

Industrial and other Commercial Developments

Chapter 15



CHAPTER FIFTEEN INDUSTRIAL AND OTHER COMMERCIAL DEVELOPMENTS

Future Industrial Development

1. The changing nature of industry in Hong Kong has been reflected in the proposed land uses within the TDS strategies. Instead of manufacturing industries, the emphasis has been placed on hightech industries, science parks and business parks. Detailed environmental impact assessments will be required prior to the implementation of the proposed industrial developments even those referred to as "clean technologies" to ensure such developments can be environmentally compatible. The acceptability of the proposals have been addressed in general terms with reference to existing and proposed adjacent uses, traffic implications, noise, air and water quality issues and the potential for the installation of PHI's at specific sites.

Special Industries

2. Special industries are located in the Tin Shui Wai Industrial Park and Tuen Mun Port in NWNT, Tseung Kwan O Phase 3 in SENT, Tai Ho, Lantau Port Peninsula and the Airport Island in SWNT. The specific nature of these industries needs to be determined before a comprehensive impact assessment can be conducted. The planning intent is to develop a high-tech corridor extending from Tseung Kwan O through to Kowloon Tong via Sha Tin.

PHI

3. New PHI's are to be located at Tseung Kwan O in SENT and at Tuen Mun Port.

Science Park

4. Two alternative sites have been proposed at Tseung Kwan O and Tai Po, the Tai Po site being the preferred site. These are conceived to provide high-tech facilities with non-polluting industries. Adverse impacts associated with these facilities include the undesirable residential development pressure on SENT and NENT in connection with effluent treatment and disposal. Traffic generated problems also need further consideration in this connection.

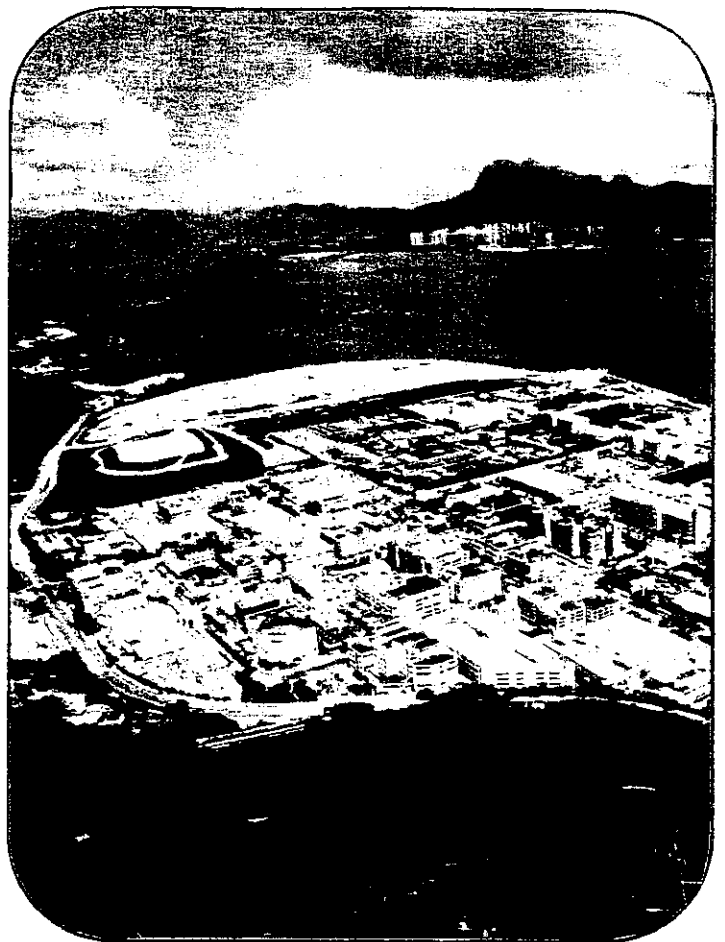
Potential Impacts Associated with Industrial Developments

