

**GEO Technical Guidance Note No. 5 (TGN 5)  
Geoguide 2 - Guide to Site Investigation  
Updated Appendix B: Sources of Information**

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**1. SCOPE**

- 1.1 This Technical Guidance Note provides an update on the sources of information for the planning of site investigation in Hong Kong. It supersedes Appendix B: Sources of Information of Geoguide 2 (GCO, 1987).
- 1.2 Any feedback on the contents of this TGN should be given to Chief Geotechnical Engineer/Geotechnical Projects of the Geotechnical Engineering Office (GEO).

**2. TECHNICAL POLICY**

- 2.1 As part of its information service, the GEO provides updates on sources of information for the planning of site investigation in Hong Kong from time to time.

**3. RELATED DOCUMENT**

- 3.1 Geotechnical Control Office (1987). Guide to Site Investigation (Geoguide 2). Geotechnical Control Office, Hong Kong, 365 p.

**4. TECHNICAL RECOMMENDATIONS**

- 4.1 Since its publication in 1987, Appendix B of Geoguide 2 has summarised important sources of information that are useful for the planning of site investigation in Hong Kong. However, there have been new developments in the Hong Kong Special Administrative Region Government's slope-related information and database systems and in GEO's Aerial Photograph Library. Additional rainfall and landslide study reports, geological maps and memoirs, GEO publications and other useful information have also become available. Annex TGN 5A1 of this TGN is an updated summary of sources of information for planning site investigation in Hong Kong.
- 4.2 Readers are advised to take note of any warning messages on the data, check with the relevant data owners on the reliability, accuracy and completeness of the data they require where necessary, taking into account the needs of their project. Readers are also invited to provide feedback to the GEO should the need to update this TGN be identified.

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5. **ANNEX**

5.1 TGN 5A1 - Update on Geoguide 2 Appendix B: Sources of Information.

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**ANNEX**

**TGN 5A1 - UPDATE ON GEOGUIDE 2 APPENDIX B: SOURCES OF INFORMATION**

**1. GENERAL**

This document gives important sources of information for the planning of site investigation in Hong Kong, in addition to the publications and guidance documents prepared by the GEO. A complete list of GEO publications and a list of TGNs, which are continually updated, can be found at the website <http://www.cedd.gov.hk>. Other information that could be useful for planning, design, construction and maintenance of geotechnical works can be found at the Hong Kong Slope Safety Website <http://hkss.cedd.gov.hk>.

**2. SLOPE-RELATED INFORMATION SYSTEMS AND DATABASES**

**2.1 Slope Information System (SIS)**

The SIS is a geographical information system developed by the GEO to enable on-line examination and analysis of information on slopes and the surrounding ground. It contains computerised information including the catalogue of slopes (see Section 2.2 below), slope maps, locations of previous landslide incidents reported to GEO and ground investigation stations, geology, natural terrain landslides and selected geotechnical information for the various districts in Hong Kong. The SIS can be accessed through the SIS terminals in the Civil Engineering and Development Building and also via the Hong Kong Slope Safety Website <http://hkss.cedd.gov.hk>. The GEO Slope Safety Division can be contacted for up-to-date information on the development of the SIS.

**2.2 Catalogue of Slopes**

The Catalogue of Slopes contains information on physical properties, conditions and histories of over 57,000 sizeable man-made slopes in Hong Kong (e.g. slope type, slope geometry, type of surface protection, signs of seepage, movements and previous failures). Information on slopes in the Catalogue can be retrieved from SIS terminals in the Civil Engineering and Development Building, via the Hong Kong Slope Safety Website <http://hkss.cedd.gov.hk>, or by application in writing to the GEO Slope Safety Division.

**2.3 Slope Maintenance Responsibility Information System (SMRIS) Maintained by the Lands Department**

The SMRIS, which is maintained by the Lands Department, systematically identifies the maintenance responsibility of all man-made slopes registered in the Catalogue of Slopes. The most up-to-date information of maintenance responsibility can be accessed via the Lands Department or at the Lands Department's Website

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<http://www.landsd.gov.hk>. Where the land status of a slope is not available in SMRIS, the Systematic Identification of Maintenance Responsibility of Slopes (SIMAR) Unit or the respective DLO of Lands Department should be consulted.

**2.4 Rainfall Database**

The GEO in collaboration with the Hong Kong Observatory (HKO) has established and maintains a network of automatic raingauges throughout Hong Kong. Rainfall data have been recorded at 5-minute intervals at these raingauges since 1984. In 1999, the GEO automatic raingauge system was upgraded and expanded to include 86 GEO raingauges (Pang et al, 2000). Verified rainfall data are available either from the HKO or the GEO Standards and Testing Division.

**2.5 Landslide Database**

An Incident Report contains information on the date, time (where known) and location of the incident, the type, size, possible causes contributing to and consequence of the failure, the advice given, evidence of past instabilities, photographs taken of the failure, etc. If the failure mass exceeds 50 m<sup>3</sup> or where a fatality is involved, a Landslip Card, which contains more detailed information, is also prepared and is available for inspection in the Public Section of the Civil Engineering Library (CEL) (Section 12.1). A computerised landslide database containing data from the Incident Reports and Landslip Cards is available and is accessible via the SIS. The database is maintained and updated by the GEO Landslip Preventive Measures Division 1.

**2.6 Enhanced Natural Terrain Landslide Inventory (ENTLI)**

The ENTLI contains information on over 105,000 landslides occurred on natural terrain. Comprehensive information is recorded in Geographical Information System for each landslide record including the dates of the aerial photographs when the landslide was first observed, width and length of the landslide scar, slope gradient, and nature of vegetation cover across the landslide source. The ENTLI is available for inspection as 1:5 000 scale map sheet paper copies in the CEL and the digital copy of the data is held in the GEO Planning Division.

**2.7 Boulder Field Inventory**

A series of fifteen 1:20 000 scale boulder field inventory maps covering the Hong Kong Special Administrative Region (HKSAR) is available for viewing in GEO Planning Division and the CEL and a digitised version is available in the SIS. A multiple attribute mapping technique was adopted to present the results. Four attributes were mapped - percentage area covered by boulders, boulder type, boulder size and boulder shape.

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**2.8 Large Landslide Study**

In this study, covering the whole of Hong Kong, a geomorphological interpretation was conducted to identify features thought to be landslides with sources areas greater than 20 m wide (Scott Wilson (Hong Kong) Ltd, 1999a, 1999b). The 1:5 000 scale maps containing the features are available for viewing in the GEO Planning Division.

