Gammon Construction Limited

Construction Waste Management Plan

for

Central Police Station Conservation and Revitalisation Project (Rev.5)

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1 BACKGROUND

Environmental protection and sustainable development are part and parcel of the daily operations of the Gammon Construction Limited. Gammon will initiate appropriate actions in order to minimize, and where possible eliminate, the environmental impact arising from the construction of this project. The Main Scope of Works for this Project comprise of the following:

a. To revitalize the Central Police Station (CPS) as an arts hub in the centre of the city;

b. A new medium-size exhibition space that can house international value loans;

c. A combination of cultural and commercial use is proposed within CPS;

d. Cafes, shops, restaurants, education and interpretation spaces;

e. New Openings and footbridge extension link between mid-levels escalator and the CPS;

f. New Building at Old Bailey Wing (OBW) and Arbuthnot Wing (AW).

g. Existing buildings will need to be fitted with some modern services and improved fire compartmentation and fire escape provisions;

h. Building services;

i. Site interventions (including tunneling works, piling works, etc.);

j. Landscape and lighting;

k. Tree felling works;

l. Asbestos removal;

m. Demolition works;

n. Recording and surveying other existing condition of buildings;

o. Creating suitable site access by carefully removing existing elements to be rebuilt at a later stage.

2 PURPOSE OF THE PLAN

This Waste Management Plan (WMP) has been prepared in accordance with the current BEAM Plus requirement (MA P3 Construction/Demolition Waste Management Plan and MA 11 Construction Waste Reduction) related to construction activities during the construction period and the Environmental Monitoring and Audit Manual (EM&A Manual). This WMP has been certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) as conforming to the information and recommendations contained in the Waste Management Impact Assessment and the Environmental Monitoring and Audit Manual (EM&A Manual).

BEAM Plus is a voluntary assessment to provide an independently certified performance rating embracing a range of good practices in planning, design, construction, and management, operation and maintenance of buildings, and is complied with local regulations, standards and codes of practice.

The proposed waste management strategy set up in this WMP aims to achieve the relevant requirement on waste management (sorting, recycling and proper waste disposal) in order to gain the credit for the BEAM Plus certification.

The BEAM Plus target of construction waste recycling for this project must be at least 30% (by weight or by volume) diversion from landfills/public fills in accordance with the BEAM Plus requirement (MA11 Construction Waste Reduction). Redirecting recyclable resources back to the manufacturing process or redirecting reusable materials to appropriate sites. The construction waste should be stored to transfer to recycler. The achievement of BEAM target shall be demonstrated through appropriate recycling record. Please reference Section 9 for more detail of waste recycling.

This WMP aims to describe the arrangements for minimising the generation of surplus construction and demolition (C&D) materials, chemical waste and general refuse that carrying out effective on-site sorting of waste materials and minimising the generation of waste from equipment/material packaging during the course of the Works. In order to comply BEAM Plus requirement, work contractors shall submit the BEAM Plus Submission Template to BEAM Plus consultant to demonstrate that a waste management system was prepared and implemented. The BEAM Plus submission template for MA P3 is attached in **Appendix D**.

The WMP shall address the potential and actual impacts and necessary mitigation measures in light of the preferred construction programme and consists of the following:-

- A review of the ordinances, regulations, codes of practices as well as contractual obligations that are applicable to the wastes arising from the Works;
- An organisation chart setting out the roles and responsibilities of the Contractor's personnel responsible for waste management and appropriate mitigation measures;
- An analysis of timing, quantities and types of Construction and Demolition (C&D) materials are anticipated to be generated in the course of the execution of the Works;
- A classification of C&D materials into inert portion (Public Fill) and non-inert portion (C&D Waste), sorting C&D waste from demolition of existing building to recover recyclable portion such as broken concrete & metals;
- Proposals for avoiding/minimizing, handling, recycling, reuse, return, storage, transport and disposal of C&D materials, chemical waste and general refuse;
- An appraisal of the potential establishment on site of a sorting facility, including the identification of potential area on-site of facilitate the waste sorting;
- A monitoring and auditing proposal to ensure that the requirements of the CWMP are properly implemented;
- Monitor the implementation and achievement of the WMP on-site to assess its effectiveness;
- Monitor the follow-up action(s) on deficiencies identified; and

- Implementation of the recommended mitigation measure to reduce waste or redress issues arising from the waste materials.

Gammon will try their best endeavour to adopt the proposed waste management strategies which are proposed on BEAM Plus Submission Template for MA P3.

3 WASTE MANAGEMENT POLICY AND STRATEGIES

3.1 Principles

The principles of waste management adopted in this project shall be in line with Gammon's environmental management system which follows the requirements of the ISO 14001 and based on a cyclical process comprising policy, planning, implementation & operation, checking and corrective action and management review. A policy statement is given in **Appendix A**.

3.2 Hierarchy

The various waste management options shall be categorised in terms of preference from an environmental viewpoint. The options considered to be more preferable have the least impacts and are more sustainable in the longer term. Hence, the hierarchy of waste management is as follows:

- Avoidance and minimisation, i.e. not generating waste through changing or improving practices and design;
- Reuse of materials, thus avoiding disposal;
- Recovery and recycling, thus avoiding disposal; and
- Treatment and disposal, according to relevant laws, guidelines and good practice.

This hierarchy shall be used to evaluate waste management options, thus allowing maximum waste reduction. Waste reduction measures shall be introduced at the detailed design and planning stage and carried through the construction activities, whenever possible, by careful purchasing control, reuse of formworks and good site management. By reducing or eliminating over-ordering of construction materials, waste is avoided and costs are reduced both in terms of purchasing of raw materials and in disposing of wastes.

4 LICENCE OR PERMIT REQUIREMENTS

4.1 Registration as a Chemical Waste Producer

Under the Waste Disposal (Chemical Waste) (General) Regulation, producers of chemical wastes must have registration with Environmental Protection Department. The registration shall be applied for as required.

4.2 Dumping licence to Public Filling Area

The Land (Miscellaneous Provisions) Ordinance requires that dumping licences are obtained by individuals or companies who deliver inert portion of construction and demolition material (i.e. Public Fill) to Public Filling

Areas. The licences are issued by Civil Engineering Department under delegated powers from the Director of Lands. The license shall be applied for as required.

4.3 Registration as a Waste Producer under the Construction Waste Disposal Charging Scheme

A billing account shall be opened with EPD prior to using Government waste disposal facilities. Waste shall be handled, transported, disposed and paid for in accordance with the Charging Scheme.

5 LEGISLATION AND GUIDELINES

5.1 Statutory Requirements

The following legislation covers, or has some bearing upon, the storage, collection, treatment and disposal of wastes in Hong Kong:

- Air Pollution Control Ordinance (Cap 311)
- Waste Disposal Ordinance (Cap 354);
- Waste Disposal (Chemical Waste) (General) Regulation (Cap 354);
- Land (Miscellaneous Provisions) Ordinance (Cap 28); and
- Public Health and Municipal Services Ordinance (Cap 132) – Public Cleansing and Prevention of Nuisances (Urban Council) and (Regional Council) By-laws.

5.2 Additional Guidelines

Other guiding documents which detail how the contractor should comply with the regulations are as follows:

- *Best Practice Guide for Environmental Protection on Construction Sites*, Hong Kong Construction Association.
- *Waste Reduction Framework Plan, 1998 to 2007*, Planning, Environment and Lands Bureau, Government Secretariat (5 November 1998);
- *2001 Review of the Waste Reduction Framework Plan,* Waste Reduction Committee;
- *Site Practice for Waste Reduction in Construction Industry* (2001), Environmental Protection Department;
- *Environmental Guidelines for Planning in Hong Kong* (1990), Hong Kong Planning and Standards Guidelines, Hong Kong Government;
- *New Disposal Arrangements for Construction Waste* (1992), Environmental Protection Department & Civil Engineering

Department;

- *A Guide to the Registration of Chemical Waste Producers* (2001), Environmental Protection Department;
- *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes* (1992), Environmental Protection Department;
- *A Guide to the Control on Import and Export of Waste* (1999), Environmental Protection Department;
- *Works Bureau Technical Circular No. 32/92, The Use of Tropical Hard Wood on Construction Site,* Works Bureau;
- *A Guidance Manual for Use of Risk-based Remediation Goals (RBRGs) for Contaminted Land Management*), Environmental Protection Department;
- *A Guidance Note for Contaminated Land Assessment and Remediation)*, Environmental Protection Department;
- *A Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boaryards, and Car Repair/Dismantling Workshop*, Environmental Protection Department;
- *Works Bureau Technical Circular No. 2/93, Public Dumps*, Works Bureau;
- *Works Bureau Technical Circular No. 2/93B, Public Filling Facilities*, Works Bureau;
- *Works Bureau Technical Circular No. 16/96, Wet Soil in Public Dumps*, Works Bureau;
- *Works Bureau Technical Circular No. 4/98 and 4/98A, Use of Public Fill in Reclamation and Earth Filling Projects,* Works Bureau;
- *Works Bureau Technical Circular No. 25/99, 25/99A and 25/99C, Incorporation of Information on Construction and Demolition Material Management in Public Works Sub-committee Papers,* Works Bureau;
- *Works Bureau Technical Circular No 12/00, Fill Management*; Works Bureau;
- *Works Bureau Technical Circular No 29/00, Waste Management Plan*, Works Bureau;
- *Works Bureau Technical Circular No 19/01, Metallic Site Hoardings and Signboards*, Works Bureau;
- *Works Bureau Technical Circular No 6/02 and 6/02A, Enhancement Specification for Site Cleanliness and Tidiness*, Works Bureau;
- *Works Bureau Technical Circular No 12/2002, Specification*

Facilitating the Use of Recycled Aggregates, Works Bureau;

- *Environment, Transport and Works Bureau Technical Circular (Works) No 33/2002, Management of Construction and Demolition Material including Rock*, Environment, Transport and Works Bureau;
- *Environment, Transport and Works Bureau Technical Circular (Works) No 15/2003, Waste Management on Construction Sites*, Environment, Transport and Works Bureau;
- *Development Bureau Technical Circular (Works) No 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials*, Environment, Transport and Works Bureau; and
- *Environment, Transport and Works Bureau Technical Circular (Works) No 19/2005, Environmental Management on Construction Sites,* Environment, Transport and Works Bureau.

6 ORGANISATION STRUCTURE

The project organisation (**Appendix B**) with respect to waste management works is outlined in the following sections.

6.1 INDIVIDUAL DUTIES AND RESPONSIBILITIES

6.1.1 Senior Project Manager

The Senior Project Manager is responsible to the Contracts Manager for overall planning, site operations, appointment of committee members for waste management, staff supervision control co-ordination and external liaison. He is ultimately responsible for all aspects of waste management issues within the Project, which they achieve by implementation of the WMP.

He is also responsible for provision of necessary support to the Environmental Engineer for the preparation and review of WMP and arrangement of site staff to attend environmental training with regard to waste management organised by other bodies or the Environmental Engineer.

He shall ensure the recommendations from the Employer, the Architect or the Gammon internal audit team are implemented to improve the waste management practices and carry out immediate action to rectify the non-compliance of waste management requirements. The Senior Project Manager has the following responsibilities in relation to waste management:

i. Keep abreast of the requirements of the statutory regulations in relation to waste management;
ii. Ensure works are executed in accordance with the WMP;
iii. Arrange routine joint site inspection with Environmental Engineer and review environmental inspection report submitted by the Environmental Engineer;
iv. Ensure works are undertaken in accordance with the

recommendations made by the Employer, the Architect and Environmental Engineer;

v. Monitor and control the works including those of subcontractors to ensure compliance with specified requirements;
vi. Ensure appropriate waste management mitigation measures are properly implemented;
vii. Ensure follow up actions are properly undertaken in the event of non-compliance of the WMP;
viii. Review method statement to ensure appropriate mitigation measures are implemented prior to execution of work;
ix. Liaise with Employer, the Architect and Environmental Engineer on waste management issues;
x. Monitor records of all trained personnel in the site offices; and
xi. Monitor the following documents.
    - any statutory required waste management permits/licenses including dumping licence, chemical waste producer, admission ticket and etc;
    - C&D material disposal delivery record; and,
    - Waste reuse / recycle / disposal summary.

6.1.2 Site Agent

He shall have the following duties in relation to environmental control:

i. Assist the Senior Project Manager in implementing the WMP;
ii. Monitor and control the works including those of subcontractors to ensure compliance of WMP;
iii. Report to the Senior Project Manager regarding non-compliance of any waste management issues;
iv. Ensure the remedial actions or mitigation measures are carried out as planned; and
v. Supervise and arrange the maintenance of waste management facilities.

6.1.3 Site Engineers/Foremen

Site Engineers/Foremen are responsible for the following duties in relation to environmental control:

1. Assist the Site Agent in implementing the WMP;
2. Control the works including those of subcontractors to fulfil the requirement of waste management issues;
3. Report to the Site Agent any non-compliance of any waste management issues;
4. Maintain the on-site waste management facilities including sorting area, temporary storage area, general refuse bins, recycling bins and etc;
5. Carry out remedial actions or mitigation measures to rectify the non-compliance;
6. Conduct environmental toolbox talks with respect to waste management to labourers and workers regularly; and
7. They shall carry out routine maintenance of waste management facilities. Maintenance records shall be kept in site office.

6.1.4 Environmental Manager/Environmental Engineer

The Environmental Manager shall oversee the implementation and the performance of the WMP and shall also be responsible for:

1. Reviewing works programmes, method statements, licence application and other relevant documentation so as to ensure the best practice would be implemented to generate no unacceptable impacts with respect to waste management to the established guidelines/standards;
2. Identifying any potential unanticipated or greater than expected waste impacts;
3. Formulating any necessary preventative or remedial measures to be taken for these potential impacts;
4. Liaising with the Architect and Contractors on waste management both regularly and as necessary;
5. Carrying out complaint investigation, evaluation and identification of preventive and corrective actions
6. Undertaking regular and ad hoc environmental site inspection and audit, including waste management issues, and supplying Corrective Action Reports for any deficiencies after completion of the inspection or audit;
7. Liaising and consulting with all relevant parties during implementing WMP;
8. Preparing training material for environmental toolbox talks with regard to waste management and disseminating guidance notes to operatives.

6.1.5 Subcontractors and other Employees

Every employee and subcontractor has the duty to carry out agreed waste management practices as instructed by the Site Agents/ Site Engineer.

Every employee and subcontractor shall report promptly to the Site Agents or Site Engineer any non-compliance of waste management issues.

On-site supervisor of each subcontractor shall conduct environmental toolbox talks with respect to waste management to their labourers and workers on a regular basis.

6.1.6 Environmental Team and Independent Environmental Checker

Environmental Team (ET) and Independent Environmental Checker (IEC) shall be informed about any waste management issues and associated improvement recommendations.

7 CLASSIFICATION AND ANALYSIS OF WASTE

7.1 Classification of Waste

The waste generated from the construction activities shall be divided into distinct categories based on their composition, as follows:

- Construction and Demolition (C&D) Material
- Chemical Waste
- General Refuse

(i) Construction and Demolition (C&D) Material

C&D materials comprise unwanted materials generated during construction, including rejected structures and materials, materials which have been over ordered or are surplus to requirements, and materials used and discarded.

C&D material could be divided into two categories according to whether they are inert or non-inert. Inert material such as excavated material, debris, rubble, bitumen material, earth and concrete is known as "Public Fill", while the non-inert part such as metal, timber, vegetation, packaging waste, organic material and all recyclables and non-recyclables is called "C&D Waste".

Recyclables are mainly metals, paper/cardboard packaging and plastics. Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material. Non-recyclable materials are treated as general refuse.

(ii) Chemical Waste

Chemical wastes are the substances defined by the *Schedule 1* of the *Waste Disposal (Chemical Waste) (General) Regulation*. Chemical wastes generated from the construction site will primarily arise from the maintenance of plant and equipment and the asbestos containing materials generated during the demolition work. These may typically include oils, lubricants, paints, solvents, asbestos waste type 2 and type 3.

(iii) General Refuse

General refuses include food wastes, non-recyclable materials (eg. timber) and other debris arising from various construction activities, site workforce and site housekeeping. The land clearing debris e.g. soil, vegetation, rocks shall be excluded.

7.2 Analysis of Waste Generation

Different types and quantities of waste will be generated throughout the construction period of the Project from various construction activities and daily operation of the construction site. Apart from those construction activities including drainage, geotechnical works, utilities construction, steel work and slope work that generate insignificant amount of waste, the major construction activities and the associated waste generating operations are identified as follows:

- Site clearance, preparation establishment
- Temporary works
- Demolition
- Excavation and Foundation
- Basement
- Superstructure
- External and Internal Finishing works
- Electrical Installation

- MVAC installation
- Fire Services Installation
- Plumbing and Drainage works
- Roadwork and Landscape Works

Reference the Summary of Waste Arising and Disposal Location at section 8.8 of the EIA report, the updated estimating information for construction phase are provided below:

Type	Quantity (Estimate)	Disposal Location
Construction Phase	EIA	
C&D Material - inert	3050 m^3 2540 m^3	Public Fill (Fill Bank TKO area 137) / Designated Recycler
C&D Material - construction waste	1050 m^3 890 m^3	Landfill (SENT)
Chemical waste	500 liters (typical chemical waste) 100L/mth	Chemical Waste Treatment Facility
	7000 kg (ACM) Not mentioned in EIA	Landfill (SENT)
General refuse	500 m^3 130kg/day	Landfill (SENT)

The detailed handling for different categories of waste was stated in Section 9.

8 WASTE REDUCTION MEASURES

8.1 On-Site Sorting of Construction and Demolition Materials

All Construction and Demolition (C&D) materials arising from or in connection with the Works will be sorted on the Site to recover reusable and/or recyclable materials. All sorted and processed surplus materials arising from or in connection with the Works from the Site will be promptly removed to minimise temporary stockpiling on the Site.

A system will be devised for on-site sorting of C&D materials. The system will include the identification of the source of generation, estimated quantity, arrangement for on-site sorting and/or collection, temporary storage areas, frequency of collection by recycling contractors or frequency of removal off the Site, etc.

Gammon Construction Limited (GCL) will sort the materials at source into the following categories:

- hard rock and large broken concrete suitable for reuse on the Site or recycling at a designated location;
- metals;
- paper and plastics;
- chemical waste; and
- Materials suitable for disposal at public fill reception facilities and landfills/outlying islands transfer facilities.

The materials to be disposed of at public fill reception facilities and landfills facilities, will comply with their respective requirements under Schedule 6 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354).

Sufficient space for temporary storage of C&D materials will be identified and provided to facilitate collection and/or sorting on the Site. Except for those inert C&D materials to be reused on the Site, all other C&D materials off the Site will be removed as soon as practicable to optimise the use of the on-site storage space.

A system for proper handling and storage of chemical waste generated from the Site will be established in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation* and *the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.* Arrangements will be made with specialist contractors for the collection and disposal of chemical waste.

The Waste Management & Storage Plan on site sorting facilities is presented in **Figure 1**

8.2 Cut and Fill Balance of Construction Waste

In order to maximize the reuse of surplus inert construction waste generated from the site, GCL will strike for reusing excavated material as back fill material to balance cut and fill on site. If cut and fill could not be balanced on site, GCL will try their best endeavor to identify the alternative disposal site (i.e. other construction project) in order to reuse surplus inert C&D material. GCL will monitor the construction program and try to identify more construction projects as an alternative disposal grounds where can reuse the C&D materials during the construction period.

8.3 Recycling

To minimise the amount of waste disposal to landfills, the general refuse shall be reused and recycled as much as practical. Waste sorting and segregation shall be carried out in accordance with the following categories for recycling:

- Steel Bars
- Plastic (i.e. plastic bag, plastic bottle, plastic packaging, etc.)
- Rubber;
- Paper;
- Wood/ timber;
- Glass;
- Textile; and
- Metal (i.e. aluminium can, steel metal, ferrous metal, and non-ferrous metal).

Equipment and material packaging (ie paper and cardboard) will be recovered, properly stockpiled in dry and covered condition to prevent cross contamination by other C&D materials. Particular attention will be paid to avoid cross contamination in the course of collecting paper for recycling. Arrangements will be made with recycling contractors to ensure that recyclable materials sorted from the Site are collected with reasonable care.

8.4 Use of Timber

The use of timber in Temporary Works construction will be avoided, reduce or minimised as far as possible. Timber with Forest Stewardship Council (FSC) label will be considered for temporary work.

The formworks will be designed to maximise the use of standard wooden panels so that high reuse levels can be achieved. More durable alternatives such as reusable metal formwork, falsework, trench supports and the like shall be optimized for use in repetitive areas to increase the potential for reuse, if applicable.

9 WASTE MANAGEMENT

9.1 Management of Chemical Waste

Containers used for the storage of chemical waste will:

- be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;
- have a capacity of less than 450 litres unless the specification have been approved by the EPD; and
- display a label in English and Chinese in accordance with instruction prescribed in *Schedule 2* of the Waste Disposal (Chemical Waste)(General) Regulation.

The storage area for chemical wastes will:

- be clearly labelled and used solely for the storage of chemical waste;
- be enclosed on at least three sides;
- have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area;
- have adequate ventilation;
- be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); and
- be arranged so that incompatible materials are adequately separated.

Disposal of chemical waste will:

- be via a licensed waste collector; and
- be to an off site facility licensed to receive chemical waste, such as a recycling facility located in Yuen Long Industrial Estate or the Chemical Waste Treatment Facility located in Tsing Yi; or
- to be a reuser of the waste, under the approval from the EPD.

When a chemical spill has been discovered one shall take the following actions:

- Alert all persons in the vicinity and inform the person in-charge of the site.
- Assess the situation and if the spill is serious which will cause danger to nearby people, water bodies, natural habitats, etc., the Fire Service Department shall be informed and the affected area shall be fenced off.
- All personnel shall evacuate from the area and wait for the Fire Services Department to arrive.
- The work area supervisor shall be present at the scene to provide the details of the chemical used and the occurrence of the incident.
- If safe to do so, take the following actions:

  (a) Where available, follow the emergency procedure as stipulated in the label on the container,
  (b) Put on personal protective equipment;
  (c) Stop the spillage;
  (d) Confine the spill with earth barriers;
  (e) Contain the spill inside the work area and prevent it from entering water ways and drainage systems, etc.;
  (f) Switch off all heat and ignitable sources.