Water Quality

5. Effluent flow rates were estimated for the industrial contributions at a district and subregional level. The total industrial effluent flow rate is approximately twice that forecast for residential developments at 2001 and 2006 for both scenarios although these forecasts were based on the TDS assumption that a high percentage of industries were high water users. As discussed previously, this assumption was revised following the assessment of the Prototype Preferred Options and the revised estimates indicate that in overall terms the contribution of effluent from the industrial sector is 40% of the total budget for base growth and the two Refined Preferred Options.
6. The BOD contribution from industry is less than 30% for the base growth and the Refined Preferred Options (even at 2011). In territorial terms industrial waste water is estimated to contribute 33% of the total COD with 17% of the total suspended solids and total Kjeldahl nitrogen (TKN) budget. These estimated pollution loadings need to be carefully considered in terms of the available capacity within the existing and planned system and the receiving water bodies.



Yuen Long Industrial Estate



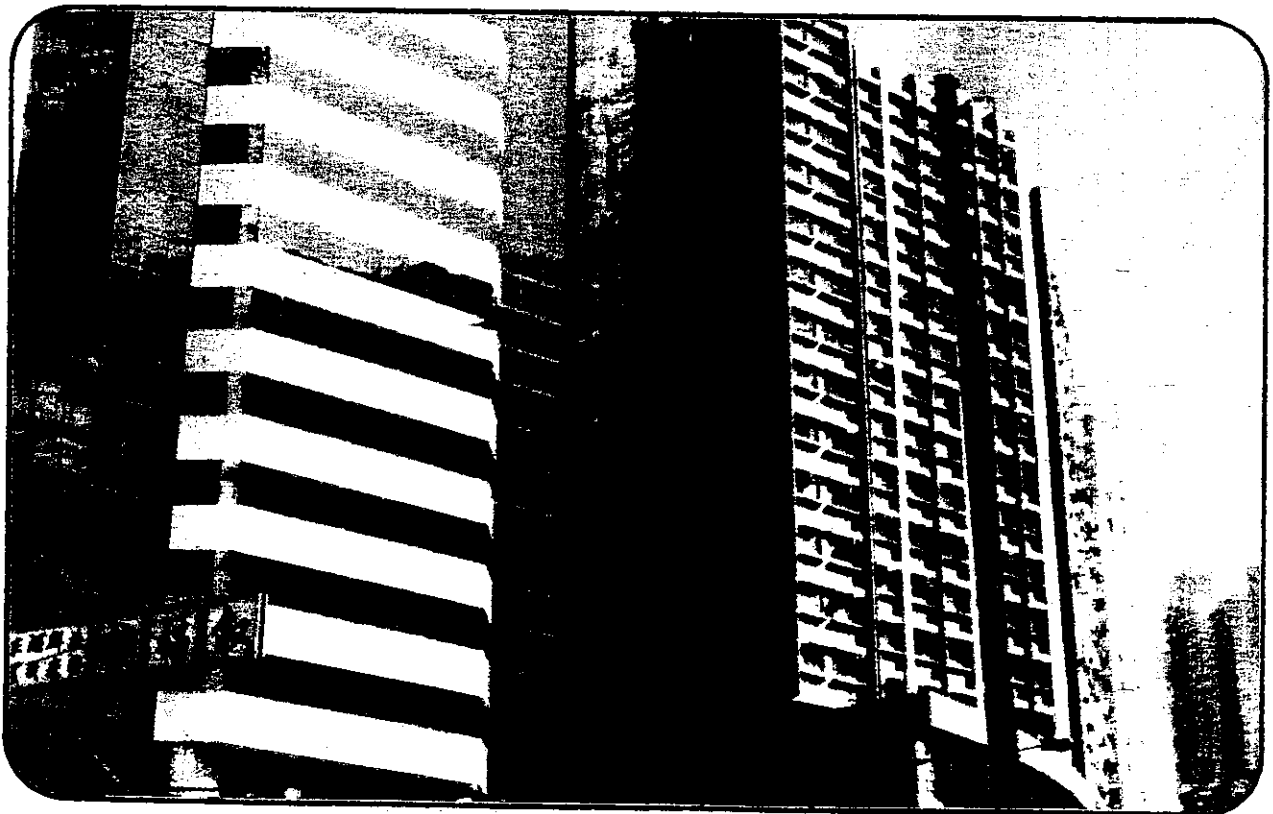
Tai Po Industrial Estate



Tseung Kwan O Industrial Estate under development
(Credit: The Hong Kong Industrial Estate Corporation)



Waste water discharge from an industrial building



A new commercial building replacing
the former industrial building in Quarry Bay

7. Key areas where the forecast volumes of effluent have the potential to exceed the existing capacity are in NWNT and NENT. Clearly the wastewater treatment and disposal strategies for these areas will need to be considered at a sub-regional planning level and a review of the SMP's is recommended to ensure any planned facilities have adequate capacity to accommodate the development proposals.