**3. TOPOGRAPHICAL MAPS, PLANS AND AERIAL PHOTOGRAPHS**

**3.1 Maps and Plans Produced by the Survey & Mapping Office**

The Survey & Mapping Office (SMO) of the Lands Department provides maps and plans in various scales and for various purposes in both digital and paper forms. A list of the currently available plans and maps, and their coverage, is given in Table 1.

The Land Information Centre of the SMO operates a Computerised Land Information System (CLIS) and maintains the topographic mapping database covering the whole territory of Hong Kong. Many utility companies, engineering consultants, computing system consultants and education institutes have established their own automated mapping, facilities management, customer support and geographic information systems using the digital maps provided by the SMO as their common reference. The digital map data are available in four different formats, namely E00, DGN, DXF and DWG, to suit applications in different platforms.

Services offered by the SMO include the supply of photographic copies of available maps, plans and aerial photographs, as well as producing enlargements and reductions. Updated information on map products and related publications, data map products and map price catalogue, etc., can also be found at the Lands Department Website <http://www.landsd.gov.hk/mapping/en/pro&ser/products.htm>.

**3.2 Other Maps**

Other map sources include the following:

- (a) Early maps of Hong Kong are held for reference by the Survey & Mapping Office and the Government Records Service (GRS).
- (b) The Antiquities and Monuments Office (AMO) of Leisure and Cultural Services Department (LCSD) holds research files covering declared monuments, historic buildings, structures and boundaries of archaeological sites. Most of these research materials can be accessed by the public in AMO by appointment. Declared monuments, historic buildings, structures and boundaries of archaeological sites may also be indicated in non-statutory plans which are available for sale in the Map Publications Centres of the Survey & Mapping Office of the Lands Department (Section 3.1).

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**3.3 Aerial Photographs**

The availability of vertical aerial photographs is summarised in Tables 2a and 2b. In general the aerial photograph scales range from 1:2 500 down to 1:50 000. The low altitude aerial photographs, mainly in the range of 1:6 000 to 1:10 000, are the most useful scale for the majority of aerial photograph interpretation undertaken.

The GEO Aerial Photograph Library contains over 180,000 aerial photographs including oblique aerial photographs. They can be borrowed by GEO staff as well as consultants working on Government projects. A GIS-based computerised aerial photograph retrieval system is now available for users to identify the photograph collection at a workstation in the Library. The Library, which is housed in the GEO Planning Division on the 11<sup>th</sup> Floor of the Civil Engineering and Development Building, is accessible by staff of the HKSAR Government and also non-Government staff engaged in Government projects.

A similar system for searching aerial photographs is also available in the SIS.

Aerial photographs can be purchased directly from the Map Publications Centres of the Lands Department.

**4. GEOLOGICAL AND RELATED MAPS AND MEMOIRS**

**4.1 Geological Maps and Memoirs**

Geological surveying in Hong Kong is carried out by the Hong Kong Geological Survey (HKGS) of the GEO. Thirty-four maps and six sheet reports have been published to date and the Sheet Reports are available (free of charge) either from the GEO Planning Division or downloaded from the CEDD Website <http://www.cedd.gov.hk>. In 2003, the HKGS embarked on a programme to update the 1:20 000 scale geological maps and to release them in digital form. The coverage of the maps, memoirs and reports is shown in Figure 1. The maps and memoirs (except those which are free of charge) can be obtained from the Map Publications Centres of the Survey and Mapping Office while the memoirs are also available from the online Government Bookstore at <http://www.bookstore.gov.hk>.

**4.2 Terrain Classification and Engineering Geology Maps**

A series of eleven 1:20 000 scale terrain classification maps (TCM) covering the whole of the HKSAR was produced by the GEO in the 1980s. Each map covers an irregular area based on catchment boundaries. Derivative maps and accompanying reports have been published for each area as the Geotechnical Area Studies Programme (GASP) series. The series contains 12 volumes, of which Volume XII is a summary report for

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the whole of the HKSAR. They are available for viewing in the Geotechnical Information Unit (GIU) of the CEL. Limited copies are available for sale at the Map Publications Centres of the Survey and Mapping Office, and online Government Bookstore.

Nine catchments with extensive colluvial deposits were also identified for GAS mapping at 1:2 500 scale. These maps contain details of old landslide scars. In 1990, a 1:5 000 scale terrain classification mapping exercise was carried out for eleven 1:5 000 scale map sheets in North Lantau. These are available for viewing in the CEL and have been incorporated into three Engineering Geology Reports on the North Lantau Area (Franks, 1991, 1992; Woods, 1992).

**4.3 Other Geological Records and Information**

The GEO Planning Division is the repository for geological records for the HKSAR. These include the field observations embodied in the geological maps and memoirs, manuscript geological maps, and offshore data. Requests for information should be directed to the Chief Geotechnical Engineer of the Planning Division. The GEO also holds a collection of representative rock types and thin sections. These are available for inspection by arrangement. An on-line version of the geology of Hong Kong, based on the two memoirs but with additions from the current map updating programme now underway, has been published on the internet (Lee & Sewell, 2007). The on-line geological memoir of Hong Kong can be accessed at: [http://www.cedd.gov.hk/eng/about/organisation/org\\_geo\\_pln\\_map.htm](http://www.cedd.gov.hk/eng/about/organisation/org_geo_pln_map.htm). A summary of the nature and occurrence of Hong Kong rocks and superficial deposits is also given in Appendix A of Geoguide 3 (GCO, 1988).

**5. NAUTICAL CHARTS AND MARINE DEPARTMENT NOTICES**

The Hydrographic Office of the Marine Department complies and publishes paper charts and electronic navigational charts. Further information on the products and services of the Hydrographic Office can be found at the website <http://www.mardep.gov.hk>.

Marine Department Notices are issued as and when required concerning information relating to navigational safety and other marine activities in Hong Kong waters. Copies of the Notices can be downloaded from the website <http://www.mardep.gov.hk>.

**6. METEOROLOGICAL, SEISMOLOGICAL AND TIDAL INFORMATION**

The Hong Kong Observatory (HKO) collects and publishes meteorological information in Hong Kong. It issues daily weather reports and forecasts as well as warnings on

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tropical cyclone, thunderstorm, rainstorm, landslip, strong monsoon, fire danger, frost, tsunami, cold and very hot weather. Rainfall records are published monthly and annually. The HKO also maintains a local seismological network to monitor earthquakes near Hong Kong.

Predicted tide levels at selected locations are published annually in 'Tide Tables for Hong Kong' which are available at the online Government Bookstore.

Further information on the services of the HKO can be found at the website <http://www.hko.gov.hk>.

7. **HYDROLOGICAL INFORMATION**

The Drainage Services Department and Water Supplies Department operate and maintain separate systems of stream/river gauging stations in the main catchment areas of the HKSAR.