9.2 Management of General Waste

General refuse generated on site will be stored in enclosed bins separate from construction and chemical wastes. A reputable waste collector will be employed by the contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimise odour, pest and litter impacts. The burning of refuse on construction site is prohibited by law.

Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible, so separate, labelled bins for their deposit will be provided if feasible.

Office wastes will be reduced through the recycling of paper. Participation in a local collection scheme will be considered if one is available. In addition, waste separation facilities for paper, aluminium cans, plastic bottles etc., should be provided.

Refuse generated from human activities (e.g. lunch box or clothes) should be properly sorted for disposal. Briefing and training will be provided for workers regarding the awareness on the collection and recycling of waste in construction site.

9.3 Management of Asbestos Containing Materials

If all asbestos containing materials (ACM) identified in the approved Asbestos Abatement Report (AIR) is going to be removed during the construction phase, the contractor should follow the methods detailed in the approved AAPS.

If any new ACMs (not identified in AIR) discovered during construction/ demolition works, the contractor should suspend works immediately and submit an addendum to asbestos abatement plan for this newly discovered

ACM to EPD for approval.

Different types of asbestos waste shall be kept from each other and from other construction and demolition wastes. While conducting demolition activities, the working area shall be fully enclosed. Packing, labelling and handling of asbestos waste shall follow EPD requirements.

Loading and unloading of asbestos waste

- Bags shall not be thrown or dropped;
- Workers shall wear approved facemasks, heavy duty rubber gloves, overalls and working safety shoes.

Storage of Asbestos waste

All storage of asbestos waste shall be carried out properly in a secure place isolated from other substances so as to prevent any possible release of asbestos fibres into the atmosphere and contamination of other substances. Type 1 waste shall not be stored together with Type 2 and 3 wastes so as to avoid damage to the plastic bags of Type 2 and 3 wastes, unless the bags are packed in boxes or drums for additional protection. Bagged asbestos waste shall not be stacked more than 3 bags high in order to avoid damage to the bottom bag. The storage shall be isolated from other working areas and bear warning panels to alert people of the presence of asbestos waste, please refer to **Figure 2** for reference.

Transport Asbestos waste to the disposal site

Type 2 and 3 asbestos wastes contained in plastic bags must be transported in enclosed skips that meet the following specifications:

- Dedicated skips must be exclusively used to transport asbestos waste;
- Skips must be constructed of steel and possess sealable drain outlet;
- Skips must be fully enclosed and be of the walk-in type with double lockable door at the rear end. The doors and joints of the skips must be rubber sealed, and the doors must be locked during transport;
- The capacity of the skips will normally be 9 or 15 m^3, and the skips must not be overloaded;
- Loading and unloading of the bagged waste must be conducted by hand whilst the skip is on the ground;
- The bagged asbestos waste shall not be stacked indiscriminately resulting in damage to the bottom bag due to the weight at top;
- Contaminated skips must be washed down at the disposal sites where wash water may be drained into reception trenches; and
- Proper warning panels must be placed on the skip to indicate the carriage of asbestos waste.
- Drummed waste and Type 1 waste
- Need not to be transported by skips and may be transported by open lorries or enclosed vehicles;
- Waste shall be secured on the vehicles;
- Plastic sheets shall be used for covering waste on an open type lorry and for lining the vehicles when loaded with Type 1 waste. The used sheets shall be disposed of as contaminated waste at the landfill;
- Proper warning panels must be placed on vehicles to indicate the carriage

of asbestos waste; and

- Wash down asbestos contaminated vehicles with water at the disposal sites where the wash water may be drained into reception trenches.

9.3.1 Assessment and Measures of Asbestos Containing Materials

The detailed assessment and proposed mitigation measures was contained in the Asbestos Investigation Report (AIR) and Asbestos Abatement Plan (AAP) for Block 17&18 and Remaining Blocks. The AIR and AAP were approved by EPD on 2 December 2011 and 18 January 2012. Please refer to the **Appendix F** for more detail.

Check with Asbestos Section

A further asbestos investigation for internal walls and slabs at shower room in Block 8 was conducted by the registered asbestos consultant and no ACM was found. The submission of investigation results was submitted to EPD on 16 April 2012. Please refer to the **Appendix G** for more detail.

9.4 Visual Inspection to check Contaminated Soil

In according to the Section 8.1 at EM&A Manual, the audit inspection should also carry out visual inspection to check if signs of contaminated soil are revealed during the construction phase. If contaminated soil is found, the procedure for assessing and remediating the contamination in accordance with Section 3.1 of the EIAO TM Annex 19 will be undertaken.

10 HANDLING FOR DIFFERENT CATEGORIES OF WASTE

During site planning stage, waste facilities shall be designed and established to facilitate on-site sorting of C&D materials, collection of recyclable materials by recycling companies, and collection of non-recyclable materials by waste haulers. Proposed types of waste facilities, waste handler and collection frequency are given below.

Waste Type(s)	Waste Handler*	Treatment Approach	Collection Frequency**
General refuse (i.e. non-recyclable materials)	Grease Tech: Collection of general debris	Collection by refuse bins and disposed at Landfill site.(SENT)	Once the bin is filled up.
Recyclable materials such as aluminium cans, waste paper/ cardboard and plastic bottles	3R: Collection of waste paper, packaging waste, metals etc.	Collected by recycled bins / bags for recycling.	Once the bins are filled up.
Chemical waste such as spent lubricating oil	Dunwell Environmental Management: Licence chemical waste collector	Collect and store in Chemical waste store and collected by Dunwell for further treatment.	Once the amount of chemical waste reach 200L.
Inert C&D hard and soft materials, scrap metals and reclaimed asphalt pavement (RAP)	YSK2 / Shing Wing: Collector for fill material and scrap metals	Portion broken concrete/rocks will transfer to designated concrete recycler or dispose to Chai Wan Public Fill Barging Point. Scrap metals/steel bars will be collected for recycle purpose.	Once the temporary sorting/storage/ stockpiling areas are filled up.

* The waste handler will be reviewed and updated if necessary
**Collection frequency shall be reviewed based on the actual storage capacity of the waste facilities and minimum collection frequency may be required apart from stipulating collection only when the bin is full.

11 WASTE MONITORING AND AUDITING

a) Chit

Construction Waste Disposal Charging Scheme has been implemented on 1 December 2005 and Gammon obtained the Billing Account (Account No: 7013338) with the EPD and pay for the construction waste disposal charge before using government disposal facilities.

Gammon obtained the billing account for this project and collected the Chit ticket from EPD.

Prior to the vehicle leaving the site, the Contractor will complete all relevant information on the Chit and give it to the waste hauler and retain Part A of the Chit. The Chit will be carried on board the vehicle at all times throughout the vehicular trip.

For each vehicular trip, the waste hauler will present to the operator of the

government disposal facilities (including public fill reception facilities, sorting facilities, landfill, and Outlying Islands Transfer Facilities) prior to the disposal of construction wastes. On completion of the service, waste hauler retains Part B of the Chit and the Government will retain Part C of Chit.

The waste transaction record and the Part A of the Chit ticket shall be maintained on site for future references.

A sample of Chit ticket form is presented in **Appendix C**.

b) C&D Material Disposal Delivery Form for Broken Concrete and Rocks

A record tracking system shall be established to record the transfer of all broken concrete and rock materials. The brief procedures of the system are detailed in *Section d.*

c) Inspection Programme

The Contractor shall arrange monthly inspection attended by the Environmental Engineer, the Environmental Team, the Independent Environmental Checker and/or the Architect nominated site representative to inspect the site to ensure satisfactory performance on compliance with the CWMP with due regards to the followings:

i. inert C&D materials suitable for recycling into aggregates are recovered and delivered to designated recycling facilities as notified by the Architect or the Public Fill Committee (Port Works Division of CED);
ii. if the Contract involves demolition works, appropriate sequential demolition has been employed to facilitate recovering as much as possible reusable and recyclable materials;
iii. a disposal recording system is operating satisfactorily for recording C&D materials removed from the Site;
iv. on-site sorting of C&D materials is properly carried out to recover inert C&D materials and reusable and/or recyclable materials before disposal;
v. paper/cardboard packaging, and metals including aluminium cans are recovered and collected by recycling contractors; and
vi. Plastic bottles/containers or plastic sheets/foam from packaging are collected as far as possible for recycling.

Immediately after the inspection, the Contractor shall take prompt action to rectify the deficiencies identified and shall report the status of action taken before the forthcoming monthly inspection.

d) Record Keeping and Reporting

The Contractor shall keep adequate and proper records such as delivery dockets and measurement records relating to the implementation of the CWMP. Records shall also include CHIT tickets.

All waste treatment should be properly recorded by receipt, photo, delivery form and summary, supporting document should also be provided for individual waste. All recordation should be submitted in the monthly BEAM report for vetting purpose.

After the completion of the project, Gammon will complete the BEAM Plus submission template for MA 11 in order to demonstrate that at least 30% of construction waste is recycled. The BEAM Plus Template – MA 11 and attached in **Appendix E**.

12 TRAINING

The Environmental Engineer and other site personnel (if they have not attended similar course before) shall be arranged to attend training on waste management organised by training institutes or organisations as considered appropriate.

The Environmental Engineer shall arrange and provide training on waste management in the site-specific induction and its refresher training for all persons employed by the Contractor or his sub-contractor on the Works or in connection with the Contract. The training should cover the waste management policy, targets, measures for on-site sorting of C&D materials and measurement on waste management performance on the Site. The training record shall be kept.

The Environmental Engineer is allowed to develop and provide toolbox talks for the topic on on-site sorting of C&D materials to promote the workers' awareness on handling, sorting, reuse and recycling of C&D materials. Training material for environmental toolbox talks with regard to waste management shall be prepared by the Environmental Engineer and disseminated to supervisor/foremen and subcontractor's representatives for conducting tool-box talks to all workers or labourers at regular intervals.

APPENDIX A

Health Safety Environmental Policy

Gammon

POLICY ON HEALTH, SAFETY AND THE ENVIRONMENT

The environment, health & safety and well being of everyone employed on Gammon projects, members of the public, and those who may be affected by our activities are afforded the highest concern within Gammon.

We fully recognise the importance of identifying and minimising the risks and impacts that may arise from our activities and believe that no task is so important or urgent as to exclude the prior consideration of health, safety, environmental and community concerns in our decision-making.

We regard excellence in health, safety & environmental performance, the incorporation of sustainability principles and positive engagement with our stakeholders as critical to our success.

We are fully committed to being a company that is Environmentally Responsible and Community Engaged. Further, we commit to demonstrate we are "World Class in Health and Safety" by achieving "Zero Harm" by 2012.

In this regard it is Gammon's policy to:

- Place health and safety as our number one priority over all other Business considerations;
- Require the highest standards of health, safety and environmental leadership from all our managers who should ensure that effective systems of control are in place for all operations;
- Treat compliance with legislation and contractual requirements as a fundamental minimum requirement in delivering Health, Safety and Environmental excellence;
- Allocate sufficient resources to implement a managed system of controls which will deliver our health, safety and environmental objectives;
- Raise the awareness of health, safety, the environment and Gammon's commitment to sustainable development by providing information, training, instruction and supervision to our employees and business partners;

- Pursue innovation and constantly re-examine our design and construction approach so as to remove risk and enhance the health and safety of our workers, prevent pollution and afford better protection to the environment;
- Engage with our industry and challenge ourselves to continually "raise the bar" by improving standards for health, safety and environmental performance;
- Frequently engage with local communities to find ways in which we can minimize impacts and add value to the quality of life of those affected by our operations;
- Seek continual improvement through regular performance monitoring, systematic audits and reviews, and by setting challenging objectives and targets.

The responsibility and accountability for implementing this policy and achieving our "Zero Harm" and Environmental Objectives rests with each and every employee. At stake is your future well-being, your company and your community. Please join me, and let's all ***"Make Safety Personal"***.

Thomas Ho
Chief Executive
Gammon Construction Limited

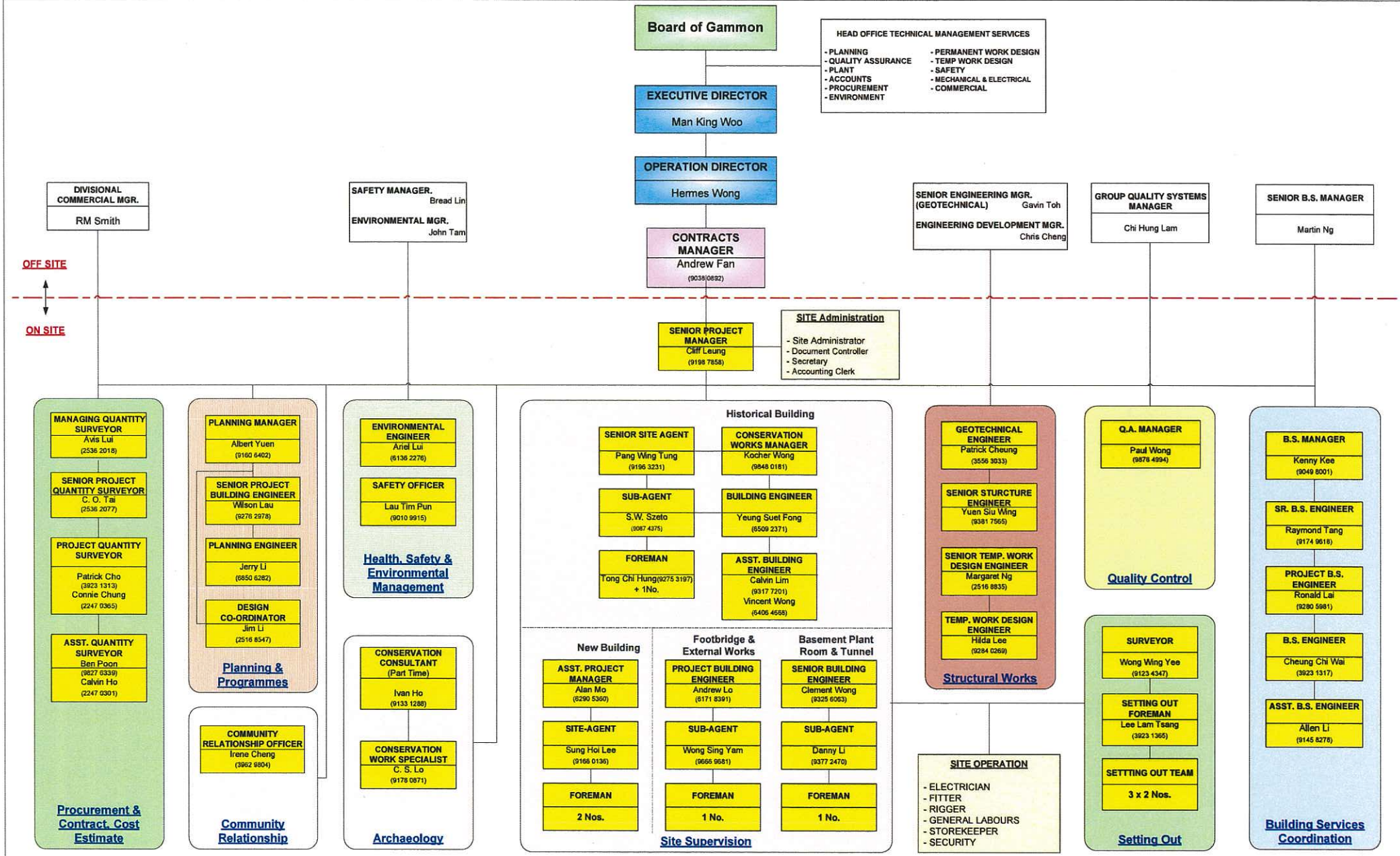
July 2009

APPENDIX B

Project Organization Chart

GAMMON CONSTRUCTION LIMITED
CENTRAL POLICE STATION CONSERVATION AND REVITALISATION PROJECT
Project Management Organization Chart

Date : 23 May 2012
Drawn By :
Drawing No. : GCL/J3416/OC02
Revision : 4



APPENDIX C

Sample Chit Ticket

EPD231

入帳票編號:
Chit No.:_____

選擇「✓」一個訂明設施:
Tick (✓) One Prescribed Facility:

☐ 堆填區 Landfills ☐ 篩選分類設施 Sorting Facilities
☐ 公眾填料接收設施 Public Fill Reception Facilities
☐ 離島廢物轉運設施 Outlying Islands Transfer Facilities

車牌號碼 Vehicle Registration Mark:

_____

使用日期:
Date of Use:_____

簽發人:
Issued by:_____

建築廢物產生地點:
Construction Waste Generated Site:

J130614

帳戶編號:
Account No.:_____

甲部份:由帳戶戶主保留
Part A: retained by Account-holder

入帳票編號:
Chit No.:_____

選擇「✓」一個訂明設施:
Tick (✓) One Prescribed Facility:

☐ 堆填區 Landfills ☐ 篩選分類設施 Sorting Facilities
☐ 公眾填料接收設施 Public Fill Reception Facilities
☐ 離島廢物轉運設施 Outlying Islands Transfer Facilities

車牌號碼 Vehicle Registration Mark:

_____

使用日期:
Date of Use:_____

簽發人:
Issued by:_____

帳戶名稱:
Name of the Account-holder:

帳戶編號:
Account No.:_____

乙部份:由廢物運輸商保留
Part B: retained by Waste Hauler

香港法例第354章廢物處置條例
廢物處置(建築廢物處置收費)規例
Waste Disposal Ordinance (Chapter 354)
Waste Disposal (Charges for Disposal of Construction Waste) Regulation

載運入帳票
CHIT

車牌號碼:
Vehicle Registration Mark:

0752045 1

_____

有效期至: Not Applicable
Valid Until:_____

建築廢物產生地點:
Construction Waste Generated Site:

帳戶名稱:
Name of the Account-holder:

CEDD 土木工程拓展署 Civil Engineering and Development Department
環境保護署 Environmental Protection Department

丙部份:由政府保留
Part C: retained by Government

7012991

APPENDIX D

BEAM Plus for MA P3

BEAM Plus for New Buildings Submission Template for Ma P3 Construction/Demolition Waste Management Plan

(BEAM Plus 2010/v1)

Credit Requirements: **Implementation of a waste management system that provides for the sorting, recycling and proper disposal of construction/demolition materials.**

Project Name: **gf**

Credit Attainable:	**Prerequisite**

Nature of Project:

Please check (☑) or (☒) the following strategies if have been adopted:

		☑	☒
1.	Nominating a person, such as a site manager, to be responsible for good site practices, collection and effective disposal of all wastes generated at the site to an appropriate facility;	☐	☐
2.	Training of site personnel in proper waste management and chemical waste handling procedures;	☐	☐
3.	Developing and providing toolbox talks for onsite sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials;	☐	☐
4.	Providing sufficient waste disposal points and regular collection of waste;	☐	☐
5.	Implementing a regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;	☐	☐
6.	Sorting C&D waste from demolition of existing facilities to recover recyclable portions such as metals;	☐	☐
7.	Segregating and sorting different types of waste into different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;	☐	☐
8.	Encouraging collection of aluminium cans, plastic bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force;	☐	☐
9.	Recycling unused chemicals;	☐	☐
10.	Ensuring proper storage and site practices to minimise the potential for damage or contamination of construction materials; and	☐	☐
11.	Routine inspection and reporting system.	☐	☐

Checklist:

Please complete each item with a tick (☑), cross (☒) or not applicable (■).

		☑	☒	■
	General (Non Construction):	☐	☐	☐
1.	All work areas are cleaned regularly to remove general litter and refuse;	☐	☐	☐
2.	General refuse and litter are stored in enclosed bins or compaction units separate from construction or chemical waste;	☐	☐	☐
3.	Collect general waste and litter from site for disposal;	☐	☐	☐
4.	No burning of refuse at any construction area;	☐	☐	☐

BEAM Plus for New Buildings Submission Template for Ma P3 Construction/Demolition Waste Management Plan

(BEAM Plus 2010/v1)

5.	Separately labelled bins are provided to allow segregation of recyclable material;	☐	☐	☐
6.	Save paper and recycle waste paper;	☐	☐	☐
7.	All vehicles carrying waste are properly fitted with side and tail boards, and with tarpaulin covered;	☐	☐	☐
8.	Training is provided to workers on waste management procedures.	☐	☐	☐
		☐	☐	☐
	General (Construction)	☐	☐	☐
9.	Different types of construction waste generated from the site is segregated, stored, transported and disposed of separately;	☐	☐	☐
10.	Sorting of waste is conducted on-site;	☐	☐	☐
11.	All waste materials are segregated into categories covering:			
	- Inert portion of construction & demolition (C&D) material for reuse on-site;	☐	☐	☐
	- Inert portion of C&D material to be used as public fill;	☐	☐	☐
	- Remaining waste for landfill;	☐	☐	☐
	- Chemical waste;	☐	☐	☐
	- Packaging waste;	☐	☐	☐
	- General waste.	☐	☐	☐
12.	Separate compartments for inert (e.g. soil, rubble, sand, stone, etc.) and non-inert (e.g. wood, glass, plastics, steel and metals, organics, etc.) wastes are provided;	☐	☐	☐
13.	Inert waste is used on site before disposed of at public fill reception facilities;	☐	☐	☐
14.	Non-inert waste is sorted for re-use or recycling where possible before disposal at strategic landfills;	☐	☐	☐
15.	Site fencing, scaffolding and timber for building work are reused wherever possible;	☐	☐	☐
16.	Regular maintenance and cleaning of waste storage area;	☐	☐	☐
17.	Excavated materials are properly treated (re-used/disposed of) according to specified procedures;	☐	☐	☐
18.	General refuse stored in specified enclosed bins/compaction units, or reused if possible;	☐	☐	☐
19.	Does the waste collector have any records of dumping?	☐	☐	☐
20.	A barge loading point is provided to facilitate transfer of suitable material to public dumps;	☐	☐	☐
21.	Records of reuse/recycling/disposal of construction waste are properly kept.	☐	☐	☐

Explanation to fulfill BEAM Plus criteria:

BEAM Plus for New Buildings Submission Template for Ma P3 Construction/Demolition Waste Management Plan

(BEAM Plus 2010/v1)

Enclosures:

- ☐ Contract specification specifying the Waste Management Plan
- ☐ The Waste Management Plan for construction/demolition within the site
- ☐ Proof of implementation of the Waste Management Plan
- ☐ Other supporting documents, please specify.

