

**REPORT ON
THE RAINSTORM OF
8 MAY 1992**

GEO REPORT No. 22

N. C. Evans

**GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING DEPARTMENT
HONG KONG**

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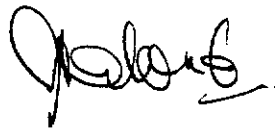
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PREFACE

In keeping with our policy of releasing information of general technical interest, we make available some of our internal reports in a series of publications termed the GEO Report series. The reports in this series, of which this is one, are selected from a wide range of reports produced by the staff of the Office and our consultants.

Copies of GEO Reports have previously been made available free of charge in limited numbers. The demand for the reports in this series has increased greatly, necessitating new arrangements for supply. In future a charge will be made to cover the cost of printing.

The Geotechnical Engineering Office also publishes guidance documents and presents the results of research work of general interest in GEO Publications. These publications and the GEO Reports are disseminated through the Government's Information Services Department. Information on how to purchase them is given on the last page of this report.

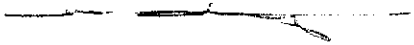


A. W. Malone
Principal Government Geotechnical Engineer
April 1995

FOREWORD

This report presents a general review of the rainfall of the severe rainstorm on 8 May 1992 in Hong Kong and the landslides which occurred as a result. This rainstorm was the most intense in the ten-year period since the event of 29 May 1982, and it warrants a separate report other than that usually produced on annual rainfall and landslides.

The District Divisions of the Geotechnical Engineering Office provided details of the landslides, and the Design Divisions provided other related information. Supplementary landslide data were provided by the Agricultural and Fisheries Department, Architectural Services Department, Drainage Services Department, Fire Services Department, Highways Department, Housing Department and Water Supplies Department. The Royal Observatory provided rainfall information. All contributions are gratefully acknowledged.



(Y C Chan)

Chief Geotechnical Engineer/Special Projects

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1. INTRODUCTION

This report reviews rainfall and landslide occurrence in Hong Kong resulting from the rainstorm of 8 May 1992. Rainfall information has been obtained from the Geotechnical Engineering Office (GEO) automatic rain gauge system and from the Royal Observatory (RO). Most of the landslide data have been taken from the records of incidents reported to the GEO. Supplementary data have been obtained from other Government departments.

In this report, a landslide is defined as the collapse of a soil or rock mass, and includes the failure of fill slopes, cut slopes, retaining structures, natural slopes and rock or boulder falls. A major landslide is defined as a failure in which the volume of the collapsed mass exceeds 50 cu m.

The GEO received a total of 360 incident reports which can be attributed to the 8 May rainstorm. Of these, 350 were classified as genuine landslides and seventeen of them were major. The remaining incidents were of no geotechnical concern. This report is based on landslides reported to the GEO, since these were inspected by the GEO's geotechnical engineers and detailed information is available.

2. RAINFALL

2.1 The Rain gauge System

In the rugged terrain of Hong Kong, the distribution and intensity of rainfall during a storm can vary dramatically with respect to both geography and time. In order to provide sufficient coverage for a meaningful analysis of rainfall distribution the Royal Observatory has installed a network of rain gauges which, during early 1992, comprised 21 automatic and 116 manual gauges at a total of 97 locations. These rain gauges range from automatic and instantaneous rate-of-rainfall recorders to those which are read manually once every month. The "principal" gauge is located at the Royal Observatory's headquarters in Tsim Sha Tsui, and a continuous rainfall record has been kept at this location since 1884. Weather summaries and rainfall statistics are normally based on the measurements made at this principal location.

Since 1978 the GEO, in cooperation with the RO, has installed a number of automatic rain gauges which transmit current rainfall data via telephone lines to the GEO's Emergency Control headquarters. Improvements have been made regularly and in early 1992 there were 48 GEO gauges and 21 RO gauges in this system, which provide up-to-date rainfall data every five minutes to the operation rooms of the GEO and RO. These data are also stored on computer tape and diskettes for future reference. The locations of these automatic rain gauges (Figure 1) were selected to supplement the network of other types of rain gauge and to provide specific information in areas of particular geotechnical interest. The latest major upgrading of this system was completed in January 1989.

2.2 Royal Observatory Records

The rainstorm of 8 May, 1992, was described by the Royal Observatory in the Monthly Weather Summary for May 1992 as follows:

".. a trough of low pressure had formed over southern China and the weather soon became unsettled over the coastal areas of Guangdong on 7 May. Rain started to fall intermittently that morning before a major outbreak of squally thunderstorms brought over 50 mm of rain in the afternoon. Light rain persisted into the evening before a lull settled in for the night. Then in the early morning of 8 May, fresh convective development took place just to the northwest of Hong Kong and moved steadily towards the Territory. Rain resumed just before daybreak. The moisture-laden air reverberated with clapping thunder and blinding lightning as the Territory bore the brunt of the most severe electrical rainstorm seen in years. Rain poured down with complete abandon soon after 6 am and the amount of rain that fell in the next hour, totalling about 110 mm, shattered the hourly record set 26 years ago on 12 June 1966. By 9 am that morning, nearly 200 mm of rain had fallen at the Royal Observatory. The havoc wreaked by the deluge was worst over Hong Kong Island where over 240 mm of rain were recorded. The onrush of rain water tumbled down the slopes of the hilly terrain and turned the city roads into a network of swollen rivers and raging streams. After a brief respite later that morning, torrential rain returned in the afternoon as another band of rain clouds followed through and swept across the Territory. By the end of a day of stormy weather and heavy squalls which lasted until evening time, over 300 mm of rain had been unleashed upon the Territory."

The hourly rainfall for 8 May as recorded at the Royal Observatory, Tsim Sha Tsui, is shown in Figure 2. Table 1 shows the maximum 1-hour, 2-hour, 5-hour, 12-hour and 24-hour rainfalls recorded at the Royal Observatory, together with the relevant ending times and estimated return periods (calculated after Peterson and Kwong, 1981). The highest estimated return period was about 70 years for the maximum 1-hour rainfall of 109.9 mm.

2.3 Geotechnical Engineering Office Records

Rainfall data are also available from the GEO's 48 automatic raingauges. Current rainfall data can be found in the GEO's Rainfall Data Acquisition Centre and past data are kept in the Civil Engineering Library.

In addition to the RO rainfall data for 8 May, data from the GEO raingauges are given as follows. Figure 3 shows 15-minute rainfall data from gauges H01, H03, H09 and H19, which recorded the highest hourly maxima during the 8 May rainstorm. Hourly rainfall data for all the GEO gauges are presented in Appendix B.

The raingauges in the GEO system showed a good correlation between maximum hourly rainfall and 24-hour rainfall for 8 May. This correlation is illustrated in Figure 4.

2.4 Rainfall Distribution

Rainfall distribution with time and location can be assessed from detailed GEO and RO records. The hourly rainfall distribution on 8 May is

shown on Figures 5 and 6 and the total daily rainfall distribution is shown on Figure 7. Figure 8 shows the distribution of maximum hourly rainfall on 8 May. The Kowloon Peninsula and the northern part of Hong Kong Island received most rainfall.

2.5 Warnings Issued by the Royal Observatory and the Geotechnical Engineering Office

The RO issued Flood Warnings on 7-9 May and Thunderstorm Warnings on 7-10 May. The RO and the GEO jointly issued a Landslip Warning at 0620 on 8 May and the warning remained in force until 0705 on 11 May. Of the 72 landslides for which the time of occurrence is known to within one hour, three occurred before the Landslip Warning was issued, and 69 occurred afterwards.

2.6 Comparison with Past Rainstorms

Maximum rainfall amounts, of various durations, recorded at the RO and by the GEO raingauges, are shown in Table 2 and are compared with the three most intense rainfalls recorded since 1982 (May 1982, July 1987 and May 1989). The maximum 5-hour rainfall on 8 May was slightly higher than that for these three earlier rainstorms, while the 1-hour maximum of 110 mm was considerably higher than the figures recorded in 1987 and 1989 and about the same as that recorded in 1982. In contrast to the above, the maximum recorded 24-hour rainfall on 8 May was significantly lower than those for two out of the three earlier rainstorms, emphasising the intense nature of the 8 May event.

3. LANDSLIDES

3.1 Landslides Attributable to the Rainstorm of 8 May 1992

The 8 May rainstorm was followed by a period of relatively dry weather and the next significant rainfall fell on 15 May. It is therefore considered reasonable to assume that landslides occurring between 8 and 14 May inclusive can be attributed to the 8 May rainstorm, as can landslides reported between 8 and 14 May but for which a precise date of failure is unknown. Landslides reported after 14 May for which a precise date is not known have not been attributed to the 8 May rainstorm and are not considered further in this report. The above rationale results in a total of 350 reported landslides (excluding flooding, tree fall etc) considered to result from the 8 May rainstorm, of which 282 occurred on 8 May and 21 occurred between 8 and 14 May, while 47 incidents reported between 8 and 14 May cannot be assigned to a precise date but have also been attributed to the 8 May rainstorm. There were, in total, seventeen major landslides attributable to the 8 May rainstorm.

The above data refer to landslides reported to the GEO. The numbers of landslides recorded by some other Government departments are shown in Table 3. A list containing details of all 360 incidents reported to the GEO is provided in Appendix A. Information on stages of GEO works, maintenance states and other details is given in the Remarks column where applicable. Ten of these incidents were of no geotechnical concern as they were caused by flooding, tree fall etc. and they were therefore ignored in the statistical analysis

below. In total, 350 incidents were considered to be of geotechnical concern. The locations of all the reported landslide incidents are shown in Drawings GCSP 8/9 and GCSP 8/10. Selected incidents are illustrated in Plates 1 to 42. More details of these incidents are contained in the incident files of the GEO District Divisions and the 1:5,000 incident location maps housed in the Civil Engineering Library.

Wherever possible, the dates and times of the landslides were ascertained by the geotechnical engineers during site inspection. Some incidents were not reported for several days or weeks and for these it was difficult to determine the exact time of occurrence. Out of 350 incidents, times of occurrence are known to within one hour for 72.

It is probable that there were other failures which are not known to the GEO, including minor failures of no consequence such as failures in open spaces and construction sites, and failures in remote areas having no impact on human activities. This should be borne in mind when reading the following landslide statistics.

3.2 Areas Affected by Incidents

The numbers of incidents affecting various categories of area, as reported to the GEO, are given in Table 4. It should be noted that one incident may affect more than one area category. Landslide consequences, classified according to failure type, are shown in Table 5.

3.2.1 Squatter Areas

A total of 45 incidents affected squatter areas. Of these, 25 occurred on Hong Kong Island, four in Kowloon and sixteen in the New Territories. No failures affecting squatter areas were major. Failures led to the permanent evacuation of 92 huts and the temporary evacuation of seventeen huts. Examples are shown in Plates 23 (Incident HK 5/80) and 24 (Incident HK 5/98).

3.2.2 Building Lots

There were 65 incidents affecting building lots, six of which were major. Incidents in this category killed two people and injured five (all were casualties of one incident, HK 5/8), and resulted in the temporary evacuation of 23 buildings in part or in total. Examples are shown in Plates 2 (Incident HK 5/3), 3-8 (Incident HK 5/8), 13-16 (Incident HK 5/38), 20 (Incident HK 5/50), 37 (Incident MW 5/67), 39 (Incident ME 5/16) and 41 (Incident ME 5/31). Four incidents (HK 5/8, HK 5/38, HK 5/59 and HK 5/139) are described in more detail in Sections 4.2, 4.4, 4.6, and 4.9 respectively.

3.2.3 Roads

A total of 82 incidents affected roads. Nine of these incidents were major. Major incident HK 5/38 caused one death. Examples are shown in Plates 3-8 (Incident HK 5/8), 11 (Incident HK 5/26), 12 (Incident HK 5/33), 13-16 (Incident HK 5/38), 19 (Incident HK 5/48), 21 (Incident HK 5/55), 22 (Incident HK 5/70), 27 (Incident K 5/6), 29 (Incident MW 5/3), 30 and 31 (Incident MW

5/12), 33 (Incident MW 5/17), 34 (Incident MW 5/45), 35 (Incident MW 5/46), 36 (Incident MW 5/47) and 38 (Incident ME 5/1). Five incidents (HK 5/8, HK 5/38, HK 5/41, HK 5/70 and MW 5/3) are described in more detail in Sections 4.2, 4.4, 4.5, 4.7 and 4.12 respectively.

3.2.4 Pedestrian Pavements

A total of 70 incidents affected pedestrian pavements, three of which were major. Examples are shown in Plates 11 (Incident HK 5/26), 13 to 16 (Incident HK 5/38), 25 (Incident HK 5/152), 29 (Incident MW 5/3), 30 and 31 (Incident MW 5/12), 32 (Incident MW 5/16) and 40 (Incident ME 5/22). Three incidents (HK 5/38, HK 5/140 and MW 5/3) are described in more detail in Sections 4.4, 4.10 and 4.12 respectively.

3.2.5 Footpaths, Back Lanes and Private Access

A total of 45 incidents affected these areas, two of which were major. Examples are shown in Plates 1 (Incident HK 5/1), 17 and 18 (Incident HK 5/39), 32 (Incident MW 5/16), 39 (Incident ME 5/67) and 42 (Incident ME 5/32).

3.2.6 Construction Sites

There were three incidents affecting construction sites, one of which (Incident HK 5/18) was major. This incident is described in more detail in Section 4.3.

3.2.7 Country Parks

Ten incidents affecting Country Parks were reported directly to the GEO, none of which were major. The Agriculture and Fisheries Department recorded nine additional incidents in the Country Parks.

3.2.8 Open Areas

A total of 73 incidents affected open areas, three of which were major. An examples is shown in Plate 28 (Incident K 5/8). The three major incidents (HK 5/104, HK 5/140 and HK 5/156) are described in more detail in Sections 4.8, 4.10 and 4.11 respectively.

3.2.9 Catchwaters, Conduits, Reservoirs and Associated Areas

Nine incidents reported to the GEO affected catchwaters, conduits and other water works. None of these incidents were major. An example is shown in Plate 26 (Incident HK 6/2). In addition, 82 incidents affecting catchwaters, conduits, reservoirs and associated areas were dealt with separately by the Water Supplies Department. These 82 incidents comprised 65 landslides and seventeen miscellaneous occurrences including flooding, silting of and damage to catchwaters, spalled chunam and road surface erosion. Of the 65 reported landslides, 43 affected catchwaters, seven affected access roads and paths, six affected conduits, three affected service reservoirs, three

affected treatment works, two affected pumping stations and one affected staff quarters.

3.3 Types of Incidents

The incidents inspected by the GEO have been classified into six types of failure and the number of failures in each type is shown in Table 6. Damage resulting from each type of failure is summarised in Table 5.

3.3.1 Fill Slopes

Twenty-four fill slope failures were reported, forming 7% of all incidents. Six of these failures were major. Examples of fill slope failures are shown in Plates 13 to 16 (Incident HK 5/38), 20 (Incident HK 5/50), 27 (Incident K 5/6) and 29 (Incident MW 5/3). Four failures (HK 5/38, HK 5/41, HK 5/140 and MW 5/3) are described in more detail in Sections 4.4, 4.5, 4.10 and 4.12 respectively.

3.3.2 Cut Slopes

A total of 221 cut slope failures were reported, forming 63% of all incidents. These failures were classified further according to the types of material, ie: soil, soil/rock and rock cut slope failures.

In total, 151 soil cut slope failures were reported, forming 43% of all incidents. Five of these failures were major. Examples of soil cut slope failures are shown in Plates 1 (Incident HK 5/1), 2 (Incident HK 5/3), 11 (Incident HK 5/26), 12 (Incident HK 5/33), 17 and 18 (Incident HK 5/39), 28 (Incident K 5/8), 32 (Incident MW 5/16), 33 (Incident MW 5/17), 34 (Incident MW 5/45), 35 (Incident MW 5/46), 36 (Incident 5/47), 38 (Incident ME 5/1), 39 (Incident ME 5/16) and 42 (Incident ME 5/32). Two failures (HK 5/104 and HK 5/139) are described in more detail in Sections 4.8 and 4.9 respectively.

Sixty-three soil/rock cut slope failures were reported, forming 18% of all incidents. Three of these failures were major. Examples of soil/rock cut slope failures are shown in Plates 9 and 10 (Incident HK 5/18), 19 (Incident HK 5/48), 21 (Incident HK 5/55), 23 (Incident HK 5/80), 25 (Incident HK 5/152) and 30 to 31 (Incident MW 5/12). Two failures (HK 5/59 and HK 5/156) are described in more detail in Sections 4.6 and 4.11 respectively.

Seven failures in rock cut slopes were reported, forming 2% of all incidents. None of these failures were major. An example of a rock cut slope failure is shown in Plate 37 (Incident MW 5/67).

3.3.3 Retaining Walls

Twenty-five retaining wall failures were reported, forming 7% of all incidents. Three of these failures were major. Examples of retaining wall failures are shown in Plates 3 to 8 (Incident HK 5/8), 22 (Incident HK 5/70) and 24 (Incident 5/98). Three failures (HK 5/8, HK 5/41 and HK 5/70) are described in more detail in Sections 4.2, 4.5 and 4.7 respectively.

3.3.4 Natural Slopes

Seventeen failures in natural slopes were reported, forming 5% of all incidents. None of these failures were major.

3.3.5 Rock and Boulder Falls

Nineteen rock and boulder falls were reported, forming 5.5% of all incidents. None of these failures were major. An example of a rock and boulder fall is shown in Plate 26 (Incident HK 6/2).

3.3.6 Other Failures

There are incidents which cannot be classified according to the above categories, such as washout, erosion and subsidence failures. Forty-two incidents of this nature were reported, forming 12% of all incidents. None of these incidents were major. In addition, two failures of unspecified type were reported. Examples of miscellaneous failures are shown in Plates 40 (Incident ME 5/22) and 41 (Incident ME 5/31).

3.4 Landslide Size Distribution

Table 7 shows the distribution of landslide size resulting from the 8 May rainstorm. The approximate landslide size was recorded for 308 out of the total of 350 reported landslides. Of the landslides for which the size was recorded, 63% involved less than 5 cu m of material. Equivalent figures for the larger landslides are as follows: 5-10 cu m, 13.0 %; 10-20 cu m, 9.0 %; 20-50 cu m, 9.5%; >50 cu m (major landslides), 5.5%.

3.5 Rainfall-Landslide Relationships

A simple relationship between rainfall and landslides is demonstrated in Figures 7 and 8, which show the approximate locations of landslides resulting from the 8 May rainstorm superimposed on the 24-hour rainfall and the maximum hourly rainfall respectively. The geographical distribution of high rainfall and landslide locations can be seen to be closely linked.

More detailed and comprehensive discussions on rainfall-landslide relationships and failure mechanisms can be found in Brand et al (1984) and Premchitt (1991), where extensive data from the past twenty years have been analysed.

3.6 Landslides Related to Lack of Maintenance

Evidence for possible lack of maintenance in the form of blocked or broken drains, vegetation growth, broken water mains etc. was recorded on the GEO Incident Reports where it was considered to have been a contributory factor to a landslide. The observations of the investigating engineers in this respect are also recorded in Appendix A. As the search for evidence of lack of maintenance is not a primary objective of emergency landslide inspections, this type of information may not be accurate or complete and the

statistics here should be viewed with caution. Subject to the above proviso, statistics on failures involving possible lack of maintenance are presented in Tables 8 to 10.

Table 8 shows the number of reported incidents in which lack of maintenance might have been a factor, classified according to slope types. There were a total of 42 such incidents, five of which were major. These incidents therefore comprise 12% of the total of 350 reported incidents and 29% of the total of seventeen reported major incidents. Ten (24%) of these incidents occurred on fill slopes (three major), thirteen (31%) on soil cut slopes (one major), five (12%) on soil/rock cut slopes (one major), and nine (21%) comprised miscellaneous incidents such as washouts and subsidence. The remaining incidents involved retaining walls (three, 7%) and natural slopes (two, 5%).

Table 9 shows the areas affected by incidents which may have resulted from lack of maintenance. Two incidents affected squatter areas, seven affected building lots, thirteen affected roads, twelve affected pedestrian pavements, four affected other types of access, two affected Country Parks and fourteen affected open areas. Note that some incidents affected more than one type of area.

Table 10 shows the consequences of failures which may have resulted from lack of maintenance. These failures caused partial or complete blockage or closure of eleven sections of road and four sections of pedestrian pavement, the partial closure of one building and the permanent evacuation of one hut.

4. NOTABLE INCIDENTS

4.1 Introduction

Eleven failures are discussed in more detail in this section. The incidents have been selected on the basis of size, consequence and technical interest.

4.2 Incident HK 5/8, Baguio Villas, Pokfulam

(Major debris flow resulting from the failure of an old retaining wall and the subsequent liquefaction of loose fill. Two deaths. Plates 3 to 8.)

This landslide involved the collapse of a masonry retaining wall and part of a fill platform behind the wall. Debris from the collapse travelled from Pokfulam Temporary Housing Area (THA), at an elevation of about 149 mPD, down a natural gully to the south of Block 26 Upper Baguio Villas, to Victoria Road at about 58 mPD. The debris flow crossed Victoria Road and continued down to Blocks 41 to 44 of Lower Baguio Villas, coming to rest on the podium and car parking floors at elevations between 34 mPD and 40 mPD. A child within an apartment and a government engineer on a duty inspection on the podium of Block 44 were fatally injured in the landslide, with a further five people being injured.