Waste Disposal

8. Solid waste disposal associated with the industrial and commercial development strategies have been identified as being very minor issues compared to domestic waste. The shift from manufacturing to packaging and assembly and similar industries will also assist in the reduction of waste. The disposal of solid waste was identified as a key issue of this Study and will require a concerted effort by many parties to reduce the waste arisings and minimise the impacts of development on existing and planned disposal facilities.

Air Quality

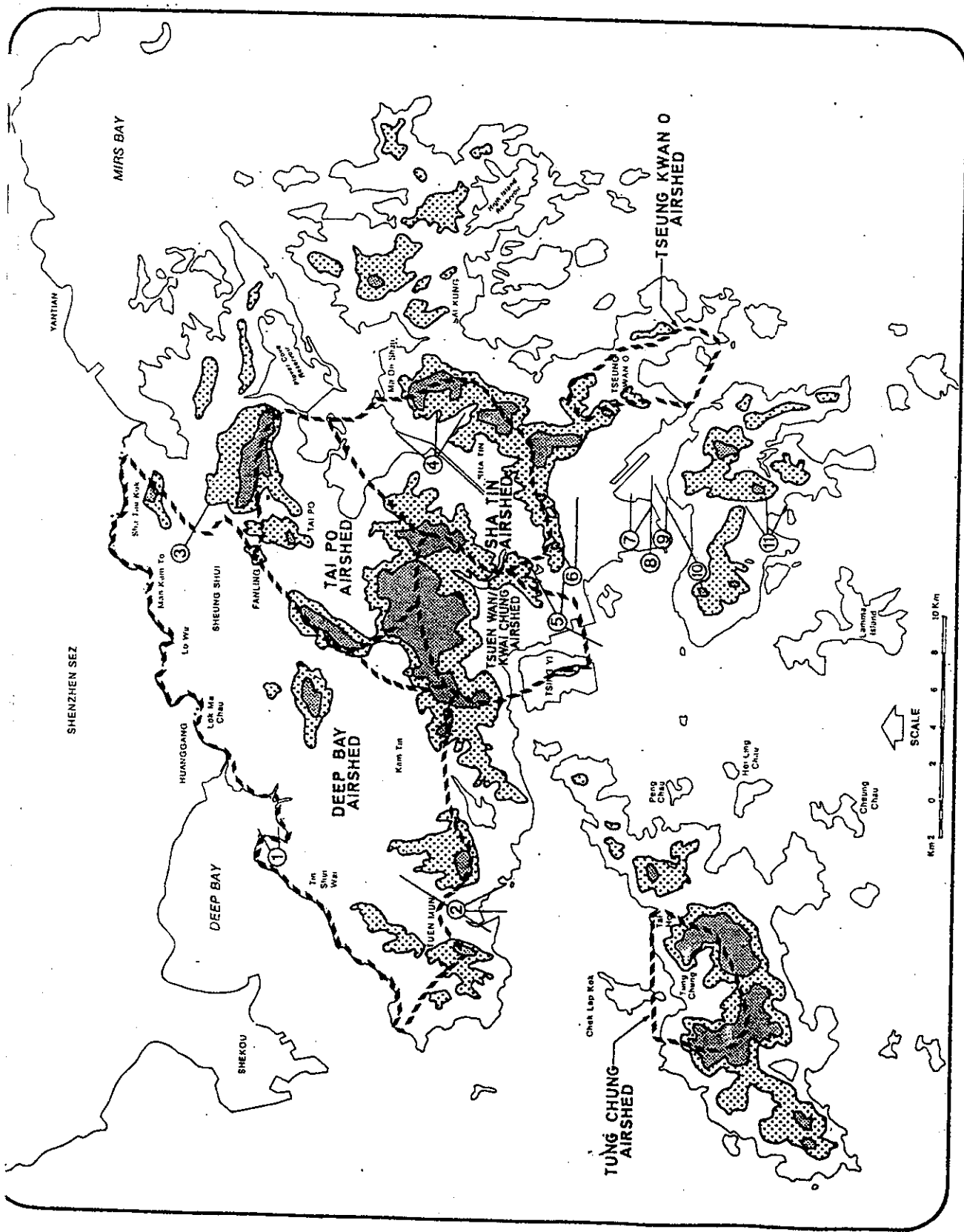
9. From the results of the modelling studies, industrial sources of SO₂ will be the major contributor to air pollution in the medium and long term. Although not subject to modelling, another significant source of air pollution is the dusts generated by some of the manufacturing processes.
10. Reference to Figures 15.1 and 15.2 indicate that, inter alia, Tuen Mun and Tsuen Wan/Kwai Chung ACZ's are topographically constrained. Taking account of the results given in Table 6.1, although the SO₂ AQO's will not be exceeded, these areas will require detailed local studies to be carried out to ensure the planning and implementation of the industrial strategies, in concert with those for traffic, will be such that the effects on ambient air quality will be minimised as far as practical.
11. In the Harbour ACZ, the industrial strategy is forecast to be the major source of SO₂ and although this area is not topographically constrained, the built environment, especially the established industrial area, has a negative impact on the dispersion of air pollutants. Detailed studies and careful planning will be required to ensure that the industrial strategies do not exert an adverse impact at the local level.
12. The relative increases in SO₂ are most apparent in the Lantau ACZ but, as previously noted, the model confines the pollution loading within a smaller area than in the reality. The planning intent is to provide "clean" as against manufacturing (or pollution emitting) industries in this location and as such the actual situation should be better than forecast.
13. In summary, in terms of developing a sustainable industrial development strategy for the whole territory, either Scenarios A or B could be considered on the basis of the distribution and emissions levels assumed for the "realistic scenario".