Declaration:

I herewith declare to the HKGBC and BEAM Society that the information submitted is true and comply with requirements of BEAM Plus for NB Ma P3.

Signature: _____

Name: Position:

Company: Date:

APPENDIX E

BEAM Plus for MA 11

HKGBC 香港綠色建築議會

BEAM Society 香港環保建築協會

BEAM Plus for New Buildings Submission Template for Ma 11 Construction Waste Reduction

(BEAM Plus 2010/v1)

Enclosures:

☐ Site records, monthly reports, calculations specifying the wastes which produced from construction processes.

☐ Site records, monthly reports, calculations specifying the recycled construction wastes other than excavated waste and disposal to public fill.

☐ Photos taken at site showing the collection of construction waste.

☐ Other supporting documents, please specify.

Declaration:

I herewith declare to the HKGBC and BEAM Society that the information submitted is true and comply with requirements of BEAM Plus for NB Ma 11.

Signature: _____

Name: Position:

Company: Date:

APPENDIX F

Asbestos Investigation Report and Asbestos Abatement Plan

本署檔號 OUR REF: (5) in EPAC/A/4/000/233 II
來函檔號 YOUR REF:
電話 TEL. NO.: 2835 1235
圖文傳真 FAX NO.: 2834 9960
電子郵件 E-MAIL:
網址 HOMEPAGE: http://www.epd.gov.hk

Environmental Protection Department
Branch Office
28th Floor, Southorn Centre,
130 Hennessy Road,
Wan Chai, Hong Kong.

環境保護署分處
香港灣仔
軒尼詩道
一百三十號
修頓中心廿八樓

2 December 2011

The Jockey Club CPS Limited
1 Sports Road, Happy Valley
Hong Kong
(Attn. : Mr. Kenneth Lee)

RECEIVED 2 - DEC 2011

BY FAX 28388942

Dear Sir,

Air Pollution Control Ordinance Cap.311
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 and 18)

We refer to the asbestos investigation report (Report No. : 0210/11/ED/0077A) and the asbestos abatement plan (Report No. : 0210/11/ED/0078A) submitted by your registered asbestos consultant Mr. YUNG Kuan Lin under letter reference MCL/ED/0323/2011/C dated 1/12/2011.

We are satisfied that the content of the said asbestos abatement plan is in accordance with section 71 of the Air Pollution Control Ordinance.

Yours faithfully,

(Danny C.C. CHENG)
for Director of Environmental Protection

cc MateriaLab Consultants Limited (Attn.: Mr. YUNG Kuan Lin) Fax 2450 6138

MXH10305/TX110519

R00330

MaterialLab

MATERIALAB CONSULTANTS LIMITED

Safety / Env / QS / Suet Fong

Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road, Tai Lam,
Tuen Mun, N.T., Hong Kong.
Tel : +852 2450 8238
Fax : +852 2450 6138
E-mail : mcl@fugro.com.hk
Website : www.materialab-consultants.com

RECEIVED
- 3 DEC 2011

Date 1 December 2011
Our Ref. MCL/ED/0323/2011/C

Environmental Protection Department
28/F., Southorn Centre,
130 Hennessy Road,
Wanchai, Hong Kong.

BY HAND

Attn.: Mr. Danny Cheng

Dear Sir,

Asbestos Consultancy Services for
Central Police Station Conservation & Revitalisation Project (Phase 1 – Block 17 and 18)

With refer to your letter ref. (3) in EPAC/A/4/000/233 II dated on 30 November 2011, we would like to on behalf of our client to submit the revised Asbestos Investigation Report (AIR) (Report No. 0210/11/ED/0077A) and Asbestos Abatement Plan (AAP) (Report No. 0210/11/ED/0078A) for the remaining blocks at the captioned site for your comment and approval.

In response to your comments the following have been conducted:

1. Additional photos have been added to the Appendix 2 of the AIR, no additional ACMs have been found in the captioned areas.
2. The corrugated sheets identified at Block 18 are homogenous to the ACM corrugated sheets at Block 17, Entrance Gate where a sample has concluded the corrugated sheet to be ACM.
3. Sections 4.5 to 4.6 and Figure 2a of the AAP gives the requirement for the set-up of the segregation with wind barriers and working platform, the drawing also includes photos showing the existing wind barrier already erected in place for this purpose.

Should you require further information, please do not hesitate to contact the undersigned on 2452 7130.

Assuring you of our best attention at all times.

Yours faithfully,
for and on behalf of
MATERIALAB CONSULTANTS LIMITED

Colin Yung
Registered Asbestos Consultant

CY/ylb

Encl.

c.c. The Jockey Club CPS – Mr. Kenneth Lee (by post)
Gammon Construction Limited – Mr. Alan Mo (by post)

MATERIALAB CONSULTANTS LIMITED
Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun, N.T., Hong Kong.
Tel : (852)-24508238
Fax : (852)-24508138
Email : mcl@fugro.com.hk

MaterialLab

ASBESTOS INVESTIGATION REPORT

Client : Gammon Construction Ltd.

Project : Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 and 18)

Report No. : 0210/11/ED/0077A

MATERIALAB CONSULTANTS LIMITED
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1.0 INTRODUCTION

MateriaLab Consultants Limited was appointed by Gammon Construction Limited to conduct an asbestos investigation for Central Police Station. The location plan for the buildings is shown in Appendix 1. This report have been extracted from the main report (report no. 0014/09/ED/0011A) in order to commence the asbestos removal work for corrugated sheets found in Block 17 and 18, the reason for this is to expedite the delayed construction programme to meet the revitalization programme.

The Central Police Station Compound (CPSC) is located in the junction of Hollywood Road, Arbuthnot Road, Old Bailey Street and Chancery Lane. The site is approximately 1.35 hectares (3.37 acres), and contains 19 definable structures and two open spaces. The Compound was built in early 20th Century and the building were mainly used as a Magistracy, Dormitory, Immigration Office, Police Station and Jail. The buildings were vacant at the time of survey and it shall be revitalised in the near future. The sensitive receivers identified in the immediate vicinity were the residents around the project site.

2.0 PARTICULARS OF CONCERNED PARTIES

Owner

The Jockey Club CPS Limited
Address: 1 Sports Road,
Happy Valley,
Hong Kong
Tel.: 2966 7224
Fax: 2838 8942
Contact person: Mr. Kenneth Lee

Owner's Representative

The Jockey Club CPS Limited
Address: 1 Sports Road,
Happy Valley,
Hong Kong
Tel.: 2966 8063
Fax: 2838 8942
Contact person: Mr. C.W. Sham

Registered Asbestos Consultant

Mr. Colin Yung (1063)
Address: Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun,
N.T., Hong Kong.
Tel.: 2450 8238
Fax: 2450 6138

Registered Asbestos Laboratory

Fugro Technical Services Limited
MateriaLab Division (4001)
Address: Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun,
N.T., Hong Kong.
Tel.: 2450 8233
Fax: 2450 6138
Contact Person: Mr. John Ho

3.0 SCOPE OF WORKS

MateriaLab Consultants Limited was appointed by Gammon Construction Limited to:

- conduct an asbestos investigation for Central Police Station Compound, Block 17 and 18;
- identify and locate asbestos-containing materials in the surveyed area;

- collect suspected asbestos-containing materials for further analysis; and
- prepare an Asbestos Investigation Report (AIR) and an Asbestos Abatement Plan (AAP) if necessary.

4.0 WORK UNDERTAKEN

4.1 Record Review

The previous survey records regarding asbestos-containing materials of the buildings were verified.

4.2 Field Work

The asbestos surveys were carried out on 18, 20 and 23 February, 3 March and 7 April 2009, and verification survey was conducted on 20 October 2011 at the project site. The surveys consisted of visual inspection of each occurrence and representative sampling of suspected materials. The surveys were limited to exposed areas of the buildings, which were accessible to the Consultant without the removal of any external or internal building fabrics, fixtures and fittings. The Consultant did not, for the purpose of these surveys, examine any unexposed areas of the buildings such as concealed or underground water pipes, cables, mains, etc and any areas of the building which were dangerous or hazardous to the Consultant.

The following materials were inspected during the surveys and are summarised in Table 1. Photographic records of these materials are enclosed in Appendix 2.

Table 1

Items Inspected	Location	Composition
Corrugated Sheets*	Various Locations	Suspected asbestos-containing Corrugated Sheets / Metal
Water Pipes	Various Locations	Metal / Plastic
Cable Trunk	Block 17, 1/F, F Hall	Empty
Air Ventilation System	Various Locations	Window type / Electric Fan
Pipe Insulation	Various Locations	Foam / Glassfibre / Plastic
Roofing	Block 17	Concrete
Sound Insulation Board	Block 17, Interview Room, G/F	Paper
Insulation inside Switch / Fuse Boxes	Various Locations	Metal

*Samples were taken for laboratory analysis.

4.3 Sampling

Sampling and analysis of suspected asbestos-containing materials were carried out by Fugro Technical Services Limited (MaterialLab Division), the Laboratory. The following sampling criteria have been adopted:

Type of Materials	Area or Length	Number of Samples
Homogeneous surface materials e.g. coating, plaster, etc.	<100 sq.m.	At least 3
	100 - 500 sq.m.	5
	> 500 sq.m.	At least 7
Thermal insulation e.g. pipe lagging, boiler insulation, etc.	Each homogeneous run	At least 3
Miscellaneous materials e.g. corrugated sheet, etc.	Each homogeneous material	At least 2

The corrugated sheets identified at Block 17 Entrance Gate G/F and Block 18 Roof is homegenous in nature and hence the sample results (PE90125/32) is a representative sample for Block 18 Roof

4.4 Laboratory Analysis

32 samples of suspected asbestos-containing materials were collected for the whole site, sample PE90125/32 was collected to represent the corrugated sheet at Block 17 and 18. The samples were then analysed for the presence and type of asbestos according to the Laboratory's HOKLAS accredited testing procedures. The results are summarised in Table 2.

Table 2

Sample Code	Sample Nature	Sampling Location	Photo No.	Type and Content of Asbestos Present
PE90125/32	Corrugated Sheet	Entrance Gate, G/F Block 17	1	Chrysotile: 5 – 10%

MATERIALAB CONSULTANTS LIMITED
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5 Lok Yi Street,
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5.0 SUMMARY OF FINDINGS

The results of the surveys identified asbestos-containing materials at the locations tabulated below. The exact locations of the materials are shown in Appendix 5 and photographs of these materials are shown in Appendix 2.

ACM Item No.	Nature of Materials	Estimated Quantity	Location	Friability	Condition	Accessibility	Potential of Ventilation Disturbance	Representative Samples Taken	Types and Content of Asbestos	Hazard Rank
ED/0011-2	Corrugated Sheets	100 m² 4 m²	Roof, Block 18 Entrance Gate, G/F, Block 17	Non-Friable	Good	Difficult	High	PE90125/32 Homogenous to sample PE90125/32	Chrysotile: 5 - 10%	3

Date of investigation: 18, 20 and 23 February, 3 March and 7 April 2009
Date of verification: 20 October 2011

MATERIALAB CONSULTANTS LIMITED
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17 M.S. Castle Peak Road,
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Email : mcl@fugro.com.hk

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 All the asbestos-containing materials identified at Block 17 and 18 at the time of survey are summarised in Section 5.

6.2 An Asbestos Abatement Plan shall be drawn up for revitalization work so that the release of asbestos dust is properly controlled and the health hazard to both the workers and the public are minimised. The removal of asbestos-containing material requires special precautions and strict compliance with relevant regulations. An air sampling and monitoring programme is necessary to demonstrate the effectiveness of the abatement plan.

6.3 Every effort has been made to visually examine all materials within the scope of this project and, where appropriate and accessible to us, these materials have been sampled and tested by the Laboratory to ascertain the presence or otherwise of asbestos. The ACMs identified in this report, if any, may not be the only ACMs within the premises.

6.4 Contractors are strongly advised to visit the areas to verify the exact locations and quantities of ACMs themselves before they prepare and submit quotations/tenders for the removal of ACMs in the subject area.

6.5 It should be noted that the information presented in this report describes the conditions at the time of survey. If suspected ACMs not identified or sampled during these surveys are revealed, a registered asbestos consultant should be consulted before proceeding with any asbestos abatement work in the premises.

6.6 Due to the fact that previous identified ACMs at Blocks 1 and 10 have been found missing, the Main Contractor is required to ensure that a sound preventative measures shall be in placed to prevent any further unauthorised disturbance to the ACMs in other areas when the demolish contractors is resident on-site. The management commitment to control the site as shown in Appendix 7 is provided by GCL and will be strictly adopted until all ACMs have been removed off-site.

Prepared by : **Yu Lap Bong**

Certified by :

Colin Yung
Registered Asbestos Consultant

Date : 1 December, 2011

MATERIALAB CONSULTANTS LIMITED
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5 Lok Yi Street,
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Fax : (852)-24506138
Email : mcl@fugro.com.hk

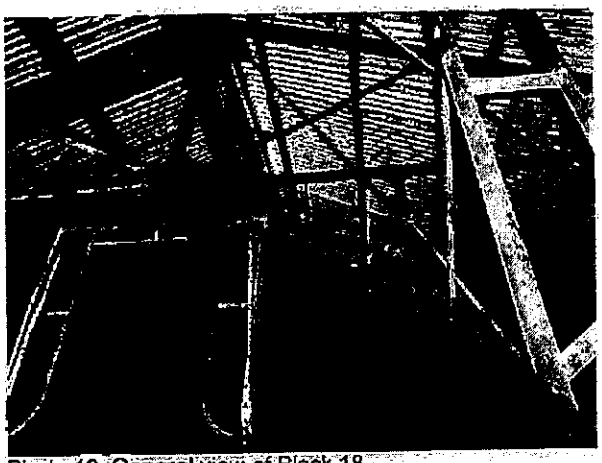
Photo 13. General view of Block 18

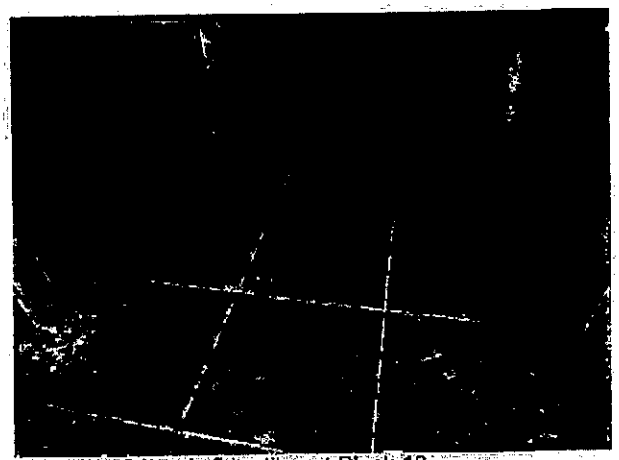
Photo 14. Ceramic floor tiles at Block 18

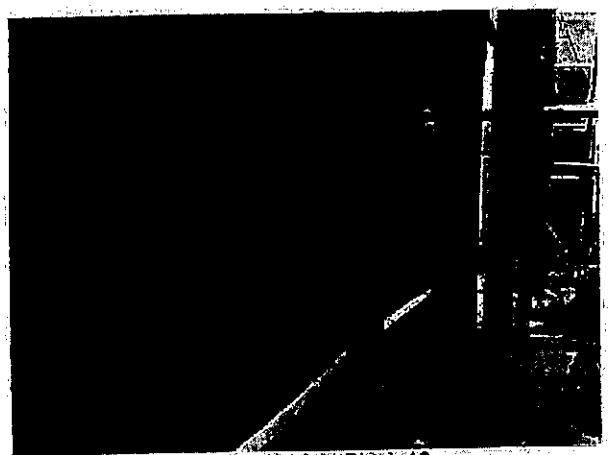
Photo 15. Water pipe (plastic) at Block 18


Photo 16. Sound insulation board (paper fibre) at Block 17, Interview Room, G/F

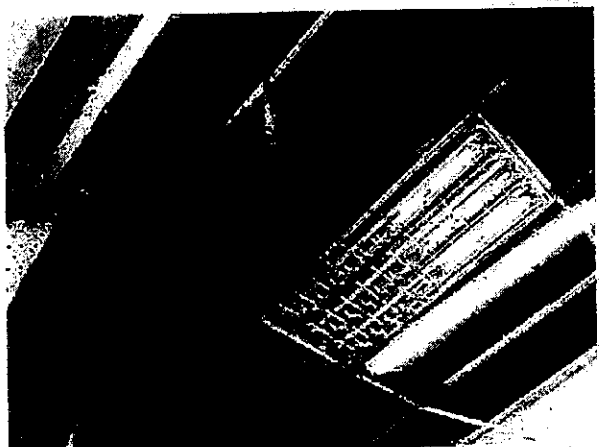
Photo 17. General view above false ceiling (no ventilation system) Block 17, Interview Room, G/F

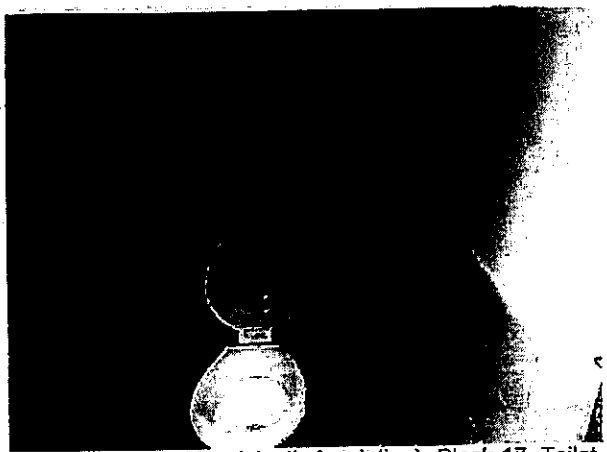
Photo 18. Water pipe (plastic insulation), Block 17, Toilet, G/F

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Report No.: 0210/11/ED/0077A