The failure began at about 1400 hrs on 8 May when the central part of the masonry retaining wall collapsed during heavy rain which started at about 1340 hrs. This initial failure released about 700 cu m of fill material into the

natural gully over a period of about one hour. Very intense rainfall began at about 1510 hrs, during which a further 1000 cu m of fill collapsed and entered the natural gully. The landslide debris was fluidised by the large volume of surface water entering the natural gully. The fluid debris was carried down the gully, scouring out more material along its path. The debris accumulated on Victoria Road, then overflowed onto the podium of Blocks 41 to 44, causing the two fatalities. Another 500 cu m of material were lost from the fill platform in intermittent landslides that continued until the evening.

The total volume of material involved in these failures was about 3500 cu m. A detailed report on the Baguio landslide may be found in GEO (1992).

4.3 Incident HK 5/18, Siu Sai Wan Private Sector Participation Scheme Site
(Continuing major failure of a soil cut slope, affecting a construction site. Plates 9 and 10.)

This site, which has a history of instability and at which a previous major failure occurred in April 1992, was being investigated by the GEO when the rainstorm of 8 May triggered further movement. The failures at this site are relatively deep-seated and slow moving, with the failed mass remaining on the slope. The GEO investigation suggests that the failures may be associated with deep weathering of hydrothermally altered volcanic rock (tuff), coupled with a complex groundwater regime. The failure of 8 May caused damage to chunam, concrete berm slabs and U-channels.

4.4 Incident HK 5/38, Kennedy Road, below Wah Yan College, Happy Valley
(Major failure of a fill slope. One death. Plates 13 to 16.)

At about 0810 on 8 May, fill at the crest of a 24 m high soil cut slope failed during heavy rain. The debris, about 500 cu m, struck a passing car and killed the motorist inside. Three lanes of Kennedy Road were blocked while Wan Chai Clinic and parts of Wah Yan College were closed.

4.5 Incident HK 5/41, Cape Collinson Road, Chai Wan
(Major failure of a fill slope, resulting in the collapse of a retaining wall and one lane of the road.)

This failure occurred during the evening of 8 May, when a 10 m long section of Cape Collinson Road collapsed. The failure occurred in fill materials and undermined a mass concrete retaining wall, which also collapsed. Failure was probably due to a combination of groundwater and surface water erosion. Blocked surface water drains and cross-road drains might have contributed to the erosion.

4.6 Incident HK 5/59, Tanner Hill Police Quarters, North Point
(Major failure of a soil/rock cut slope resulting in the partial evacuation of one building.)

At 1500 hrs on 8 May a major failure took place on a steep soil and rock cut slope behind Block H of Tanner Hill Police Quarters. About 100 cu m of soil and boulders fell onto open ground behind the building. Some windows on the 3rd and 5th floors were damaged by flying rocks. The failure was probably

caused by infiltration and erosion due to surface runoff collected from Pak Fuk Road and discharged directly to the crest of the slope.

- 4.7 Incident HK 5/70, below 5 Coombe Road, Magazine Gap
(Major failure of a retaining wall resulting in subsidence and the closure of two lanes of the road. Plate 22.)

On 8 May, a 20 m length of retaining wall on the downslope side of Coombe Road failed and moved about 1 m downslope. Both lanes of the road were closed. Localised surface failures were noted on the slope below the retaining wall, together with a broken water pipe which may have contributed to the failure.

- 4.8 Incident HK 5/104, Eastern Treatment Works, Tai Hang Road
(Major failure of a soil cut slope.)

This failure began at about 0930 on 8 May when some sand and gravel was washed down the slope to the Treatment Works Staff Quarters. The main slide occurred at about 1430 when around 120 cu m of sand, gravel and boulders were washed down onto the Staff Quarters back yard, piling up to a height of about 240 mm above floor level. A surface drainage channel on the slope was observed to be blocked with sand and gravel and may have contributed to the failure by diverting water onto the slope.

- 4.9 Incident HK 5/139, Island Road Government Primary School, Aberdeen
(Failure of a soil cut slope and rockfill affecting a building lot)

During heavy rain at about 0800 on 8 May, surface water on Peel Rise overflowed onto a rockfill slope below the road and moved about 30 cu m of rockfill material. During further heavy rain at about 1500 a cut slope in weathered volcanic rock at the same site failed. This slope had been the subject of Landslip Preventive Measures investigations and remedial works had been completed. This second failure also involved about 30 cu m of material and resulted in the temporary evacuation of a classroom block. Part of the school playground was also closed.

- 4.10 Incident HK 5/140, Chung Hom Kok Beach
(Major failure of a fill and natural slope, resulting in the closure of a pedestrian pavement.)

This failure occurred on 8 May when about 150 cu m fill material at the top of a 45 m high natural slope failed. The material moved down the natural slope, causing some additional washing-out, and spread over a playground and beach. The failure originated below a broken surface drain. A blocked catchpit on this drain may have contributed to the amount of water diverted onto the slope.

4.11 Incident HK 5/156, Smithfield Road, Kennedy Town
(Major failure of a soil/rock cut slope.)

This failure occurred on 8 May when over 100 cu m of weathered rock collapsed from a soil and rock cut slope, forming a scarp face about 7 m high. A tension crack was noted 2 to 3 m behind the failure scarp. A drainage channel to one side of the slip was seen to be blocked by dense vegetation and may have overflowed during the heavy rain of 8 May, contributing to the failure. The failure took place below a squatter area, with the nearest squatter located about 7 m from the failure scarp.

4.12 Incident MW 5/3, Tai Po Road, Kowloon

(Major failure of a fill slope resulting in the closure of one road lane. Plate 29.)

This landslide occurred on 8 May on a fill slope (formerly 11NW-B/F48) situated between Tai Po Road and Ching Cheung Road. The fill slope is about 40 m high and stands at an angle of about 30 degrees. The lower batter of the fill slope is retained by a reinforced earth wall. The slope was reconstructed during the Tai Po Road Improvement Works about two years ago. The landslide extended from the toe to the crest of the slope, with a length of about 40 m and a width of about 3 m. A surface drainage channel was destroyed and fell to the base of the failure scar.

5. CONCLUSIONS

The rainfall on 8 May 1992 was very heavy and intense. The Royal Observatory recorded a maximum hourly rainfall of 109.9 mm between 0600 and 0700, the highest ever recorded at this location. The estimated return period for rainfall of this magnitude is about 70 years. The rainfall was concentrated on the Kowloon Peninsula and the northern and western parts of Hong Kong Island. There is a good correlation between the distribution of rainfall and the distribution of landslides.

In total 350 landslides reported to the GEO could be attributed to the 8 May rainstorm. Seventeen of these landslides were major (>50 cu m), whereas 194 were very small (<5 cu m). The Landslip Warning was issued at 0620 on the morning of 8 May. Of the 72 landslides for which the time of occurrence is known to within one hour, three occurred before the Landslip Warning was issued and 69 occurred afterwards.

The landslides caused three deaths and five injuries. Ninety-two squatter huts were permanently evacuated and seventeen were temporarily evacuated. Twenty-two buildings were partly or completely evacuated. Sixty-four sections of road and 29 sections of miscellaneous access were partly or completely blocked or closed.

6. REFERENCES

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Table 1 - Maximum Rainfall Intensities at the Royal Observatory During the 8 May Rainstorm and Estimated Return Periods

Duration	Rainfall (mm)	Ending Time	* Estimated Return Period (Years)
1 hour	109.9	07:00	70
2 hours	162.3	08:00	32
5 hours	195.5	10:00	7.5
12 hours	322.6	17:00	16
24 hours	324.1	24:00	6

Notes : (1) Return periods derived from the Gumbel equation, after Peterson and Kwong (1981).
(2) Rainfall maxima refer to fixed hourly intervals as measured at the Royal Observatory.

Table 2 - Rainfall-Landslide Data for the 8 May Rainstorm Compared with Recent Major Rainstorms

Date of Event	Maximum Rainfall(mm)								Landslide Consequences				
	Royal Observatory					GEO Raingauges			Number of Landslides			Persons Killed or Injured	Number of Huts Evacuated Permanently
	24-hr	5-hr	1-hr	Antecedent		24-hr	5-hr	1-hr	GEO	News-paper	FSD		
4-day				15-day									
8/5/92	324	196	110	64.5	71	385	244	110	350	40	9	9	92
20-21/5/89	388	149	37	28	42	566	224	51	340	100	3	5	199
29-30/7/87	183	71	38	147	343	314	169	73	111	36	3	3	49
29/5/82	394	153	44	1	11	430	237	111	551	498	15	48	1153

Notes : (1) Newspapers searched are the South China Morning Post, the Hongkong Standard, Sing Tao Daily and Wen Wei Po.

Abbreviations :
 GEO - Geotechnical Engineering Office
 FSD - Fire Services Department

Table 3 - Number of Incidents Reported to Various Offices/Departments after the 8 May Rainstorm

Office/Department	Total Number	Types of Incident		
		Landslide	Flooding	Others
Agriculture & Fisheries Department	23	17	6	0
Architectural Services Department	47	37	10	0
Drainage Services Department	136	0	136	0
Fire Services Department	9	7	2	0
Geotechnical Engineering Office, CED	360	350	4	6
Highways Department	111	111*	0	0
Housing Department	26	22	4	0
Water Supplies Department	82	65	1	16
Legend : * Landslides reported to HyD were referred to GEO and are included in the GEO incidents				

Table 4 - Number of Incidents Reported to GEO Resulting from the 8 May Rainstorm Classified by Area Affected

Affected Area	Hong Kong	Kowloon	New Territories	All Districts
Squatters	25	4	16	45
Building lots	36(6)	3	26	65(6)
Roads	64(6)	3(1)	15(2)	82(9)
Pedestrian pavements	46(2)	1	23(1)	70(3)
Footpaths, back lanes, private access	22(1)	1	22(1)	45(2)
Construction sites	2(1)	-	1	3(1)
Country Parks	9	-	1	10
Open areas	31(3)	8	34	73(3)
Catchwaters/conduits	9	-	-	9
<p>Legend :</p> <p>() Number of major failures</p>				
<p>Notes : (1) One incident may affect more than one type of area (2) Incidents of no geotechnical concern are not included</p>				

Table 5 - Consequence Related to Type of Failure for the 8 May Rainstorm

Type of failure		Evacuation of huts		Closure or partial closure of building	Blockage or closure			Deaths (injuries)
		Permanent	Temporary		Roads	Pedestrian pavements	Footpaths, back lanes, private access	
Fill slope		12	-	9	8	1	-	1
Cut slope	Soil	35	7	5	30	9	8	-
	Soil/rock	7	-	1	16	4	1	-
	Rock	-	-	-	2	2	-	-
Natural slope		11	2	-	-	-	-	-
Retaining wall		13	2	6	3	2	-	2(6)
Rock/boulder fall		7	1	-	4	-	-	-
Others (Washout, subsidence etc.)		7	5	1	1	1	1	-
TOTAL		92	17	22	64	19	10	3(6)

Table 6 - Number of Incidents Reported to GEO Resulting from the 8 May Rainstorm, Classified by Type of Failure

Type of Failure		Number	Percentage
Fill Slope		24 (6)	7
Cut Slope	Soil	151 (5)	43
	Soil/rock	63 (3)	18
	Rock	7	2
Retaining wall		25 (3)	7
Natural slope		17	5
Rock/boulder fall		19	5.5
Others (Washout, subsidence etc.)		42	12
Failure type not specified		2	0.5
TOTAL		350 (17)	100
<p>Legend :</p> <p>() Number of major failures</p>			
<p>Note : there were 10 incidents of no geotechnical concern (tree fall, flooding etc), which are not included in the table above.</p>			

Table 7 - Landslide Size Distribution

Size of Failure (cu m)	Failures of known size expressed as a total number and as a percentage			
	Hong Kong	Kowloon	New Territories	All Districts
<5	127 (63.5%)	14 (78.0%)	53 (59.0%)	194 (63.0%)
5-10	27 (13.5%)	1 (5.5%)	12 (13.5%)	40 (13.0%)
10-20	15 (7.5%)	1 (5.5%)	11 (12.0%)	27 (9.0%)
20-50	18 (9.0%)	1 (5.5%)	11 (12.0%)	30 (9.5%)
>50 (major)	13 (6.5%)	1 (5.5%)	3 (3.5%)	17 (5.5%)
TOTAL	200	18	90	308

Note : Total reported failures - 350

Table 8 - Number of Landslides in which Lack of Maintenance may have been a Factor, Classified by Area Affected.

Affected Area	Hong Kong	Kowloon	New Territories	All Districts
Squatters	1	-	1	2
Building lots	5(1)	1	1	7(1)
Roads	10(1)	1(1)	2	13(2)
Pedestrian pavements	8(1)	-	4	12
Footpaths, back lanes, private access	2	1	1	4
Construction sites	-	-	-	-
Country Parks	1	-	1	2
Open areas	4(3)	2	8	14(3)
Catchwaters/conduits	-	-	-	-
<p>Legend :</p> <p>() Number of major failures</p>				
<p>Notes : (1) One incident may affect more than one type of area (2) Incidents of no geotechnical concern are not included</p>				

Table 9 - Number of Landslides in which Lack of Maintenance may have been a Factor, Classified by Type of Failure

Type of Failure		Number	Percentage
Fill Slope		10(3)	24
Cut Slope	Soil	13(1)	31
	Soil/Rock	5(1)	12
	Rock	-	-
Retaining Wall		3	7
Natural Slope		2	5
Rock/Boulder Fall		-	-
Others (Washout, subsidence etc.)		9	21
TOTAL		42(5)	100
<p>Legend :</p> <p>() Number of major failures</p>			
<p>Note :</p> <p>Incidents of no geotechnical concern (tree fall, flooding etc), were ignored.</p>			

Table 10 - Consequences of Failures in which Lack of Maintenance may have been a Factor

Type of failure	Evacuation of huts		Closure or partial closure of building	Blockage or closure			Deaths (injuries)
	Permanent	Temporary		Roads	Pedestrian pavements	Footpaths, back lanes, private access	
Fill slope	-	-	-	3(2)	1(1)	-	-
Cut slope	Soil	-	-	3	2	-	-
	Soil/rock	-	-	2	1	-	-
	Rock	-	-	-	-	-	-
Natural slope	-	-	1	-	-	-	-
Retaining wall	-	-	-	1	-	-	-
Rock/boulder fall	-	-	-	-	-	-	-
Others (Washout, subsidence etc.)	1	-	-	2	-	-	-
TOTAL	1	-	1	11(2)	4(1)	-	-

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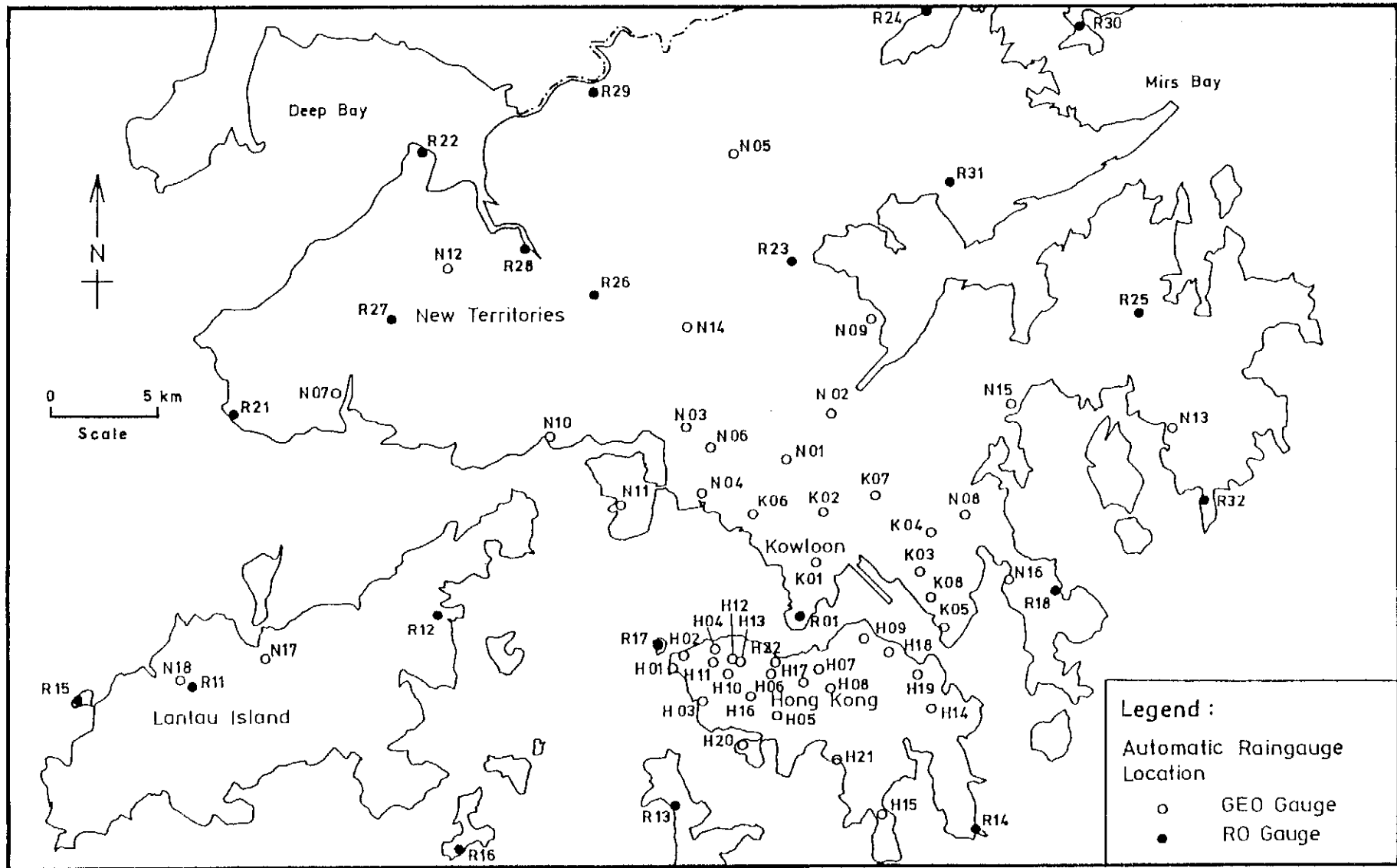