8. **PAST RECORDS**

8.1 **Records from Previous Investigations**

The GIU of the GEO holds reports of previous ground investigation, which usually include borehole logs and sometimes results from geophysical surveys and laboratory testing of soils, rocks and sediments. Digital Geotechnical Information Unit (DGIU) system is also available for fast retrieval of these reports in the CEL.

The GIU also contains a large amount of other information of direct relevance to site investigation, and this is described in Section 12.1.

8.2 **Design and Construction Records**

Several Government Departments possess information that is of value to the planning and execution of site investigation in Hong Kong, but this is often not readily accessible. However, arrangements can usually be made for specific information to be made available to bona fide users.

For example, each Government Department retains its own files on projects that are carried out under its control. Copies of design reports and record drawings of completed projects are also kept.

A brief summary of information possessed by some of the Government Departments is given below:

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| Department  | Record/Information  |
|---|---|
| Architectural Services Department   | Records of Government buildings   |
| Buildings Department  | Building plans and related documents of existing buildings in Hong Kong (except for pre-war buildings and New Territories Exempted Houses). These documents may be available for viewing by the public in the Buildings Department upon application.  |
| Environmental Infrastructure Division of the Environmental Protection Department        | Records of known landfills  |
| CEL   | Plans showing the locations of disused tunnels  |
| Drainage Services Department  | Records of sewerage tunnels (see also Section 10.4)   |
| Geotechnical Engineering Office of the Civil and Engineering and Development Department | Landslip Preventive Measures study reports, information on slopes and records of all known disused tunnels and quarries. Catalogue of Hong Kong Tunnels and Catalogue of Notable Tunnel Failure Case Histories. The Catalogues can be accessed at the CEDD Website <a href="http://www.cedd.gov.hk/eng/publications/reference/doc/HK%20Tunnel%20Cat.pdf">http://www.cedd.gov.hk/eng/publications/reference/doc/HK%20Tunnel%20Cat.pdf</a> and <a href="http://www.cedd.gov.hk/eng/publications/reference/doc/HK%20NotableTunnel%20Cat.pdf">http://www.cedd.gov.hk/eng/publications/reference/doc/HK%20NotableTunnel%20Cat.pdf</a> (Designers should obtain the design and construction details of such tunnels from the relevant owners and maintenance agents.) |
| Water Supplies Department   | Record of water tunnels, water mains, catchwaters, impounding reservoirs, service reservoirs, water treatment works, pumping stations, and ancillary structures.  |

### 8.3 Hong Kong Rainfall and Landslide Studies

Since 1984, the GEO has compiled annual reports to document information on rainfall and landslides occurring in the HKSAR. GEO has also prepared detailed/forensic investigation reports on some selected major landslide incidents and incidents involving casualties. Since 1997, GEO has started engaging consultants to carry out investigation of some selected landslides and to prepare landslide study reports. The annual reports, detailed/forensic investigation reports and landslide study reports are either published as GEO Reports or produced as GEO internal reports. GEO Reports can be purchased from the online Government Bookstore or downloaded from the CEDD Website <http://www.cedd.gov.hk>. GEO internal reports can be viewed in the

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CEL. Summary of findings of selected landslide studies are also uploaded onto the Hong Kong Slope Safety Website <http://hkss.cedd.gov.hk> for viewing.

**8.4 Slope Maintenance Records**

Slope maintenance records (e.g. maintenance manuals, records of slope upgrading, records of routine maintenance and Engineer Inspections, records of monitoring of special measures such as permanent prestressed ground anchors and designed horizontal drains) are kept by the slope owners or their maintenance agents (GEO, 2003).

**8.5 Other Public Records**

The GRS is the central repository for the permanent archives and selected official publications of the HKSAR Government. It maintains catalogued collections of maps and photographs dating from 1860, together with almost complete collections of the Hong Kong Government Gazette, Blue Books, Sessional Papers, Administrative Reports, Historical & Statistical Abstracts of Hong Kong, Legislative Council Minutes, Annual Departmental Reports, Ordinances and Regulations, Hong Kong Hansard and a comprehensive newspaper collection. In November 2002, GRS introduced an integrated information access system to facilitate online searching of all catalogues and access to selected visual images via the Internet. ([http://www.grs.gov.hk/ws/english/es\\_online\\_cata.htm](http://www.grs.gov.hk/ws/english/es_online_cata.htm))

The Photo Library of the Information Services Department has in place some old photographs which may be reproduced for use by members of the public.

Lists of declared monuments and deemed monuments as well as archaeological sites are maintained by the Antiquities & Monuments Office (AMO) of the Leisure and Cultural Services Department (see also Section 3.2).

**9. NOTES AND CIRCULARS RELATED TO GROUND INVESTIGATION WORKS**

For private development, the general requirements for carrying out ground investigation works, including the site supervision requirements, are given in PNAP 132 which can be downloaded from Buildings Department Website <http://www.bd.gov.hk>. For public development, the requirements are given in WBTC No. 13/90. Ground Investigation Note No. 1/2008, which can be downloaded from CEDD Website <http://www.cedd.gov.hk> gives the details of procurement of ground investigation and laboratory testing services provided by CEDD for Government projects. Guidance on specific aspects of site investigation (SI) for tunnel works in Hong Kong is given in GEO TGN No. 24.

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**10. SCHEDULED AND DESIGNATED AREAS AND OTHER CONCERNED AREAS**

**10.1 Mid-levels Scheduled Area**

Ground investigation works in scheduled areas, including the Mid-levels Scheduled Area, are subject to special geotechnical control under the Buildings Ordinance. The Mid-levels Scheduled Area is specified as Area Number 1 of the Scheduled Areas in the Fifth Schedule of the Buildings Ordinance. A plan showing the boundary of the Mid-levels Scheduled Area is on display in Buildings Department and in the GIU of the CEL.

The Mid-levels Consultants' study was summarised in a report entitled "Mid-levels Study: Report on Geology, Hydrology and Soil Properties" (GCO, 1982). The report is available for sale at the online Government Bookstore. All factual data on geology, hydrology and soil properties collected in the course of the Mid-levels Study between 1979 and 1981 are available for inspection in the GIU.

For private development, the requirements on the special geotechnical control for ground investigation works in the Mid-levels Scheduled Area are given in PNAP 85. For public development, the requirements are specified in ETWB TC (Works) No. 29/2002A.

**10.2 North-western New Territories and Ma On Shan Areas**

The designated areas in North-western New Territories and Ma On Shan are specified as Area Numbers 2 and 4 respectively of the Scheduled Areas in the Fifth Schedule of the Buildings Ordinance. The plans illustrating the exact extent of these Areas are on display in the Buildings Department and in the GIU.