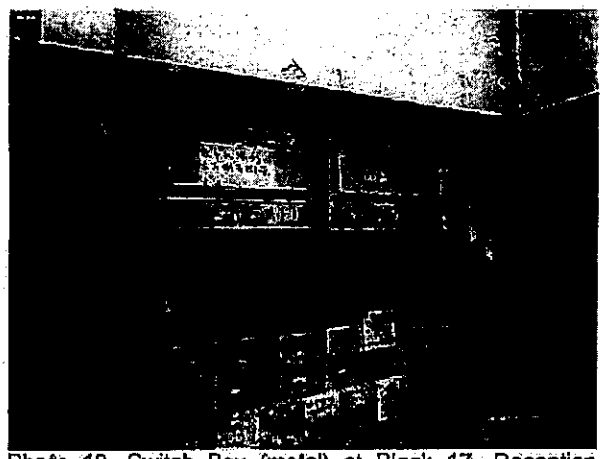

Photo 19. Switch Box (metal) at Block 17, Reception Room, G/F

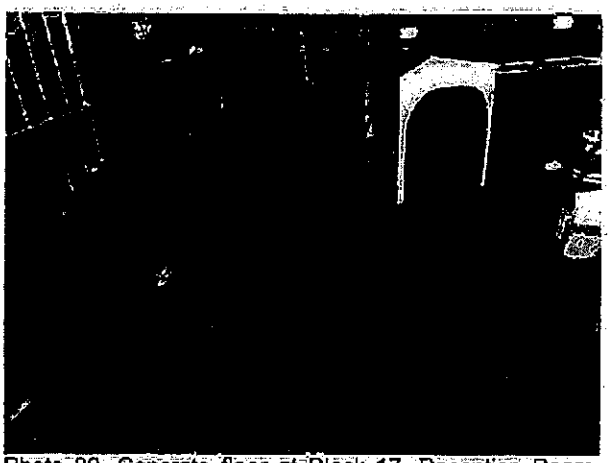

Photo 20. Concrete floor at Block 17, Reception Room, G/F

Photo 21. Electric Fan at Block 17, Reception Room, G/F

Photo 22. Electric Fan at Block 17, Reception Room, G/F

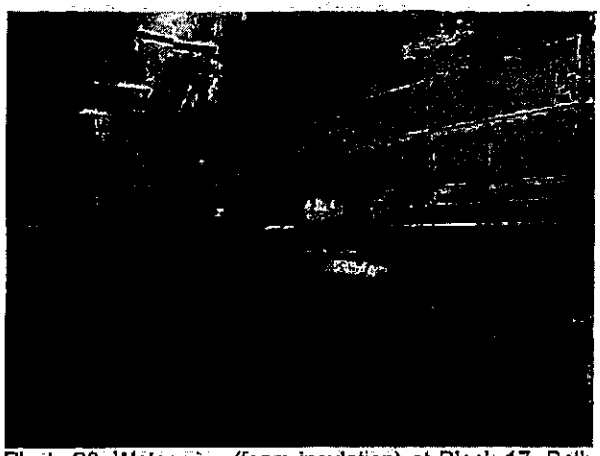

Photo 23. Water pipe (foam insulation) at Block 17, Bath Room, G/F

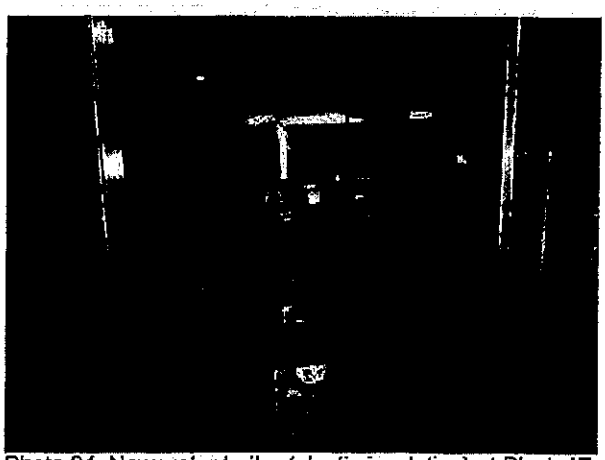

Photo 24. New water boiler (plastic insulation) at Block 17, Bath Room, G/F

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APPENDIX 1

LOCATION PLAN

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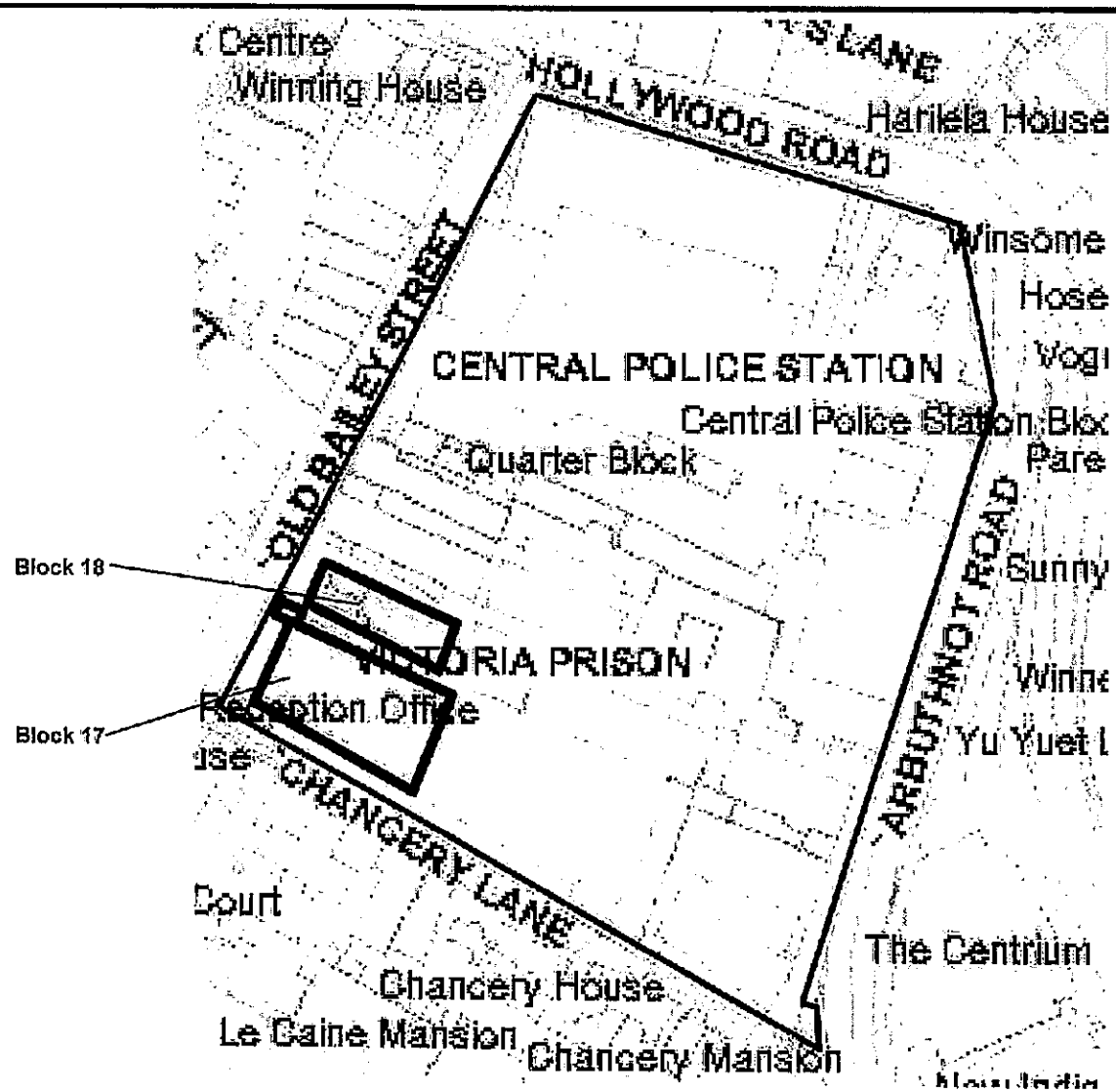

Figure: 1

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 & 18)

Drawing Title:
Location Plan

Our ref. no.:
0210/11/ED/0077A

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

- Central Police Station Compound
- Scope of Work

Rev.	Date
0	19/11/2011

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APPENDIX 2

PHOTOGRAPHIC RECORDS OF SITE SURVEY

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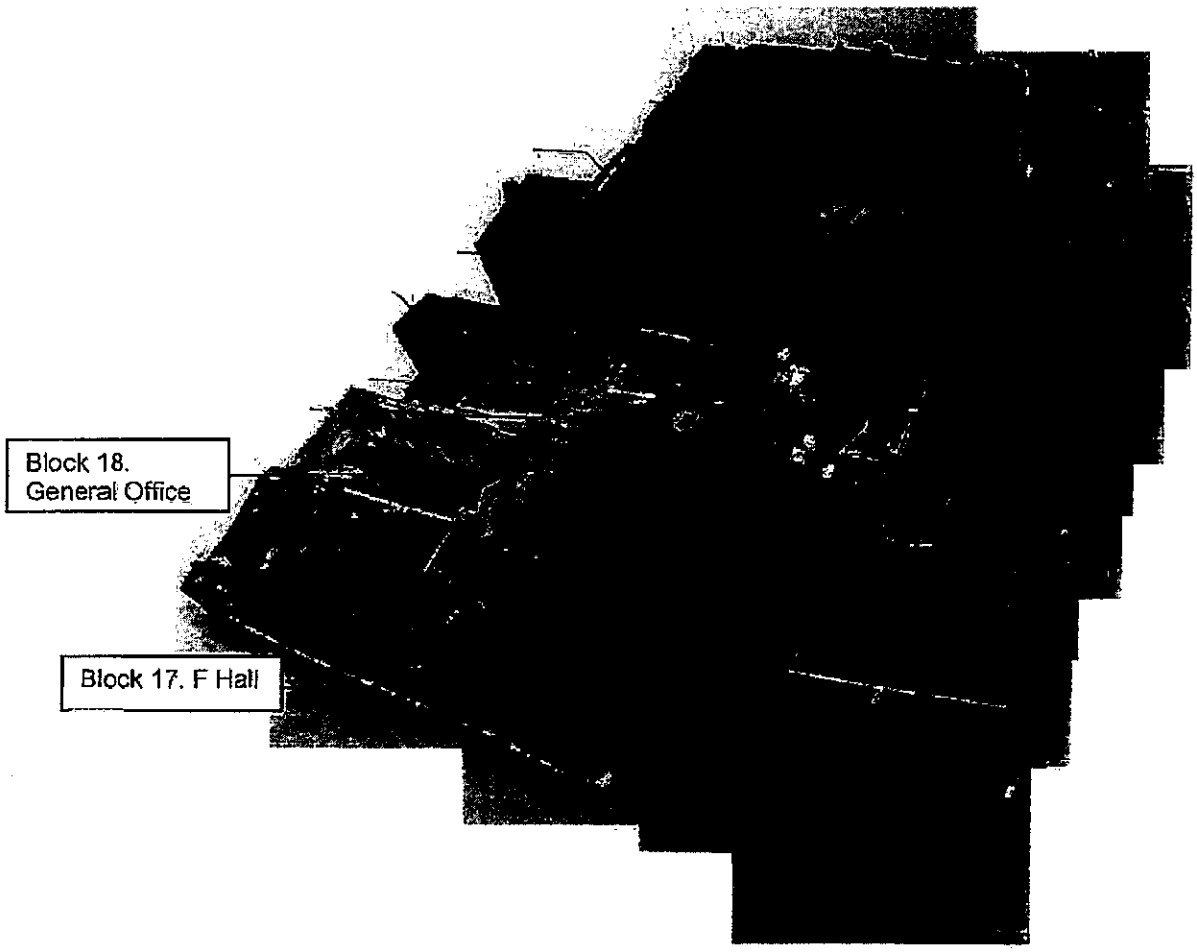
Report No.: 0210/11/ED/0077A



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Report No.: 0210/11/ED/0077A

Photo 1. Corrugated Sheet (PE90125/32) sampled at Entrance Gate, Block 17 was confirmed as ACM. (ACM Item No.: ED/0011-2).

Photo 2. General view of the asbestos-containing corrugated sheet (ED/0011-2), photo taken at the Entrance Gate, Block 17

Photo 3. General view of the Block 17 Concrete Roof

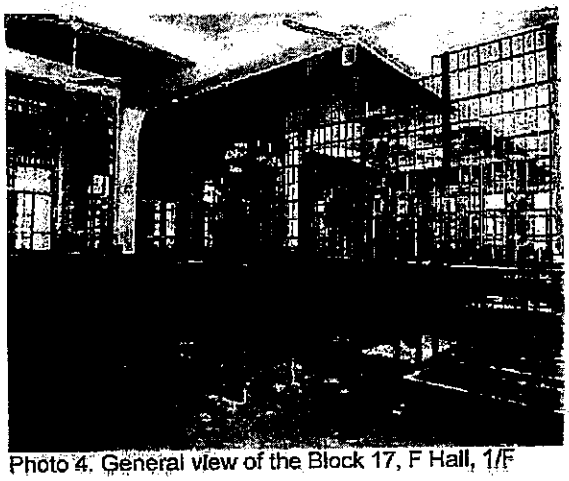

Photo 4. General view of the Block 17, F Hall, 1/F

Photo 5. General view of the Block 17, F Hall, 1/F

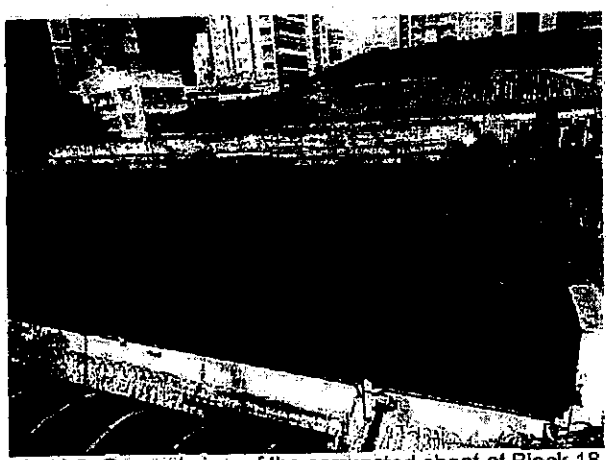

Photo 6. General view of the corrugated sheet at Block 18

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Report No.: 0210/11/ED/0077A

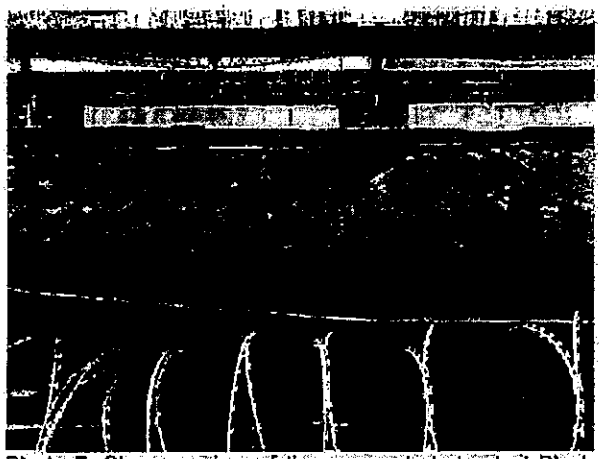

Photo 7. Close up view of the corrugated sheet at Block 18

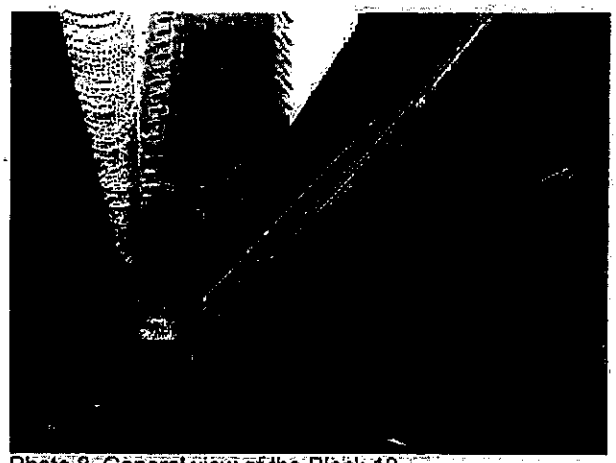

Photo 8. General view of the Block 18

Photo 9. Close up view of the corrugated sheet at Block 18

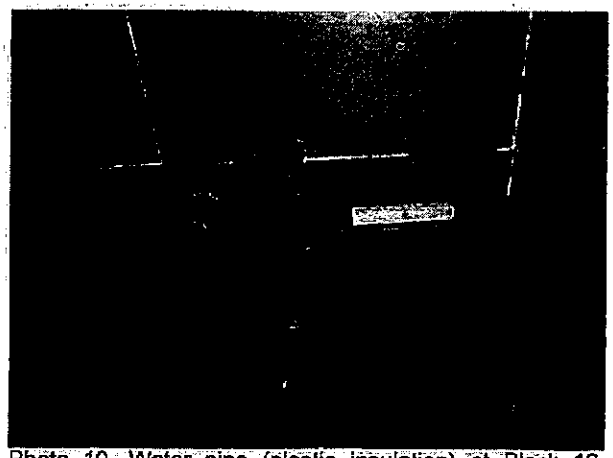

Photo 10. Water pipe (plastic insulation) at Block 18, Toilet

Photo 11. Chiller pipe (glassfibre insulation) at Block 18, Toilet

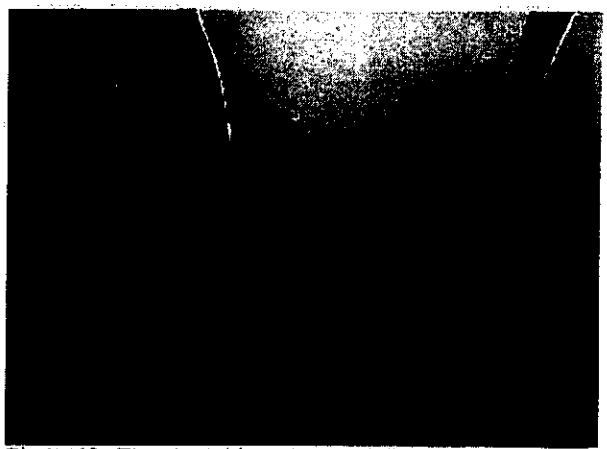

Photo 12. Electric cable (plastic insulation) no block wall seal, Block 18, Hall

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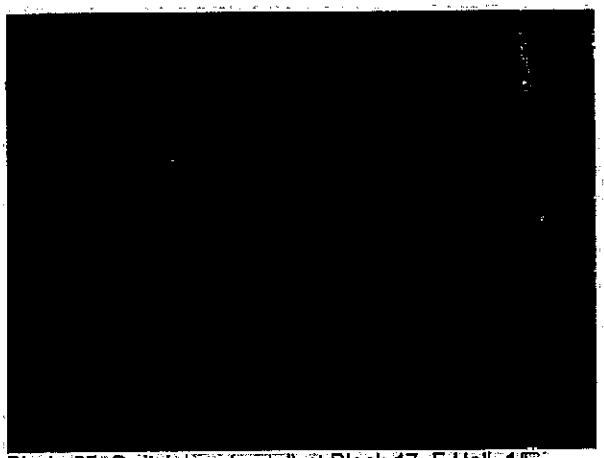

Photo 25. Switch box (metal) at Block 17, F Hall, 1/F

Photo 26. Cable Trunk (empty) at Block 17, F Hall, 1/F

Photo 27. Water boiler (Metal) at Block 17, F Hall, 1/F

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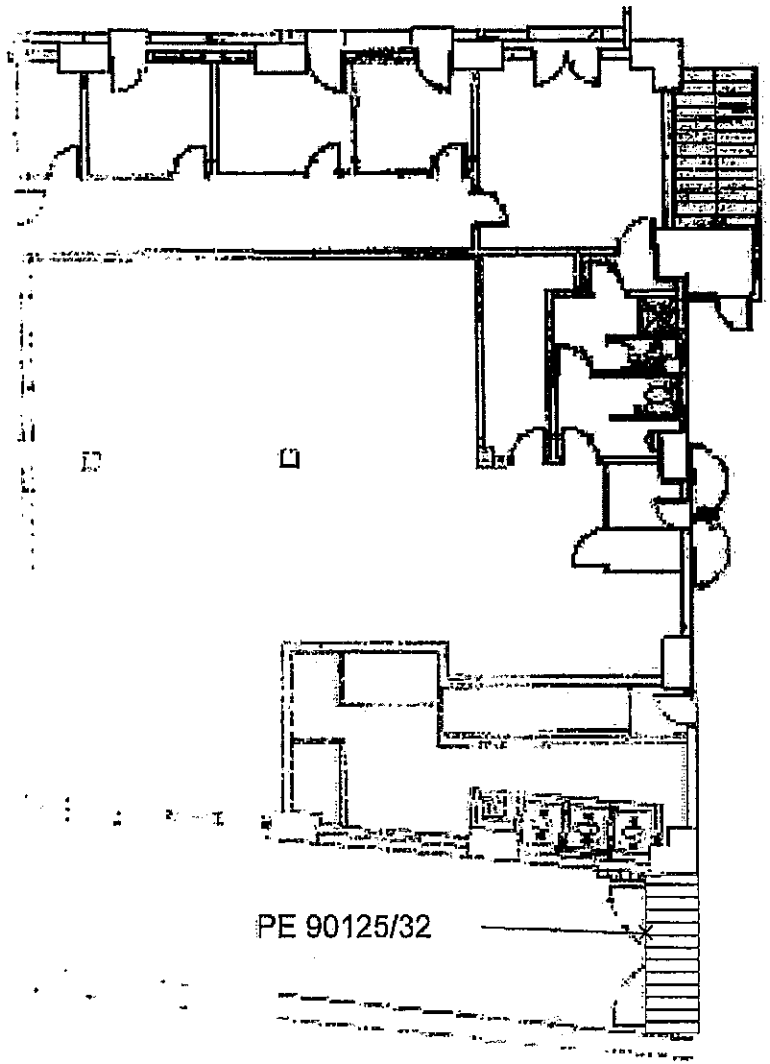

G/F, Block 17

Figure:	1
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 & 18)
Drawing Title:	Sampling Location Plan G/F, Block 17, F Hall
Our ref. no.:	0210/11/ED/0077A
Prepared by:	Yu Lap Bong
Scale:	Not to Scale
Legend:	

Rev.	Date
0	19/11/2011

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APPENDIX 3

SAMPLING LOCATION PLANS

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APPENDIX 4

LABORATORY TEST RESULTS

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Website : www.materialab.com.hk

MaterialLab

Report No. : 090338PE90125(4)

I. TEST REPORT ON SAMPLING AND ANALYSIS OF BULK MATERIALS

Information Supplied by Client

Client : MaterialLab Consultants Limited

Client's address : Fugro Development Centre, 5 Lok Yi Street, 17 M.S. Castle Peak Road, Tai Lam, Tuen Mun, N.T.

Project : Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Test required : 1. Presence of asbestos
2. Type of asbestos, if present
3. Determination of ACM by visual examination

Laboratory Information

Lab. sample I.D. : PE90125/30 to 32

Sample description : 3 nos. bulk material sampled from the project site

Date of sampling : 07/04/2009

Sampling method : In-house method G-T-022

Sampled by : K.L. Yung

Date of test completed : 14/04/2009

Test method : In-house methods G-T-023 & G-T-028

Test Results :

Lab. Sample I.D.	Sample Nature	Sampling Location	Sampling Method	Asbestos Fibres		ACM / Non-ACM
				Presence	Type	
PE90125/30	Corrugated Sheet	Rear of Block 8	G-T-022	Not detected	-	Non-ACM
PE90125/31	Corrugated Sheet	Toilet of Block 16, Workshops	G-T-022	Not detected	-	Non-ACM
PE90125/32	Corrugated Sheet	Entrance Gate of Block 17, F Hall	G-T-022	Present	Chrysotile	ACM

Remarks :
1. The sample is either classified as an ACM (>1% asbestos by weight) or a non-ACM (not >1% asbestos by weight) as defined in the Air Pollution Control Ordinance.
2. Estimated content of asbestos presented in Supplementary Report No. 090338PE90125(5).
3. Sampling location plans and photographic records are detailed in asbestos investigation report.