Figure 1 - Location of GEO and RO Automatic Raingauges

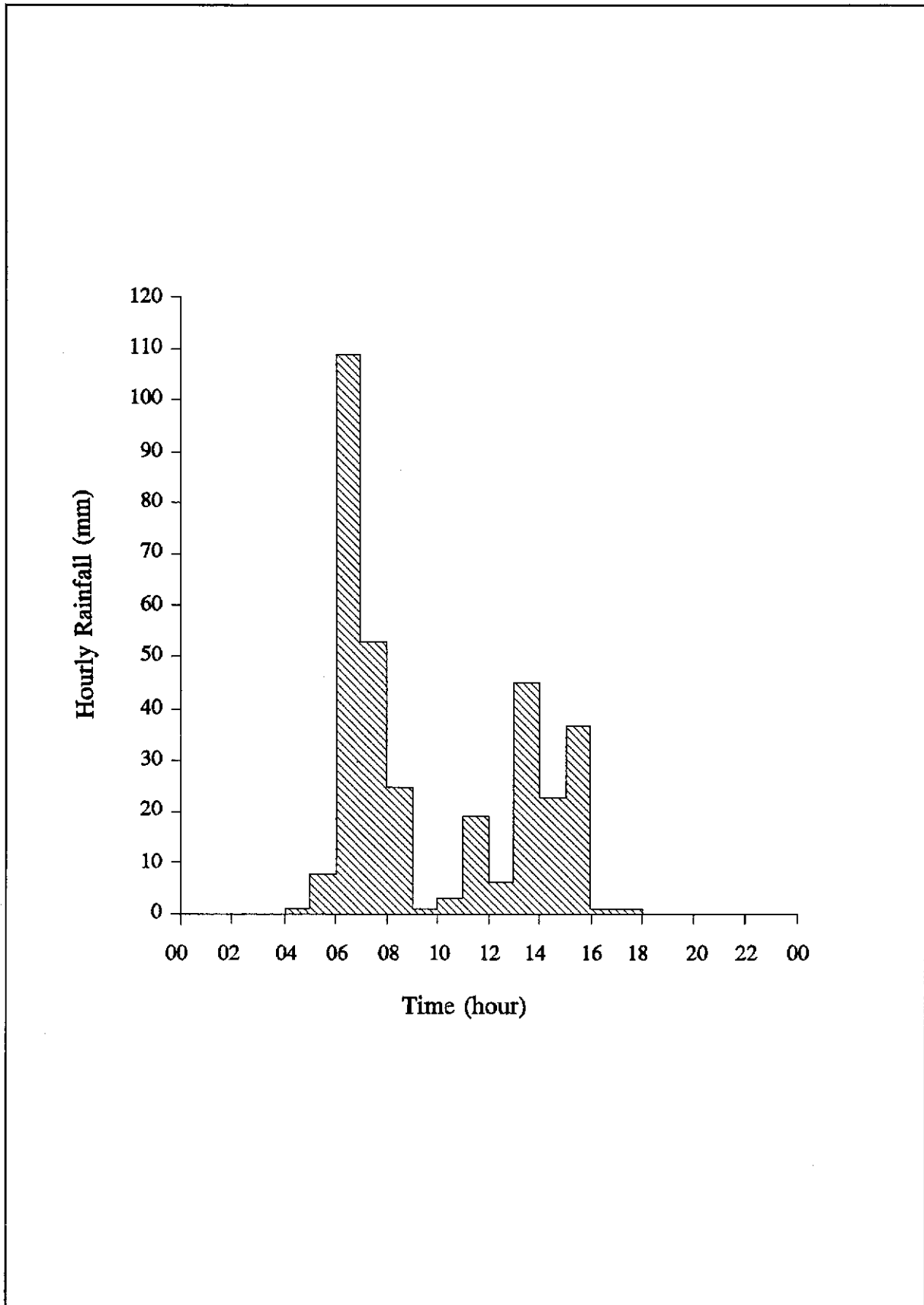


Figure 2 - Histogram of Hourly Rainfall at the Royal Observatory on 8 May 1992

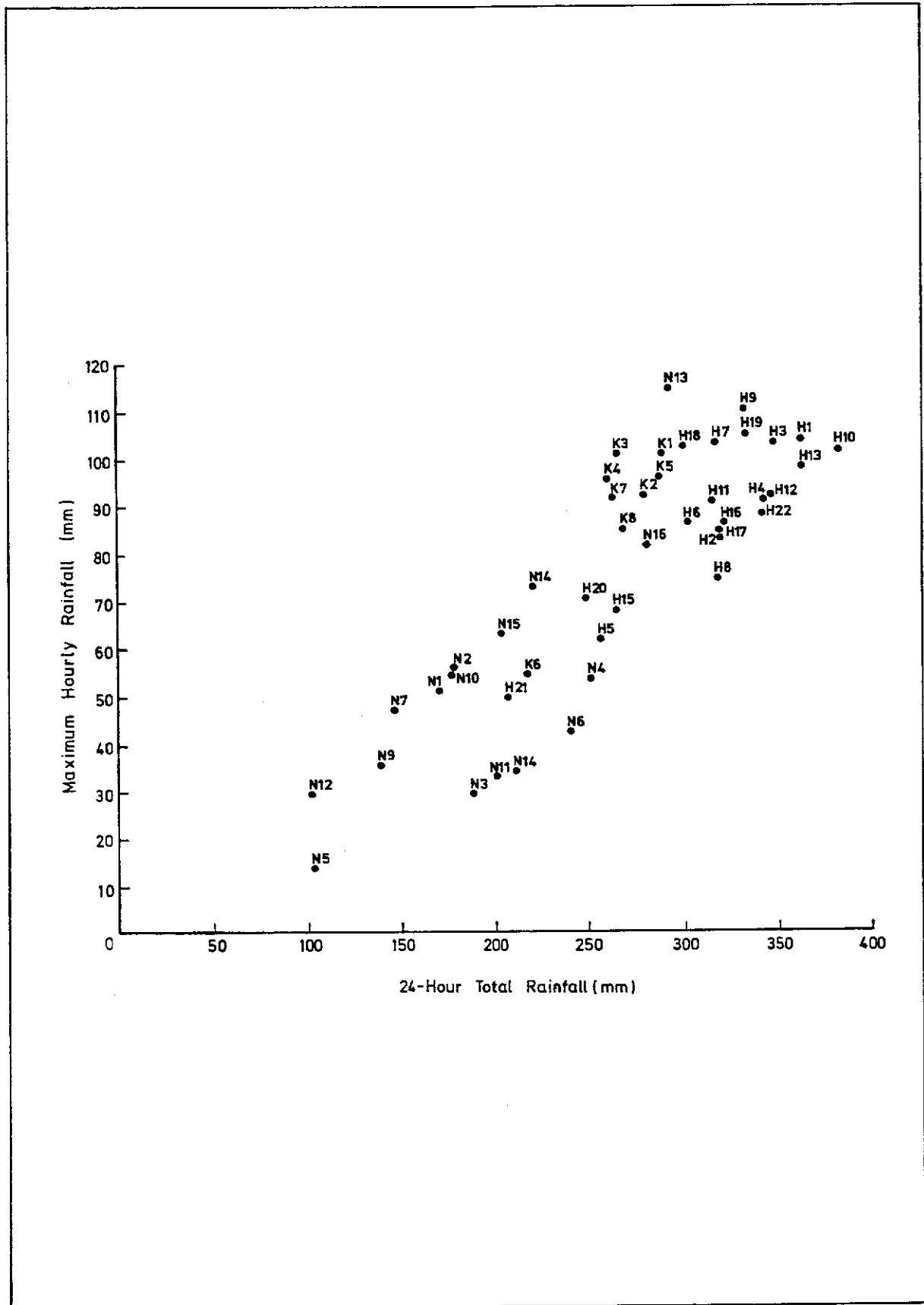
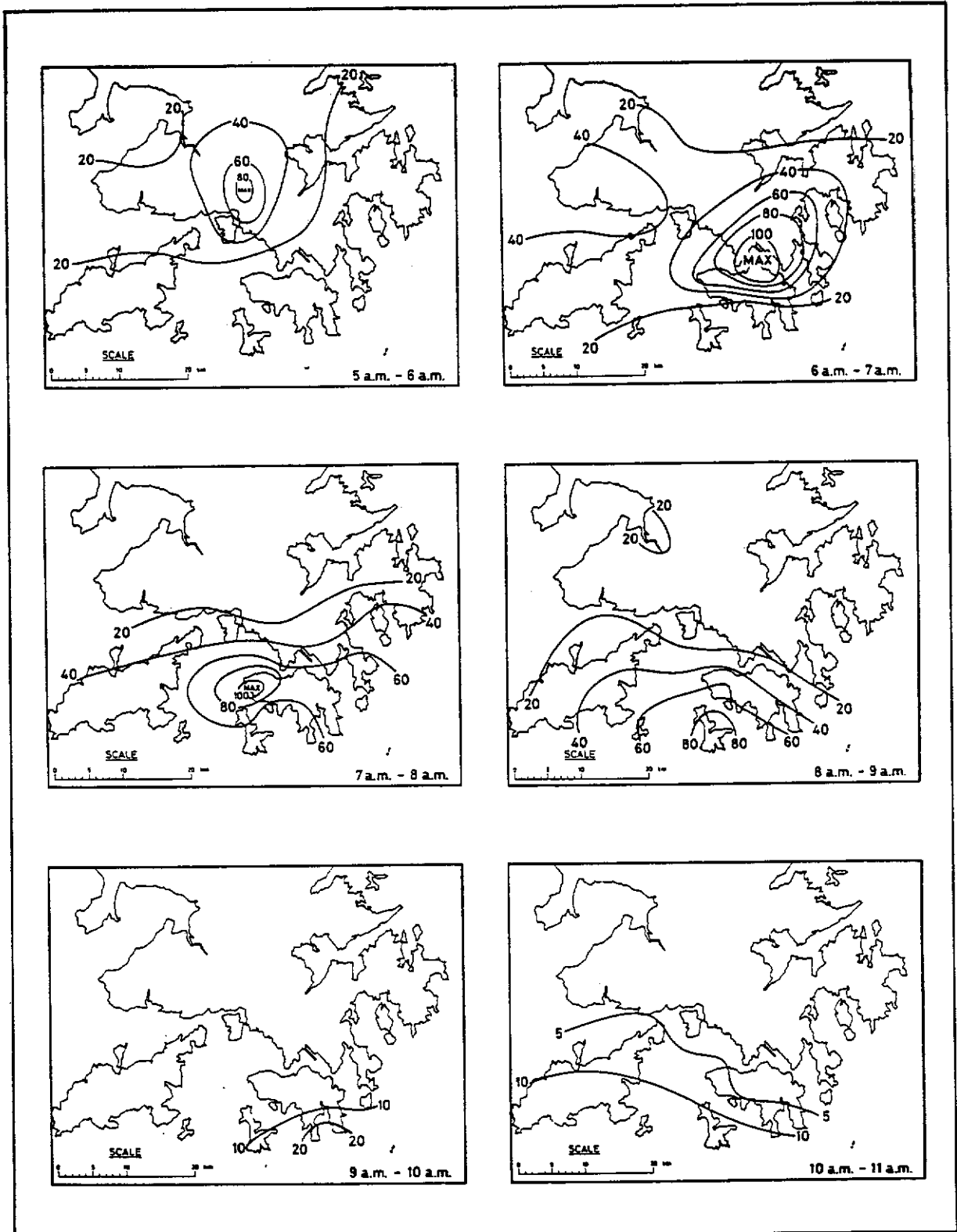


Figure 4 - Correlation Between Maximum Hourly Rainfall and 24-hour Rainfall on 8 May 1992



Note : From Royal Observatory (1992)

Figure 5 - Hourly Rainfall Distribution from 0500 to 1100, 8 May 1992

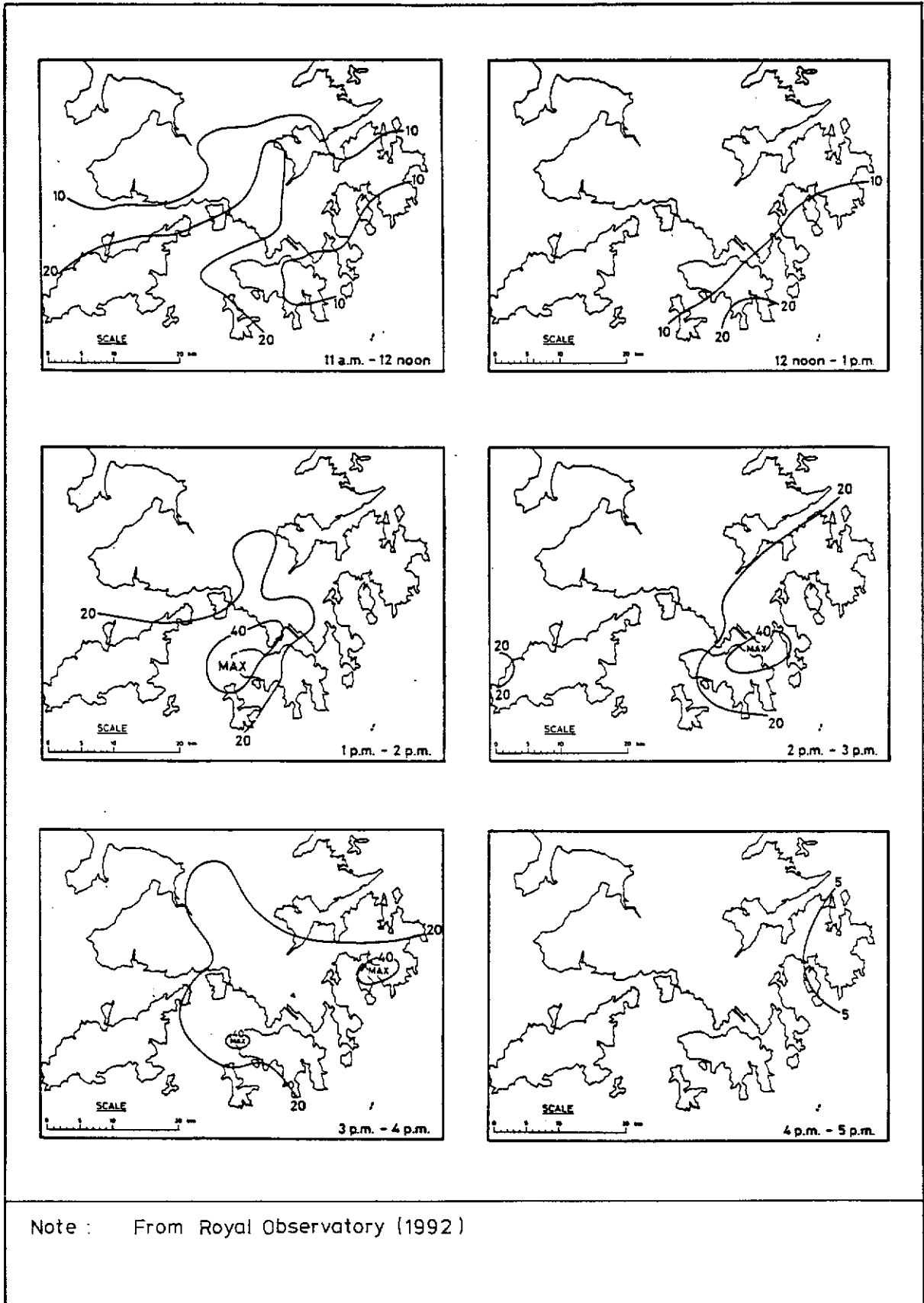


Figure 6 - Hourly Rainfall Distribution from 1100 to 1700, 8 May 1992

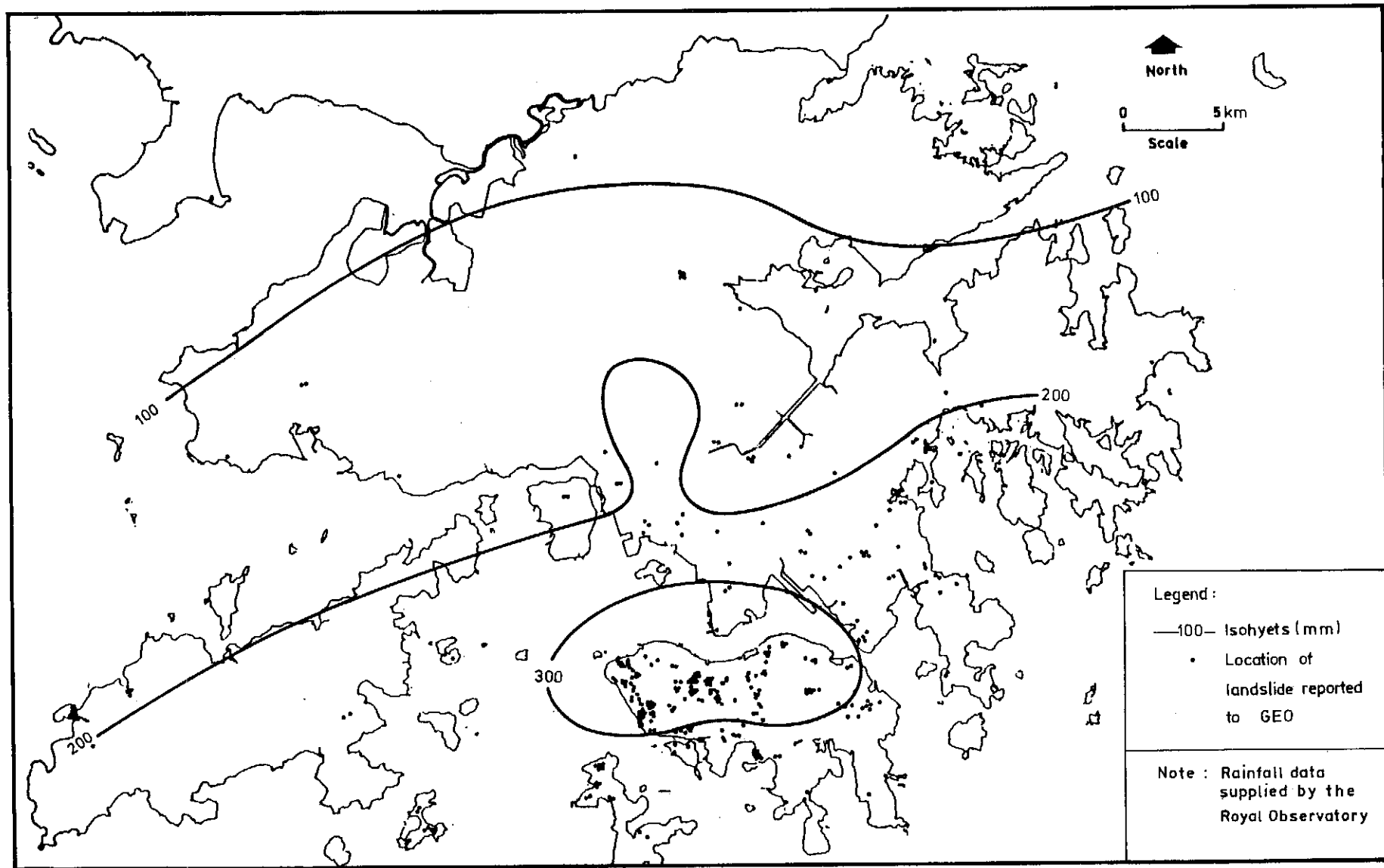


Figure 7 - Correlation Between 24-hour Rainfall Distribution and Landslide Locations, 8 May 1992

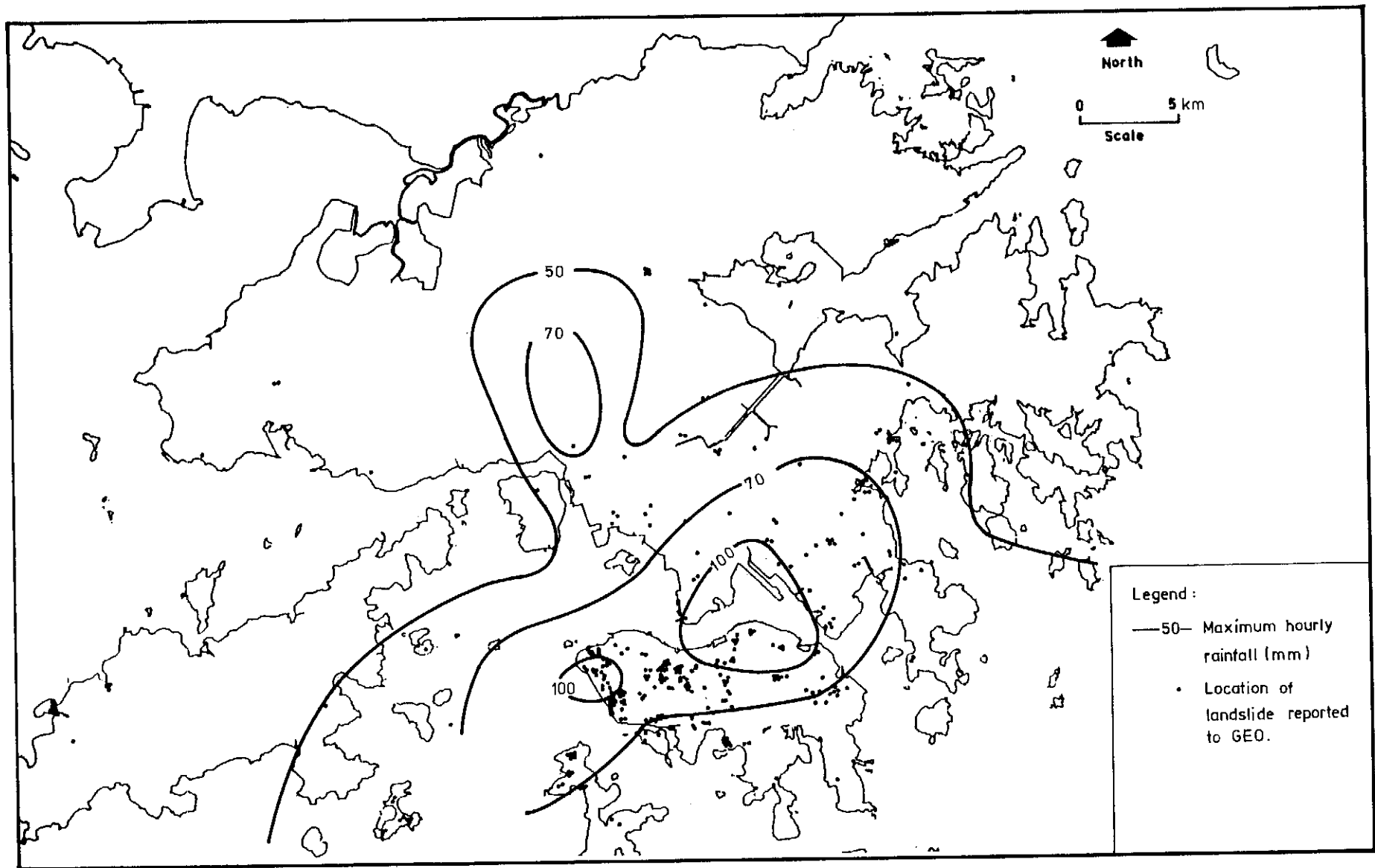


Figure 8 - Correlation Between Maximum Hourly Rainfall Distribution and Landslide Locations, 8 May 1992

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Negative No. I9221614 Taken on : 11-5-92
Description : Failure of a soil cut slope affecting a private access.

Plate 1 - 12 Severn Road, Mount Gough (Incident HK 5/1)

Negative No. I9223629
Taken on : 12-5-92

Description :
Failure of a soil cut slope affecting a building lot.

Plate 2 -
78-80 MacDonnell Road, The Peak
(Incident HK 5/3)





Negative No. I9221009 Taken on : 9-5-92



Negative No. I9221005 Taken on : 10-5-92

Description : Major failure of a retaining wall and a fill platform (about 3500 cu m).
Two dead, five injured. Edge of fill platform illustrated.

Plates 3 & 4 - Baguio Villas, Victoria Road, Pokfulam (Incident HK 5/8)



Negative No. 14625 Taken on : 9-5-92



Negative No. 14626 Taken on : 9-5-92

Description : Major failure of a retaining wall and a fill platform (about 3500 cu m).
Two dead, five injured. Blocks 26 and 44 illustrated.

