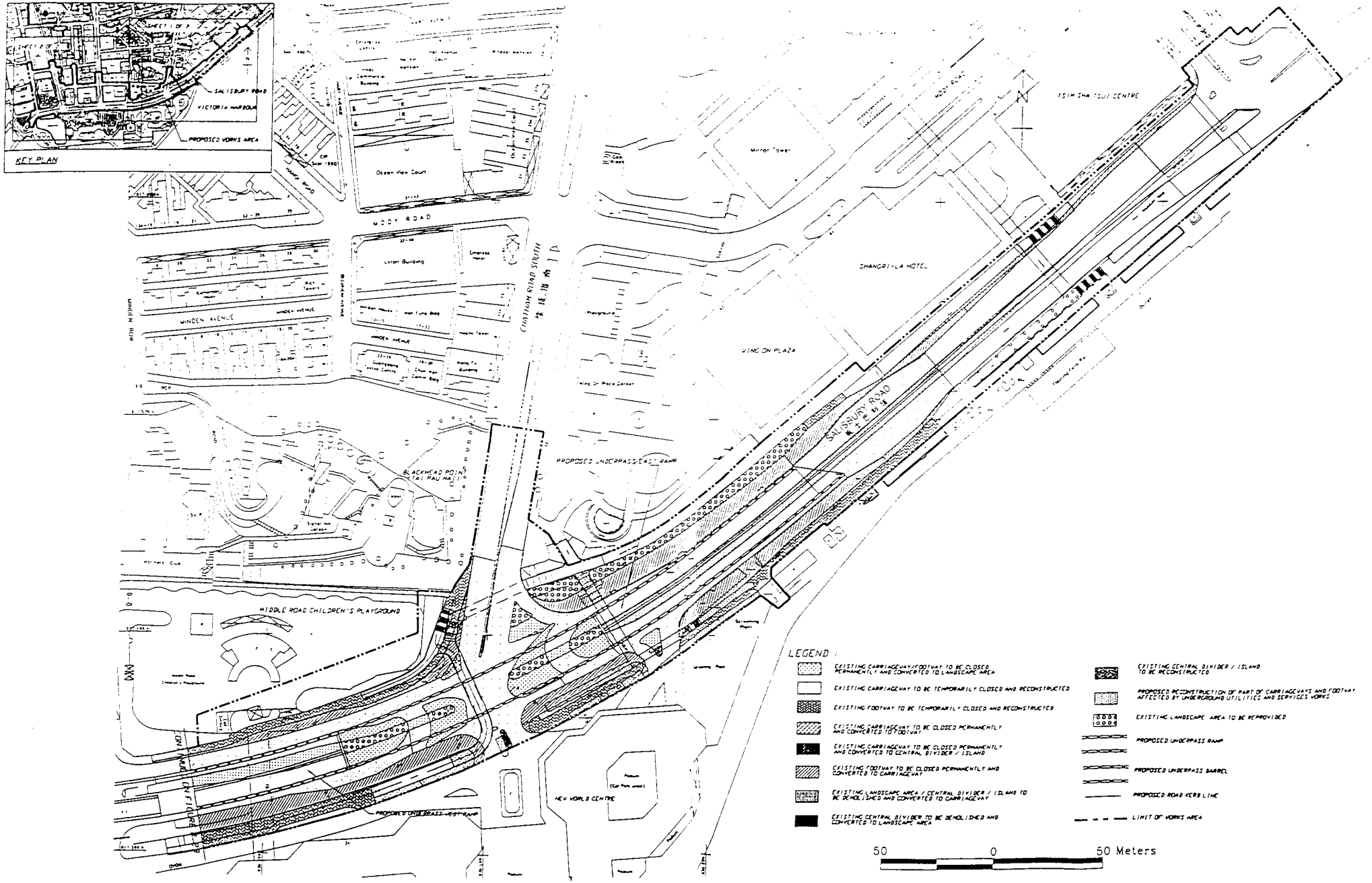
PROJECT NO.	C440\exe_sum	DATE	Mar. 1999
DESIGNED	Fanny Lau	DRAWING NO.	Figure 1



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TITLE

Salisbury Road Underpass (East)