Considerable information exists on the geology of the Scheduled Areas. Twenty 1:5 000 Geological Map sheets, together with the Hong Kong Geological Survey Sheet Report No. 1 - Geology of Yuen Long, covers Area Number 2. Scheduled Area 4 is covered by 1:5 000 Geological Map Sheets 7-NE-C and 7-NE-D, together with a report on the geology. These can be obtained from the GEO Planning Division.

For private development, the requirements on the special geotechnical control for ground investigation works in these Scheduled Areas are given in PNAP 161. For public development, the requirements are specified in ETWB TC (Works) No. 4/2004.

**10.3 Mass Transit Railway Areas**

To safeguard the safety and stability of the Mass Transit Railway (MTR) structures operated and maintained by the MTR Corporation Limited (MTRCL), a "protection boundary" for the railways has been drawn on plans or determined by a figure and a set of building/engineering guidelines produced. The areas within the "protection

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boundary” are commonly known as the railway protection areas.

The MTR includes the following existing operating railways of Tsuen Wan Line, Kwun Tong Line, Island Line, Tseung Kwan O Line, Tung Chung Line, Airport Express, Disneyland Resort Line, East Rail Line, East Rail Line Extensions – Hung Hom to Tsim Sha Tsui, West Rail Line, Ma On Shan Line, Lok Ma Chau Spur Line and Light Rail.

Amongst the railway protection areas, some areas are designated as Scheduled Area No. 3 in the Fifth Schedule of the Buildings Ordinance (Scheduled Area No. 3). The areas within the “protection boundary” have been designated as Scheduled Area No. 3 includes Tsuen Wan Line, Kwun Tong Line, Island Line, Tseung Kwan O Line, Tung Chung Line, Airport Express, East Rail Line Extensions – Hung Hom to Tsim Sha Tsui and West Rail Line. The plans illustrating the extent of these areas are available for inspection in the Buildings Department (BD) and the MTRCL. Information on the “alignment of the railways as constructed” may be obtained direct from MTRCL. For private development, the additional requirements for ground investigation works within Scheduled Area No. 3 are given in PNAP 77 and PNAP 279. WB Technical Circular No. 19/2002, ETWB Technical Circular (Works) Nos. 33/2003 and 2/2005 shall be referred to for guidance on ground investigation works near the MTR and liaison with the Railway Protection & Land Survey Manager of the MTRCL.

The survey and Mapping Office of Lands Department maintains a set of digital land records covering the whole territory of Hong Kong. Useful information, e.g. lot boundaries, the railway reserves and others, is recorded in this database.

#### **10.4 Sewage Tunnel Protection Areas**

The sewage tunnel protection areas are designated as Area Number 5 of the Scheduled Areas in the Fifth Schedule of the Buildings Ordinance (Scheduled Area No. 5). The plans illustrating the extent of these areas are available for inspection in the Buildings Department and the Drainage Services Department. For private development, the additional requirements for ground investigation work within Scheduled Area No. 5 are given in PNAP 165. For ground investigation works proposals of Government Departments in the vicinity of the sewage tunnels, the project proponents shall refer to ETWB Technical Circular (Works) No. 28/2003 for the procedures for forwarding proposals to Drainage Services Department and GEO for comment/agreement.

#### **10.5 Designated Area of Northshore Lantau**

The Designated Area is underlain by locally complex geological conditions that require due attention to be given to the potential problems associated with high-rise buildings and other structures involving deep foundations. Technical recommendations and the plan illustrating the exact extent of the area are given in GEO TGN No. 12.

For private development, administrative procedures and general guidance for ground

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investigation work in the Designated Area are given in PNAP 283. For public development, the requirements are specified in ETWB TC(W) No. 4/2004.

**10.6 Water Gathering Grounds (WGG)**

Information on the limits of the WGG and the required conditions for protection of the WGG against pollution should be obtained from the relevant regional office of the Water Supplies Department. Maps showing WGG are also held by the relevant District Lands Offices of the Lands Department.

**10.7 Marine Ground Investigation in Difficult Ground Areas**

Difficult ground conditions generally refer to the existence of unfavourable subsoil strata on site. Technical guidelines on the areas and the plan illustrating the extent of the areas are given in Port Works Design Manual issued by CEDD.

**11. SERVICES AND UTILITIES**

Information on gas, electricity, telephone, cable television and similar services, including both the locations and details of existing facilities and the provision of further services, should be sought from the private companies supplying these services (see local telephone directories or the Yellow Pages for their latest addresses and telephone numbers).

Information on the locations of water mains, water tunnels, reservoirs and other waterwork facilities maintained by the Water Supplies Department (WSD) should be sought from the Department. Application forms and further information on the customer services of the WSD can be found at the website <http://www.wsd.gov.hk>.

As-built records of public stormwater drains and foul sewers should be sought from the Drainage Services Department (DSD). Similar records for private lots can be obtained from the Buildings Department. As-built records of exclusive road drainage should be sought from the Highways Department.

Tentative limits of allowable settlement, groundwater drawdown and vibration may be obtained from DSD, WSD, public corporations and private utility undertakers.

**12. LOCAL LIBRARIES**

**12.1 The Civil Engineering Library and the Geotechnical Information Unit**

The CEL is the central reference library of the Civil Engineering and Development Department. The CEL contains over 150,000 documents, including periodicals, books, conference proceedings, manuals, standards, codes of practice, geotechnical reports,

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maps, documents submitted to GEO in support of private developments, and documents produced by or for Government Departments.

The GIU forms part of the CEL and comprises a collection of geotechnical data from ground investigations throughout the HKSAR. The following GIU materials are among those available for inspection within the Public Section of the CEL.

- (a) ground investigation and geophysical survey reports;
- (b) reports on the laboratory testing of soil and rock;
- (c) Landslip Cards;
- (d) piezometer monitoring data; and
- (e) an inventory of natural terrain landslides.

The Bibliography on the Geology and Geotechnical Engineering of Hong Kong, produced by the GEO, lists more than 4,600 items that are known to have been published specifically on aspects of the geology and geotechnical engineering of Hong Kong. The Bibliography can be found under the Publications Section of the CEDD Website <http://www.cedd.gov.hk/eng/publications/reference/index.htm>.

Members of the public are free to view documents held within the Public Section of the CEL and search for library materials using the Online Public Access Catalogue (OPAC) – V Lib computer terminals. Retrieval of ground investigation and laboratory testing reports can be accessed by the Digital Geotechnical Information Unit (DGIU) system. A user's manual for DGIU is provided in the CEL. Photocopying and printing facilities are available.

Further information on the services of the CEL and GIU can be found under the Public Services Section of the CEDD Website <http://www.cedd.gov.hk/eng/services/library/index.htm>.