Plates 5 & 6 - Baguio Villas, Victoria Road, Pokfulam (Incident HK 5/8)

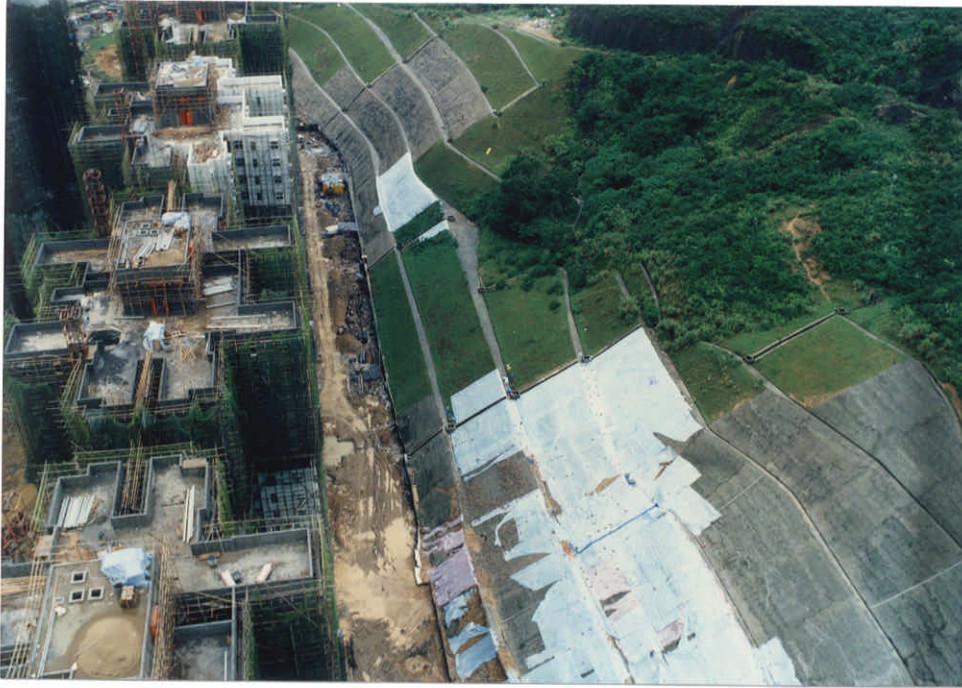
Negative No. 14621
Taken on : 9-5-92

Description :
Major failure of a retaining wall and
a fill platform (about 3500 cu m.)
Two dead, six injured. Block 26
illustrated.



Negative No. I92210I03 Taken on : 9-5-92
Description : Major failure of a retaining wall and a fill platform (about 3500 cu m).
Two dead, five injured. Block 44 illustrated.

Plate 7 & 8 - Baguio Villas, Victoria Road, Pokfulam (Incident HK 5/8)



Negative No. 14591 Taken on : 9-5-92



Negative No. 14594 Taken on : 9-5-92

Description : Major failure of a soil/rock cut slope (about 100 cu m).

Plates 9 & 10 - Siu Sai Wan PPS Site, Chai Wan (Incident HK 5/18)

Negative No. I9226113
Taken on : 18-5-92

Description :
Failure of a soil cut slope resulting
in the blockage of a pedestrian
pavement and the partial blockage of
one road lane.

Plate 11 -
92 Pokfulam Road, Kennedy Town
(Incident HK 5/26)



Negative No. I9220816 Taken on : 8-5-92
Description : Failure of a soil cut slope resulting in the blockage of one road lane.

Plate 12 - Junction of Stubbs Road and Peak Road, The Peak (Incident HK 5/33)



Negative No. SP9205925 Taken on : 8-5-92



Negative No. SP9206021 Taken on : 8-5-92

Description : Major failure of a fill slope (about 500 cu m). One dead, three lanes of Kennedy Road blocked.

Plates 13 & 14 - Kennedy Road, below Wah Yan College, Happy Valley
(Incident HK 5/38)



Negative No. SP9207301 Taken on : 12-5-92



Negative No. SP9207517 Taken on : 14-5-92

Description : Major failure of a fill slope (about 500 cu m). One dead, three lanes of Kennedy Road blocked.

Plates 15 & 16 - Kennedy Road, below Wah Yan College, Happy Valley
(Incident HK 5/38)



Negative No. I9220814 Taken on : 9-5-92
Description : Failure of a soil cut slope resulting in the blockage of a private access.

Plate 17 - 9 Middle Gap Road, Wan Chai Gap (Incident HK 5/39)

Negative No. I9220813
Taken on : 9-5-92

Description :
Failure of a soil cut slope resulting
in the blockage of a private access.

Plate 18 -
9 Middle Gap Road, Wan Chai Gap
(Incident HK 5/39)



Negative No. I9221520
Taken on : 11-5-92

Description :
Failure of a soil/rock cut slope
resulting in the blockage of two road
lanes.

Plate 19 -
15-38 Mount Kellett Road, Mount
Kellett (Incident HK 5/48)



Negative No. 14602 Taken on : 9-5-92
Description : Major failure of a fill slope (about 100 cu m).

Plate 20 - Below 156 Tai Hang Road, So Kon Po (Incident HK 5/50)



Negative No. I9224802 Taken on : 9-5-92
Description : Failure of a soil/rock cut slope resulting in the blockage of two road lanes.

Plate 21 - Tai Hang Road, Jardine's Lookout (Incident HK 5/55)



Negative No. A9206704 Taken on : 9-5-92
Description : Major failure of a retaining wall resulting in ground subsidence and the closure of two road lanes.

Plate 22 - Below 5 Coombe Road, Magazine Gap (Incident HK 5/70)



Negative No. I9223616 Taken on : 11-5-92

Description : Failure of a soil/rock cut slope resulting in the permanent evacuation of two huts.

Plate 23 - Behind Mobil Marine Petrol Station, Ap Lei Chau (Incident HK 5/80)

Negative No. I9222210

Taken on : 12-5-92

Description :
Failure of a retaining wall resulting
in the permanent evacuation of nine
huts.

Plate 24 -
Hut No. 1977, Pokfulam Village
(Incident HK 5/98)





Negative No. I9224212A Taken on : 14-5-92
Description : Failure of a soil/rock cut slope affecting a pedestrian pavement.

Plate 25 - Ocean Park Road, Wong Chuk Hang (Incident HK 5/152)



Negative No. I9235707 Taken on : 16-6-92
Description : Rock/boulder fall affecting a footpath.

Plate 26 - Aberdeen SW Service Reservoir (Incident HK 6/2)

Negative No. ME9218001
Taken on : 8-5-92

Description :
Major failure of a fill slope (about
65 cu m) resulting in road closure.

Plate 27 -
Jat's Incline above Fung Shing Street
(Incident K 5/6)



Negative No. ME9217909 Taken on : 11-5-92
Description : Failure of a soil cut slope.

Plate 28 - Buddhist College, 3 Ko Chiu Road (Incident K 5/8)



Negative No. MW9210505 Taken on : 9-5-92
Description : Major failure of a fill slope (over 50 cu m) resulting in the closure of one road lane.

Plate 29 - Tai Po Road Near Carlton Hotel, Kowloon (Incident MW 5/3)



Negative No. MW9209912



Negative No. MW9209913

Description : Failure of a soil/rock cut slope resulting in the blockage of a pedestrian pavement and one road lane.

Plates 30 & 31 - Tai O Road, near MS 12¾ , Lantau Island (Incident MW 5/12)



Negative No. MW9210806 Taken on : 11-5-92
Description : Failure of a soil cut slope affecting a pedestrian pavement.

Plate 32 - Kwai Fuk Road, Kwai Chung (Incident MW 5/16)

Negative No. MW9211123
Taken on : 11-5-92

Description :
Failure of a soil cut slope affecting a road.

Plate 33 -
Piper's Hill, Shatin
(Incident MW 5/17)





Negative No. MW9211524 Taken on : 12-5-92
Description : Failure of a soil cut slope resulting in the partial blockage of a road.

Plate 34 - Sham Wat Road, Lantau Island (Incident MW 5/45)



Negative No. MW9211519 Taken on : 12-5-92
Description : Failure of a soil cut slope resulting in the partial blockage of a road.

Plate 35 - Sham Wat Road, Lantau Island (Incident MW 5/46)



Negative No. MW9211521 Taken on : 12-5-92
Description : Failure of a soil cut slope resulting in the partial blockage of a road.

Plate 36 - Sham Wat Road, Lantau Island (Incident MW 5/47)

Negative No. MW9213602

Description :
Failure of a rock cut slope affecting
a private access.

Plate 37 -
Tai Lam Correctional Institution
(Incident MW 5/67)





Negative No. ME9218819 Taken on : 8-5-92
Description : Failure of a soil cut slope resulting in the blockage of one road lane.

Plate 38 - Anderson Road, Sau Mau Ping (Incident ME 5/1)

Negative No. ME9225410
Taken on : 19-6-92

Description :
Failure of a soil cut slope affecting a
building lot.

Plate 39 -
42 Tui Hoi Village, Sai Kung
(Incident ME 5/16)





Negative No. ME9218018 Taken on : 11-5-92
Description : Subsidence failure affecting a pedestrian pavement.

Plate 40 - Wong Chuk Yeung, Fo Tan, Shatin (Incident ME 5/22)

Negative No. ME921804
Taken on : 11-5-92

Description :
Washout failure affecting a building
lot.

Plate 41 -
Huts 37A and 38A, Tai Lam Lin,
Shatin (Incident ME 5/31)



Negative No. ME9219421 Taken on : 13-5-92
Description : Failure of a soil cut slope affecting a private access.

Plate 42 - 20 Ngau Pai Sha Village, Shatin (Incident ME 5/32)

APPENDIX A

LIST OF INCIDENTS RESULTING FROM THE RAINSTORM
OF 8 MAY 1992 AND REPORTED TO THE GEO

APPENDIX A

LIST OF TABLES

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Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 1 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/1	12 Severn Rd., Mount Gough 11SW-D/CS02	11/5	ASD	8/5 (12:00)	Soil cut slope	Minor (42)	Private access	Rank 6865	
HK 5/2	64 MacDonnell Rd., the Peak	9/5	Resident	8/5 (07:00)	Natural slope	Minor (2)	Building lot, pedestrian pavement, private access	One flat temporarily evacuated Blockage of drains	
HK 5/3	78–80 MacDonnell Rd., the Peak 11SW-B/C171	9/5	BOO	8/5 (08:00)	Soil cut slope	Minor (8)	Building lot	Rank 2116, Stage 1, D—Notice pending Checked 8/1072/81	
HK 5/4	Below 1 Repulse Bay Rd., Wong Nai Chung Gap 11SE-C/C18	8/5	GEO	8/5 (07:00)	Rock/boulder fall	Minor (2)	Road	1/2 lane of road blocked Rank 7151	
HK 5/5	Above 9 May Rd., the Peak 11SW-D/CR328	8/5	Public	8/5 (am)	Soil cut slope	Minor (3.5)	Building lot	Rank 987, Stage 1, NFA	
HK 5/6	10 Po Shan Rd., Mid-Levels 11SW-A/C177 and 11SW-A/R675	8/5	BOO	8/5 (07:30)	Retaining wall	Minor (40)	Carparks, road	2 lanes of road blocked Rank 6724 (A/C177) Rank 5809 (A/R675) Rupture of water mains/drains	
HK 5/7	12–20 Cloud View Rd., North Point	8/5	HyD/HK	8/5 (am)	Washout	N/A	Road	2 lanes of road blocked, Cloud View Rd. closed Blockage of drains	
HK 5/8	Bagulo Villas, Victoria Rd., Pokfulam	8/5	—	8/5 (15:20)	Retaining wall	Major (3500)	Road, building lot	2 dead, 5 injured, 2 lanes of road blocked, 7 blocks evacuated	
HK 5/9	Yee King Rd., North Point 11SE-A/C212	8/5	HyD/HK	8/5 (am)	Rock/boulder fall	Minor (1)	Pedestrian pavement	Rank 5643, Stage 1, NFA	

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 2 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/10	8 Severn Rd., Mount Gough 11SW-D/C503	11/5	ASD	8/5 (07:45)	Soil cut slope	Minor (16)	Car parks		Rank 6281, Stage 2 pending
HK 5/11	Wan Tsui Rd., Chai Wan 11SE-D/C41	8/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (25)	Pedestrian pavement		Rank 8060 Blockage of drains
HK 5/12	San Ha St., Chai Wan 11SE-D/C17	8/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (10)	Pedestrian pavement		Rank 1321, Stage 2 pending
HK 5/13	Tai Hang Rd., Jardine's Lookout 11SE-C/C56	8/5	HyD/MWC	8/5 (am)	Soil cut slope	Minor (2)	Road	1 lane of road blocked	Rank 5704, Stage 1, NFA
HK 5/14	Below 6A and 6B Shouson Hill Rd., Shouson Hill 11SW-D/CR155	8/5	--	8/5	Soil cut slope, fallen trees	Minor (4)	Road	1 lane of road blocked	Rank 3413, Advisory Letter pending
HK 5/15	1 Chatham Path, the Peak 11SW-D/CR319	8/5	Resident	8/5 (15:30)	Retaining wall	Major (50)	Building lot, footpath	Part of 1 Chatham Path temporarily evacuated, Chatham Path closed	Rank 879, Stage 2, NFA
HK 5/16	Below Ap Lei Chau West Village	8/5	BOO	8/5 (am)	Natural slope	Minor (0.5)	Squatters	1 hut temporarily evacuated	
HK 5/17	Fung Wah Estate, Chai Wan	8/5	HD	8/5 (am)	Soil cut slope	Unknown	Building lot	Flooding	Blockage of catchwater by landslide caused flooding
HK 5/18	Siu Sai Wan P8PS site, Chai Wan 11SE-D/C183	8/5	GEO	7/5-8/5	Soil/rock cut slope	Major (100)	Construction site		Unranked, GEO checked
HK 5/19	Tai Tam Rd., Tai Tam Gap 11SE-D/C133	8/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (10)	Road	1 lane of road blocked	Rank 2733, Stage 1, NFA

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 3 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/20	Shing Tai Rd., HengFa Chuen, Chai Wan	8/5	HyD/HK	8/5	Flooding/washout	Minor (0.5)	Road	Road flooded	Blockage of drains
HK 5/21	Yee King Rd., North Point 11SE-A/C214	8/5	HyD/HK	–	Soil/rock cut slope	Minor (10)	Pedestrian pavement		Rank 6295
HK 5/22	Kennedy Rd., Wan Chai 11SW-B/C201	8/5	HyD/HK	8/5 (am)	Soil/rock cut slope	Minor (5–10)	Road	1 lane of road blocked	Rank 4004, Stage 1, NFA
HK 5/23	Borrett Rd., Central 11SW-B/C195	10/5	HyD/HK	8/5	Soil cut slope	–	Road	1 lane of road blocked	Rank 4875, Stage 1, NFA
HK 5/24	1–3 Magazine Gap Rd., the Peak 11SW-B/C99	10/5	HyD/HK	–	Soil/rock cut slope	–	Road	1 lane of road blocked	Rank 6291
HK 5/25	82 Pokfulam Rd., Kennedy Town 11SW-A/C139	8/5	GEO	8/5 (16:00)	Soil cut slope, fallen trees	Minor (3)	Road	1 lane of road blocked	Rank 5540, Stage 1 pending
HK 5/26	92 Pokfulam Rd., Kennedy Town 11SW-A/C323	8/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (5–10)	Pedestrian pavement, road	Part of 1 lane of road blocked, pedestrian pavement blocked	Rank 4121, Stage 2 pending
HK 5/27	Below St. Clare's Girls School, Pokfulam 11SW-C/C205	8/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (3–5)	Pedestrian pavement		Rank 3996, Stage 1, NFA
HK 5/28	49 Mount Davis Rd., Pokfulam 11SW-C/C211	8/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (5–10)	Road	1 lane of road blocked	Rank 6981, Stage 1, NFA
HK 5/29	64 Victoria Rd., Kennedy Town 11SW-A/C254	8/5	HyD/HK	8/5 (am)	Soil/rock cut slope	Minor (2–3)	Pedestrian pavement		Rank 3636, Private slope, Binnie Phase IId study
HK 5/30	405 Victoria Rd., Pokfulam 11SW-A/C289	8/5	HyD/HK	8/5 (am)	Soil/rock cut slope	Minor (1)	Pedestrian pavement		Rank 6517

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 4 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/31	Sai Ning St. USD Depot, Kennedy Town	8/5	HyD/HK	8/5 (pm)	Soil cut slope	Minor (2-3)	Building lot		
HK 5/32	21 Magazine Gap Rd., Magazine Gap 11SW-D/C298	8/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (10-20)	Private access	Rank 5330, Stage 1 pending	
HK 5/33	J/O Stubbs Rd. and Peak Rd., the Peak 11SW-D/C601	8/5	HyD/HK	8/5 (pm)	Soil cut slope	Minor (5-10)	Road	1 lane of road blocked Rank 3160, Stage 1, NFA	
HK 5/34	14 Bowen Rd., Central 11SW-B/C213	8/5	HyD/HK	8/5 (pm)	Soil cut slope, fallen trees	Minor (2-3)	Road	Road blocked Rank 5006, Stage 1, NFA Rupture of water mains/drains	
HK 5/35	Pokfulam Gardens, Pokfulam Rd. 11SW-C/CR124	8/5	GEO	8/5 (16:00)	Rock cut slope, fallen trees	Minor (5-10)	Pedestrian pavement, road	Pedestrian pavement blockgd, 1 lane of road blocked Rank 1770, Stage 2 pending	
HK 5/36	Behind 128 Pokfulam Rd., Pokfulam	8/5	Resident	8/5 (07:00)	Soil cut slope	Minor (20-25)	Building lot		
HK 5/37	Shek Pai Wan Rd./Pokfulam Rd., Wah Fu 1SW-C/C128	8/5	Police	8/5 (07:00-08:00)	Soil/rock cut slope, fallen trees	Minor (40)	Road	Shek Pai Wan Rd. blocked Rank 7134 Tree root action	
HK 5/38	Kennedy Rd., below Wah Yan College, Happy Valley	8/5	GEO	8/5 (08:10)	Fill slope	Major (500)	Building lot, pedestrian pavement, road	1 dead, 3 lanes of Kennedy Rd. blocked, Wan Chal Clinic and part of Wah Yan College closed	
HK 5/39	9 Middle Gap Rd., Wan Chai Gap 11SW-D/CR550	8/5	Public	8/5 (am)	Soil cut slope	Minor (45)	Private access	Access road blocked Rank 7096	
HK 5/40	8 Big Wave Bay Rd., Tai Long Wan 15NE-B/C75	10/5	HyD/HK	Unknown	Soil cut slope	Minor (12)	Pedestrian pavement, road	1 lane of road blocked, pedestrian pavement closed Rank 5070, Stage 1, NFA	

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 5 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cum)			
HK 5/41	Cape Collinson Rd., Chal Wan	9/5	HyD/HK	8/5 (pm)	Fill Slope	Major (120)	Road	1 lane of road collapsed	Blockage of drains
HK 5/42	Behind Kennedy Town Public Swimming Pool, Smithfield Rd.	8/5	ASD	8/5 (06:40)	Retaining wall	Minor (40–50)	Building lot (swimming pool)	Part of swimming pool closed	
HK 5/43	Marly Villa, Ocean Park Rd., Aberdeen	8/5	Public	8/5 (am)	Soil/rock cut slope	Minor (10–15)	Private access		
HK 5/44	40 Magazine Gap Rd., Magazine Gap 11SW–D/C526	9/5	HyD/HK	8/5 (24:00)	Soil cut slope, fallen trees	Major (50)	Road	1 lane of road blocked	Rank 3046, Stage 1, NFA
HK 5/45	Below A1, Cloudridge Apartment, 30 Plunkett's Rd., the Peak	–	–	8/5	Soil cut slope	Minor (10)	Open space	Private garden closed	
HK 5/46	88B Pokfulam Rd., Kennedy Town 11SW–A/C322	8/5	Resident	8/5 (am)	Soil cut slope	Minor (20)	Building lot, carparks		Rank 1963, Stage 1, Advisory Letter issued, no work done
HK 5/47	27 Mount Kellett Rd., Mount Kellett 11SW–C/C262	9/5	HyD/HK	8/5 (am)	Soil/rock cut slope, fallen trees	Minor (3–5)	Private access		Rank 5511
HK 5/48	15–38 Mount Kellett Rd., Mount Kellett 11SW–C/C258	8/5	HyD/HK	8/5 (am)	Soil/rock cut slope	Minor (20–25)	Road	2 lanes of road blocked	Rank 4604, Stage 1, NFA
HK 5/49	23 Barker Rd., the Peak 11SW–D/C453	10/5	HyD/HK	8/5	Soil cut slope	Major (50)	Road	1 lane of road blocked	Rank 5512, Stage 1
HK 5/50	Below 156 Tai Hang Rd., So Kon Po	8/5	Management	8/5 (10:00)	Fill slope	Major (100)	Building lot	Foundation column exposed	