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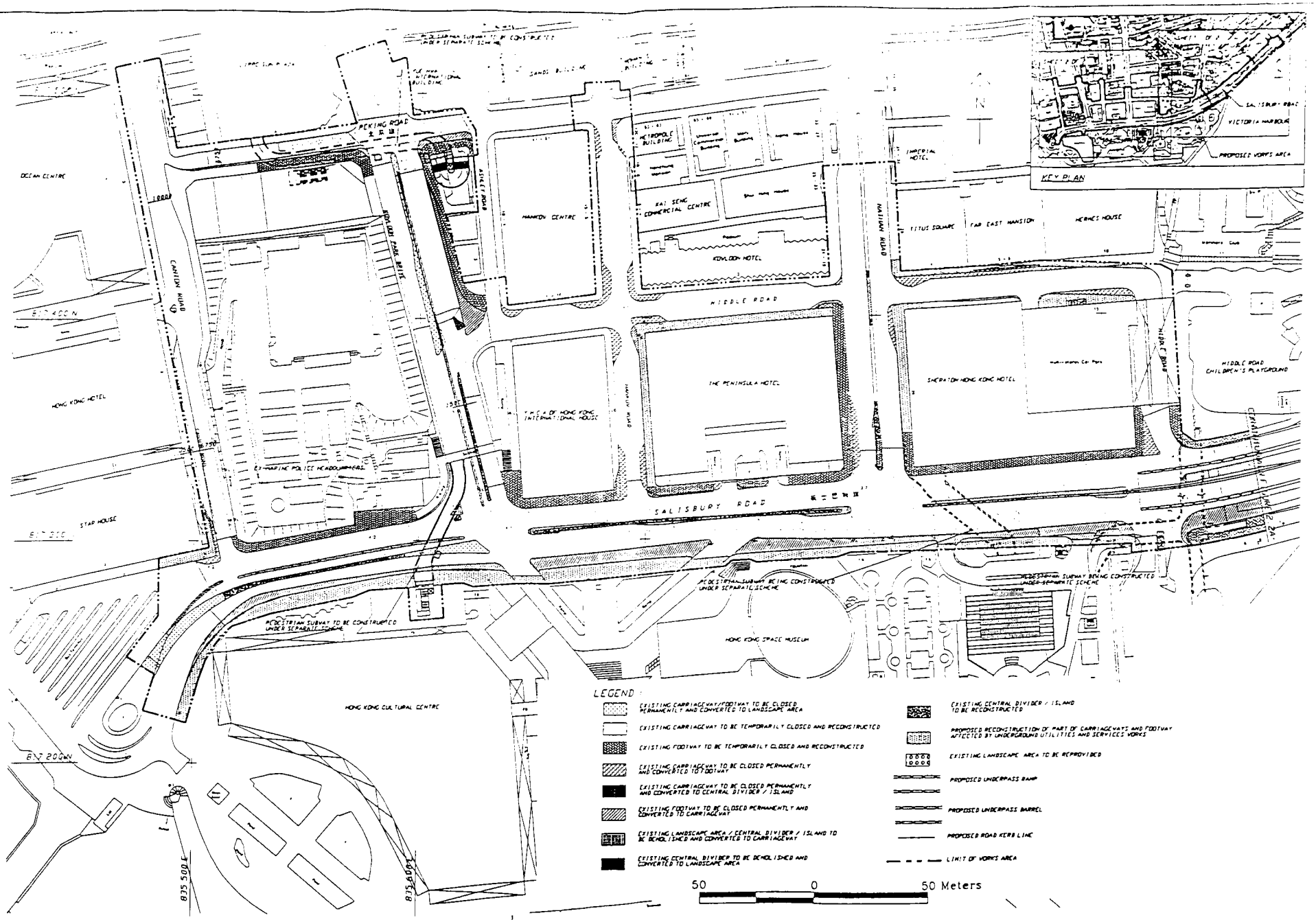
PROJECT NO	C440	DATE	Mar 1999
DESIGNED CHECKED	Anna Chung	DRAWING NO	Figure 2a



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TITLE

Salisbury Road Underpass (West)

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PROJECT NO	C440	DATE	Mar. 1999
DESIGNED/ CHECKED	Anna Chung	DRAWING NO	Figure 2b