## 12.2 Other Libraries

The City Hall Public Library, the Hong Kong Central Library and the Kowloon Public Library each houses a reference section which contains a number of published documents on the geology and geotechnical engineering of Hong Kong, together with some unpublished reports. They also house Hong Kong Collections of considerable interest. Direct access is permitted to the shelved items, and bibliographic information of the items can be accessed through the Online Public Access Catalogue. Photocopying facilities are available for public use.

The University of Hong Kong, the Chinese University of Hong Kong, the Hong Kong Polytechnic University, the Hong Kong University of Science and Technology and the

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City University of Hong Kong each has a large library which contains a collection of general geological and geotechnical information. The first three, however, can only be accessed by special permission, although for bona fide visitors this is usually not difficult to obtain. The University of Hong Kong maintains the Hong Kong Collection, which contains considerable unpublished information, as well as master and doctoral degree theses on geological and geotechnical topics.

13. **ADDRESSES OF LOCAL ORGANISATIONS AND GOVERNMENT DEPARTMENTS**

Antiquities and Monuments Office,  
Leisure and Cultural Services Department,  
136 Nathan Road, Tsim Sha Tsui, Kowloon.  
(Tel.: 2721 2326)  
(Website: <http://www.amo.gov.hk>)

Architectural Services Department,  
Queensway Government Offices,  
66 Queensway, Hong Kong.  
(Tel.: 2867 3628)  
(Website: <http://www.archsd.gov.hk>)

Buildings Department,  
12th to 18th and 21st to 22nd Floors,  
Pioneer Centre, 750 Nathan Road, Kowloon.  
(Tel.: 2626 1616)  
(Website: <http://www.bd.gov.hk>)

City Hall Public Library,  
City Hall High Block,  
Edinburgh Place, Hong Kong.  
(Tel.: 2921 2672)  
(Website: <http://www.hkpl.gov.hk>)

Chinese University of Hong Kong Library,  
122 Milestone, Tai Po Road,  
Sha Tin, New Territories.  
(Tel.: 2609 7301)  
(Website: <http://www.lib.cuhk.edu.hk>)

City University of Hong Kong,  
Run Run Shaw Library,  
Tat Chee Avenue, Kowloon.  
(Tel.: 2788 8311)  
(Website: <http://www.cityu.edu.hk>)

Civil Engineering Office,  
Civil Engineering and Development  
Department,  
Civil Engineering and Development  
Building,  
101 Princess Margaret Road,  
Homantin, Kowloon.  
(Tel.: 2762 5111)  
(Website: <http://www.cedd.gov.hk>)

District Lands Offices,  
Lands Department,  
20th Floor, North Point Government  
Offices,  
333 Java Road, North Point  
Hong Kong.  
(Tel. 2525 6694)  
(Website: <http://www.landsd.gov.hk>)

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Drainage Services Department,  
43rd Floor, Revenue Tower,  
5 Gloucester Road,  
Wan Chai, Hong Kong.  
(Tel.: 2877 0660)  
(Website: <http://www.dsd.gov.hk>)

Environmental Infrastructure Division  
Environmental Protection Department  
4/F, East Wing, Island West Transfer  
Station,  
88, Victoria Road,  
Kennedy Town, Hong Kong  
(Tel.: 2872 1807)  
(Website: <http://www.epd.gov.hk>)

Government Records Service,  
Hong Kong Public Records Building,  
13 Tsui Ping Road,  
Kwun Tong, Kowloon.  
(Tel.: 2195 7801)  
(Website: <http://www.grs.gov.hk>)

Geotechnical Engineering Office,  
Civil Engineering and Development  
Department,  
Civil Engineering and Development  
Building,  
101 Princess Margaret Road,  
Homantin, Kowloon.  
(Tel.: 2762 5111)  
(Website: <http://www.cedd.gov.hk>)

Geotechnical Information Unit,  
Civil Engineering Library, LG1,  
Civil Engineering and Development  
Building,  
101 Princess Margaret Road,  
Homantin, Kowloon.  
(Tel.: 2762 5148)  
(E-mail: [librarian@cedd.gov.hk](mailto:librarian@cedd.gov.hk))

Geotechnical Projects Division, GEO  
23rd Floor, 410 Kwun Tong Road,  
Kwun Tong, Kowloon.  
(Tel. 2716 8612)  
(E-mail: [terencecfchan@cedd.gov.hk](mailto:terencecfchan@cedd.gov.hk))

Highways Department,  
5th Floor, Homantin Government Offices,  
88 Chung Hau Street,  
Homantin, Kowloon.  
(Tel.: 2926 4111)  
(Website: <http://www.hyd.gov.hk>)

Hong Kong Observatory,  
134A Nathan Road,  
Tsim Sha Tsui,  
Kowloon.  
(Tel.: 2926 8200)  
(Website: <http://www.hko.gov.hk>)

Hong Kong Central Library,  
66 Causeway Road,  
Causeway Bay, Hong Kong.  
(Tel.: 2921 0222)  
(Website: <http://www.hkp1.gov.hk>)

Hong Kong Geological Survey,  
Geotechnical Engineering Office,  
11th Floor, Civil Engineering and  
Development Building,  
101 Princess Margaret Road,  
Homantin, Kowloon.  
(Tel.: 2762 5380)  
(E-mail: [jsewell@cedd.gov.hk](mailto:jsewell@cedd.gov.hk))

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The Hong Kong Polytechnic University  
Pao Yue-kong Library,  
Yuk Choi Road,  
Hung Hom, Kowloon.  
(Tel.: 2766 6863)  
(Website: <http://www.lib.polyu.edu.hk>)

Hong Kong University of Science &  
Technology Library,  
Clear Water Bay,  
Kowloon.  
(Tel.: 2358 6762)  
(Website: <http://library.ust.hk>)

Kowloon Public Library,  
5 Pui Ching Road,  
Homantin,  
Kowloon.  
(Tel.: 2926 4062)  
(Website: <http://www.hkp1.gov.hk>)

Lands Department,  
1st, 2nd, 6th, 18th to 24th Floors,  
North Point Government Offices,  
333 Java Road, North Point, Hong  
Kong.  
(Tel.: 2231 3294)  
(Website: <http://www.landsd.gov.hk>)

Lands Information Centre  
Survey and Mapping Office,  
Lands Department,  
23rd Floor, North Point Government  
Offices,  
333 Java Road,  
North Point, Hong Kong.  
(Tel.: 2231 3452)  
(E-mail: [lic\\_enquiry@landsd.gov.hk](mailto:lic_enquiry@landsd.gov.hk))