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 6 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cum)			
HK 5/51	Behind 1 May Rd., the Peak	8/5	Resident	8/5 (12:00–15:30)	Rock/boulder fall, flooding	Minor (10)	Footpath	Chatham Path flooded	Culvert blocked by boulders
HK 5/52	Behind 1 May Rd., the Peak 11SW–D/CR318	8/5	Resident	8/5 (am)	Soil cut slope	Minor (10–20)	Footpath	Damage to parapet of Chatham Path	Rank 4327, Stage 1 pending checked 6/2120/87
HK 5/53	J/O Aberdeen Reservoir Rd. and Yue Kwong Rd., Aberdeen 11SW–D/C60	9/5	HyD/HK	8/5 (12:15)	Soil cut slope, fallen trees	Minor (3–5)	Pedestrian pavement, road	1 lane of road blocked, pedestrian pavement closed	Rank 5487, Stage 1 pending Blockage of drains
HK 5/54	60–62 Kai Yuen St., North Point 11SE–A/C98	9/5	HyD/HK	8/5	Soil/rock cut slope	Minor (40)	Back lane		Rank 462, Stage 1, works to start in 7/92
HK 5/55	Tai Hang Rd., Jardine's Lookout 11SE–C/C60	9/5	HyD/MWC	8/5 (16:00)	Soil/rock cut slope	Minor (4)	Road	2 lanes of road blocked	Rank 2942, Stage 1, NFA
HK 5/56	Kennedy Town Public Swimming Pool Smithfield Rd. 11SW–A/C370	8/5	ASD	8/5 (15:00)	Rock cut slope,	Minor (1)	Open space		Unranked
HK 5/57	Victoria Rd., Pokfulam, between Baguio Villas and Victoria Kennels	10/5	–	–	Fill slope	Minor (8)	Pedestrian pavement, road	1 lane of road blocked	
HK 5/58	Bowen Drive, Central 11SW–B/FR58	10/5	HyD/HK	Unknown	Fill slope	Minor (3)	Road	1 lane of road blocked	Unranked
HK 5/59	Opposite Tanner Hill Police Quarters, North Point 11SE–A/C229	8/5	HD	8/5 (15:00)	Soil/rock cut slope	Major (100)	Building lot (police quarters)	Part of 1 building temporarily evacuated	Rank 89, Stage 1, works under design for 92/93

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 7 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/60	Above 8 and 12 Severn Rd., Mount Gough	11/5	ASD	Unknown	Unknown	Unknown	Road	1/2 lane of road blocked	
HK 5/61	48 Kennedy Rd., Central 11SW-B/C220	9/5	BOO	Unknown	Washout	Minor (1)	Building lot		Rank 318, D – Notice pending Checked DH75/77/HK
HK 5/62	Access road, Chai Wan Au, Shau Kai Wan	11/5	DLO/HKE	8/5	Soil/rock cut slope	Minor (1-3)	Country Park		3 minor failures
HK 5/63	88 Pokfulam Rd., Kennedy Town	8/5	Public	8/5 (am)	Soil cut slope	Minor (3-5)	Building lot, pedestrian pavement		
HK 5/64	Opposite 152 Tai Hang Rd., So Kon Po 11SE-C/C61	10/5	HyD/HK	Unknown	Soil cut slope	Minor (5)	Road	1 lane of road blocked	Rank 3740, Stage 1, NFA
HK 5/65	Same as 5/194								
HK 5/66	Mount Nicholson Rd., Happy Valley 11SW-D/C335	9/5	Police	8/5 (15:30)	Rock/boulder fall	Minor (5)	Road	1 lane of road blocked	Rank 4932, Stage 1, NFA
HK 5/67	3 Middle Gap Rd., Wan Chai Gap 11SW-D/C545	9/5	HyD/HK	8/5 (14:00)	Rock/boulder fall	Minor (40)	Building lot, road	1 lane of road blocked	Rank 4387, Stage 1, NFA
HK 5/68	Opposite 2 Middle Gap Rd., Wan Chai Gap 11SW-D/CR543	9/5	HyD/HK	9/5 (am)	Soil cut slope	Minor (3)	Road	1 lane of road blocked	Rank 5631, Stage 1 pending
HK 5/69	Opposite 4 Middle Gap Rd., Wan Chai Gap	9/5	HyD/HK	9/5 (am)	Soil cut slope	Minor (2)	Road	1 lane of road blocked	
HK 5/70	Below 5 Coombe Rd., Magazine Gap 11SW-D/F107	9/5	HyD/HK	8/5 (23:35)	Retaining wall	Major (55)	Road	2 lanes of road closed	Unranked

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 8 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
		HK 5/71	56 Mount Davis Rd., Pokfulam 11SW-C/CR203	9/5	Management	8/5-9/5			
HK 5/72	62 and 62A Kong Sin Wan Tsuen, Telegraph Bay	10/5	HyD/HK	Unknown	Retaining wall	Minor (4)	Squatters	2 huts temporarily evacuated	
HK 5/73	Opposite 60 Victoria Rd., Kennedy Town 11SW-A/C254	10/5	HyD/HK	8/5 (am)	Soil/rock cut slope	Minor (1)	Pedestrian pavement	1 lane of road closed Rank 3636, Private slope, Binnie Phase II d study	
HK 5/74	51 Barker Rd., the Peak	10/5	HyD/HK	Unknown	Fill slope	Minor (5)	Road	Checked 2052/67	
HK 5/75	Lower Albert Rd., Central 11SW-B/C15	9/5	HyD/HK	9/5 (am)	Soil cut slope	Minor (10)	Pedestrian pavement, road	1/2 lane of road blocked Rank 7025 Blockage of drains	
HK 5/76	94 Pokfulam Rd., Pokfulam	10/5	Police	Unknown	Fallen trees	N/A	Pedestrian pavement	No geotechnical concern Checked 6/2039/28	
HK 5/77	Above North Point Methodist Church, Tin Hau Temple Rd. 11SE-A/N14 & CR259	10/5	HyD/HK	Unknown	Natural slope	Minor (2)	Open space	Rank 473 Checked GCI3/1/216	
HK 5/78	Opposite 16 Severn Rd., Mount Gough	12/5	HyD/HK	8/5 (am)	Soil/rock cut slope	Minor (1-3)	Open space		
HK 5/79	Old Peak Rd., the Peak	11/5	HyD/HK	8/5 (am)	Natural slope, fallen trees	Minor (2-3)	Pedestrian pavement		
HK 5/80	Behind Mobil Marine Patrol Station, Ap Lei Chau	11/5	BOO/DB	8/5 (07:00 & 15:30)	Soil/rock cut slope	Minor (3)	Squatters	2 huts permanently evacuated	

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 9 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cum)			
HK 5/81	10 Stanley Market Road, Stanley	9/5	BOO	8/5	Flooding	N/A	Building lot	No geotechnical concern	
HK 5/82	20 Leighton Rd., Causeway Bay 11SW-B/C267	8/5	-	8/5 (am)	Soil cut slope, fallen trees	Minor (10)	Building lot	Rank 759, deleted from LPM programme due to development	
HK 5/83	Behind Sir Ellis Kadoorie School Eastern Hospital Rd., Tai Hang	11/5	ASD	8/5 (am)	Washout	Minor (0.5)	Private access		
HK 5/84	Opposite 20 Broadwood Rd., Happy Valley	11/5	HyD/MWC	8/5	Fill slope	Minor (10)	Building lot, open space		
HK 5/85	Hong Kong Park 11SW-B/C153	11/5	ASD	9/5	Soil cut slope	Minor (<1)	Pedestrian pavement	Broken chunam Rank 7745	
HK 5/86	41 Island Rd., Deepwater Bay	12/5	Resident	8/5 (13:30)	Natural slope	Minor (0.8)	Open space		
HK 5/87	Below 43-45 Repulse Bay Rd., Deepwater Bay. 15NE-A/C20	12/5	HyD/HK	Unknown	"Landslide"	Minor (-)	Road	Rank 2426, Stage 1, NFA	
HK 5/88	Opposite 11 Guildford Rd., Mount Gough 11SW-D/C287	12/5	Resident	8/5 (am)	Soil cut slope	Minor (1-2)	Pedestrian pavement	Rank 7733	
HK 5/89	61 Mount Kellett Rd., Mount Kellett 11SW-C/CR246	10/5	HyD/HK	Unknown	Soil cut slope	Minor (1)	Open space	Rank 2899	
HK 5/90	4 Chancery Lane, Central 11SW-B/R176	12/5	BOO/DB	8/5 (am)	Retaining wall	Nil	Building lot	No failure—water seepage only. Rupture of water mains/drains. Checked 6/2047/86	
HK 5/91	Above catchwater near Chai Wan Chinese Permanent Cemetary	12/5	Public	Unknown	Soil/rock cut slope	Unknown	Catchwater	Debris deposited on catchwater	

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 10 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cum)			
HK 5/92	Tsat Tsz Mui Rd., North Point	12/5	HyD/HK	Unknown	Soil/rock cut slope	Minor (40)	Open space		
HK 5/93	12 Sandy Bay Rd., Pokfulam 11SW-C/C188	12/5	Management	8/5	Soil/rock cut slope	Minor (1-2)	Private access	Rank 8411	
HK 5/94	Guildford Rd. Park, Mount Gough	12/5	ASD	11/5	Soil cut slope	Minor (4)	Open space	U-channel blocked	
HK 5/95	43 Repulse Bay Rd., Deepwater Bay 15NE-A/C20	12/5	HyD/HK	8/5	Soil/rock cut slope	Minor (5)	Road	1 lane of road blocked Rank 2426, Stage 1, NFA	
HK 5/96	Behind Block 11, Chi Fu Fa Yuen, Pokfulam	12/5	BOO	8/5	Soil cut slope	Minor (1)	Open space		
HK 5/97	83-84 Pokfulam Village	9/5	DO/HKS	8/5 (am)	Soil cut slope	Minor (40-45)	Squatters	6 huts permanently evacuated	
HK 5/98	Hut no.1977, Pokfulam Village	9/5	DO/HKS	8/5 (am)	Retaining wall	Minor (30-40)	Squatters	9 huts permanently evacuated	
HK 5/99	Hut no.266, Pokfulam Village	9/5	DO/HKS	8/5 (am)	Rock/boulder fall	Minor (4)	Squatters	1 hut permanently evacuated	
HK 5/100	183 Pokfulam Village	9/5	DO/HKS	8/5 (am)	Natural slope, flooding	Minor (4)	Squatters	9 huts permanently evacuated Blockage of stream course	
HK 5/101	601 Baguio Village Squatter Area, Pokfulam	9/5	DO/HKS	8/5 (am)	Rock/boulder fall	Minor (2)	Squatters	1 hut permanently evacuated	
HK 5/102	Confucius Hall Middle School, Caroline Hill Rd., Happy Valley	11/5	Management	8/5 (pm)	Soil cut slope, fallen trees	Minor (5)	Building lot		

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 11 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/103	8 Happy View Terrace, Happy Valley 11SW-B/FR86	12/5	Public	9/5	Washout	Minor (3)	Building lot	Unranked Checked GCI3/4/1042/84	
HK 5/104	Eastern Treatment Works, Tai Hang Rd., Jardine's Lookout 11SW-D/CR380	11/5	WSD	8/5 (09:30 & 14:30)	Soil cut slope	Major (120)	Open space, building lot	Rank 6086, Stage 1 pending Blockage of drains	
HK 5/105	Opposite 5 Shouson Hill Rd., Shouson Hill 11SW-D/C154	10/5	HyD/HK	Unknown	Soil/rock cut slope	Minor (10)	Pedestrian pavement, road	1 lane of road blocked, pedestrian pavement closed Rank 7449 Checked 3020/88	
HK 5/106	Hut no. 1462, Nga Chol Hang Village, Cloudview Rd., North Point	13/5	DO/E	8/5	Soil cut slope	Minor (0.5)	Squatters		
HK 5/107	Cape Collinson Rd., Chai Wan 11SE-D/C88	8/5	HyD/HK	8/5	Rock/boulder fall	Minor (1)	Road	1 lane of road blocked Rank 7176	
HK 5/108	Cape Collinson Rd., Chai Wan 11SE-D/C89	11/5	HyD/HK	Unknown	Soil cut slope	Minor (0.5)	Road	Private car damaged Rank 4261, Stage 1, NFA	
HK 5/109	Cape Collinson Rd., Chai Wan 11SE-D/CR121	11/5	HyD/HK	Unknown	Soil cut slope	Minor (2)	Road	1/2 lane of road blocked Rank 5003, Stage 1, NFA	
HK 5/110	Above Sai Wan Estate, Kennedy Town 11SW-A/CR8	13/5	HyD/HK	8/5 (am)	Soil/rock cut slope	Minor (1-2)	Building lot	Rank 2, LPM works completed	
HK 5/111	Opposite Hong Kong CCCU, Pokfulam Rd. Cemetery 11SW-A/C332	11/5	HyD/HK	8/5	Soil cut slope	Minor (4-5)	Pedestrian pavement	Rank 2227, Stage 1, NFA	
HK 5/112	138 Pokfulam Rd., Pokfulam 11SW-C/C95	11/5	HyD/HK	8/5	Soil cut slope	Minor (3)	Pedestrian pavement	Rank 4037, Stage 1, NFA	

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 12 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/113	Aberdeen Reservoir Rd., opposite lamp post 21724 11SW-D/C63	11/5	HyD/HK	8/5	Soil cut slope	Minor (20)	Pedestrian pavement		Rank 6303
HK 5/114	Victoria Kennels, Victoria Rd., Pokfulam 11SW-C/C135	11/5	HyD/HK	8/5	Soil/rock cut slope	Minor (10-15)	Pedestrian pavement		Rank 6837
HK 5/115	Victoria Rd., Pokfulam, opposite lamp post 10879 11SW-C/C135	11/5	HyD/HK	8/5	Rock cut slope	Minor (7-10)	Pedestrian pavement		Rank 6837
HK 5/116	Victoria Rd., Pokfulam, opposite lamp post 10878 11SW-C/C136	11/5	HyD/HK	8/5	Soil/rock cut slope	Minor (40)	Pedestrian pavement, road	1/2 lane of road blocked	Rank 5448, Stage 1 pending
HK 5/117	Victoria Rd., Pokfulam, opposite lamp post 10876 11SW-C/CR137	11/5	HyD/HK	8/5	Rock cut slope	Minor (3-5)	Pedestrian pavement		Rank 6438
HK 5/118	J/O Wah Yan College access road and Queen's Rd. East, Wan Chai 11SW-B/C26	12/5	ASD	8/5 (am)	Rock/boulder fall	Minor (5)	Private access		Rank 8206
HK 5/119	95 Ap Lei Chau Main St., Ap Lei Chau 15NW-B/C28	9/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (10-20)	Building lot		Rank 1289, LPM works completed
HK 5/120	28 to 30 Po Shan Rd., Mid-Levels	9/5	BOD	9/5	Soil cut slope	Minor (10)	Road	2 lanes of road blocked	
HK 5/121	Kong Sin Wan Tsuen, Telegraph Bay	13/5	HD	Unknown	Fill slope	Minor (5-8)	Squatters	6 huts permanently evacuated	

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 13 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/122	Shui Choi Tin Village, Wah Fu	13/5	HD	Unknown	Soil cut slope	Minor (0.5)	Squatters	6 huts permanently evacuated	
HK 5/123	Shui Choi Tin Village, Wah Fu	13/5	HD	Unknown	Soil cut slope	Minor (2)	Squatters	4 huts permanently evacuated	
HK 5/124	Shui Choi Tin Village, Wah Fu	13/5	HD	Unknown	Soil cut slope	Minor (1-2)	Squatters	1 hut permanently evacuated	
HK 5/125	Pokfulam Village	13/5	HD	Unknown	Flooding	-	Squatters	1 hut permanently evacuated	No geotechnical concern
HK 5/126	Pokfulam Village	13/5	HD	Unknown	Retaining wall	Minor (3)	Squatters	1 hut permanently evacuated	
HK 5/127	Pokfulam Village	13/5	HD	Unknown	Flooding	N/A	Squatters	1 hut permanently evacuated	No geotechnical concern
HK 5/128	Pokfulam Village	13/5	HD	Unknown	Fill slope	Minor (1)	Squatters	1 hut permanently evacuated	
HK 5/129	Pokfulam Village	13/5	HD	Unknown	Rock/boulder fall	Minor (1)	Squatters	1 hut permanently evacuated	
HK 5/130	Pokfulam Village	13/5	HD	Unknown	Retaining wall	Minor (3)	Squatters	1 hut permanently evacuated	
HK 5/131	Aberdeen Marina Club, Aberdeen 15NE-B/F14	11/5	Public	8/5 (am)	Fill slope	Minor (1-2)	Building lot		Unranked
HK 5/132	Queen's Rd., Central 11SW-B/R710	11/5	ASD	10/5	Retaining wall	Minor (10)	Open space		Rank 6065
HK 5/133	Aviary, Hong Kong Park	11/5	ASD	11/5	Fill slope	Minor (5)	Building lot		

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 14 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/134	Evelyn Tower, Cloudview Rd., North Point 11SE-A/F17	14/5	HyD/HK	Unknown	Fill slope, flooding	–	Pedestrian pavement	Unranked Blockage of drains	
HK 5/135	95–97 Tin Hau Temple Rd., North Point 11SE-A/C222	12/5	Resident	Unknown	Soil out slope	Minor (1)	Private access	Rank 6529	
HK 5/136	30 Plunkett's Rd., the Peak 11SW-C/C224	11/5	ASD	8/5 (am)	Soil/rock out slope	Minor (6)	Construction site	Rank 5805, Stage 1 pending	
HK 5/137	Access road to Grantham Hospital, Wong Chuk Hang 11SW-D/C96	14/5	Public	8/5	Soil out slope	Minor (4)	Pedestrian pavement	Rank 4506, Stage 2 pending	
HK 5/138	Peel Rise, Aberdeen	14/5	HyD/HK	8/5	Soil cut slope	Minor (2–3)	Road	Road blocked	
HK 5/139	Island Rd. Govt. Primary School, Tsung Man St., Aberdeen 11SW-D/CR52	13/5	ASD	8/5 (08:00 & 15:00)	Soil cut slope and rockfill slope	Minor (30 & 25–30)	Building lot	Part of playground closed, part of building evacuated	Rank 755, LPM works complete
HK 5/140	Chung Hom Kok Beach 15NE-C/FR19	11/5	USD	8/5	Fill slope	Major (150)	Pedestrian pavement, beach, playground	Pedestrian pavement closed	Unranked Rupture and blockage of surface drains
HK 5/141	6 Stanley Village Rd., Stanley 15NE-A/F41	12/5	Public	Unknown	Fill slope	N/A	Road	1 lane of road closed	Bulging of stone pitching. LPM works in progress, GEO checked GC12/E2/1991(2)
HK 5/142	60 Repulse Bay Rd., Deepwater Bay 15NE-A/CR79	15/5	Manage- ment	8/5 (12:00)	Washout	Minor (0.3)	Nil		Rank 4359, Stage 1, NFA Checked 3074/81
HK 5/143	Hong Kong Cemetery, Wong Nai Chung Rd.	14/5	ASD	8/5–9/5	Soil cut slope, washout	Minor (4)	Open space		18 minor incidents reported within the cemetery

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 15 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/144	Mount Parker Rd., Quarry Bay	12/5	Public	8/5	Natural slope	Minor (1)	Country Park		
HK 5/148	Behind Callax petrol station, South Bay Rd., Repulse Bay	15/5	Management	8/5	Natural slope	Minor (2.5)	Building lot		
HK 5/149	San Wai Village, Wong Chuk Hang	18/5	DO/S	8/5 (am)	Soil/rock cut slope, washout	Minor (0)	Squatters		No geotechnical concern
HK 5/150	177 Pokfulam Village	15/5	HD	8/5	Subsidence	–	Squatters	1 hut permanently evacuated	Blockage of drains
HK 5/151	36,5–7 Pokfulam Village	15/5	HD	8/5	Soil cut slope	Minor (2)	Squatters	5 huts permanently evacuated	
HK 5/152	Ocean Park Rd., Wong Chuk Hang	14/5	GEO	8/5 (am)	Soil/rock cut slope	Minor (2–5)	Pedestrian pavement		
HK 5/153	38 Magazine Gap Rd., Magazine Gap	13/5	Management	12/5	Fill slope	Minor (8)	Building lot		Rupture of surface drain
HK 5/154	Bowen Drive, Central 11SW–B/CR210	15/5	HyD/HK	10–15/5	Soil cut slope, fallen trees	Minor (4)	Road		Rank 767t
HK 5/155	Pokfulam Village	14/5	Resident	13/5	Flooding, washout	Minor (1)	Squatters		
HK 5/156	26–30 Smithfield Rd., Kennedy Town	14/5	Public	8/5	Soil/rock cut slope	Major (100)	Open space		Blockage of drains
HK 5/157	73 Repulse Bay Rd., Deepwater Bay 15NE–A/C38	18/5	HyD/HK	8/5 (am)	Soil/rock cut slope	Minor (1.5)	Private access		Rank 2144, Stage 1, NFA

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 16 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/158	Catchwater at Tsiu Shui Wan Au, above South Bay Close	-	-	-	Washout	-	Catchwater	Catchwater partially blocked	
HK 5/159	Shek O Rd., Tai Tam Gap 11SE-D/C114	8/5	HyD/HK	8/5	Soil/rock cut slope	Minor (3)	Road		Rank 5600, Stage 1 pending
HK 5/160	Shek O Rd. near catchpit SO 37	13/5	HyD/HK	12/5	Natural slope	Minor (15)	Road		
HK 5/161	133 Tai Hang Rd., So Kon Po	18/5	GED	8/5	Subsidence, washout	Minor (1)	Building lot		Blockage of drains Checked GC13/4/3044/86
HK 5/162	Victoria Rd. Centre, Victoria Rd., Mount Davis	18/5	ASD	8/5 (am)	Broken chunam	Minor (1 sq.m)	Pedestrian pavement		
HK 5/163	Victoria Rd. Centre, Victoria Rd., Mount Davis	18/5	ASD	8/5	Fill slope	Minor (45)	Pedestrian pavement		
HK 5/164	Opposite 8 Severn Rd., Mount Gough	19/5	HyD/HK	8/5 (am)	Natural slope	Minor (1-2)	Pedestrian pavement		
HK 5/165	Gough Hill Rd., Mount Gough	19/5	HyD/HK	8/5 (am)	Natural slope	Minor (2-3)	Pedestrian pavement		
HK 5/166	Opposite South Island School, Nam Fung Rd., Shouson Hill 11SW-D/C114	19/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (30)	Pedestrian pavement	Pedestrian pavement closed	Rank 4469, Stage 1, NFA Blockage of drains
HK 5/167	Same as 5/163								
HK 5/168	Quarry Bay St., Quarry Bay 11SE-A/C178	8/5	Public	8/5	Soil cut slope	Minor (2)	Pedestrian pavement		Rank 5014