Tested by : C.F. Lam

Certified by : _____
Approved Signatory: LEUNG Man Wai, Donney
Assistant Manager – Micro-Materials Section

Date : 20/04/2009

FUGRO TECHNICAL SERVICES LIMITED
MateriaLab Division,
Fugro Development Centre,
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Tai Lam, Tuen Mun, N.T., Hong Kong.
Tel : +852-2450 8233
Fax : +852-2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk

MateriaLab

Report No. : 090338PE90125(5)

SUPPLEMENTARY REPORT ON ANALYSIS OF BULK MATERIALS

(Supplement To Report No. 090338PE90125(4))

Testing required : Quantification of asbestos – Percentage by weight

Method used : Estimation of asbestos content by visual examination

Results :

Lab. sample I.D.	Estimated asbestos content % by weight	Other fibres present
PE90125/30	-	Polymer fibre & Paper fibre
PE90125/31	-	Polymer fibre & Paper fibre
PE90125/32	Chrysotile : 5 – 10 %	-

Tested by : C.F. Lam

Certified by :

Approved Signatory : LEUNG Man Wai, Donney
Assistant Manager – Micro-Materials Section

Date : 20/04/2009

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APPENDIX 5

ASBESTOS-CONTAINING MATERIAL LOCATION PLANS

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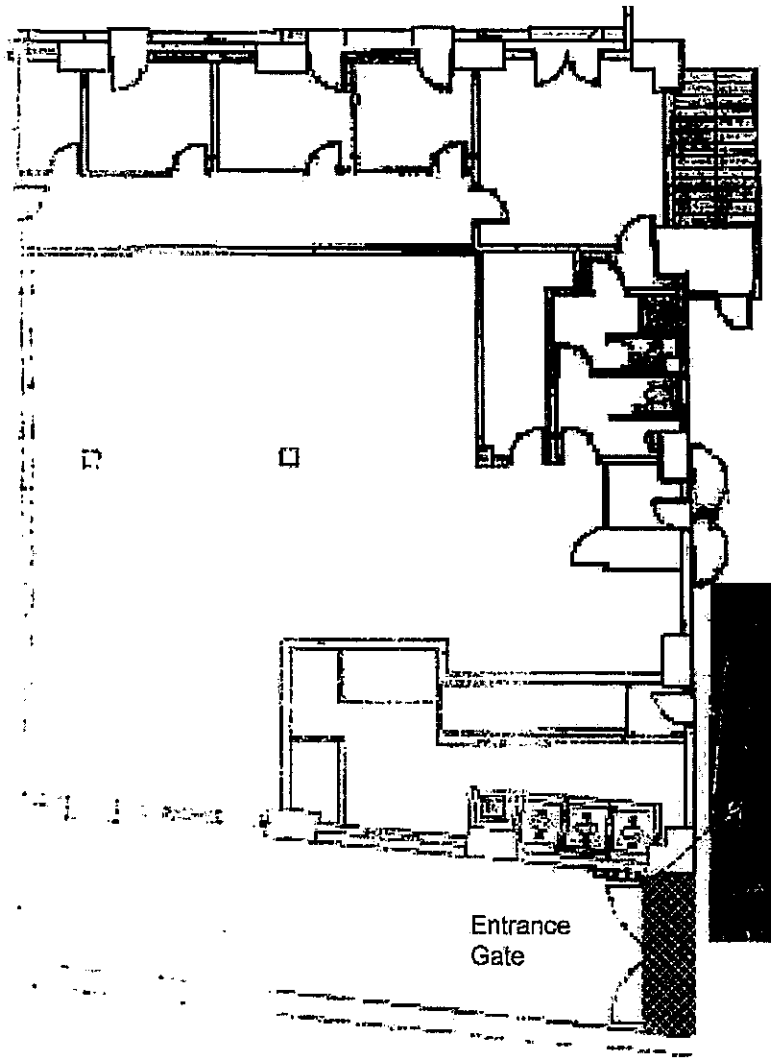

G/F, Block 17

Figure: 3

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 & 18)

Drawing Title:
ACM Location Plan
G/F, Block 17, F Hall

Our ref. no.:
0210/11/ED/0077A

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

ACM Corrugated Sheet (ACM Item No. ED/0011-2)

Rev.	Date
0	19/11/2011

MATERIALAB CONSULTANTS LIMITED

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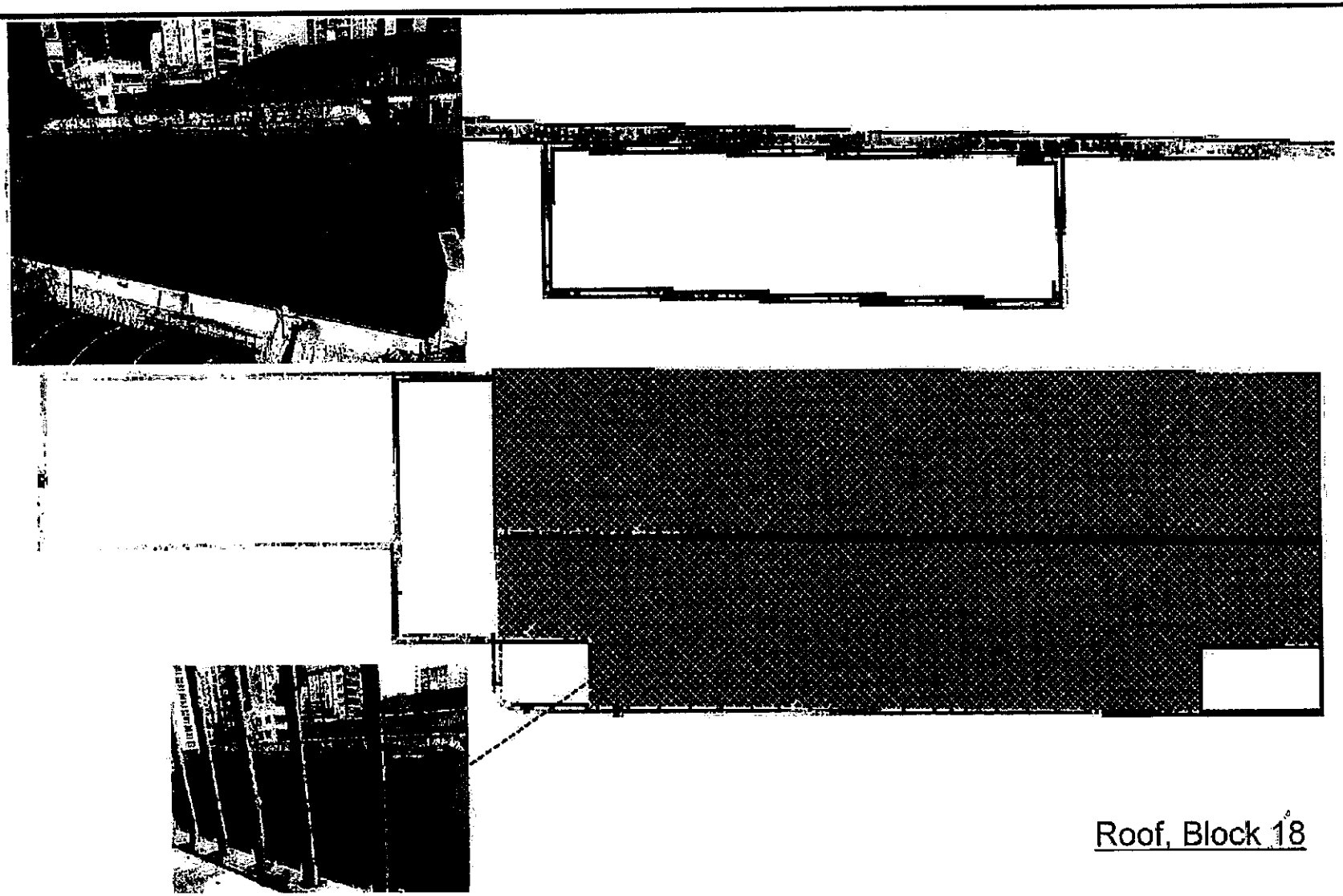

Figure: 4

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 & 18)

Drawing Title:
ACM Location Plan Roof, Block 18, General Office

Our ref. no.:
0210/11/ED/0077A

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

ACM Corrugated Sheet (ACM Item N ED/0011-2)

Rev.	Date
0	19/11/2011

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APPENDIX 6

HAZARD RANKING SCHEME

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Hazard Ranking Scheme

Hazard Rank	ACM Condition	Disturbance Potential
1 Low	Good	Low
2	Good	Moderate
3	Good	High
4	Fair	Low
5	Fair	Moderate
6	Fair	High
7 High	Poor	Any

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APPENDIX 7

SITE CONTROL

Gammon Construction Limited
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Taikoo Place 979 King's Road
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金門建築有限公司
香港英皇道979號太古坊
德宏大廈廿八樓

Tel 電話 (852) 2516 8824
Fax 傳真 (852) 2516 6260
www.gammonconstruction.com

Ref: J3416/302/D00412

21 November 2011

Mr Colin K.L. Yung
MaterialLab Consultants Limited
5th Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mum, N.T.
Hong Kong

Dear Colin K.L. Yung,

J3416 - Central Police Station Conservation & Revitalization Project
Site Management Control for Asbestos Works

We refer to EPD's letter ref. EPAC/A/4/000/233) regarding the Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project.

As a Management Contractor for this project, we will fully support and manage the subcontractors/labours to prevent any unauthorized disturbance to the asbestos materials identified within the site area.

The following preventive measures will be taken to prevent any further unauthorized disturbance to the Asbestos Containing Materials (ACMs) in other area identified in the Asbestos Investigation Report when the demolition contractors is resident on site.

1. All the asbestos containing materials identified in the report will proper labeled accordingly to the specification given in the Code of Practice on the Preparation of Asbestos Investigation Reports, Asbestos Abatement Plan and Asbestos Management Plans, issued by the Environmental Protection Department.
2. All ACMs shall be identified and demarcated onto the site layout plan for easy monitoring.
3. No construction works is allowed for the identified ACMs area as stipulated from above.
4. The ACMs area should be fenced off to prevent any unauthorized entry with warning notices, relevant photo record attached.
5. A staff will be designated to check the ACMs condition on a daily basis to ensure the ACMs are closely monitored.
6. Site entry record have been setup to record who had access the site, all contractors and workers entering the site must register at the security gate.

安全 SAFETY
卓越 EXCELLENCE
誠信 INTEGRITY

Gammon

Mr Colin K.L. Yung
MateriaLab Consultants Limited

Ref: J3416/302/D00412
21 November 2011

7. A Mandatory Health & Safety Induction Training shall be conducted to all workers/staff before entering to site. The training will outline and brief the location of asbestos containing materials to workers for entering to the area with asbestos containing materials. The training shall be recorded with attendance, please find the attached the template of the Health & Safety Training Attendance Record for your reference.

Should you require further information, please do not hesitate to contact our Mr. Alan Mo at 6290 5360.

Thank you for your kind attention.

Yours faithfully
For and on behalf of
Gammon Construction Limited

Cliff Leung
Senior Project Manager

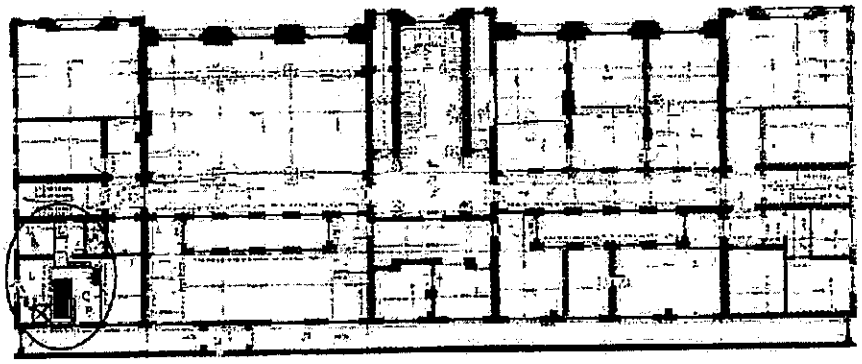
CL/AMAYTL/mm

Encl

cc: JCCPS - Mr Kenneth Lee
RDA - Mr David Chan
ERM - Ms Paggy Wong / Ms Katie Yu
YSK2 - Mr. Thomas Wong
GCL - E&M / QS / BE/ Planning / Safety / Environment

Block 1

1/F Floor Plan



Air Monitoring
B - Background
P - Personal
C - Penultimate / Final Clearance
I - Leakage

1/F, Block 1

Project Title
Asbestos Consultancy Services for Central Police Station Conservation & Revitalization Project

Drawing Title
1/F, Block 1 Headquarter Block
ACM Abatement Plan

Drg. ref. no.
C01400/ED/0012A

Prepared by
Yu Lee Bong

Scale Not to Scale

Legend
- Electric Generator with ACM Pipe Lagging (ACM Item No ED/0011-4)
- ACM Switch / Fuse Box (ACM Item No ED/0011-3)
- Decontamination Unit
- Containment
- Viewing Panel
- Air Mover
- Flexible Duct

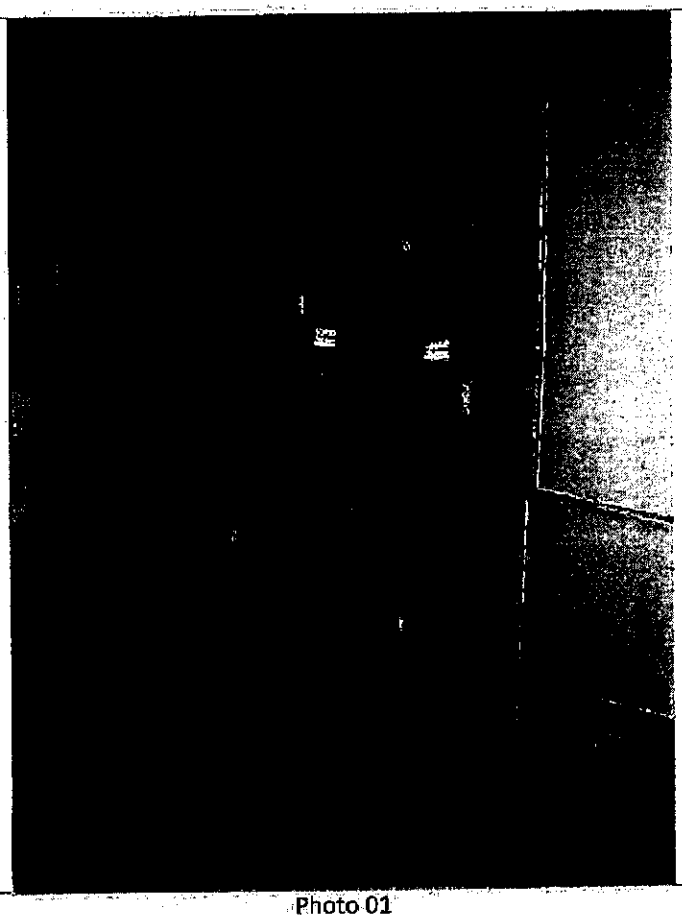
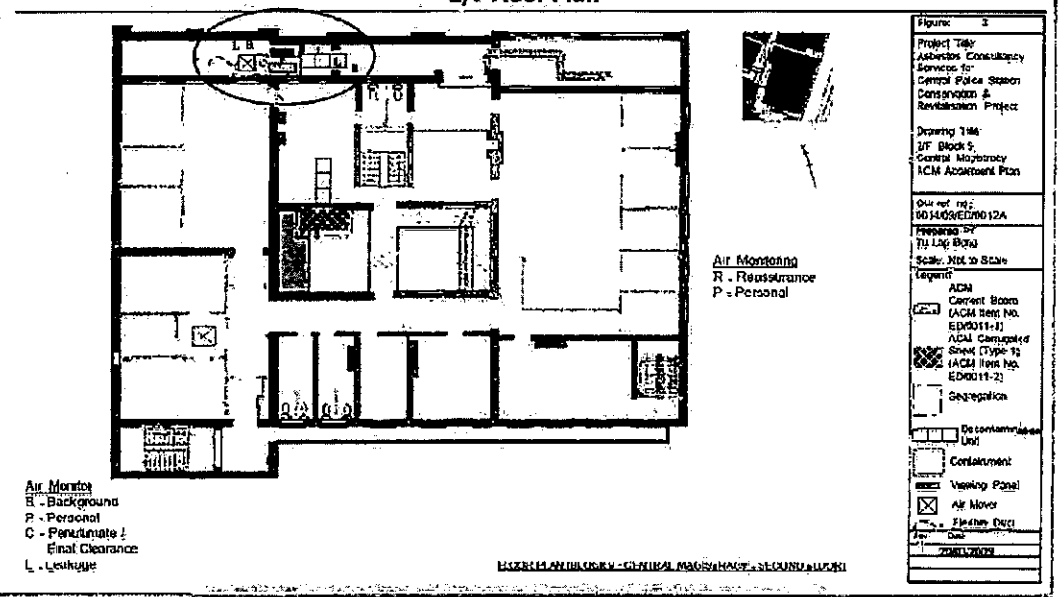


Photo 01
Door is locked with warning notice

Block 9

2/F Floor Plan



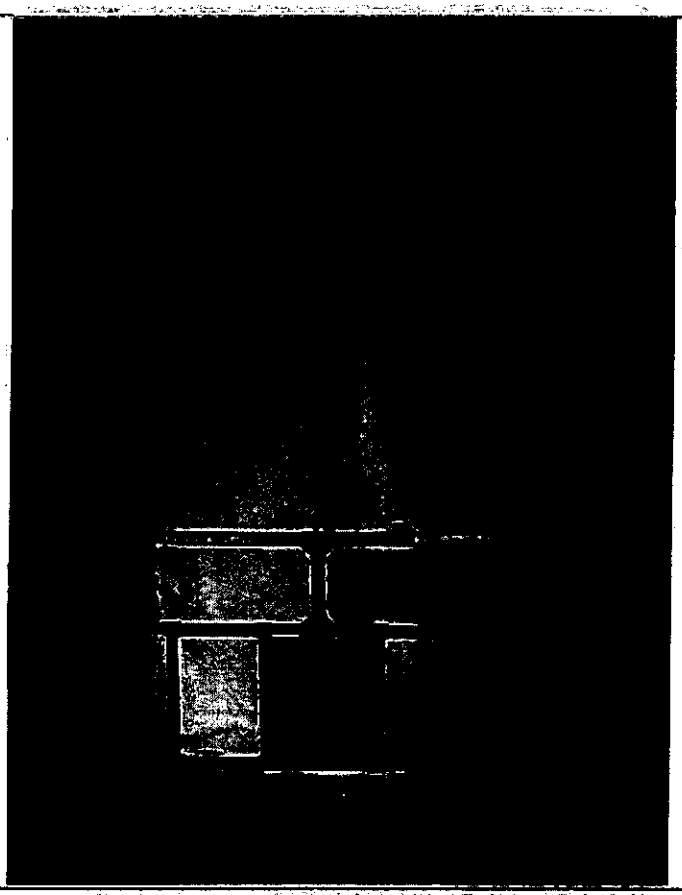
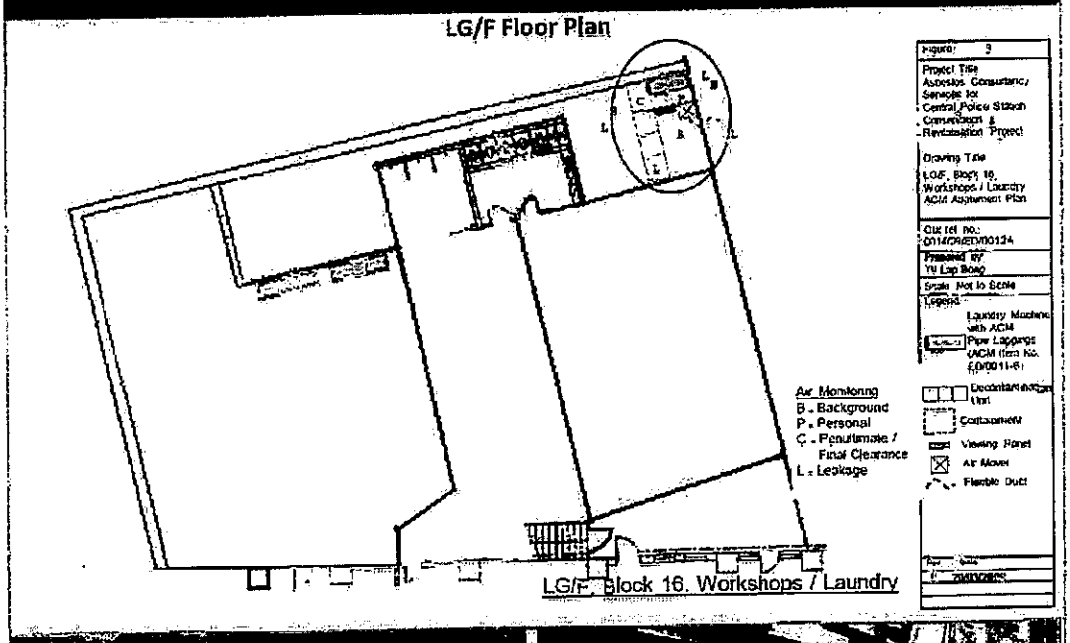