Landslip Preventive Measures Division  
1, GEO, 1st Floor, Civil Engineering  
and Development Building,  
101 Princess Margaret Road,  
Homantin, Kowloon.  
(Tel.: 2760 5778)  
(E-mail: [wkpun@cedd.gov.hk](mailto:wkpun@cedd.gov.hk))

Leisure and Cultural Services Department,  
1-3 Pai Tau Street,  
Sha Tin,  
New Territories.  
(Tel.: 2603 4567)  
(Website: <http://www.lcsd.gov.hk>)

Map Publications Centre (Hong Kong),  
Survey and Mapping Office  
Lands Department  
23rd Floor, North Point Government  
Offices,  
333 Java Road, North Point, Hong  
Kong.  
(Tel.: 2231 3187)  
(E-mail: [smosale1@landsd.gov.hk](mailto:smosale1@landsd.gov.hk))

Map Publications Centre (Kowloon),  
Survey and Mapping Office,  
Lands Department  
382 Nathan Road,  
Yau Ma Tei, Kowloon.  
(Tel.: 2780 0981)  
(E-mail: [smosale2@landsd.gov.hk](mailto:smosale2@landsd.gov.hk))

Marine Department,  
Harbour Building,  
38 Pier Road, Hong Kong.  
(Tel.: 2542 3711)  
(Website: <http://www.mardep.gov.hk>)

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Mines Division, GEO,  
25th Floor, 410 Kwun Tong Road,  
Kwun Tong, Kowloon.  
(Tel.: 2716 8666)  
(E-mail: [mines@cedd.gov.hk](mailto:mines@cedd.gov.hk))

MTR Corporation Limited  
MTR Tower Telford Plaza,  
Kowloon Bay, Kowloon.  
(Tel.: 2993 2111)  
(Website: [http://www.mtr.com.hk/engtx/railway/protection\\_index.html](http://www.mtr.com.hk/engtx/railway/protection_index.html))

Online Geological Memoir  
(Website: [http://www.cedd.gov.hk/eng/about/organisation/org\\_geo\\_pln\\_map.htm](http://www.cedd.gov.hk/eng/about/organisation/org_geo_pln_map.htm))

Online Government Bookstore,  
(Website: <http://www.bookstore.gov.hk>)

Planning Division, GEO,  
11th Floor, Civil Engineering and  
Development Building,  
101 Princess Margaret Road,  
Homantin, Kowloon.  
(Tel.: 2762 5400)  
(E-mail: [samuelkcneg@cedd.gov.hk](mailto:samuelkcneg@cedd.gov.hk))

Publications Sales Unit,  
Information Services Department,  
Room 402, 4th Floor, Murray Building,  
Garden Road, Central, Hong Kong.  
(Tel.: 2537 1910)  
(Website: <http://www.isd.gov.hk>)

Slope Maintenance Responsibility  
Information Centre,  
Lands Department,  
1st Floor, North Point Government Offices,  
333, Java Road, North Point, Hong Kong.  
(Tel.: 2231 3333)  
(Website: <http://www.landsd.gov.hk>)

Slope Safety Division, GEO,  
7th Floor, Civil Engineering and  
Development Building,  
101 Princess Margaret Road,  
Homantin, Kowloon.  
(Tel.: 2760 5760)  
(Hong Kong Slope Safety Website:  
<http://hkss.cedd.gov.hk>)  
(E-mail: [hkss@cedd.gov.hk](mailto:hkss@cedd.gov.hk))

Standards and Testing Division, GEO,  
12th Floor, Civil Engineering and  
Development Building,  
101 Princess Margaret Road,  
Homantin, Kowloon.  
(Tel.: 2762 5345)  
(E-mail: [kenho@cedd.gov.hk](mailto:kenho@cedd.gov.hk))

The University of Hong Kong Library,  
Pokfulam Road,  
Hong Kong.  
(Tel.: 2859 2203)  
(Website: <http://lib.hku.hk>)

Water Supplies Department,  
48<sup>th</sup> Floor, Immigration Tower,  
7 Gloucester Road,  
Wan Chai, Hong Kong.  
(Tel.: 2829 4500)  
(Website: <http://www.wsd.gov.hk>)

Waste Facilities Business Unit,  
Environmental Protection Department,  
4th Floor, West Wing, 88 Victoria  
Road,  
Kennedy Town, Hong Kong.  
(Tel.: 2872 1888)  
(Website: <http://www.epd.gov.hk>)

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14. **REFERENCES**

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- Fyfe, J.A., Shaw, R., Campbell, S.D.G., Lai, K.W. & Kirk, P.A. (2000). The Quaternary Geology of Hong Kong. Geotechnical Engineering Office, Hong Kong, 208 p. plus 6 maps.
- Franks, C.A.M. (1991). Engineering Geology of North Lantau: Tsing Chau Tsai Peninsula to Ta Pang Po (Special Project Report SPR 4/91). Geotechnical Engineering Office, Hong Kong, 148 p. plus 9 drgs.
- Franks, C.A.M. (1992). Engineering Geology of North Lantau: Ta Pang Po to Tai Ho Wan (Special Project Report SPR 2/92). Geotechnical Engineering Office, Hong Kong, 109p. plus 5 drgs.
- GCO (1982). Mid-levels Study: Report on Geology, Hydrology and Soil Properties (1982). Geotechnical Control Office, Hong Kong, 265 p. plus 54 drgs.
- GCO (1987). Guide to Site Investigation (Geoguide 2). Geotechnical Control Office, Hong Kong, 365 p.
- GCO (1988). Guide to Rock and Soil Descriptions (Geoguide 3). Geotechnical Control Office, Hong Kong, 189 p.
- GEO (1998). GEO Emergency Manual. Geotechnical Engineering Office, Hong Kong. (Amended from time to time).
- GEO (2003). Guide to Slope Maintenance (Geoguide 5). (Third Edition). Geotechnical Engineering Office, Hong Kong, 132 p.
- King, J.P. (1999). Natural Terrain Landslide Study, the Natural Terrain Landslide Inventory (GEO Report No. 74). Geotechnical Engineering Office, Hong Kong, 127 p.
- Lee, C.W. & Sewell, R.J. (2007). On-line Geological Memoir of Hong Kong. Episodes, Vol. 30, no.1, 62p.
- Pang, P.L.R., Evans, N.C., Lam, T.W.K., Au, D. & Man, K.S. (2000). Upgrading of an automatic raingauge system. Proceedings of the Symposium on Slope Hazards and their Prevention, Hong Kong, pp 297-302.
- Scott Wilson (Hong Kong) Ltd (1999a). Specialist API Services for the Natural Terrain Landslide Study – Task B Factual Report. Report to Geotechnical

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Engineering Office, Hong Kong, 9 p. plus 4 Appendices.