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 17 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/169	Mount Parker Rd., near catchpit MPK 20, Mount Butler	12/5	Public	8/5	Soil/rock cut slope	Minor (<1)	Country Park		
HK 5/170	Mount Parker Rd., near catchpit MPK 49, Quarry Bay 11SE-A/C249	12/5	Public	8/5	Soil cut slope	Minor (8)	Country Park	Rank 6619	
HK 5/171	Mount Parker Rd., near catchpit MPK 50, Quarry Bay 11SE-A/C248	12/5	Public	8/5	Soil cut slope	Minor (13)	Country Park	Rank 7697	
HK 5/172	Mount Parker Rd., between catchpit MPK 52 and MPK 53, Quarry Bay 11SE-A/C248	12/5	Public	8/5	Soil cut slope	Minor (<1)	Country Park	Rank 7697	
HK 5/173	Mount Parker Rd., near catchpit MPK 53, Quarry Bay 11SE-A/C247	12/5	Public	8/5	Soil cut slope	Minor (3)	Country Park	Rank 6651	
HK 5/174	Mount Parker Rd., near catchpit MPK 54, Quarry Bay 11SE-A/C245	12/5	Public	8/5	Soil cut slope	Minor (4)	Country Park	Rank 7349	
HK 5/176	Below Block A, Kornhill Quarry Bay	14/5	DO/E	Unknown	Washout	Minor (1)	Open space	Blockage of drains Checked GCI3/4/7090/81	
HK 5/178	Below Pul Chi Boy's Home, King's Rd., Quarry Bay 11SE-A/CR79	11/5	HyD/HK	8/5	Washout	Minor (5)	Pedestrian pavement	Rank 3866, LPM works completed 87 Blockage of drains, checked GCI2/B2/122	
HK 5/179	88 Hill Rd., Western	19/5	ASD	8/5 (am)	Subsidence	Minor (3-4)	Open space		

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 18 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/180	Kennedy Town Police Quarters 11SW-A/C107	19/5	ASD	8/5 (am)	Soil cut slope	Minor (3-4)	Open space	Berm channel blocked	Rank 152, LPM works completed
HK 5/181	WSD catchwater CH 1900 above Nam Fung Rd.	-	-	-	Washout	Minor	Open space		
HK 5/182	Yu To Sang Memorial School, Hospital Rd., Mid-Levels 11SW-A/CR21	19/5	ASD	8/5	Soil cut slope	Minor (1)	Private access		Rank 1584, Stage 1, NFA
HK 5/183	92 Pokfulam Rd., Mount Davis 11SW-A/C332	18/5	HyD/HK	8/5 (am)	Soil cut slope	Minor (3-5)	Open space		Rank 2227, Stage 1, NFA
HK 5/184	Near Shui Fai Terrace, Stubbs Rd., Happy Vally 11SW-D/CR439	8/5	HyD/HK	8/5 (19:45)	Soil cut slope, fallen trees	Minor (7)	Road	1 lane of road blocked	Rank 4331, Stage 1, NFA
HK 5/185	Elliot Treatment Works, 78 Pokfulam Rd., Western 11SW-A/C149	14/5	WSD	9/5	Soil/rock cut slope	Minor (2.5)	Open space		Rank 3427, Stage 1, NFA
HK 5/186	Elliot Treatment Works, 78 Pokfulam Rd., Western 11SW-A/C148	14/5	WSD	9/5 (am)	Soil/rock cut slope	Minor (8)	Private access		Rank 5945, Stage 1 pending
HK 5/187	36 Mount Davis Rd., Pokfulam 11SW-A/C316	21/5	UC	8/5	Soil/rock cut slope	Minor (3-4)	Squatters	5 huts permanently evacuated	Rank 2457, Stage 2 pending
HK 5/189	68A MacDonnell Rd., the Peak	20/5	Public	8/5 (am)	Soil cut slope	Minor (0.2)	Carparks		
HK 5/190	Opposite 70 MacDonnell Rd., the Peak 11SW-B/C174	23/5	Public	8/5 (am)	Soil cut slope, washout	Minor (4.5)	Private access		Rank 7726 Checked 2-3/2105/79/3SW

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 19 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 5/191	Bowen Rd. near Bowen Drive, Central	9/5	HyD/HK	9/5	Soil cut slope	Minor (2)	Road	1 lane of road blocked	
HK 5/192	60–62 Tin Wan St., Aberdeen 11SW–C/C15	20/5	Public	8/5	Flooding, broken chunam	–	Building lot		Rank 1286, Stage 1, NFA Checked 2–3/2105/79/3SW
HK 5/193	Tai Hang Valley near Tiger Balm Gardens	2/6	Public	8/5	Rock/boulder fall	Minor (40)	Open space		
HK 5/194	110 Kennedy Rd., Wanchai 11SW–D/CR407	11/5	Public	8/5	Washout	Minor (1.5)	Pedestrian pavement		Rank 3333, Stage 1 pending
HK 5/195	Black's Link, Mount Cameron	26/5	HyD/HK	8/5	Soil cut slope	Minor (3)	Road	1 lane of road blocked	
HK 5/197	Upper Kai Lung Wan Village, Wah Fu	26/5	DO/HKS	8/5 (am)	Rock/boulder fall, flooding	–	Squatters	1 hut permanently evacuated	Debris cleared before inspection Blockage of stream course
HK 5/198	Behind Blocks 13–14, Chi Fu Fa Yuen, Pokfulam	26/5	Public	8/5	Soil/rock cut slope	Minor (2)	Pedestrian pavement	Pedestrian pavement closed	
HK 5/199	Behind Blocks 13–14, Chi Fu Fa Yuen, Pokfulam	26/5	Public	–	Rock cut slope	Minor (8)	Pedestrian pavement	Pedestrian pavement closed	
HK 5/201	Marymount Secondary School, Blue Pool Rd., Jardine's Lookout	27/5	DLD/HKW	8/5	Fallen trees	N/A	Road		No geotechnical concern
HK 5/202	Pottinger North Catchwater, CH 1750, Chai Wan	12/5	DO/E	8/5	Soil cut slope	Minor (20)	Catchwater	Catchwater damaged	
HK 5/203	212 Victoria Rd., Pokfulam 11SW–C/C196	27/5	HyD/HK	8/5	Soil cut slope	Minor (5)	Road		Rank 2632, Stage 1, NFA

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 20 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cum)			
HK 5/204	Gulf Petrol Station, Victoria Rd., Kennedy Town 11SW-A/CR260	29/5	GEO	8/5	Soil cut slope	Minor (4-5)	Building lot		Rank 1101, Stage 2 underway
HK 5/205	23-25 Tai Hang Rd., So Kon Po 11SE-A/CR150	30/5	CED	8/5	Soil cut slope, washout	Minor (1)	Building lot		Rank 1355, Stage 1, D-Notice pending
HK 6/1	J/O Lyttelton Rd. and Babington Path, Mid-Levels	2/6	HyD/HK	8/5	Fallen trees	N/A	Road	1 lane of road blocked	No geotechnical concern
HK 6/2	Aberdeen S.W. Service Reservoir	14/5	WSD	8/5	Rock/boulder fall	Minor (4)	Footpath		
HK 6/3	11B Bowen Rd., Central	2/6	HyD/HK	8/5	Soil/rock cut slope	Minor (5)	Pedestrian pavement		
HK 6/5	Pokfulam Conduit, Chainage 335	14/5	WSD	8/5	Rock/boulder fall	Minor (4)	Conduit		
HK 6/6	Pokfulam Conduit, Chainage 345	14/5	WSD	8/5	Soil/rock cut slope	Minor (3)	Conduit		
HK 6/7	Pokfulam Conduit, Chainage 500	14/5	WSD	8/5	Soil/rock cut slope	Minor (3)	Conduit		
HK 6/8	Pokfulam Conduit, Chainage 520	14/5	WSD	8/5	Soil/rock cut slope	Minor (3)	Conduit		
HK 6/9	Pokfulam Conduit, Chainage 350	14/5	WSD	8/5	Soil/rock cut slope	Minor (3)	Conduit		
HK 6/10	Pokfulam Conduit, Chainage 1425 11SW-C/C79	14/5	WSD	8/5	Soil/rock cut slope, fallen trees	Minor (15)	Conduit		Rank 2892, Stage 1, NFA

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 21 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 6/11	Kai Lung Wan Service Reservoir Access Rd., Wah Fu	14/5	WSD	8/5	Soil cut slope	Minor (-)	Road	Chunam in poor condition, blockage of weepholes Blockage of drains Rank 2720, Stage 1, NFA 1/2 lane of road blocked 1/2 lane of road blocked 1/2 lane of road blocked 1/2 lane of road blocked Blockage of drains	
HK 6/12	Aberdeen S.W. Service Reservoir	14/5	WSD	8/5	Rock/boulder fall	Minor (4)	Footpath		
HK 6/13	Aberdeen S.W. Service Reservoir	14/5	WSD	8/5	Soil/rock cut slope	Minor (8)	Footpath		
HK 6/14	142 Pokfulam Rd., Pokfulam 11SW-C/C329	2/6	Management	8/5	Soil cut slope	Minor (3)	Pedestrian pavement		
HK 6/18	Lamp post 11264, Homestead Rd., the Peak	4/6	HyD/HK	8/5	Soil/rock cut slope	Minor (2)	Road		
HK 6/19	Lamp post 16724, Lugard Rd., the Peak	4/6	HyD/HK	8/5	Soil/rock cut slope	Minor (2)	Road		
HK 6/20	Lamp post 16704, Lugard Rd., the Peak	4/6	HyD/HK	8/5	Soil/rock cut slope	Minor (1)	Road		
HK 6/21	Lamp post 16699, Lugard Rd., the Peak	4/6	HyD/HK	8/5	Soil/rock cut slope	Minor (2)	Road		
HK 6/22	Mount Parker Reservoir access road	12/5	Country Park	8/5	Fill slope	Minor (20)	Road, Country Park		
HK 6/23	Zoological gardens	3/6	ASD	8/5	Soil/rock cut slope	Minor (5)	Open space		
HK 6/24	Rosaryhill School, Happy Valley	9/6	Public	8/5 (10:00)	Retaining wall	Minor (15)	Building lot		

Table A1 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Hong Kong Island (Sheet 22 of 22)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
HK 6/25	Block G, 55 Island Rd., Repulse Bay 11NW-B/FR23	11/6	HyD/HK	8/5 (am)	Washout	Minor (0.5)	Open space		LPM works 78/79
HK 6/36	Kennedy Rd., Central 11SW-B/C200	17/6	HyD/HK	8/5	Soil/rock cut slope	Minor (5)	Pedestrian pavement		Rank 2855, Stage 1, NFA
HK 6/37	Brewin Path, the Peak 11SW-B/C90	17/6	HyD/HK	8/5	Soil cut slope	Minor (5)	Road	1 lane of road blocked	Rank 6870
HK 6/39	Same as 5/21								
HK 6/42	6A Bowen Rd., Central	27/5	Public	8/5	Soil/rock cut slope	Minor (2)	Building lot		
HK 6/44	Catchpit 27, Victoria Rd., Pokfulam	19/6	HyD/HK	8/5	Soil/rock cut slope	Minor (3)	Road	1/2 lane of road blocked	
HK 6/45	106-108 MacDonnell Rd., Central	19/6	Public	8/5	Washout	Minor (0.1)	Open space		
HK 6/47	Footpath at end of Justice Drive, Central 11SW-B/F69	8/6	DSD	8/5	Washout	Minor (-)	Open space		Unranked

Table A2 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Kowloon (Sheet 1 of 2)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
K 5/1	Choi Shek Lane, Ngau Tau Kok 11NE-A/C104	8/5	Police	8/5 (07:30)	Soil/rock cut slope	Minor (30)	Road	Access road to THA partially blocked	Rank 2484, Stage 1, NFA
K 5/2	Behind Block D of Kai Tak Mansion, 55A Kwun Tong Road 11NE-A/C69	8/5	Police	8/5	Soil/rock cut slope	Minor (1-2)	Carparks		Rank 2205, Stage 1, D-Notice issued, no work done
K 5/3	Ling Nam New Village(upper), Ko Chiu Road	8/5	Police	8/5 (07:00)	Fill slope	Minor (3)	Squatters	5 huts permanently evacuated	
K 5/4	Hong Ning Road near Chun Wah Road, Kwun Tong 11NE-C/CR64	8/5	HyD/K	8/5	Soil/rock cut slope	Minor (2)	Road	1 lane of road blocked	
K 5/5	Behind Ka Yin Mansion, 19 Ngau Tau Kok Rd. 11NE-C/CR5	8/5	Police	8/5 (15:30)	Soil/rock cut slope	Minor (2-3)	Open space		Rank 2722, Stage 1, NFA
K 5/6	Jat's Incline above Fung Shing Street	8/5	Police	8/5 (am)	Fill slope, washout	Major (65)	Road	Road closed	Blockage of surface drain
K 5/7	56 Waterloo Road	11/5	Management	Unknown	Washout	Minor (2)	Building lot		
K 5/8	Buddhist College, 3 Ko Chiu Road	8/5	ASD	8/5 (14:30)	Soil cut slope	Minor (2-3)	Open space		Leakage of drains/manholes
K 5/9	Cha Kwo Ling Village, Yau Tong 11NE-D/C18	11/5	DO/KT	8/5 (14:30)	Fallen trees	N/A	Squatters	7 huts permanently evacuated	No geotechnical concern Rank 59, LPM works complete
K 5/10	Behind OPD clinic, Kowloon Hospital, 92 Waterloo Road 11NW-D/C21	9/5	ASD	8/5 (16:30)	Soil cut slope	Minor (3-4)	Carparks		Rank 576, checked by District

Table A2 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Kowloon (Sheet 2 of 2)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cum)			
K 5/11	Access road to TST Marine Police HQ 11SW-B/F46	9/5	Police	9/5 (am)	Fill slope	-	Access road	No failure, only signs of distress. Visual inspection by AOM. Growth of tree root.	
K 5/12	Lion Rock Park Nursery, Lung Cheung Road	13/5	ASD	8/5	Natural slope	Minor (45)	Open space		
K 5/13	23 Homantin Hill Road, Police Quarters 11NW-D/C113	-	ASD	8/5 (am)	Soil cut slope	Minor (3)	Pedestrian pavement	Rank 6829	
K 5/14	Ling Nam New Village(Lower), off Cha Kwo Ling Rd.	22/5	DO/KT	8/5	Rock/boulder fall	Minor (1)	Squatters	3 huts permanently evacuated	
K 5/15	Margaret Trench Medical Centre, Lei Yue Mun Rd.	23/5	ASD	8/5	Soil cut slope	Minor (3)	Open space		
K 5/16	Nam Shan Mei Village, Diamond Hill	26/5	DO/WTS	8/5	Soil cut slope	Minor (1.5)	Squatters	1 hut temporarily evacuated	
K 5/17	Hiu Kwong Street, Kwun Tong	18/5	USD	8/5	Soil/rock cut slope	Minor (10)	Open space	Blockage of drains	
K 6/1	51 Kwun Tong Road, Kwun Tong 11NE-A/FR86	27/5	ASD	8/5 (13:00)	Rock/boulder fall	Minor (5)	Open space	Unranked	
K 6/2	54 Waterloo Rd., Yau Ma Tei 11NW-D/C120	9/6	Management	Unknown	Erosion	Minor (2)	Building lot	Rank 1961, Stage 2 pending Blockage of drains	
K 6/4	Leung Cheung Road Park, behind Waterloo Road Caltex Petrol Station	16/6	HyD/K	8/5	Soil cut slope	Minor (4)	Building lot		

Table A3 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland East (Sheet 1 of 5)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
ME 5/1	Anderson Rd., Sau Mau Ping 11NE-D/C167	8/5	Police	8/5 (06:30)	Soil cut slope	Minor (25)	Road	Road blocked	Rank 4646, Stage 1, NFA. Blockage of drains
ME 5/2	Clearwater Bay Rd, near Silver Cape Rd. 12NW-C/C34	8/5	Police	8/5	Soil cut slope	Minor (20)	Road	1 lane of road blocked	Rank 2275, Stage 1, NFA
ME 5/3	Lot 794, Tseng Leng Shue, Sai Kung	8/5	Resident	8/5 (07:00)	Soil cut slope	Minor (5)	Back lane	Back lane blocked	
ME 5/4	Below Lutheran Primary School, Rennie's Mill Cottage Area, Tseung Kwan O	8/5	Police	8/5 (07:00)	Retaining wall	Minor (20)	Building lot		
ME 5/5	Below 73, Area 2, Rennie's Mill Cottage Area, Tseung Kwan O	8/5	HD	8/5 (07:00)	Soil cut slope	Minor (20)	Building lot	2 cottage huts temporarily evacuated	
ME 5/6	Behind House 23 Ling Yan Terrace, Tui Min Hoi	8/5	DO/SK	8/5	Soil cut slope	Minor (3)	Building lot	1 flat evacuated	
ME 5/7	12 Po Lo Che Rd., Sai Kung	8/5	DO/SK	Unknown	Soil cut slope	Minor (10)	Pedestrian pavement, open space	Pedestrian pavement closed	Blockage of drains
ME 5/8	Wing Long Rd., Ng Fe Tin, Sai Kung	8/5	DO/SK	Unknown	Retaining wall	Minor (4)	Pedestrian pavement, private access, carparks		
ME 5/9	Opposite Lot 131 in DD 236, Pan Long Wan, Sai Kung	8/5	DO/SK	8/5	Retaining wall	Minor (40)	Pedestrian pavement	1 house evacuated, access road closed	Blockage of natural stream
ME 5/10	1 Pak Shek Toi, Pik Uk, Clearwater Bay Rd.	8/5	DO/SK	8/5	Soil/rock cut slope	Minor (2)	Open space		

Table A3 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland East (Sheet 2 of 5)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cum)			
ME 5/11	64 Tseng Lan Shue, Clearwater Bay Rd.	8/5	DO/SK	8/5 (15:00–18:00)	Soil cut slope	Minor (6)	Open space		
ME 5/12	Mau Tso Ngam, Tate's Cairn	8/5	DO/ST	8/5	Soil cut slope	Major (100)	Road	1 lane of road blocked	
ME 5/13	154, Kam Shan, Tai Po	8/5	Public	8/5 (06:00)	Retaining wall	Minor (1.5)	Pedestrian pavement	Blockage of drains	
ME 5/14	Lot 236 in DD 258, Wong Chuk Wan, Sai Kung	8/5	DO/SK	8/5	Washout	Unknown	Open space	Checked 6/9361/89	
ME 5/15	38 & 39, Tui Hoi Village, Tui Min Hoi, Sai Kung	9/5	DO/SK	8/5	Soil cut slope	Minor (3)	Building lot, open space		
ME 5/16	42 Tui Hoi Village, Tui Min Hoi, Sai Kung	9/5	DO/SK	8/5	Soil cut slope	Minor (3)	Building lot, open space		
ME 5/17	2 Ling Yan Terrace, Tui Min Hoi, Sai Kung	11/5	DO/SK	8/5–9/5	Soil cut slope	Minor (1–2)	Private access		
ME 5/18	Opposite Lot 299 in DD 213, Ngau Liu, Sai Kung	11/5	DO/SK	Unknown	Soil cut slope	Minor (1)	Private access		
ME 5/19	34A Tin Ha Wang, Sai Kung	8/5	DO/SK	8/5 (07:00)	Soil cut slope	Minor (20)	Back lane	Back lane blocked	
ME 5/20	Behind Lot 1192–6 in DD 243, Mang Kung Uk Village, Sai Kung	8/5	Police	8/5 (07:00)	Fill slope	Minor (10)	Construction site	Checked 6/9256/88	
ME 5/21	Wong Chuk Yeung, Fo Tan, Shatin	11/5	DO/ST	8/5 (09:00)	Soil cut slope	Minor (3)	Road		