Photo 2
The corridor is fenced off with warning notice

Block 16

LG/F Floor Plan



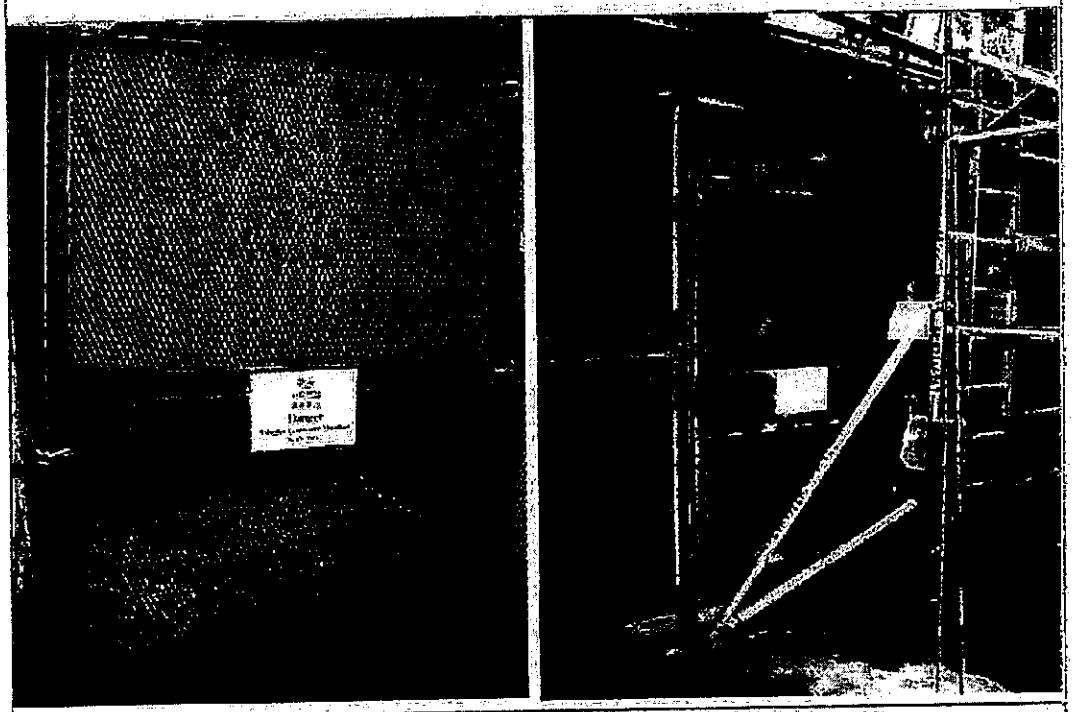
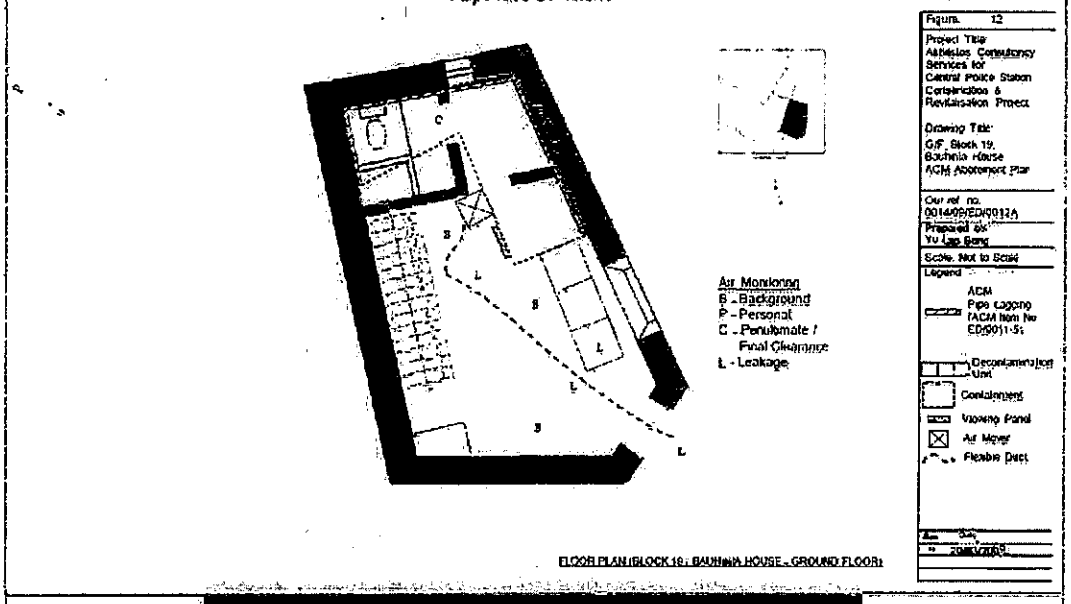


Photo 3 & 4
The metal door is locked with warning notice

Block 19

G/F Floor Plan



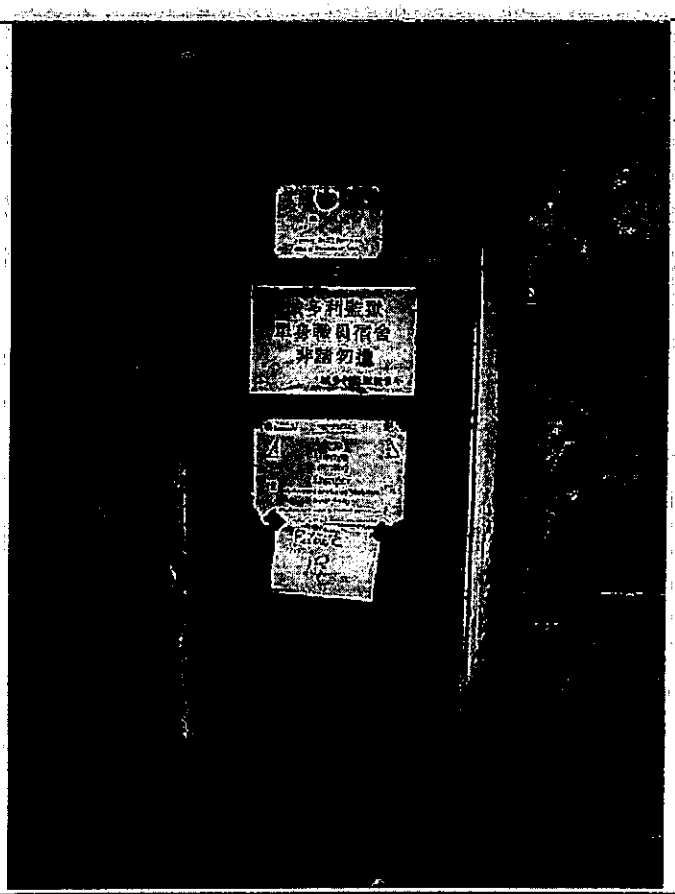


Photo 5
The door is locked with warning notice

Gammon

健康及安全訓練出席記錄
Health & Safety Training Attendance Record

Trainer Use Only 導師專用

☐ 入職安全訓練 Induction Training
☐ 特別安全訓練 Specific Safety Training : _____
☐ 工具箱安全講座 Tool Box Talk : _____

日期 Date : _____ 時間 Time : _____ 所需時間 Duration: _____

部門 Division / Department : *Building* 工程項目 Job No : *J3416 Central Police Station*

地點 Location : _____

導師 / 機構 Trainer / Organisation : _____

受訓員工記錄/Name of Trainee

號碼 No	1. 姓名 (中文) Name (Chinese)	2. 姓名 (英文) Name (English)	3. 身份証號碼 HKID No.	4. 職員類別 *Employee Nature (M/D/S/I)	5. 公司 Company	6. 職位 Position	7. 簽名 Signature	評估 Evaluation Pass☑ Fail☒
1.								☐
2.								☐
3.								☐
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11.								☐
12.								☐
13.								☐
14.								☐
15.								☐

訓練項目 Training Topic:

1. 高空工作安全 Safe work at height
2. 防止物料下墮 Falling object prevention
3. 預防火警 Fire hazard prevention
4. 電力安全 Electric safety
5. 人力搬運安全 Safety on manual handling
6. 安全使用個人防護設備 Safe use on PPE
7. 工地整潔 Housekeeping
8. 緊急程序 Emergency preparedness
9. 安全使用化學品 Safe use on Chemical
10. 情報意外/事故程序 Accident / incident reporting procedure

*M-Monthly, D-Daily, S-Subcontractor, I-Imported Labour

Trainer Use Only 導師專用

_____
導師簽名 Trainer's Signature

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ASBESTOS ABATEMENT PLAN

Client : Gammon Construction Ltd.

Project : Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 and 18)

Report No. : 0210/11/ED/0078A

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1.0 INTRODUCTION

MaterialLab Consultants Limited was appointed by Gammon Construction Limited to conduct an asbestos investigation for Central Police Station. This report have been extracted from the main report (report no. 0014/09/ED/0012A) in order to commence the asbestos removal work for corrugated sheets found in Block 17 and 18, the reason for this is to expedite the delayed construction programme to meet the revitalization programme.

Asbestos survey was carried out on 18, 20 and 23 February, 3 March, and 7 April 2009, and verification survey on 20 October 2011 at the above premises and asbestos containing corrugated sheets were identified and shown in Section 3.0.

This Asbestos Abatement Plan is drawn up to ensure that the health hazard to both workers and the public can be minimized during the removal works, and the works will comply with all relevant local regulations related to asbestos removal. The contractor's tentative work programme is shown in Appendix 12.

2.0 PARTICULARS OF CONCERNED PARTIES

Owner

The Jockey Club CPS Limited
Address: 1 Sports Road,
Happy Valley,
Hong Kong
Tel.: 2966 7224
Fax: 2838 8942
Contact person: Mr. Kenneth Lee

Owner's Representative

The Jockey Club CPS Limited
Address: 1 Sports Road,
Happy Valley,
Hong Kong
Tel.: 2966 8063
Fax: 2838 8942
Contact person: Mr. C.W. Sham

Registered Asbestos Consultant

Mr. Colin Yung (1063) Verification Survey
Mr. Steven Wong (1071) Initial Survey
Address; Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun,
N.T., Hong Kong.
Tel.: 2450 8238
Tel.: 2450 8238

Registered Asbestos Contractor

Asbestos Removal Contactors (HK) Company Limited
Address: Rm 701, Yuen Fat Industrial Building,
25 Wang Chiu Road,
Kowloon Bay, Kowloon.
Tel.: 2850 8876
Fax.: 2850 8927
Contact person: Mr. S.M. Cheng

Registered Asbestos Laboratory

Fugro Technical Services Limited
MaterialLab Division (4001)
Address: Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun,
N.T., Hong Kong.
Tel.: 2450 8238
Tel.: 2450 8238
Contact person: Mr. John Ho

Duties of Registered Asbestos Consultant, Contractor, Laboratory and Main Contractor are described in Appendix 1.

3.0 SUMMARY OF IDENTIFIED ASBESTOS-CONTAINING MATERIALS AND SUSPECT MATERIALS AND ASBESTOS REMOVAL STRATEGY

The asbestos-containing materials found in the survey are summarised in Section 5.0 of our Asbestos Investigation Report Ref. 0014/09/ED/0011A and listed below.

ACM Item No.	Nature of Materials	Estimated Quantity / Size	Location	Types and Content of Asbestos	Hazard Rank	Abatement Method
ED/0011-2	Corrugated Sheets	100 m^2 4 m^2	Roof , Block 18 Entrance Gate, G/F, Block 17	Chrysotile: 5 - 10%	3	Segregation

The asbestos-containing corrugated sheets (ED/0011-2) are cementitious materials, which are non-friable in nature. The corrugated sheets could be easily unbolted from the metal frame by using hand tools. The removal of these corrugated sheets will be conducted inside segregation areas as described in Section 4 and Appendix 2.

Before the start of the works the Main Contractor and Asbestos Contractor should follow the requirements shown in Appendices 4 to 7. Local regulations and codes of practice relevant to the removal work are shown in Appendix 8.

4.0 METHOD FOR THE REMOVAL OF ASBESTOS-CONTAINING CORRUGATED SHEETS

The procedures described below are applicable to the asbestos-containing corrugated sheets present in the premises (ACM Item No.: ED/0011-2 described in AIR Report No.: 0210/11/ED/0077) and the set up of work area is illustrated in Appendix 2.

4.1 All workers should wear approved half-face respirators of minimum nominal protection factor 10, equipped with HEPA replaceable cartridge type filter; and full-body protective clothing with hoods and shoe covers.

4.2 A 3-chamber decontamination unit should be constructed to provide safe access and egress for authorised working personnel. Refer to Appendix 5 for the construction requirements and use of decontamination facilities.

4.3 Before the start of the asbestos removal work, a continuous dust barrier and wind screen of height two-metre higher than the corrugated sheet, sealed to the floor should be constructed around the work area. All opening of the work area i.e. the area under the corrugated sheet should be individually sealed off with 2 layers of polythene sheeting securely taped in place. Non-transparent tarpaulin sheets should be used to cover up the abatement work.

4.4 All floor should be masked and sealed with 2 individual layers of polythene sheeting. Each layer should be applied separately. The layers should extend at least 300 mm up all wall surfaces to form a continuous skirting and should be securely sealed with moisture resistant duct tape.

4.5 For the corrugated sheet at Block 18, a mobile working platform and access ladder should be located at one side of the building. The platform / access should be covered with 2 layers of polythene sheet to prevent contamination during the abatement work.. The working platform shall be certified by competent person before use.

4.6 The workers working in the high level should wear safety belt.

4.7 In the process of the asbestos removal only hand tools should be allowed.

4.8 Mortars or concrete materials bonding the corrugated sheet and walls should be wetted with amended water and removed using hand tools and disposed of as asbestos wastes.

4.9 The corrugated sheet should then be sprayed (using airless spray equipment) in a fine mist with amended water with sufficient frequency and quantity for enhanced penetration.

4.10 The corrugated sheet should be taken down by loosening the nuts and bolts. Great care must be exercised to minimise breakage.

4.11 Corrugated sheets removed intact should be maintained wet, wrapped in two layers of 0.15 mm polythene sheeting, labelled for disposal.

4.12 All debris should be removed by wet-wiping and HEPA vacuuming as soon as they are produced. The work area must be cleaned up thoroughly at the end of each work shift.

4.13 After completion of the removed work, surfaces which have been in contact with the corrugated sheet should be wire-brushed and wiped to remove all visible residue.

4.14 A HEPA vacuuming followed by wet-wiping should be performed on all surfaces from top to bottom.

4.15 If the Contractor is satisfy with the clean up, the floor polythene sheets should be removed so that the floor tile removal can commence.

4.16 A thorough visual inspection should then be performed by the Contractor to ensure that any debris in the form of contaminated items, dust, chips, untreated effluent, etc. have been cleared from the work area.

4.17 Reassurance air samples will be taken to monitor the cleanliness of the site after all the ACM have been removed. The air sample which shows fibre counts in excess of 0.01 fibres/ml will not be acceptable and the area will be re-cleaned again until the specified fibres level in air is attained.

4.18 When satisfactory air test result is attained, all exposed plastic surfaces inside the work area should be sprayed with a PVA solution, allowed to dry and peeled off.

4.19 All used cloth, gloves and polythene sheeting should be treated as asbestos waste and be disposed of with the corrugated sheet removed.

4.20 The site should be declared clean for re-occupation after a satisfactory final inspection carried out by the Contractor.

5.0 AIR MONITORING STRATEGIES

The following air monitoring tests should be conducted before, during and after the asbestos abatement work.

5.1 For the removal of asbestos-containing corrugated sheets (ACM Item No. ED/0011-2):

Type of Sampling	No. of sample	Location
Personal	1 per 4 workers	Inside the segregation.
Reassurance	2 4 (for Block 18)	Inside the work area, segregation.

Detailed descriptions and requirements of the air tests are given in Appendix 10.

After the removal of all asbestos wastes in the temporary waste storage area, one reassurance air test should be carried out in each storage area.

Detailed description and requirements of the tests are contained in Appendix 10.

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6.0 HANDLING OF ASBESTOS WASTE

The amount of asbestos-containing materials to be removed is estimated to be as follows:

Nature of Materials	Type	Estimated Quantity	Estimated Nos. of Bags
Corrugated Sheets	1	104 m^2	120

Asbestos waste generated should be handled and stored according to procedures documented in Appendix 11.

Prepared by : **Yu Lap Bong**

Certified by :

Colin Yung
Registered Asbestos Consultant

Date : 1 December, 2011

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APPENDIX 1

Duties of Registered Asbestos Consultant, Contractor, Laboratory and Main Contractor

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DUTIES OF REGISTERED ASBESTOS CONSULTANT, CONTRACTOR, LABORATORY AND MAIN CONTRACTOR

Duties of registered asbestos consultant, contractor, laboratory and main are summarised below:-

Duties of Registered Asbestos Consultant

Before the commencement of asbestos abatement works, a registered asbestos consultant (hereinafter called "the Consultant") should be appointed to supervise the asbestos abatement work and perform the following duties:-

- to supervise the carrying out of the Asbestos Abatement Plan and the conduct of any asbestos abatement work;
- to certify completion of asbestos abatement work as specified in the Asbestos Abatement Plan;
- to advise on alternative control methods and their technical and cost implication;
- to advise on air and bulk sampling;
- to advise on other matters relating to the use and handling of asbestos containing materials;
- to notify the Environmental Protection Department of any modification of the content of the Asbestos Abatement Plan before implementing the modification; and
- to notify the Environmental Protection Department of any contravention of a requirement under the APCO.
- to submit a Completion Report to Environmental Protection Department after completion of work within 1 month which include the waste trip tickets and air monitoring results.

Duties of Registered Asbestos Contractor

A specialist contractor from the register kept by the Environmental Protection Department (hereinafter called "the Contractor") should be employed to carry out the abatement works. A full-time registered asbestos supervisor should be employed for the daily supervision of the abatement work. The abatement procedures should comply with the asbestos abatement plan, current local regulations and codes of practice.

Duties of Registered Asbestos Laboratory

A HOKLAS accredited laboratory from the register kept by the Environmental Protection Department (hereinafter called "the Laboratory") should be engaged to conduct air monitoring before, during and after the completion of the asbestos abatement works.

Duties of Main Contractor

The main contractor should provide all support and access for the registered asbestos consultant, contractor and laboratory during the course of asbestos abatement works. The main contractor should prevent any unauthorised disturbance to the asbestos materials identified within the site area. The main contractor should provide the double bamboo scaffolds and dust barriers as mentioned in Section 4.

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APPENDIX 2

Layout Plan for Abatement

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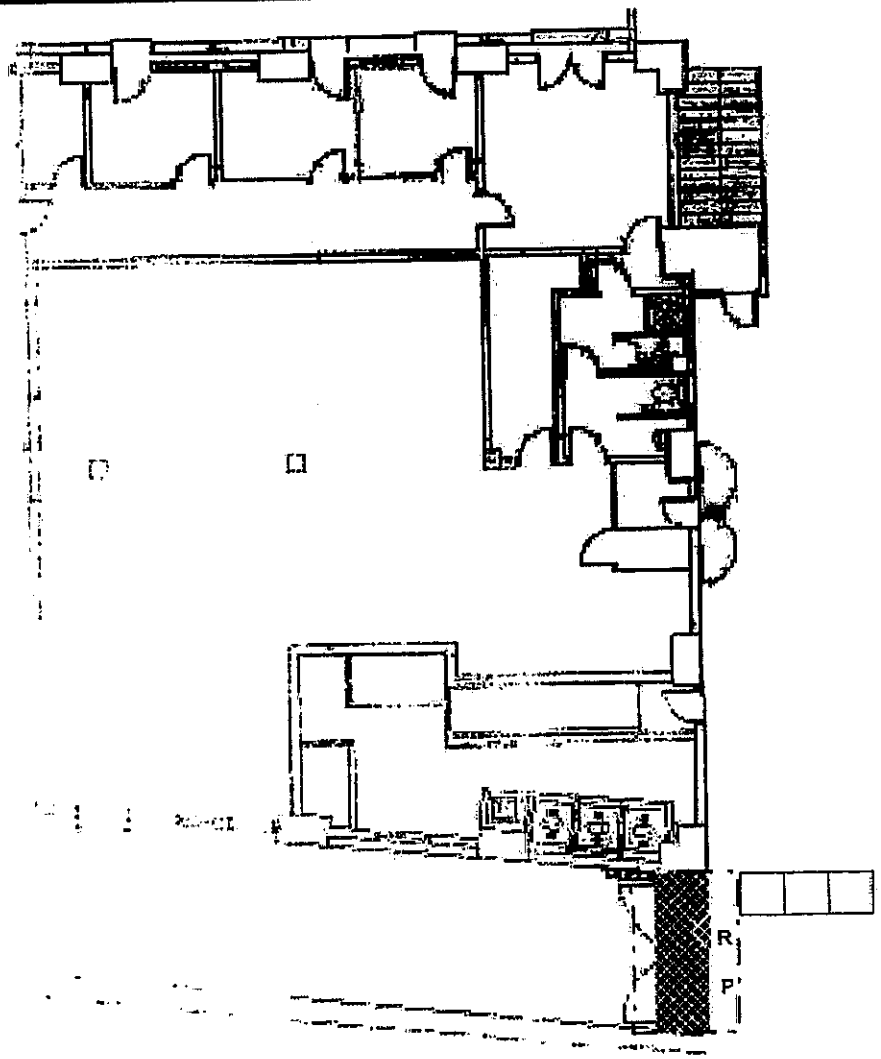

Air Monitoring
R - Reassurance
P - Personal

G/F, Block 17

Figure: 1

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 &18)

Drawing Title:
ACM Abatement Plan G/F, Block 17, F Hall

Our ref. no.:
0210/11/ED/0078A

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:
ACM Corrugated Sheet (ACM Item No. ED/0011-2)

Segregation

Decontamination Unit

Rev.	Date
0	19/11/2011

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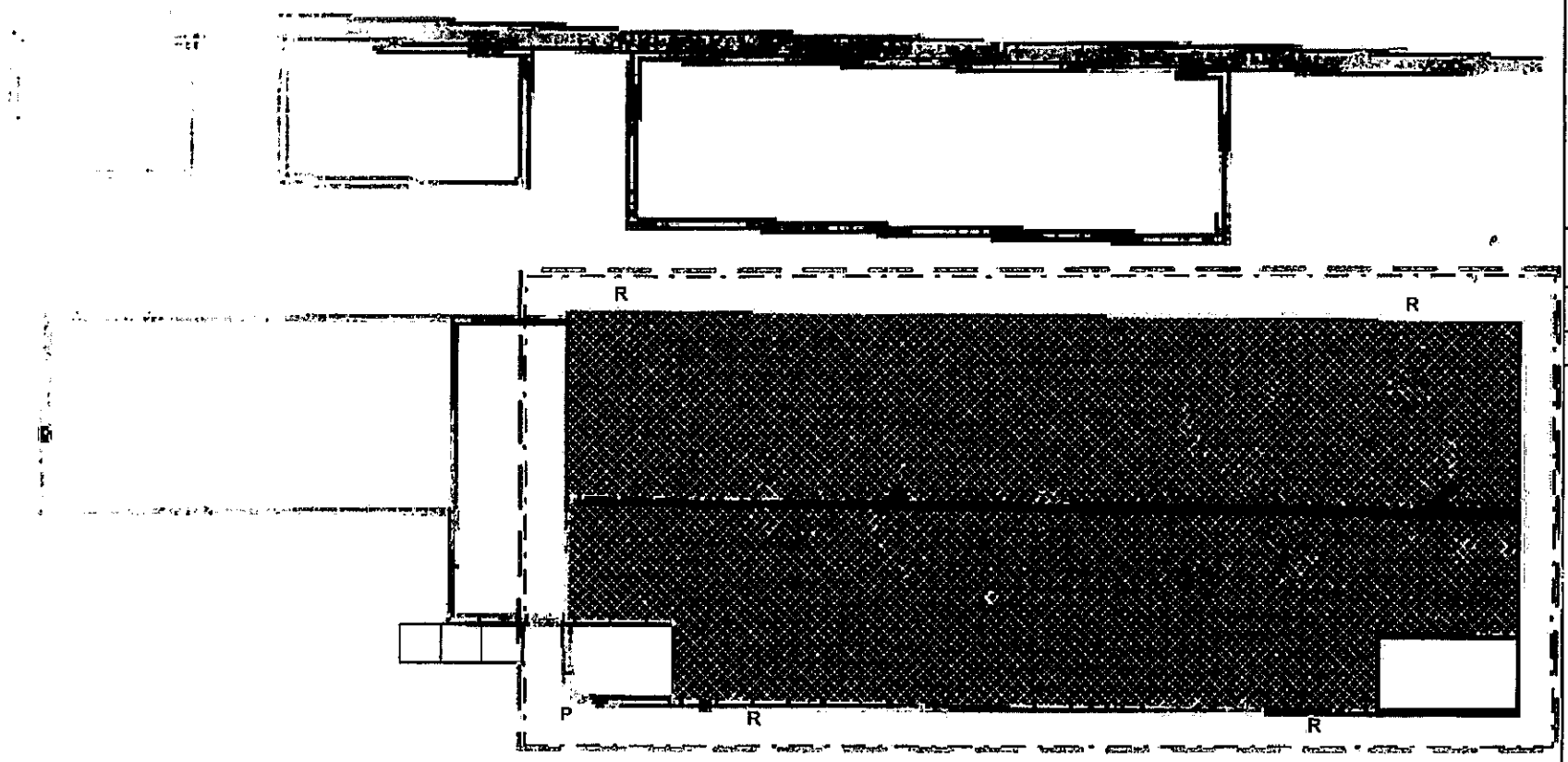