Scott Wilson (Hong Kong) Ltd (1999b). Specialist API Services for the Natural Terrain Landslide Study – Interpretive Report. Report to Geotechnical Engineering Office, Hong Kong, 32 p. plus 6 Appendices.

Sewell, R.J., Campbell, S.D.G., Fletcher, C.J.N., Lai, K.W. & Kirk, P.A. (2000). The Pre-Quaternary Geology of Hong Kong. Geotechnical Engineering Office, Hong Kong, 181 p. plus 4 maps.

Woods, N.W. (1992). Engineering Geology of North Lantau: Tung Chung, Vol. I & II (Special Project Report SPR 1/93). Geotechnical Engineering Office, Hong Kong, 94 p. plus 8 drgs.

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Table 1 - Selected Maps, Plans and Aerial Photographs Available from the Lands Department

| Map/Plan   | Coverage            | Paper Map Products |                |               |                  | Digital Map Products |               |
|--|---------------------|--------------------|----------------|---------------|------------------|----------------------|---------------|
|  |                     | Series No.         | Size (mm)      | No. of Sheets | Colour           | Product Name         | No. of Sheets |
| <b>Topographic Maps</b>  |                     |                    |                |               |                  |                      |               |
| 1. 1:1 000   | Full                | HP1C               | 750 x 850      | 3254          | B & W            | B1000                | 3254          |
| 2. 1:5 000   | Full                | HP5C               | 750 x 850      | 166           | B & W            | B5000                | 189           |
| 3. 1:10 000<br>(Street Map)  | Full                | SM10C              | 685 x 980      | 59            | B & W            | B10000               | 57            |
| 4. 1:20 000  | Full                | HM20C              | 685 x 980      | 16            | Colour           | B20000               | 16            |
| 5. 1:50 000  | Full                | HM50CL             | 1010 x 690     | 2             | Colour           | N.A.                 | N.A.          |
| 6. 1:100 000   | Full                | HM100CL            | 655 x 850      | 1             | Colour           | N.A.                 | N.A.          |
| 7. 1:200 000   | Full                | HM200CL            | 327 x 425      | 1             | Colour           | N.A.                 | N.A.          |
| 8. 1:300 000<br>(Hong Kong in<br>its regional<br>setting)                        | As per<br>title     | HM300C             | 610 x 860      | 1             | Colour           | N.A.                 | N.A.          |
| <b>Digital Orthophotos / Orthophoto Maps</b>                                     |                     |                    |                |               |                  |                      |               |
| 1. 1:5 000   | Full                | N.A.               | N.A.           | N.A.          | N.A.             | DOP5000              | 189           |
| 2. 1:10 000  | Full                | N.A.               | N.A.           | N.A.          | N.A.             | DOP10000             | 55            |
| 3. 1:50 000  | Full                | OPM50              | 1080 x<br>1400 | 1             | Colour           | N.A.                 | N.A.          |
| 4. 1:100 000   | Full                | OPM100             | 600 x 770      | 1             | Colour           | N.A.                 | N.A.          |
| Aerial Photos  | Full#               | N.A.               | 250 x 250      | Numerous      | B & W/<br>Colour | DAP                  | Numerous      |
| <b>Geological Maps</b>   |                     |                    |                |               |                  |                      |               |
| 1. 1:5 000*  | Selectiv<br>e Areas | HGP5, 5A, 5B       | 760 x 1000     | 34            | Colour           | N.A.                 | N.A.          |
| 2. 1:20 000*   | Full                | HGM20 &<br>20S     | 775 x 1000     | 14 & 1        | Colour           | N.A.                 | N.A.          |
| 2a 1:20 000  | Full                | HGM20              | 700 x 1000     | 1             | Colour           | N.A.                 | N.A.          |
| 3. 1:100 000   | Full                | HGM100             | 660x 1000      | 1             | Colour           | N.A.                 | N.A.          |
| Town Planning<br>Plan by Planning<br>Department                                  | N.A.                | 471                | Various        | Various       | B & W            | N.A.                 | N.A.          |
| Legend:<br>* See Figure 1 for area coverage<br># See Table 2 for further details |                     |                    |                |               |                  |                      |               |

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Table 2a - Aerial Photographs Available from the Lands Department (Low Attitude Photographs)

| Year   | Scale(s)                          | Approximate Coverage (%) |            |         | Remarks  |
|--|-----------------------------------|--------------------------|------------|---------|--|
|  |                                   | HKI                      | K          | NT      |  |
| 1924   | Approx. 1:14 000                  | 60                       | 10         | 30      | Medium to low resolution, single frames with incidental stereo overlap.                            |
| 1945   | 1:12 000                          | 95                       | 60         | 95      | Medium to good resolution. Almost all areas except east-west strip from Tuen Mun to Sai Kung.      |
| 1949   | 1:4 800<br>1:11 600               | 100                      | 95         | 30      | Good resolution. Excellent coverage of north-west New Territories. Good coverage of lowland areas. |
| 1956<br>1959   | 1:10 000<br>1:13 300              | 10                       | 50         | 5       | Good resolution; some stereo overlap.  |
| 1961-1962  | 1:10 000                          | 100                      | 100        | 10      | Good resolution; small relief exaggeration.  |
| 1963   | NT = 1:7 800<br>HKI + K = 1:5 400 | 100                      | 100        | 95      | Excellent resolution, full stereo coverage. Coverage of all areas except Mai Po to Sha Tau Kok.    |
| 1964   | 1:3 600                           | 5                        | 5          | 10      | Coverage of trunk roads.   |
| 1967   | 1:7 800 - 1:12 500                | 90                       | 90         | 20      | Coverage of main Urban Area only.  |
| 1968-1970  | 1:5 000 - 1:10 000                | 40                       | 100        | 20      | Coverage of Urban Areas.   |
| 1972   | 1:6 000 - 1:13 000                | 40                       | 80         | 20      | Coverage of trunk road.  |
| 1973   | 1:3 000<br>1:10 000 - 1:12 000    | 70<br>70                 | 100<br>100 | 5<br>90 | Urban Areas only.<br>Most of HKSAR.  |
| 1974   | 1:5 000                           | 10                       | 70         | 30      | Coverage of north-west and west New Territories.   |
| 1975   | 1:4 600 - 1:10 000                | 5                        | 40         | 30      | Coverage of north-west and west New Territories.   |
| 1976   | 1:2 000 - 1:8000                  | 100                      | 100        | 40      | Coverage of Urban Areas and New Towns.   |
| 1977   | 1:2 800 - 1:8 000                 | 100                      | 100        | 50      | Detailed coverage of north-west and north New Territories plus New Towns.                          |
| 1978-1987  | 1:4 000 - 1:8 000                 | 100                      | 100        | 60      | Annual coverage of Urban Areas including New Towns and lowland areas.                              |
| 1988 to present  | 1:2 000 - 1:12 000                | 100                      | 100        | 45-90   | Annual coverage of New Territories varies from year to year.                                       |
| Note: Colour aerial photographs have also been taken routinely since 1993. |                                   |                          |            |         |  |