Table A3 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland East (Sheet 3 of 5)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
ME 5/22	Wong Chuk Yeung Fo Tan, Shatin	11/5	DO/ST	8/5 (09:00)	Subsidence	Minor (10)	Pedestrian pavement		
ME 5/23	Pik Shiu New Village, Sai Kung	11/5	DO/SK	8/5 (18:00– 20:00)	Soil cut slope	Minor (3)	Building lot	3 flats evacuated	
ME 5/24	Lot 190 in DD211, Ma Nam Wat, Sai Kung	9/5	DO/SK	8/5	Retaining wall	Minor (15)	Building lot	1 house evacuated	
ME 5/25	35A Tin Ha Wang, Tin Wan Tsai, Sai Kung	12/5	Resident	8/5 (07:00)	Soil cut slope	Minor (<50)	Back lane	Back lane blocked	
ME 5/26	Sussex Lodge, Hang Hau, Clearwater Bay Rd.	10/5	Police	8/5 (05:30)	Retaining wall	Unknown	Building lot	2 flats evacuated	
ME 5/27	Wo Mei, Sai Kung	11/5	DO/SK	8/5–10/5	Soil cut slope	Minor (34)	Private access		
ME 5/28	84B Shek Kwun Lung Village, Tai Po	9/5	DO/TP	8/5	Soil cut slope	Minor (0.3)	Footpath		
ME 5/29	30 & 31, Kam Shan Village, Tai Po	12/5	DO/TP	8/5	Natural slope	Minor (0.5)	Squatters	1 hut temporarily evacuated	
ME 5/30	Huts 191–193, Kam Shan Village, Tai Po	12/5	DO/TP	8/5	Retaining wall	Unknown	Squatters	2 huts permanently evacuated	
ME 5/31	Huts 37A & 38A, Tai Lam Lin Village, Shatin	9/5	Police	Unknown	Washout	Minor (5)	Building lot		
ME 5/32	20 Ngau Pai Sha Village, Shatin	13/5	DO/ST	8/5	Soil cut slope	Minor (5)	Private access		

Table A3 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland East (Sheet 4 of 5)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cum)			
ME 5/33	38 To Fung Shan Rd., Yau Oi Tsuen, Shatin	13/5	DLS/ST	8/5	Fill slope	Minor (0.5)	Open space	Parts of 2 houses evacuated	Blockage of drains
ME 5/34	Mok Tse Che, Sai Kung	12/5	DO/SK	8/5-10/5	Soil cut slope	Minor (<50)	Road		
ME 5/36	House 33, Tseng Lan Shue, Sai Kung	13/5	DO/SK	8/5	Soil cut slope	Minor (2)	Open space		
ME 5/37	Lot 221, Tseng Lan Shue, Sai Kung	13/5	DO/SK	Unknown	Soil cut slope	Minor (-)	Open space		
ME 5/38	4 & 5, Nam Wal, Sai Kung	12/5	DO/SK	8/5	Retaining wall	Minor (15)	Building lot		
ME 5/39	Nam Wal, Sai Kung	15/5	DO/SK	8/5	Soil cut slope	Minor (10)	Building lot		
ME 5/40	42 Ha Wo Che, adjacent to Sui Wo Rd., Shatin	21/5	HyD/NT	8/5	Washout	Minor (3)	Private access, open space		
ME 5/41	Lot 731, Tai Wan, Sai Kung	19/5	DLO/SK	Unknown	Soil cut slope	Minor (3)	Open space		
ME 5/42	Hung Fa Tsuen, Po Lo Che, Sai Kung	20/5	DO/SK	8/5	Soil cut slope	Minor (2)	Building lot		
ME 5/43	Ha Wo Che adjacent to Sui Wo Rd., Shatin	21/5	HyD/NT	8/5	Washout	Minor (3)	Private access, open space		
ME 5/44	Yau Oi Tsuen, Tung Lo Wan Hill Rd., Shatin	8/5	Resident	8/5 (06:00)	Soil cut slope	Minor (5)	Open space		

Table A3 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland East (Sheet 5 of 5)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
ME 5/45	Silverstrand Beach, Sai Kung	15/5	Resident	8/5	Natural slope	Minor (45)	Open space		
ME 5/46	Silverstrand Beach access road, Sai Kung	15/5	Resident	8/5	Soil cut slope	Minor (2)	Road		
ME 5/47	Carpark, Silverstrand Beach Rd., Sai Kung	8/5	DO/SK	8/5	Natural slope	Minor (30)	Open space		
ME 5/48	House 65C, Teeng Lan Shue, Sai Kung	20/5	DO/SK	8/5	Soil cut slope	Minor (2)	Open space		
ME 5/49	Lung Ha Wan Rd., near access road to Monastery	20/5	DO/SK	8/5	–	–	–		
ME Un-Numbered	39 & 42, Tui Min Hoi Village, Sai Kung	8/5	Police	8/5 (15:00)	Soil cut slope	Minor (2 & 3)	Building lot	2 failures	
ME 6/24	Sam Long, Sai Kung	18/6	DO/SK	8/5	Soil cut slope	Minor (3)	Footpath		

Table A4 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland West (Sheet 1 of 7)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
MW 5/1	Same incident as MW5/58								
MW 5/2	Hiking trail, Kan Cho Long, Lamma Island	8/5	DLO/IS	8/5 (08:00)	Soil cut slope	Major (200)	Footpath	Footpath closed	
MW 5/3	Tai Po Road near Carlton Hotel, Kowloon	8/5	HyD/K	8/5	Fill slope	Major (> 50)	Pedestrian pavement, road	1 lane of road closed	Checked 2/B2/43
MW 5/4	Same incident as MW5/58								
MW 5/5	24 Yung Shue Long New Village, Lamma Island	8/5	DLO/IS	8/5 (08:00)	Soil cut slope	Minor (25)	Pedestrian pavement, open space	Pedestrian pavement and private garden closed	
MW 5/6	22–23 Hung Hing Ye, Lamma Island	8/5	DLO/IS	8/5 (8:00)	Retaining wall	Minor (45)	Building lot, private access	Pedestrian pavement closed, 1 flat temporarily evacuated	
MW 5/7	6–7 Tai Shan Sai, Lamma Island	8/5	DLO/IS	8/5 (8:00)	Soil cut slope	Minor (8)	Squatters	2 huts temporarily evacuated	
MW 5/8	Sha Tin Pass Road near Sap Yi Wat Village, Sha Tin	8/5	Public	8/5	Washout	Minor (-)	Road		
MW 5/9	83–84 Tai Peng San Tsuen, Lamma Island	8/5	DLO/IS	8/5 (8:00)	Soil/rock cut slope	Minor (30)	Building lot		
MW 5/10	South Lantau Road near MS 3/4, Mui Wo, Lantau Island 10SW–C/C20	8/5	HyD/NT	8/5 (12:00)	Soil cut slope	Minor (6)	Road, pedestrian pavement	Two lanes of road closed, pedestrian pavement closed	Rank 6826, Stage 1, NFA
MW 5/11	South Lantau Road near MS 1, Mui Wo, Lantau Island 10SW–C/C22	8/5	HyD/NT	8/5 (12:00)	Rock cut slope	Minor (2)	Road, pedestrian pavement	1 lane of road blocked	Rank 5492, Stage 1, NFA

Table A4 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland West (Sheet 2 of 7)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
MW 5/12	Tai O Rd., near MS 12 3/4, Tai O, Lantau Island 9SW-D/C1	8/5	HyD/NT	8/5 (15:30)	Soil/rock cut slope	Minor (20)	Road, pedestrian pavement	Pedestrian pavement and 1 lane of road blocked	Rank 7220, Stage 1, NFA Blockage of drains
MW 5/13	12 Tai Shan Sai, Lamma Island	8/5	DLO/IS	8/5 (08:30)	Soil cut slope	Minor (1.5)	Building lot		
MW 5/14	J/O Cheung Wah St. & Shun Wing Rd., Sham Shui Po	8/5	HyD/K	8/5	Flooding	-	Open space		No geotechnical concern
MW 5/15	6 Liu To Tsuen, Liu To Rd., Tsing Yi	8/5	FSD	Unknown	Soil cut slope	Minor (1)	Open space		Blockage of drains
MW 5/16	Kwai Fuk Rd., by Chun Shing Fty. Bldg., Kwai Chung 7SW-C/C281	8/5	-	-	Soil cut slope	Minor (6)	Pedestrian pavement		Rank 2705, Stage 1 underway Blockage of drains
MW 5/17	Piper's Hill, Shatin 11NW-B/C5	11/5	HyD/NT	8/5	Soil cut slope	Minor (10)	Road		Rank 4383, Stage 1, NFA
MW 5/18	Kau Wah Kang Tsuen, Kwai Chung	9/5	DLO/KT	8/5 (15:00)	Washout	Minor (1)	Squatters	2 huts permanently evacuated, 5 huts temporarily evacuated	
MW 5/19	Kam Shan Village, Kwai Chung	9/5	HyD/NT	9/5	Subsidence, washout	-	Squatters	4 huts permanently evacuated	
MW 5/20	Hut 97, Kut Hing Back St., Tai O, Lantau Island 9SW-D/CR8	12/5	HyD/NT	8/5 (07:00)	Washout	Minor (4)	Private access		Rank 2586, LPM works pending
MW 5/22	Sheung Yat Chuen, Kwai Chung	8/5	HyD/NT	8/5	Washout	Minor (-)	Open space		

Table A4 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland West (Sheet 3 of 7)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
MW 5/23	Buddhist Chi Hong Kindergarten, Che Kung Temple, Shatin	11/5	Public	8/5 (am)	Broken chunam	Minor (-)	Private access		
MW 5/24	77 Shatin Tau Village, Area 8, Shatin	11/5	Public	8/5	Washout	Minor (-)	Open space		
MW 5/25	Lot 8685, Tai Po Rd., Shatin	11/5	HyD/NT	8/5	Fill slope	Minor (30)	Open space	Open surface channel collapsed	
MW 5/26	Warwick Hotel, Cheung Chau Sports Rd., Cheung Chau 14NW-D/C24	8/5	BOO	8/5 (17:30)	Soil cut slope	Minor (12)	Open space, pedestrian pavement	Pedestrian pavement closed	
MW 5/27	19 & 33, Lai Chi Yuen, Cheung Chau	8/5	BOO	8/5 (12:00)	Retaining wall	Minor (1)	Pedestrian pavement, building lot, open space	Pedestrian pavement closed	
MW 5/28	1A Peak Rd., Cheung Chau	8/5	BOO	8/5 (10:00)	Retaining wall	Minor (12)	Building lot, open space	Repture of water mains/drains	
MW 5/29	Footpath between Sok Ku Wan & Mo Tat, Lamma Island 15NW-C/C7 & 15NW-C/C8	11/5	DLO/IS	8/5	Rock/boulder fall	Minor (<5)	Pedestrian pavement	C7 Rank 4811, Stage 1, NFA C8 Rank 5577, Stage 1, NFA	
MW 5/30	4 Po Wah Yuen, Yung Shue Wan, Lamma Island 14NE-B/C23	9/5	-	Unknown	Soil/rock cut slope	Minor (4)	Building lot, back lane	Rank 2691, Stage 1, NFA	
MW 5/31	7 Tai Ling Village, Lamma Island	10/5	-	8/5 (15:00)	Flooding, erosion	-	Country Park	Blockage of drains	
MW 5/32	89 Tai Peng San Tsuen, Lamma Island	11/5	DLO/IS	8/5 (15:00)	Soil cut slope	Minor (12)	Building lot, open space		

Table A4 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland West (Sheet 4 of 7)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
MW 5/33	11 Tai Peng San Tsuan, Lamma Island	9/5	DLO/IS	8/5	Soil cut slope	Minor (2.5)	Building lot	1 house temporarily closed	
MW 5/34	32 Yung Shue Long Village, Lamma Island	11/5	-	Unknown	Erosion	Minor (<1)	Building lot		
MW 5/35	Rear of Sport Village, Kwu Tung, Ma Tso Lung, Sheung Shui	9/5	Public	-	-	-	-		False alarm, no geotechnical concern
MW 5/36	Lung Mun Rd., near Siu Lang Shui, Pillar Point, Tuen Mun 5SE-D/C2	12/5	HyD/NT	8/5-9/5	Soil cut slope	Minor (4)	Pedestrian pavement		Rank 2588, Stage 1, NFA
MW 5/37	Hung Shing Ye, Lamma Island	11/5	DLO/IS	Unknown	Flooding, subsidence, washout	-	Pedestrian pavement, footbridge	Footbridge destroyed, pedestrian pavement subsided	
MW 5/38	Temporary Housing Area, Cornwall St., Kowloon Tong	11/5	HyD/K	11/5	Natural slope	Minor (30)	Open space		Repture of drains
MW 5/39	Tai Po Rd., near Esso petrol station, Cheung Sha Wan 11NW-B/C64	12/5	HyD/K	-	Soil cut slope	-	Pedestrian pavement		Rank 4372, Stage 1, NFA
MW 5/40	92B Pak Sha New Village, Cheung Chau	9/5	-	8/5	Soil cut slope	Minor (2)	Building lot, private access	Private access closed	
MW 5/41	12-15 Liu To Tsuen, Tsing Yi	13/5	-	8/5 (pm)	Soil cut slope	Minor (30)	Permitted huts	4 huts permanently evacuated	
MW 5/42	563 Kut Hing Back St., Tai O, Lantau Island	8/5	HyD/NT	8/5 (07:00)	Soil cut slope	-	Squatters	1 hut permanently evacuated	

Table A4 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland West (Sheet 5 of 7)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cum)			
MW 5/43	65 Kut Hing Back St., Tai O, Lantau Island 9SW-D/C7	12/5	HyD/NT	8/5	Soil/rock cut slope	-	Pedestrian pavement	Pedestrian pavement closed	Rank 2475, Stage 2 pending
MW 5/44	Same incident as MW5/20								
MW 5/45	Sham Wat Rd.(80 mPD), Sham Wat, Lantau Island	12/5	HyD/NT	8/5	Soil cut slope	Minor (-)	Road	Road partly blocked	
MW 5/46	Sham Wat Rd.(240 mPD), Sham Wat, Lantau Island	12/5	HyD/NT	8/5	Soil cut slope	Minor (-)	Road	Road partly blocked	
MW 5/47	Sham Wat Rd.(140 mPD), Sham Wat, Lantau Island	12/5	HyD/NT	8/5	Soil cut slope	Minor (-)	Road	Road partly blocked	
MW 5/48	52D Kut Hing Back St., Tai O, Lantau Island 9SW-D/CR8	12/5	HyD/NT	11/5	Rock/boulder fall	Minor (-)	Squatters	1 hut temporarily evacuated	Rank 2586, Stage 1, LPM works pending
MW 5/49	Pump Fong Sheung Tsuen, Kwai Chung	12/5	HyD	9/5	Soil cut slope	Minor (1.5)	Squatters		
MW 5/50	72 Po Wah Yuen, Yung Shue Wan, Lamma Island	12/5	Resident	-	Boulder	N/A	Nil		No failure, no geotechnical concern
MW 5/51	14 Yung Shue Long New Village, Lamma Island 14NE-B/C10	12/5	BOO	8/5 (07:30)	Soil cut slope	Minor (20)	Building lot	1 house temporarily evacuated	Rank 3123, Advisory Letter issued, work done
MW 5/52	6 Tai Shan Tung, Ko Long, Lamma Island 14NE-B/C21	13/5	DLO/IS	8/5 (15:00)	Soil cut slope	Minor (10)	Squatters, open space	1 hut permanently evacuated	Rank 961, Stage 2, NFA
MW 5/53	Sai Hang Mei, Tsz Tin Tsuen, Tuen Mun	14/5	DO/TM	8/5	Washout	Minor (<1)	Open space		

Table A4 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland West (Sheet 6 of 7)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
MW 5/54	16 Shatin Tau Village, Area 2, Shatin	10/5	HyD/NT	8/5	Soil cut slope	Minor (-)	Nil		
MW 5/55	Huts RTW/9A/281 – 282, Cheung Hang Kwai Chung	14/5	HD	-	Natural slope	Minor (5)	Squatters	2 huts permanently evacuated	
MW 5/56	Near 31 Tai Wo Hau Tsuen, Peng Chau	13/5	HyD/NT	8/5	Washout	Minor (4)	Pedestrian pavement		
MW 5/57	Tsz Tin Tsuen, Tuen Mun	15/5	DO/TM	8/5	Retaining wall	Minor (3)	Building lot		
MW 5/58	Kwun Yum Wan Rd., Cheung Chau	14/5	HyD/NT	8/5	Soil cut slope	Minor (1.5)	Pedestrian pavement		
MW 5/59	10 Sai Wan, Tsan Tuen Rd., Cheung Chau 14NW-D/C10	14/5	DLO/IS	8/5	Soil cut slope	Minor (5)	Pedestrian pavement	Pedestrian pavement closed	Rank 6037
MW 5/60	House SW/76/91, Sai Wan Rd., Cheung Chau	14/5	DLO/IS	8/5	Soil/rock cut slope	Minor (1)	Private access		
MW 5/61	Access road near 1 Pak She New Village, Cheung Chau	14/5	DLO/IS	Unknown	Washout	Minor (1)	Open space		
MW 5/63	House RTW/4A/173, Fu Yung Shan, Tsuen Wan	20/5	HD	8/5	Soil cut slope, flooding	Minor (2)	Squatters, open space		Blockage of drains
MW 5/64	Behind Lai Chi Kok Reception Centre, Castle Peak Rd.	9/5	DO/SSP	-	Washout	-	Pedestrian pavement		
MW 5/66	Behind 2 Shing Ka Rd., Pang Chau 10SW-B/C8	15/5	Public	8/5 (am)	Soil cut slope	Minor (4)	Squatters, private access	2 huts temporarily evacuated, back lane closed	Rank 894, Stage 2, Advisory Letter issued, no work done

Table A4 – List of Incidents Resulting from the 8 May Rainstorm Reported to GEO – Mainland West (Sheet 7 of 7)

Incident No.	Location	Call Received		Failure			Area Affected	Consequence	Remarks, and GEO Slope Catalogue Data
		Date	From	Date (Time)	Type	Scale (cu.m)			
MW 5/67	Access road, Tai Lam Correctional Institution	19/5	ASD	8/5	Rock cut slope	Minor (2)	Private access	Checked 5/9117/88	
MW 5/68	4 Chung Shan Terrace, Kwai Chung	21/5	Public	8/5	Soil cut slope	Minor (3)	Open space		
MW 5/69	House RTW/2A/365–366, Fu Yung Shan, Tsuen Wan	2/6	Resident	8/5	Soil cut slope	Minor (2.5)	Squatters		2 huts permanently evacuated
MW 6/3	62 King Lam St., Sham Shui Po	4/6	HD	8/5	Soil cut slope	Minor (-)	Squatters		1 hut permanently evacuated
MW 6/4	Firing range, Stonecutters Island	27/5	ASD	8/5	Soil cut slope	Minor (-)	Open space		
MW 6/8	Hut RTW/9B/129 & 130, Kau Wa Kang Upper Village, Kwai Chung	11/6	HD	8/5	Soil cut slope	Minor (5)	Squatters		3 huts permanently evacuated
MW 6/32	Shek Lal Hang Village, Kwai Chung	18/6	DO/KT	8/5	Soil cut slope	Minor (10)	Foot path		
MW 6/36	Shul Hang, Sai Wan Rd. Cheung Chau	26/6	DLO/IS	8/5	Retaining wall	Minor (<10)	Pedestrian pavement		
MW Un-numbered	Hut RTE/7E/119, Kam Shan Tsuen, Kwai Chung 7SW–C/C182	9/5	HD	-	Subsidence	Minor (-)	Squatters		

APPENDIX B

RECORDS FROM GEO RAINGAUGES DURING THE RAINSTORM OF 8 MAY 1992

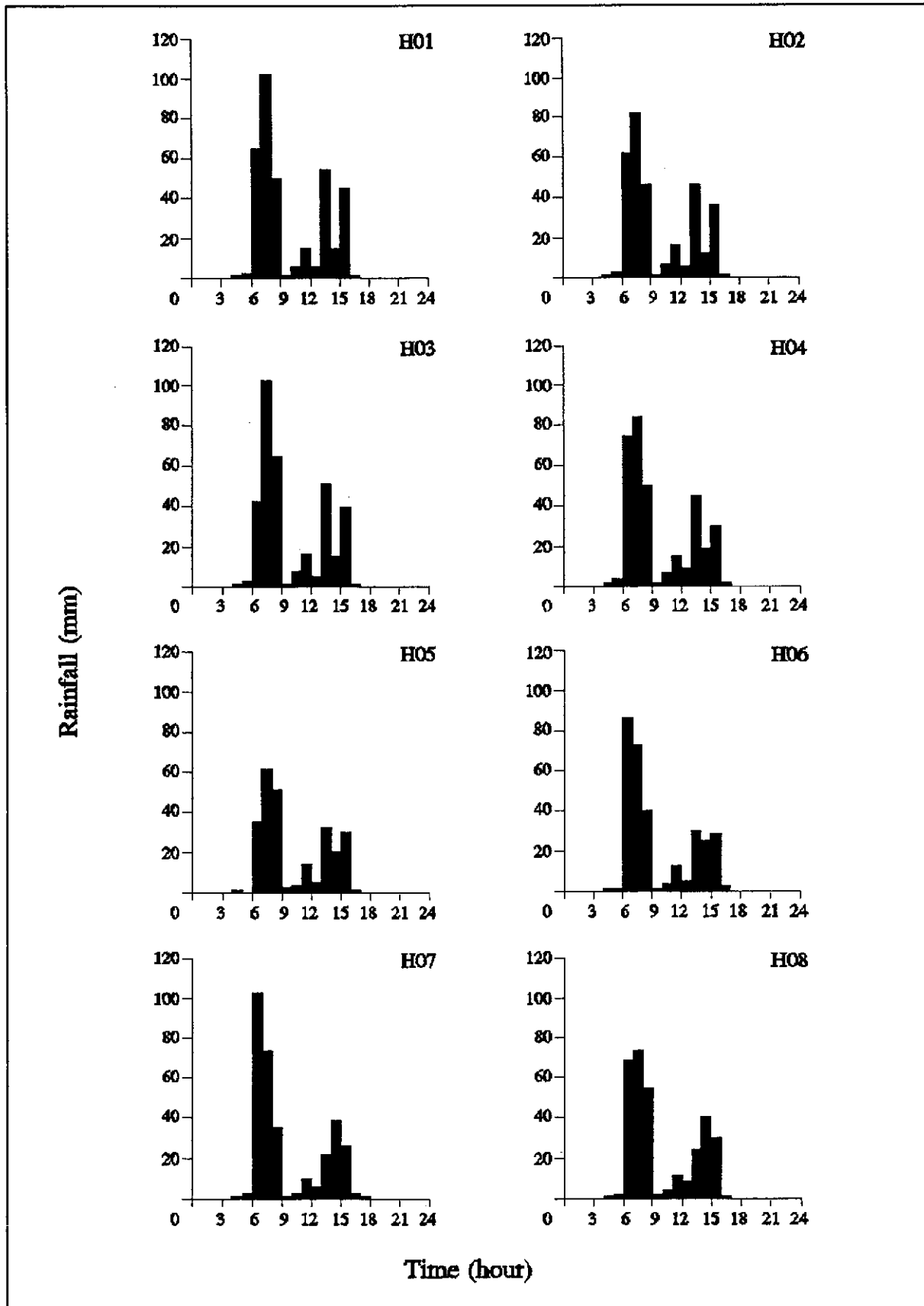


Figure B1 - Histograms of Hourly Rainfall Recorded by GEO Raingauges on 8 May 1992 (Sheet 1 of 6)