Air Monitoring
R - Reassurance
P - Personal

Roof, Block 18

Figure: 2

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 &18)

Drawing Title:
ACM Abatement Plan Roof, Block 18, General Office

Our ref. no.:
0210/11/ED/0078A

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

- ACM Corrugated Sheet (ACM Item No. ED/0011-2)
- Segregation
- Wind Barrier
- Decontamination Unit

Rev.	Date
0	19/11/2011

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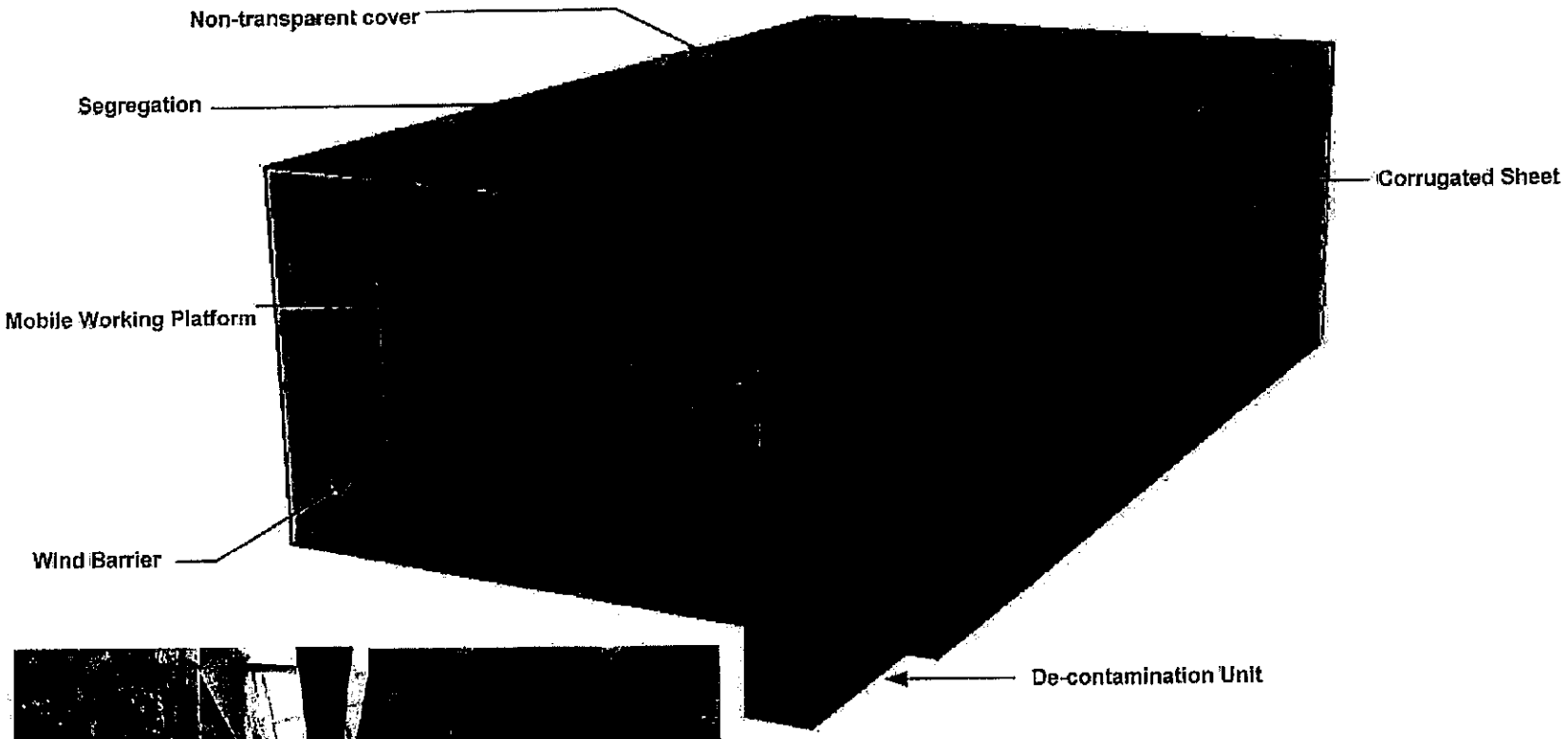

Existing Wind Barrier

Segregation Setup for Block 18

Figure: 2a
Project Title: Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 &18)
Drawing Title: ACM Abatement Plan Roof, Block 18, General Office
Our ref. no.: 0210/11/ED/0078A
Prepared by: Yu Lap Bong
Scale: Not to Scale
Legend:

Rev.	Date
0	01/12/2011

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APPENDIX 3

Location of Temporary Asbestos Waste Storage Area

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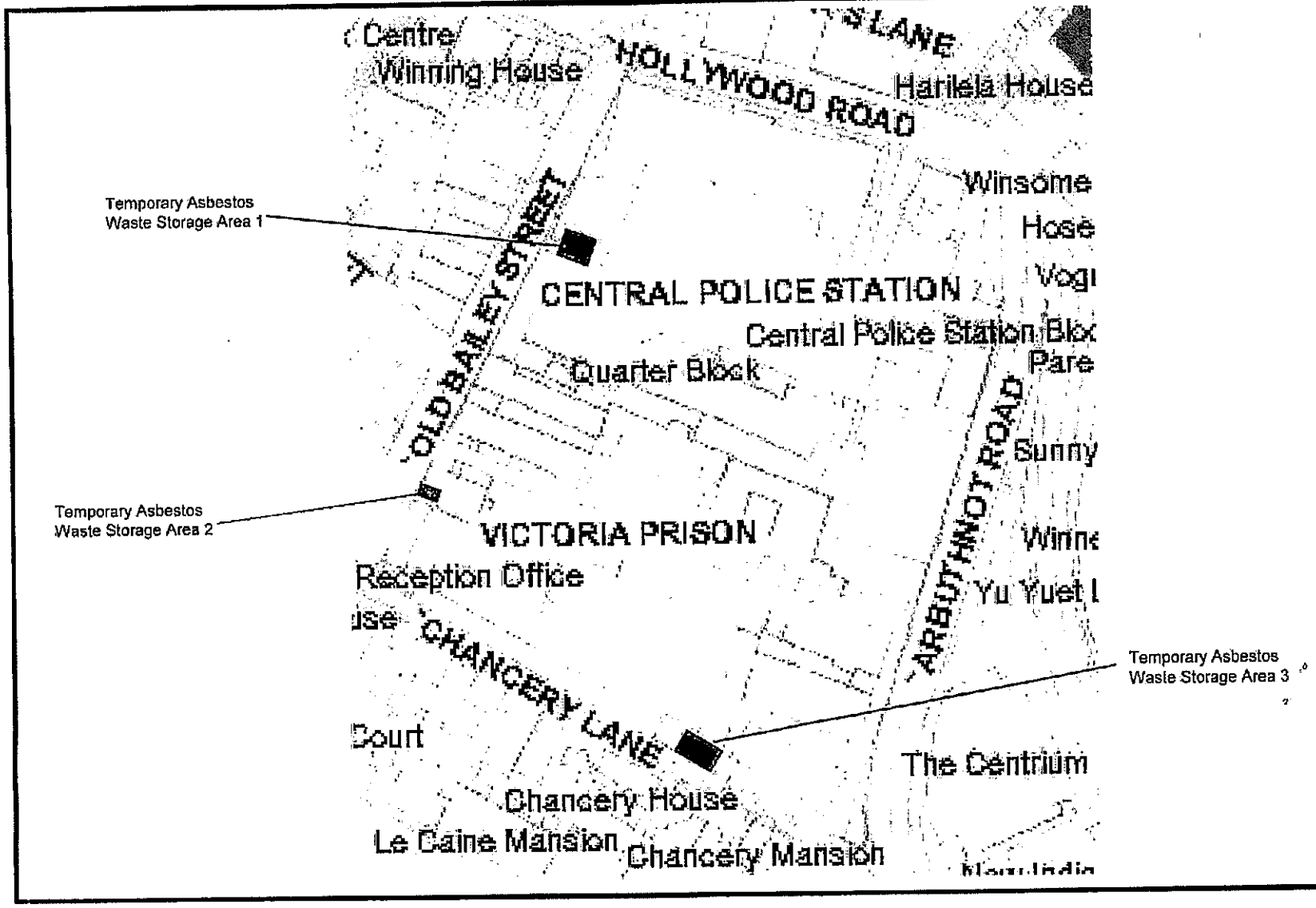

Figure: 3

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Block 17 &18)

Drawing Title:
Temporary Asbestos Waste Storage Area

Our ref. no.:
0210/11/ED/0078A

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

Temporary Asbestos Waste Storage Area

Rev.	Date
1	19/11/2011

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APPENDIX 4

Site Management

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SITE MANAGEMENT

The Contractor is required to visit all areas within the premises and acquaint themselves with the facilities for access, services, local condition, nature, volume and particular conditions which appertain to the asbestos materials, as stated in the Asbestos Investigation Report, to be removed from the site. Details of site management as outlined below should be followed.

- The owner of the premises shall ensure that all the identified ACMs are required to be labelled according to the specification given in the Code of Practice on the Preparation of Asbestos Investigation Reports, Asbestos Abatement Plans and Asbestos Management Plans, issued by the Environmental Protection Department (EPD).

- After the site visit, the Contractor shall prepare a proposed work program to show the commencement and completion of each and every stage of the works and provide copies of this program to the Main Contractor and EPD for reference.

- Prior to commencement of the asbestos abatement works, the Contractor shall notify the Labour Department and the Environmental Protection Department of the intended work on a specified notification form 28 days in advance.

- The Contractor should also coordinate the asbestos disposal work with and give notice to the Chemical Waste Disposal Section of the Waste and Water Management Group of the EPD (located at 25/F., Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong; phone 2835-1187; fax. 2305-0453) in a prescribed form as required under section 17 of the Waste Disposal Ordinance for dumping of the asbestos waste at the government appointed disposal site, and comply with the trip ticket system for disposal.

- All workers prior to working on asbestos must have valid medical certificates or equivalent examination certifying their fitness to work on asbestos. The Contractor should also keep X-ray films or certificates available on site for inspection.

- The working area should be fenced off to prevent any unauthorised entry either by temporary hoarding or tarpaulin sheeting with warning notices.

- Warning notices and signs worded in English and Chinese characters should be displayed outside the site.

- Electricity supply to the work area should be shut down and locked out before the commencement of work. The Contractor should also make sure that the water and electricity supplies are sufficient for the daily operations. Otherwise, the Contractor should make alternative arrangements for providing an adequate water and electricity supply.

- The Contractor should ensure that materials, mechanical plants and equipment brought to the site is uncontaminated and well maintained.

- A registered asbestos supervisor should be present during the course of the abatement works to oversee all safety procedures in the work area and to ensure that the work is carried out properly. Daily report should be filled by the supervisor and kept available on site for inspection by the Contractor appointed for the project. The items to be included in the daily report are listed below:-

    - Name and I.D. number of the full-time Registered Asbestos Supervisor(s) on site;
    - Name and I.D. number of all workers involved in the removal work;

- Name and I.D. number of authorised personnel visiting the work site and purpose of their visit;
- Hours and particulars of work;
- Inspection details of barrier or segregation if applicable, and action required;
- Details of air monitoring carried out;
- Number of waste bags produced and number taken for disposal; and
- Detailed account on any abnormality taking place, the corrective action adopted and the approval obtained for resumption of work.

- All personnel entering work area are required to wear approved respirators and protective clothing which should comply with the requirements of the Factories & Industrial Undertakings (Asbestos) Special Requirements enforced by the Labour Department. Respiratory protective equipment should be an approved type respirator, equipped with HEPA (High-efficiency Particulate Air) replaceable cartridge type filters.

- All air test results from the laboratory should be sent to the Consultant, Main Contractor and EPD as soon as they are available and should be made available within 24 hours of sampling. A copy of these test reports should be available on site for inspection. (It should be noted that the air monitoring requirements specified in this Abatement Plan are aimed at providing a guide to the monitoring strategy. The Consultant, who is appointed to supervise the project, based on the site situation, should decide exact sampling points).

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APPENDIX 5

Construction Requirements and Use of Decontamination Facilities

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CONSTRUCTION REQUIREMENT AND USE OF DECONTAMINATION FACILITIES

A 3-chamber airlock decontamination hygiene unit with water supply, waste water filters and HEPA vacuum unit should be constructed at the entrance of each work area. In case of the abatement area having sufficient space, a 2-chamber debris port should also be established for transferring of asbestos wastes. Workers who have entered contaminated areas must carry out thorough decontamination every time they leave the site. Detailed construction requirements and use of decontamination facilities as outlined below should be followed.

1 Construction of the Decontamination Unit

1.1 The decontamination unit should consist of three sealable compartments namely the dirty room, the shower room and the clean room. Each compartment should have a minimum size of 2m (height) x 1m (width) x 1m (length). The size of the shower room should be 1m square and 2m headroom for every shower head provided. Appropriate warning notices should be posted conspicuously at eye level at the clean entrance of the decontamination unit.

1.2 The unit can either be of a prefabricated design (thoroughly cleaned and decontaminated before re-use) or it can be constructed on site with 3 individual layers of plastic sheeting with sealed taped joints supported on suitable framing.

1.3 Each compartment is separated by a curtained doorway consisting of a polythene sheet with an I-shaped slit opening covered by a plastic flap which hangs and lifts in the direction of access. The plastic flap should have an overlap of at least 100mm on each side of the slit opening and weighted at the bottom to maintain a good seal when negative air pressure ventilation is not in use.

1.4 The shower room should be constructed and tested against water leakage and fitted with a tray of adequate size to collect waste water. Water adjustable at the shower should be provided at a minimum of one shower per 6 workers calculated on the basis of the largest shift. All waste water should be taken by a sump pump through pipework/hosing to an aquarium type filter unit to remove suspended particles (down to 5 microns) before being discharged either to the soil drainage system or drummed and then properly disposed of. The sump pump should be switched on while the facility is in use to prevent overflow of waste water. The electrical fittings, etc. must also be installed and protected to eliminate any chance of electrocution.

1.5 The shower room should be wet-cleaned and HEPA-vacuumed after each shift change and meal break.

2 Construction of the Debris Port

A 2-chamber debris port, consisting of a washing room fitted with water supply and waste water filtration facility, and a clean room, should be constructed for controlled transfer of bagged waste and equipment. Each compartment should have a minimum size of 2 m (height) x 1 m (width) x 1 m (length). The specifications of debris port are the same as those of the decontamination unit. This debris port is normally sealed and used only during the period of active waste/equipment transfer. An asbestos warning sign should be posted conspicuously at the entrance of the clean end.

3 Use of Decontamination Facilities

3.1 Procedures for Using the 3-chamber Decontamination Unit

Preparing for work

IN THE CLEAN ROOM, WORKER:

1. Enters clean room
2. Removes clothing, places in locker
3. Puts on nylon swim suit (optional)
4. Puts on clean coveralls
5. If separate disposable foot coverings are used, these are put on
6. Applies tape around ankles, wrists, etc.
7. Inspects respirator, puts it on, checks fit
8. Puts on hood over respirator headstraps
9. Proceeds to equipment room

IN THE EQUIPMENT ROOM, WORKER:

10. Puts on any additional clothing - deck shoes, hard hat, etc.
11. Collects necessary tools and proceeds to Work Area

Exiting

IN INDIVIDUAL WORK AREA, WORKER:

12. Cleans tools and equipment by HEPA vacuum cleaner and wet-wiping
13. HEPA vacuum or wet-wipe protective clothing
14. Removes all protective clothing except respirator
15. Wipes clean the hands and the respirator externally
16. Disposes of used wet cloths and contaminated coveralls into the labelled asbestos waste bags
17. Leaves the work area and enter the equipment room of the decontamination unit for further cleaning and disinfection

IN THE EQUIPMENT ROOM, WORKER:

18. Stores used tools and any other cleaned articles
19. Proceeds to the shower

IN THE SHOWER ROOM, WORKER:

20. Washes respirator and soaks filters (without removing)
21. Removes respirator, washes with soap and water
22. Washes swim suit
23. Thoroughly washes body and hair

IN THE CLEAN ROOM, WORKER:

24. Dries off, dresses in clean coveralls or street clothes
25. Cleans and dries respirator, replaces filters (if applicable)

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4 Procedures for Waste/Equipment Transfer through the Debris Port

4.1 Before entering the debris port, external surfaces of contaminated materials and equipment should be cleaned by HEPA vacuuming and wet-wiping in the work area. The surfaces should be further decontaminated in the washing room by 'flushing' with a fine water spray followed by wet-wiping. Workers in the clean room, who should receive the materials/equipment in 0.15mm transparent plastic bags (or sheeting as the item's physical features demand) which are then vacuum packed and gooseneck-sealed with tape.

4.2 Workers in the clean room must not enter the washing room and upon completion of work, they should discard their protective clothing/gloves etc. as contaminated waste and exit by the clean room.

4.3 Every time the debris port is in use, the main decontamination unit (for personnel access) should be closed and kept airtight in order to maintain the negative air pressure of the work area and to facilitate favourable ingress of fresh air through the debris port for dust control purpose.

4.4 The washing room should be wet-cleaned twice using amended water upon completion of waste/equipment transfer. When the main decontamination unit alternates as a debris port, the shower room should be washed immediately with cloth saturated with a detergent solution prior to wet cleaning.

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APPENDIX 6

Preliminary Decontamination

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PRELIMINARY DECONTAMINATION

Following the completion of the decontamination facilities, the work areas should be pre-cleaned systematically by HEPA-vacuuming and wet-wiping methods. Procedures of preliminary decontamination as outlined below should be followed.

1 Workers should wear half-face respirators and protective clothing.

2 All openings of the work areas such as windows, doors, power points, etc. should be individually sealed off with 2 layers of polythene sheeting securely taped in place.

3 If the asbestos-containing materials have been damaged or in poor condition, the whole unit might have been contaminated with released asbestos fibres.

4 Immediate repair to these damaged asbestos-containing materials to curb further deterioration should be carried out, but care must be taken not to disturb any of the other part of the asbestos-containing materials unnecessarily.

5 Movable objects within the areas should be decontaminated before being removed.

6 Those objects which would remain should be decontaminated and enclosed with a minimum of 2 layers of polythene sheeting sealed to protect from re-contamination.

7 Large asbestos debris should be collected and removed by hands. The work areas will be pre-cleaned by HEPA vacuuming and wet-wiping methods.

8 All used filters as well as contaminated cloths, etc. should be removed and packed for disposal as asbestos waste.

9 The work areas should be vacated for 12 hours to allow fibres to settle and then all objects and surfaces in the area should be HEPA vacuumed and wet cleaned a second time.

10 A visual inspection should be carried out by the Consultant who should verify that preliminary decontamination has been satisfactorily completed and the area deemed temporarily uncontaminated.

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APPENDIX 7

Materials and Equipment

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Materials and Equipment

The Contractor should have adequate working knowledge, standby materials and equipment for the abatement work. Documentary proof on their safety and specification e.g. Material Safety Data Sheets for chemicals, may be required for submission to EPD for endorsement. The materials and equipment used during all abatement activities are outlined below:-

- Transparent plastic sheeting of 0.15mm thickness manufactured from extruded low-density polythene to B.S. 4932 : 1973 or equivalent, in sizes to minimise the frequency of joints, should be employed.

- Duct tape and spray adhesive should be capable of sealing joints of adjacent sheets of polythene, facilitating attachment of polythene sheets to finished and unfinished surfaces, and of adhering under both wet and dry conditions, including during the use of amended water.

- Amended water should be 50% polyoxyethylene ester and 50% polyoxyethylene ether or equivalent, diluted to a specific concentration in accordance with the manufacturer's instructions.

- HEPA-filtered appliances which include air movers, vacuum cleaners should be fitted with a high efficiency particulate air filter capable of trapping and retaining 99.97% of particles (asbestos fibres) greater than 0.3 micron mass median aerodynamic equivalent diameter. For the HEPA-filtered appliances used on site, they should be properly certified as per EPD's Code of Practice on Asbestos Control. Log sheets for these appliances should also be kept on site for inspection.