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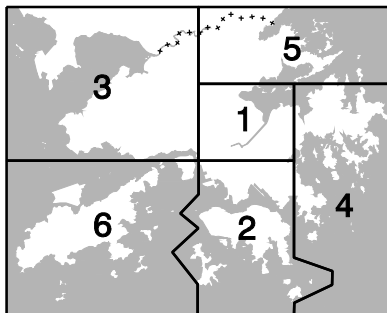
|              |             |                  |                |
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Table 2b - Aerial Photographs Available from the Lands Department (High Altitude Photographs)

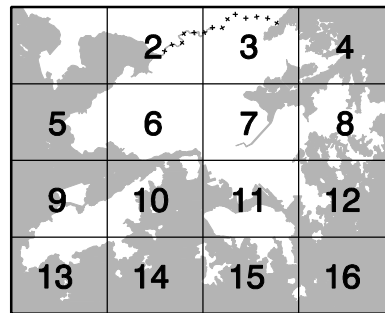
| Year  | Scale(s)            | Approximate Coverage (%) |     |     | Remarks   |
|---|---------------------|--------------------------|-----|-----|---|
|   |                     | HKI                      | K   | NT  |   |
| 1954  | 1:60 000            | 2                        | 80  | 90  | Good resolution.  |
| 1964  | 1:25 000            | 100                      | 100 | 100 | Excellent resolution. Mosaic of aerial photographs available. East to west flight lines, 4 to 5 km apart. |
| 1973  | 1:25 000            | 100                      | 100 | 90  | Good resolution. East to west flight lines 3 to 5 km apart.   |
| 1974-1976   | 1:25 000            | 100                      | 100 | 100 | Good resolution. Annual coverage. East to west flight lines, 1 to 4 km apart.                             |
| 1977  | 1:25 000            | 20                       |     | 20  | Obliques only of Urban Area. Coverage of Lantau, west New Territories and Sha Tin.                        |
| 1978  | 1:25 000            | 100                      | 100 | 100 | Complete coverage.  |
| 1979  | 1:20 000            | 100                      | 100 | 100 | Complete coverage.  |
| 1980  | 1:20 000            | 100                      | 80  | 20  | Southern half of HKSAR only.  |
| 1981  | 1:20 000            | 100                      | 100 | 100 | Complete coverage.<br>Urban Area and Lantau only.   |
|   | 1:50 000            | 80                       | 80  | 10  |   |
| 1982  | 1:20 000            | 100                      | 100 | 100 | Complete coverage   |
| 1983  | 1:20 000            | 100                      | 100 | 100 | Complete coverage.<br>Almost complete coverage.   |
|   | 1:40 000            | 100                      | 100 | 95  |   |
| 1984  | 1:20 000            | 30                       | 40  | 15  | Coverage of Urban Area, Clearwater Bay and Sai Kung Peninsula.  |
| 1985  | 1:20000             | 100                      | 100 | 100 | Complete coverage   |
|   | 1:30 000            |                          |     |     |   |
| 1986  | 1:20 000            | 100                      | 100 | 100 | Complete coverage.  |
| 1987  | 1:40 000            | 100                      | 100 | 100 | Complete coverage.  |
| 1988 – 1997*  | 1:20 000 - 1:40 000 | 100                      | 100 | 100 | Complete coverage.  |
| 1998 to present   | 1:16 000 - 1:40000  | 100                      | 100 | 100 | Complete coverage.  |
| <p>Note: Colour aerial photographs have also been taken routinely since 1993.<br/>*Year 1996: only 1:20 000 available</p> |                     |                          |     |     |   |

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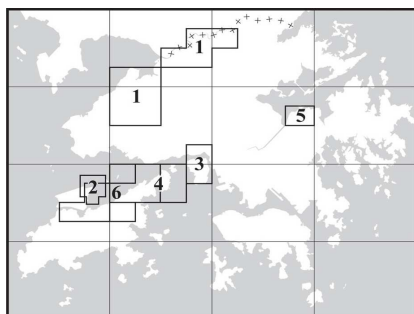


Geological Memoir Nos.

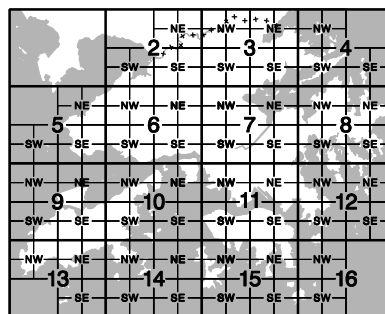


1:20 000 Map Sheet Nos.

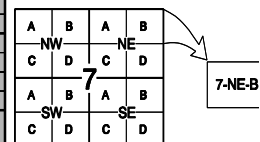
| Geological Memoir Nos. | Area of Coverage             | Map Coverage 1:20 000 Sheet Nos. |
|------------------------|------------------------------|----------------------------------|
| 1                      | Sha Tin                      | 7                                |
| 2                      | Hong Kong Island and Kowloon | 10, 11, 14, 15, 16               |
| 3                      | Western New Territories      | 2, 5, 6                          |
| 4                      | Sai Kung and Clearwater Bay  | 8, 12, 16                        |
| 5                      | Northeastern New Territories | 3, 4                             |
| 6                      | Lantau District              | 9, 10, 13, 14                    |



Sheet Report Nos.



1:5 000 Map Sheet Nos.



Numbering System of 1:5 000 Series

| Sheet Report Nos. | Area of Coverage                        | Map Coverage 1:5 000 Sheet Nos.               |
|-------------------|---|---|
| 1                 | Yuen Long - Scheduled Area No. 2        | 14 map sheets                                 |
| 2                 | Chek Lap Kok                            | 9-NE-C and 9-NE-D                             |
| 3                 | Tsing Yi and surrounding offshore area  | 6-SE-B and 10-NE-B,D                          |
| 4                 | North Lantau Island and Ma Wan          | 10-NE-A,C, 10-NW-B,C,D, and 10-SW-A           |
| 5                 | Ma On Shan - Scheduled Area No. 4       | 7-NE-D and 7-NE-C                             |
| 6                 | Tung Chung and Northshore Lantau Island | 9-SE-A, 9-SE-B and 5 offshore part map sheets |

Figure 1 - Geological Maps, Memoirs and Sheet Reports