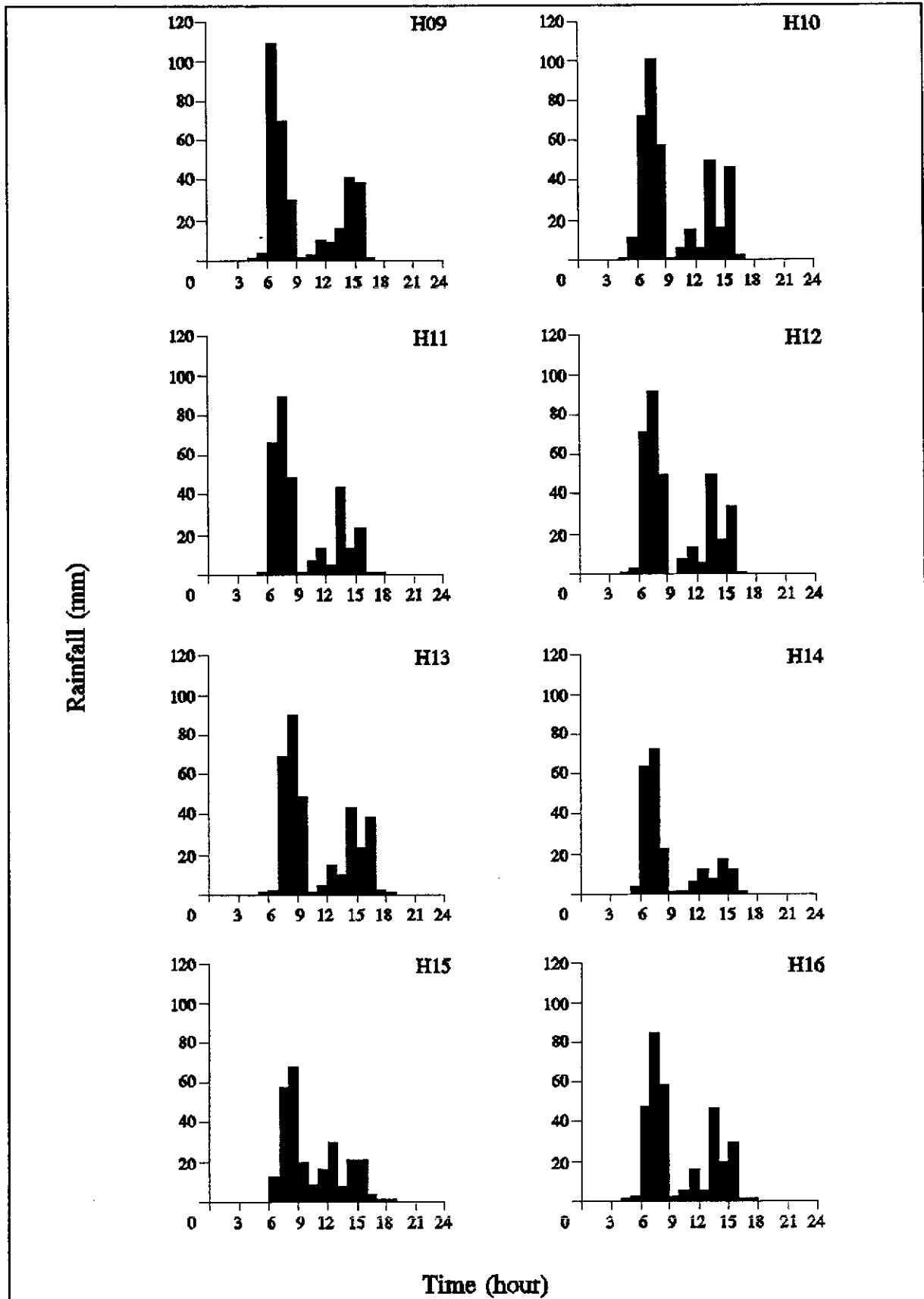


Figure B2 - Histograms of Hourly Rainfall Recorded by GEO Raingauges on 8 May 1992 (Sheet 2 of 6)

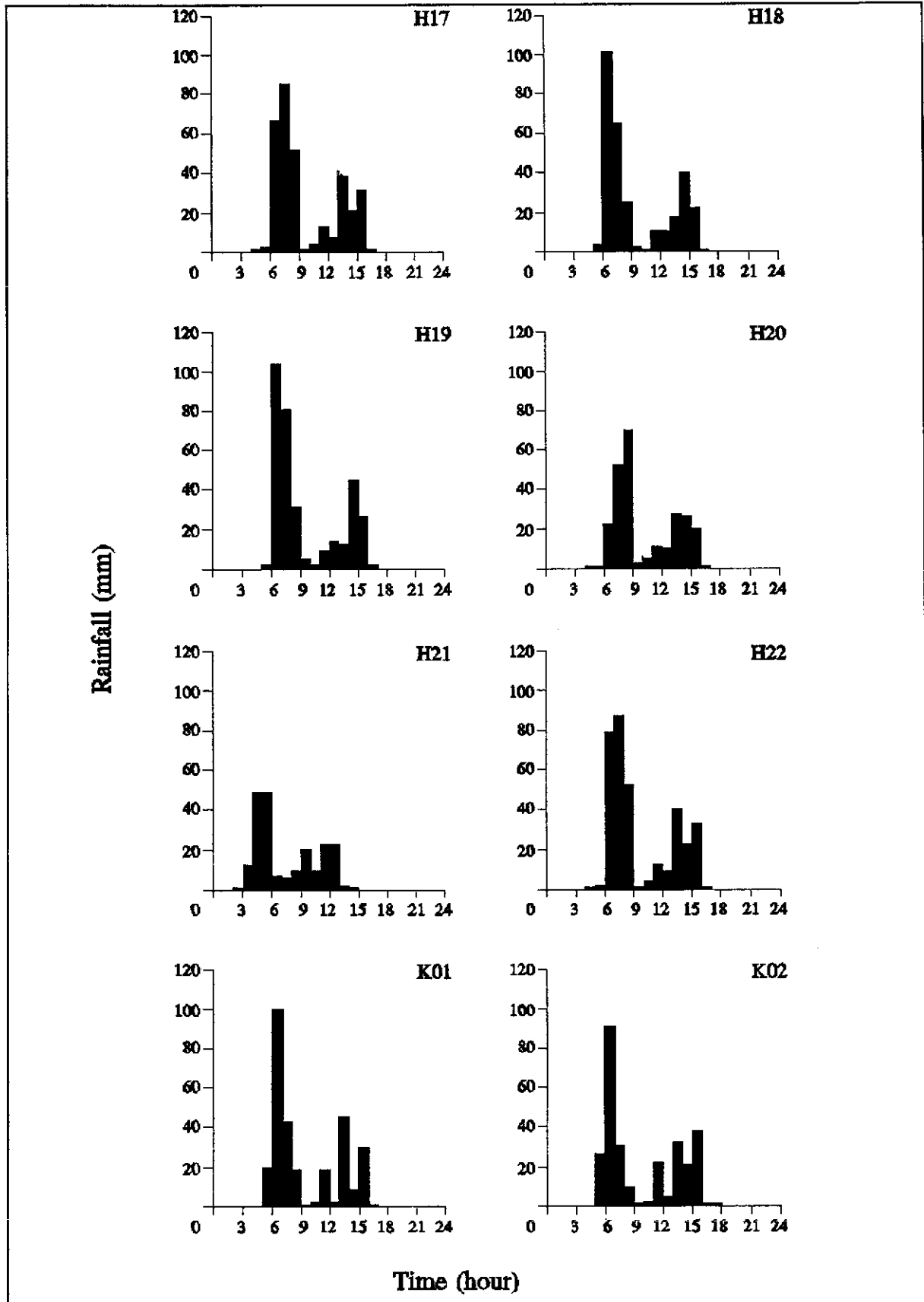


Figure B3 - Histograms of Hourly Rainfall Recorded by GEO Raingauges on 8 May 1992 (Sheet 3 of 6)

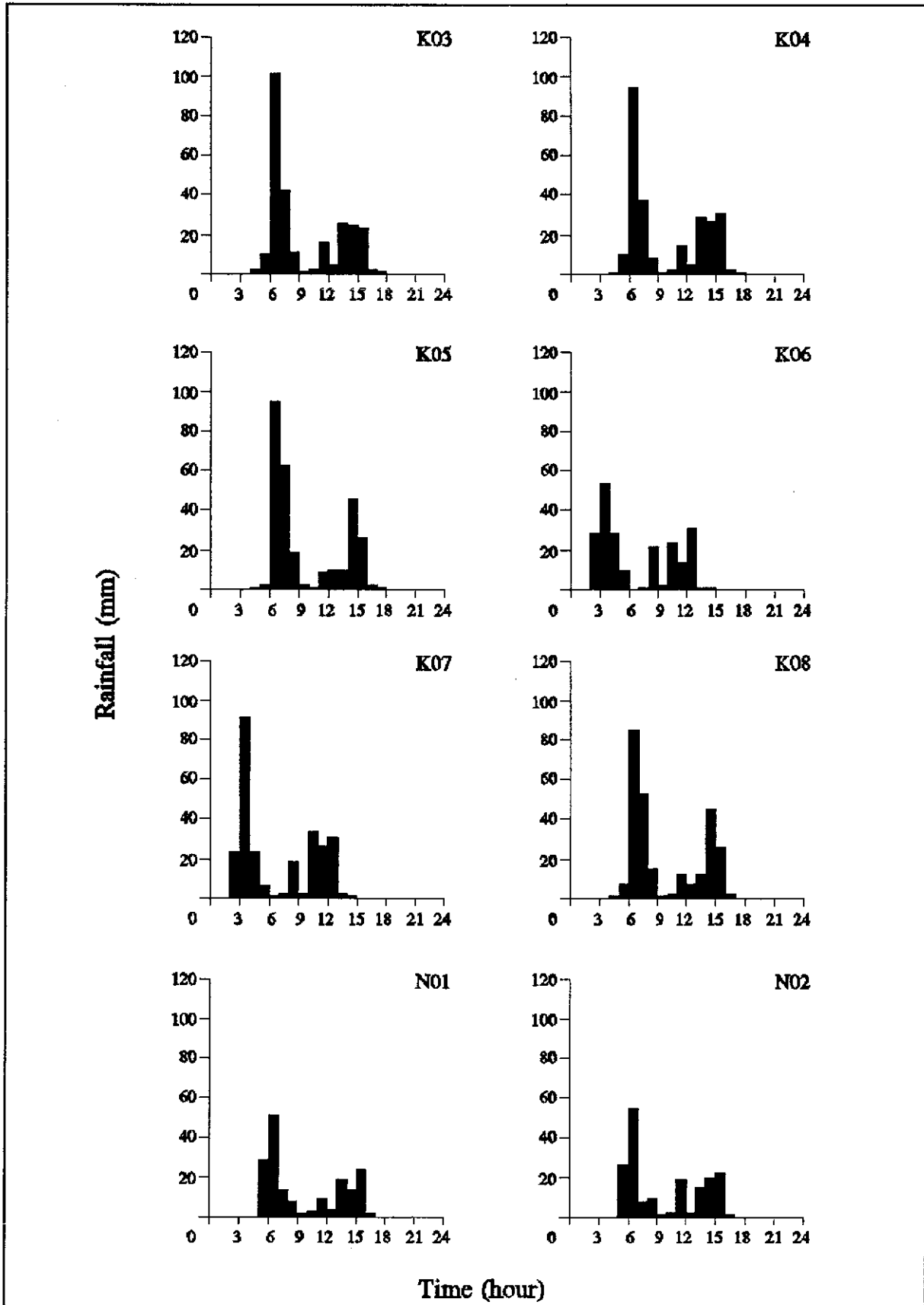


Figure B4 - Histograms of Hourly Rainfall Recorded by GEO Raingauges on 8 May 1992 (Sheet 4 of 6)

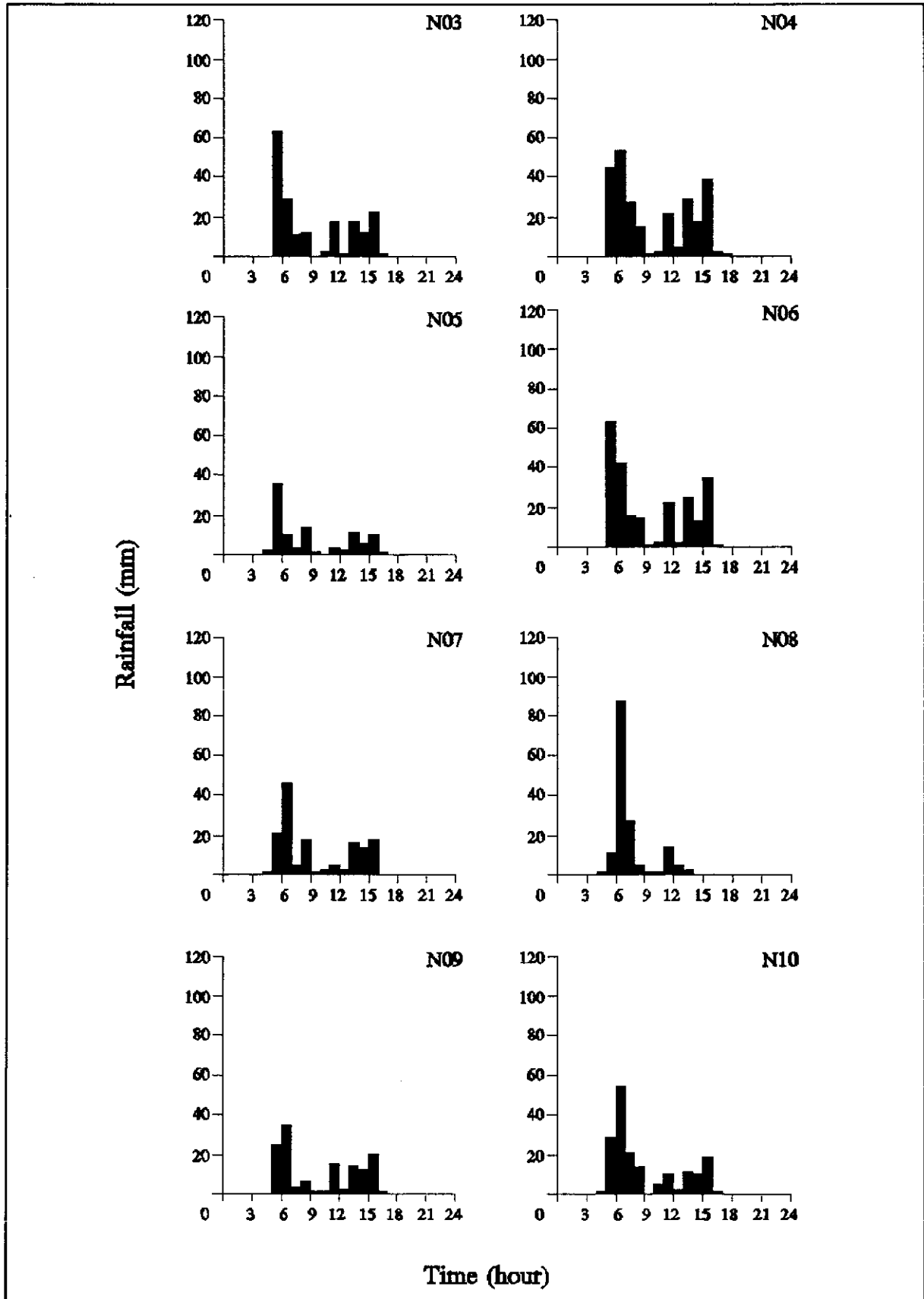


Figure B5 - Histograms of Hourly Rainfall Recorded by GEO Raingauges on 8 May 1992 (Sheet 5 of 6)

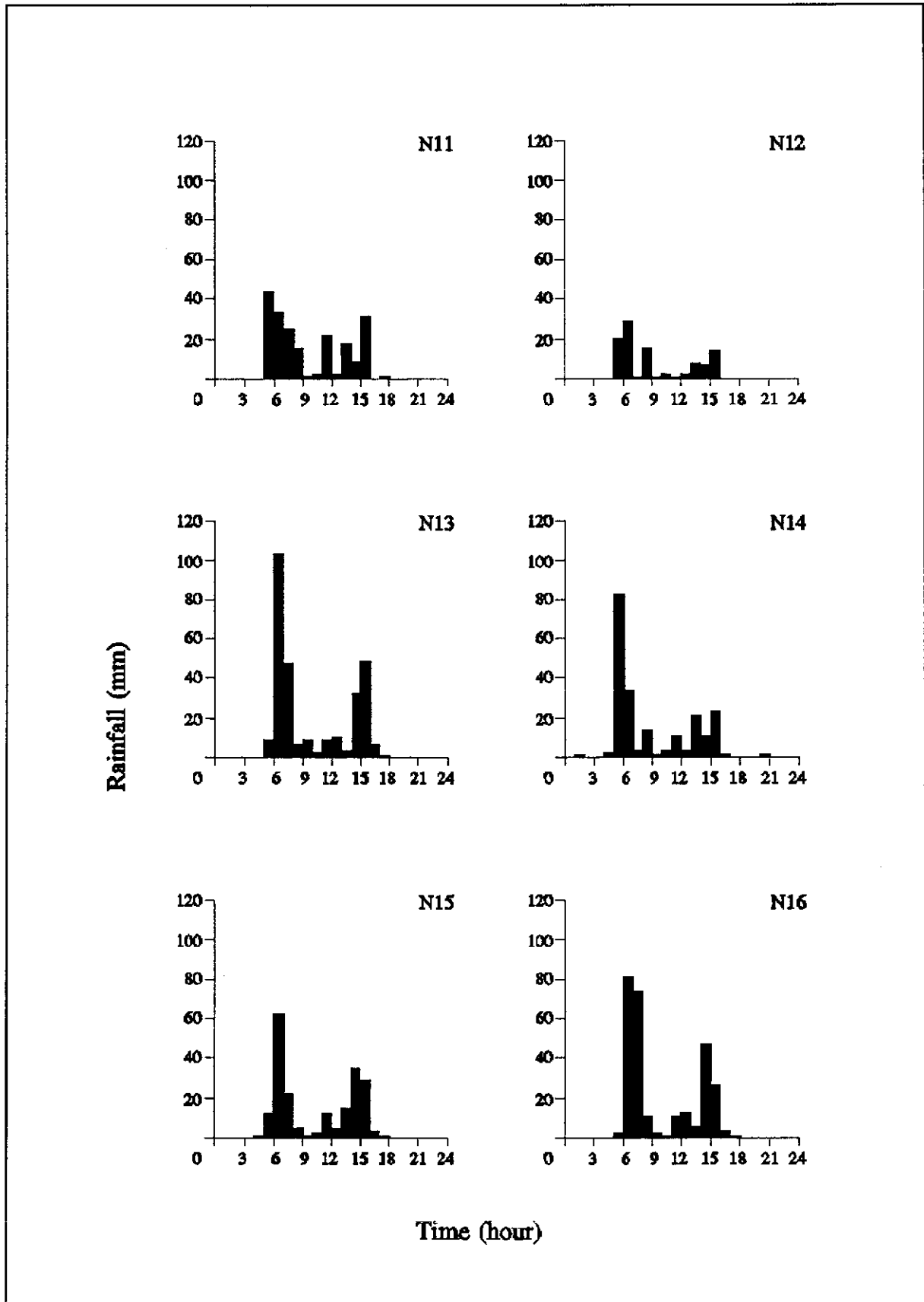


Figure B6 - Histograms of Hourly Rainfall Recorded by GEO Raingauges on 8 May 1992 (Sheet 6 of 6)

LIST OF DRAWINGS

Drawing
No.

- GCSP 8/9 Location Map of Landslides and Related Incidents, 8 May 1992 -
 Hong Kong Island
- GCSP 8/10 Location Map of Landslides and Related Incidents ,8 May 1992 -
 Kowloon and the New Territories