Noise

14. One of the environmental benefits to be accrued from change in manufacturing industries to service sector type of industries is the reduction in noise experienced by the workforce and the general public (fans/motors/pumps etc. on the external face of buildings). The issue is complex as the changing nature of buildings to commercial uses or industrial related office use will result in more use of air conditioning and ventilation (noise from extractor fans) so the overall noise climate may not benefit in the long run. This emphasises the need to consider a reduction in the acceptable backgrounds noise level in order to improve our overall living and working environment.

Guidelines for the Development of a Sustainable Industrial and Commercial Policy

15. Development of a sustainable industrial and commercial policy may be based on the following guidelines, which are by no means exhaustive:
- (a) locate industrial developments only in areas where existing or planned effluent treatment facilities are able to accommodate the additional flows;
 - (b) locate industrial developments in areas where the airsheds have good dispersive capacities (traffic impacts as well as industrial emissions per se);
 - (c) minimise aerial emissions;
 - (d) enhance the concept of high technology corridors;
 - (e) reduce waste generation and minimisation of water usage; and
 - (f) eliminate Industrial/Residential interfaces.



LEGEND

Royal Observatory
Monitoring Stations

Percentage frequen
and direction of low
speed (2-12 km/h)
winds 1989-1990

Land over 400m

Land over 200m
delineates Airsheds

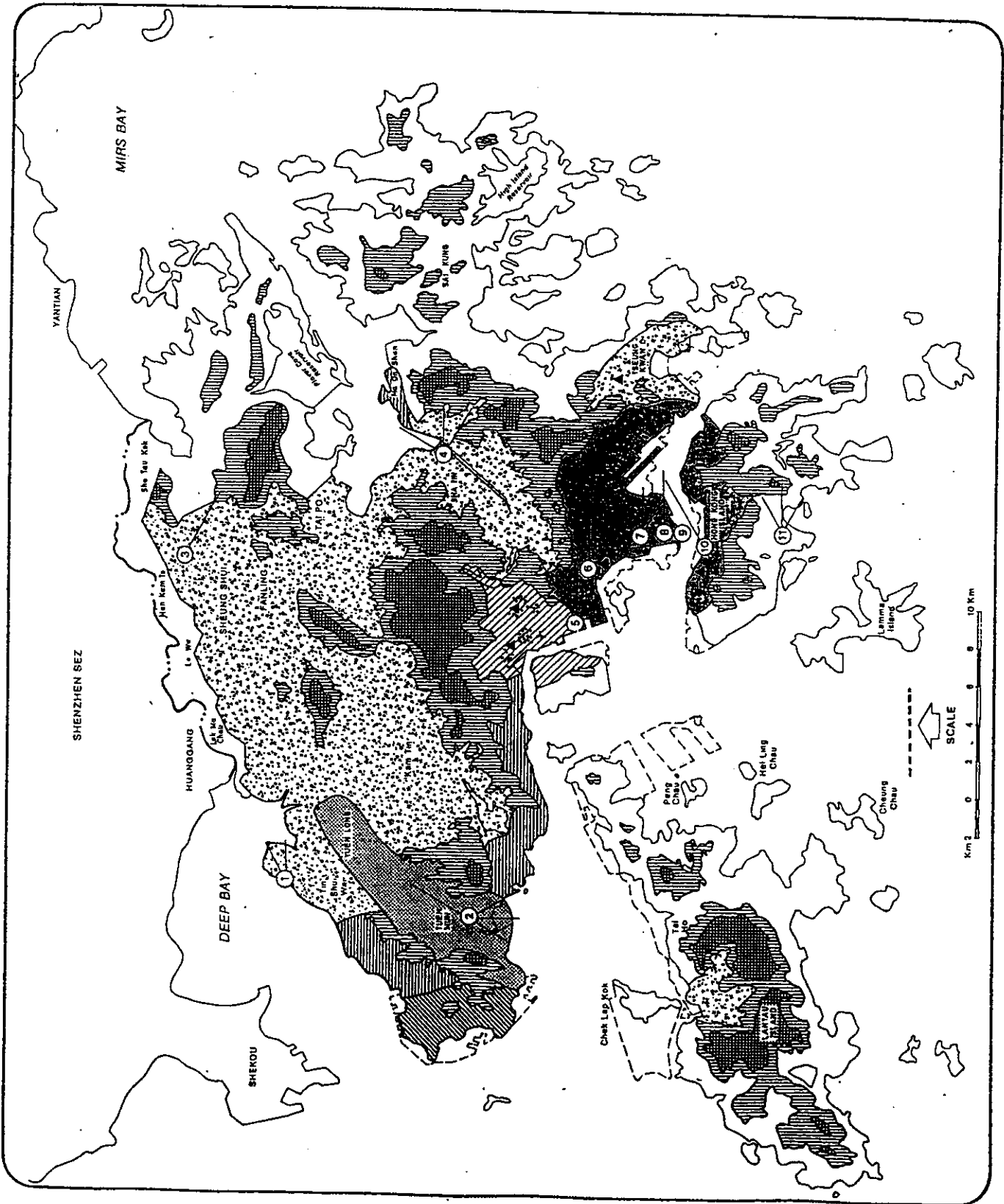
Principal
topographically
confined airsheds

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TERRITORIAL DEVELOPMENT STRATEGY REVIEW ENVIRONMENTAL PROFILES
TOPOGRAPHY AND WIND CONSTRAINTS TO DEVELOPMENT



LEGEND

- Land over 400m
- Land over 200m
- Potential Blackspot
- Exceeds 1 hour, 24 hour or 1 yearly AQOs
- Royal Observatory Monitoring Station
- Percentage frequency and direction of low speed winds (2-12 km/h)
- Densely developed/Confined/Very bad air quality
- Densely developed/Partly confined/Bad air quality
- Developed area/Partly confined/Poor air quality
- Partly developed/Very confined/Good air quality
- Partly developed/Partly confined/Good air quality
- Undeveloped/Unconfined/Good air quality
- Area of very good air quality/Development of emission generating industry undesirable

TERRITORIAL DEVELOPMENT STRATEGY REVIEW ENVIRONMENTAL PROFILES
AIR POLLUTION PROFILE