- Water-based polyvinyl acetate (PVA) adhesives should be used during final clean-up of work area to encapsulate all exposed surfaces that may still be contaminated with traces of asbestos. The adhesives should be dyed, say 'red', to indicate where (and whether) they have been applied to facilitate cross-checking at a later stage.

- Polythene sheeting, transparent/colour-coded bags and containers used for packing of asbestos waste should meet the specifications given in the Code of Practice on the Handling, Transport and Disposal of Asbestos Waste issued by the Solid Waste Control Group of the EPD.

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- Respiratory protective equipment and protective clothing used for asbestos abatement should comply with the requirements of the Factories & Industrial Undertakings (Asbestos) Special Regulations enforced by the Labour Department.

Types of Respiratory Protective Equipment	Assigned Protection Factor	Maximum Use Concentration (fibres/ ml)
Disposable, half-face particulate respirator	5	0.5
Half-face particulate filter (cartridge) respirator	10	1
Powered air-purifying, loose-fitting helmet or hood respirator	25	2.5
Supplied-air, continuous-flow, loose-fitting helmet or hood respirator	25	2.5
Full-face particulate filter (cartridge) respirator	50	5
Powered air-purifying, full-face particulate respirator	100	10
Supplied-air, positive pressure demand, full-face respirator	>1000	>100
Supplied-air, continuous flow, full suit	>1000	>100

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APPENDIX 8

Local Regulations and Codes of Practice

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LOCAL REGUALTIONS AND CODES OF PRACTICE

Local regulations and codes of practice to be complied for the asbestos removal works are summarised below:-

- The Air Pollution Control Ordinance, Environmental Protection Department, Hong Kong.
- The Waste Disposal (Chemical Waste) Ordinance, Environmental Protection Department, Hong Kong.
- The Factories and Industrial Undertakings (Asbestos) Regulation (1997), Labour Department, Hong Kong.
- Code of Practice on the Preparation of Asbestos Investigation Reports, Asbestos Abatement Plans and Asbestos Management Plans, Environmental Protection Department, Hong Kong.
- Code of Practice on Asbestos Work Using Full Containment or Mini Containment Method, Environmental Protection Department, Hong Kong.
- Code of Practice on Safe Handling of Low Risk Asbestos-containing Materials, Environmental Protection Department, Hong Kong.
- Code of Practice on the Handling, Transport and Disposal of Asbestos Wastes, Environmental Protection Department, Hong Kong.
- Code of Practice on Safety and Health at Work with Asbestos, Occupational Safety and Health Branch, Labour Department, Hong Kong.

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APPENDIX 9

Emergency Procedures

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EMERGENCY PROCEDURES

Procedures in the Case of a Fire Breaks Out

If during the course of asbestos abatement work, a fire breaks out, the Contractor should immediately: -

1. Stop all work.
2. Leave the work area and follow normal decontamination procedures. For life threatening situations, however, decontamination should take a lower priority. The operatives evacuated from the containment should avoid contact with other parties to prevent spread of asbestos fibres unless proper decontamination has been performed.
3. Switch off power fuel supply to machinery and plant.
4. Seal up the decontamination unit with adhesive tape, and the exhaust outlet of the air mover(s) with plastic sheeting.
5. Leave the premises as quickly as possible.
6. Urge and assist other workers in the premises to leave if necessary.
7. Supervisor should take roll calls for this workers.

After Fire

8. Spray all surfaces and debris with amended water in a fine mist spray, using airless spray equipment, when the site is safe for re-entry.
9. Place all loose asbestos materials/debris into suitably labelled containers.
10. Wipe clean the surfaces and thoroughly clean the contaminated area with a HEPA vacuum cleaner once the surfaces become dry.
11. The works are allowed to proceed only after a satisfactory visual inspection by the Consultant.

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Procedures in the Case of an Accident

If during the course of asbestos abatement work, a worker collapses or some other accident occurs, the Contractor should immediately :-

1. Stop all work and if necessary remove worker or workers to safety.

2. Assist the victim(s) to follow normal decontamination procedures before exiting the work area. For life-threatening situations, however, decontamination should take a lower priority and every effort should be made to ensure the victim(s) receives immediate medical treatment.

3. Carry out normal Emergency First Aid procedures. Dial 999, and arrange for the victim(s) to be taken to a Hospital, if necessary.

4. Clean thoroughly any area contaminated during the emergency by wet-wiping and HEPA vacuuming at the earliest opportunity and ask the Consultant to verify before works are allowed to continue.

Procedures in the Case of a Rain-Storm or Typhoon

If during the course of asbestos abatement work, a Number Three Typhoon Signal or above is raised or there is a rain-storm, the Contractor should immediately :-

1. Stop all processes which would result in producing more asbestos debris.

2. Place all loose asbestos materials/debris into suitably labelled containers and remove to the secure storage area.

3. Clean the contaminated area thoroughly with a HEPA vacuum cleaner. Cut off all power and water supplies and secure all loose equipment and materials against rain-storm or typhoon damage.

4. Move all bags of asbestos waste to a secure storage area.

5. Prepare the site for visual inspection by the Contractor, who shall verify that the above measures have been carried out, before workers are allowed to leave the site.

6. Recommence the abatement works only after the rain-storm or after the Number Three Typhoon Signal has been lowered in the case of a typhoon, and the Consultant has verified that any necessary cleaning up work and repairs to the setup have been completed.

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APPENDIX 10

Air Monitoring

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AIR MONITORING

Types of Air Monitoring Tests

In order to ensure the safety of the work personnel and surrounding occupants of the premises, the following air monitoring tests are necessary: -

Background

To be carried out in each abatement area after preliminary decontamination and before abatement process to establish the normal fibre level of the area. Background sample is used to measure the concentration of fibres before any works starts, for example, to check on the presence of other sources of fibres, which may affect interpretation of the clearance indicator. If fibre level is greater than 0.01 fibre/ml, interfere sources should be identified and removed. When the interfere sources cannot be removed, the guideline of the action level should be adjusted to the measured background fibre level.

Personal

To be carried out by the worker (the filter holder should be placed within 200 mm of the worker's breathing zone) when carrying out asbestos work. The personal test is used to evaluate the exposure level of the workers to asbestos dust and the workmanship. When the personal test result exceeds the control limit, the contractor should review the work method to minimize the generation of dust. In addition, the protection level of the RPE should be evaluated to ensure that all workers are under adequate protection.

Reassurance

To be carried out after the removal and a thorough visual inspection of the work area (by the Contractor) that is clean, dry and free of any debris. When reassurance test result exceeds 0.01 fibre/ml, it indicates that high level of asbestos dust present inside work area. The whole work area should be HEPA vacuumed and wet wiped again and reassurance air test should be retaken. These procedures will be repeated until the penultimate test result is satisfactory.

Reference Standards

The following standards are adopted: -

Type of air monitoring test	Reference Standards
Background	<0.01 fibre/ml
Personal	<0.2 fibre/ml for amosite and crocidolite <0.5 fibre/ml for other asbestos
Reassurance	<0.01 fibre/ml

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APPENDIX 11

Handling and Storage of Asbestos Waste

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HANDLING AND STORAGE OF ASBESTOS WASTE

1 Asbestos waste generated during the disposal operation should be placed directly into suitably labelled containers, vacuum packed and sealed (debris with sharp edges should be first placed in a nylon woven bag to prevent the plastic bags from being damaged).

2 As stated in the Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste, the maximum size of the packages should be restricted to 3m (L) x 1.5m (W) x 0.75m (H).

3 External surfaces of asbestos waste plastic bags (or sheeting as the item's physical features demand) should be cleaned by HEPA vacuuming and wet-wiping in the work area.

4 Asbestos waste placed in suitably labeled containers from individual work areas should be transported to the rigid containment described below at the end of each work shift.

5 Should the licensed asbestos waste collector deem that transit area for temporary storage of asbestos waste is needed, the area should be properly segregated, labelled and secured as described below:-

6 A room with lockable access should be set (See Appendix 3) for temporary storage of asbestos waste produced which are to be stacked not more than 3 bags high. Access to this containment should be restricted to the licensed asbestos waste collector only and the door should be kept shut all the times. The place should bear adequate warning notice and particular attention should be given to maintain good fire safety measures.

7 The containment should be wet cleaned twice using amended water upon completion of waste disposal.

8 Workers handling and transporting waste should wear plastic gloves, protective clothing and approved half-face respirators with minimum nominal protection factor 10, equipped with HEPA replaceable cartridge type filters.

9 All asbestos wastes should be disposed of according to the "Code of Practice on the Handling, Transportation and Disposal of Asbestos Wastes". The licensed asbestos waste collector should have registered with the EPD as a waste producer in order to dispose the asbestos wastes.

10 Care should be taken at all times when handling the asbestos waste to avoid causing damage to the bags or containers. When moved the bags should be lifted and not dragged.

11 All asbestos waste should be transported by designated vehicles equipped as stated in the above code of practice issued by EPD. Care shall be taken to avoid overloading of the vehicle.

12 At the disposal site the asbestos waste should be unloaded by hand and not thrown or dropped. If any bag or container is found to be broken, immediate action should be taken to prevent the release of fibres as set out in the code of practice, and the waste rebagged.

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APPENDIX 12

Tentative Work Programme

香港荷里活道10號中區警署

石棉消減工程 工程時間表 (Phase 1) 19/11/2011 rev A

Phase 1	ACM Item No.	Nature of Materials	Location	Dec-11																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	ED/0011-2	Corrugated Sheets	Roof, Block 18																		
2			Entrance Gate, G/F, Block 17																		

Legend

Holiday Preparation Execution / Removal

本署檔號 OUR REF: (2) in EPAC/A/4/000/233 III
來函檔號 YOUR REF:
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圖文傳真 FAX NO.: 2834 9960
電子郵件 E-MAIL:
網址 HOMEPAGE: http://www.epd.gov.hk

Environmental Protection Department
Branch Office
28th Floor, Southorn Centre,
130 Hennessy Road,
Wan Chai, Hong Kong.

環境保護署分處
香港灣仔
軒尼詩道
一百三十號
修頓中心廿八樓

18 January 2012

The Jockey Club CPS Limited
1 Sports Road, Happy Valley
Hong Kong
(Attn. : Mr. Kenneth Lee)

BY FAX 28388942

Dear Sir,

Air Pollution Control Ordinance Cap.311
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Phase 2 - Remaining Blocks)

We refer to the asbestos investigation report (Report No. : 0014/09/ED/0011B) and the revised asbestos abatement plan (Report No. : 0014/09/ED/0012B) submitted by your registered asbestos consultant Mr. YUNG Kuan Lin under letter reference MCL/ED/0311/2011/C & MCL/ED/0353/2011/C dated 23/12/2011 & 4/1/2012 respectively.

We are satisfied that the content of the said asbestos abatement plan is in accordance with section 71 of the Air Pollution Control Ordinance. Please be reminded that as indicated by your consultant Mr. Colin Yung, the internal walls and slabs at shower rooms in Block 8 need further asbestos investigation by the registered asbestos consultant and the investigation result will be submitted to us for consideration before its demolition.

In the meantime, you should take all precautionary measures to avoid any inadvertent disturbance of the identified asbestos containing materials before its removal by a registered asbestos contractor.

Yours faithfully,

(Danny O.C. CHENG)
for Director of Environmental Protection

cc MateriaLab Consultants Limited (Attn.: Mr. YUNG Kuan Lin) Fax 2450 6138

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RECEIVED
23 NOV 2011

MATERIALAB CONSULTANTS LIMITED

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Date 23 November 2011
Our Ref. MCL/ED/0311/2011/C

Environmental Protection Department
28/F., Southorn Centre,
130 Hennessy Road,
Wanchai, Hong Kong.

BY HAND

Attn.: Mr. Danny Cheng

Dear Sir,

Asbestos Consultancy Services for
Central Police Station Conservation & Revitalisation Project (Phase 2 – Remaining Blocks)

With refer to your letter ref. (2) in EPAC/A/4/000/233 dated on 16 November 2011, we would like to on behalf of our client to submit the Asbestos Investigation Report (AIR) (Report No. 0014/09/ED/0011B) and Asbestos Abatement Plan (AAP) (Report No. 0014/09/ED/0012B) for the remaining blocks at the captioned site for your comment and approval.

In response to your comments the following have been conducted:

1. The previous survey report conducted in 2009 has been provided to your office on 21 November 2011.
2. Photographic records showing the before and current conditions have been included in AIR – Appendix 2 and 5.
3. The findings of the missing ACM items are addressed in AIR – Section 6.0; air monitoring to measure the fibre levels in the concerned areas were conducted and the results are shown in AIR – Appendix 7; and the current site controls to prevent any further inadvertent removal are provided in AIR – Appendix 8.
4. A decontamination procedure has been included in the AAP – Section 8.0.

Should you require further information, please do not hesitate to contact the undersigned on 2452 7130.

Assuring you of our best attention at all times.

Yours faithfully,
for and on behalf of
MATERIALAB CONSULTANTS LIMITED

Colin Yung
Registered Asbestos Consultant

CY/ylb

Encl.

c.c. The Jockey Club CPS – Mr. Kenneth Lee (by post)
Gammon Construction Limited – Mr. Alan Mo (by post)

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ASBESTOS INVESTIGATION REPORT

Client : Alliance Professional Surveyors Co. Ltd. / Gammon Construction Ltd.

Project : Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Phase 2 – Remaining Blocks)

Report No. : 0014/09/ED/0011B

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1.0 INTRODUCTION

MateriaLab Consultants Limited was appointed by Alliance Professional Surveyors Company Limited in 2009 to conduct an asbestos investigation for Central Police Station. The location plan for the buildings is shown in Appendix 1.

The Central Police Station Compound (CPSC) is located in the junction of Hollywood Road, Arbuthnot Road, Old Bailey Street and Chancery Lane. The site is approximately 1.35 hectares (3.37 acres), and contains 19 definable structures and two open spaces. The Compound was built in early 20th Century and the building were mainly used as a Magistracy, Dormitory, Immigration Office, Police Station and Jail. The buildings were vacant at the time of survey and it shall be revitalised in the near future. The sensitive receivers identified in the immediate vicinity were the residents around the project site.

An asbestos investigation for blocks 17 and 18 have been reported in a separate submission to EPD on 21 November 2011 under AIR report no. 0210/11/ED/0077 and AAP report no. 0210/11/ED/0078 and hence it will not be repeated in this report.

2.0 PARTICULARS OF CONCERNED PARTIES

Owner

The Jockey Club CPS Limited
Address: 1 Sports Road,
Happy Valley,
Hong Kong
Tel.: 2966 7224
Fax: 2838 8942
Contact person: Mr. Kenneth Lee

Owner's Representative

The Jockey Club CPS Limited
Address: 1 Sports Road,
Happy Valley,
Hong Kong
Tel.: 2966 8063
Fax: 2838 8942
Contact person: Mr. C.W. Sham

Registered Asbestos Consultant

Mr. Colin Yung (1063) Verification Survey
Mr. Steven Wong (1071) Initial Survey
Address: Fugro Development Centre,
5 Lok Yi Street,
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Tel.: 2450 8238
Fax: 2450 6138

Registered Asbestos Laboratory

Fugro Technical Services Limited
MateriaLab Division (4001)
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N.T., Hong Kong.
Tel.: 2450 8233
Fax: 2450 6138
Contact Person: Mr. John Ho

3.0 SCOPE OF WORKS

MateriaLab Consultants Limited was appointed by Alliance Professional Surveyors Company Limited in 2009 to:

- conduct an asbestos investigation for Central Police Station Compound;

- identify and locate asbestos-containing materials in the surveyed area;
- collect suspected asbestos-containing materials for further analysis; and
- prepare an Asbestos Investigation Report (AIR) and an Asbestos Abatement Plan (AAP) if necessary.

MateriaLab Consultants Limited was appointed by Gammon Construction Ltd. to conduct a verification survey of the previous AIR and AAP in 2011.

4.0 WORK UNDERTAKEN

4.1 Record Review

The previous survey records regarding asbestos-containing materials of the buildings were verified.

4.2 Field Work

The initial asbestos surveys were carried out on 18, 20 and 23 February, 3 March and 7 April 2009, and verification survey was conducted on 20 October 2011 at the project site. The surveys consisted of visual inspection of each occurrence and representative sampling of suspected materials. The surveys were limited to exposed areas of the buildings, which were accessible to the Consultant without the removal of any external or internal building fabrics, fixtures and fittings. The Consultant did not, for the purpose of these surveys, examine any unexposed areas of the buildings such as concealed or underground water pipes, cables, mains, etc and any areas of the building which were dangerous or hazardous to the Consultant.

The following materials were inspected and verified during the surveys and are summarised in Table 1. Photographic records of these materials and the latest condition are enclosed in Appendix 2.

Table 1

Items Inspected	Location	Composition
Cement Board*	Balcony, 2/F, Block 9	Suspected asbestos-containing Cement Board
Vinyl Floor Tiles with Adhesives underneath*	Various Locations	Suspected asbestos-containing Vinyl Floor Tiles with Adhesives underneath
Corrugated Sheets*	Various Locations	Suspected asbestos-containing Corrugated Sheets
Insulation inside Switch / Fuse Boxes*	Various Locations	Suspected asbestos-containing Insulation inside Switch / Fuse Boxes / Metal
Ceiling Plaster*	Confidential Registry, Room 205, 2/F, Block 1	Suspected asbestos-containing Ceiling Plaster
Chalkboard*	Room 220, 2/F, Block 1	Suspected asbestos-containing Chalkboard
Flexible Joints*	Various Locations	Suspected asbestos-containing Flexible Joint / Rubber
Chimney Lagging*	Generator Room, 1/F, Block 1	Suspected asbestos-containing Chimney Lagging

Table 1 (con't)

Items Inspected	Location	Composition
Beam Plasters*	Room G08A to G08C, G/F, Block 1	Suspected asbestos-containing Beam Plaster
Gasket*	Gas Meter Room, G/F, Block 10	Suspected asbestos-containing Gasket
Pipe Laggings*	Fibre Glass Repair Workshop, LG/F, Block 16 and G/F, Block 19	Suspected asbestos-containing Pipe Lagging
Access Panel Insulations	Block 19	Rubber
Air Duct Laggings	Block 19	Polystyrene Foam
Chiller Pipe Laggings	Block 9	Polystyrene Foam
Oven Door Seals	Kitchen, 1/F, Block 3 and Kitchen, 1/F, Block 13	Rubber
Boiler Insulations	Various Locations	Metal
Sound Insulation Panels	Office, 1/F, Block 1 and Hall, G/F, Block 9	Wood
Roofing Tiles	Roof	Ceramic Tiles
Water Pipes	Various Locations	Metal / Plastic

*Samples were taken for laboratory analysis.

4.3 Sampling

Sampling and analysis of suspected asbestos-containing materials were carried out by Fugro Technical Services Limited (MaterialLab Division), the Laboratory. The following sampling criteria have been adopted:

Type of Materials	Area or Length	Number of Samples
Homogeneous surface materials e.g. coating, plaster, etc.	<100 sq.m.	At least 3
	100 - 500 sq.m.	5
	> 500 sq.m.	At least 7
Thermal insulation e.g. pipe lagging, boiler insulation, etc.	Each homogeneous run	At least 3
Miscellaneous materials e.g. corrugated sheet, etc.	Each homogeneous material	At least 2

4.4 Laboratory Analysis

32 samples of suspected asbestos-containing materials were collected. The samples were then analysed for the presence and type of asbestos according to the Laboratory's HOKLAS accredited testing procedures. The results are summarised in Table 2.

Table 2

Sample Code	Sample Nature	Sampling Location	Photo No.	Type and Content of Asbestos Present
PE90125/1	Cement Board	Balcony, 2/F, Block 9	1	Chrysotile: 5 - 10% Crocidolite: < 5%
PE90125/2	Vinyl Floor Tiles with Adhesives (Pale Yellow)	Staircase Lobby, 2/F, Block 9	2	Non-ACM

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Table 2 (con't)

Sample Code	Sample Nature	Sampling Location	Photo No.	Type and Content of Asbestos Present
PE90125/3	Vinyl Floor Tiles with Adhesives (Pale Yellow)	Staircase Lobby, 1/F, Block 9	3	Non-ACM
PE90125/4	Vinyl Floor Tiles with Adhesives (Grey)	Pantry, 1/F, Block 9	4	Non-ACM
PE90125/5	Vinyl Floor Tiles with Adhesives (Grey)	Office, B/F, Block 9	5	Non-ACM
PE90125/6	Vinyl Floor Tiles with Adhesives (Green)	Office, B/F, Block 9	6	Non-ACM
PE90125/7	Vinyl Floor Tiles with Adhesives (Green)	Office, B/F, Block 9	7	Non-ACM
PE90125/8	Corrugated Sheet (Type 1)	Entrance, G/F, Block 9	8	Chrysotile: 10 – 15% & Amosite: < 5%
PE90125/9	Insulation inside Fuse Box	Pump House, B/F, Block 9	9	Chrysotile: 70 – 80%
PE90125/10	Vinyl Floor Tiles with Adhesives (Blue)	Interview & Statement Taking Room, G/F, Block 3	10	Non-ACM
PE90125/11	Vinyl Floor Tiles with Adhesives (Blue)	Office, G/F, Block 3	11	Non-ACM
PE90125/12	Vinyl Floor Tiles with Adhesives (Red)	Game Room, 1/F, Block 3	12	Non-ACM
PE90125/13	Vinyl Floor Tiles with Adhesives (Red)	Game Room, 1/F, Block 3	13	Non-ACM
PE90125/14	Ceiling Plaster	Confidential Registry Room, Room 205, 2/F, Block 1	14	Non-ACM
PE90125/15	Ceiling Plaster	Confidential Registry Room, Room 205, 2/F, Block 1	15	Non-ACM
PE90125/16	Ceiling Plaster	Confidential Registry Room, Room 205, 2/F, Block 1	16	Non-ACM
PE90125/17	Chalkboard (The previously loose chalkboard was not found on 20 Oct 2011)	Room 220, 2/F, Block 1	17	Chrysotile: 5 – 10%

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Table 2 (con't)

Sample Code	Sample Nature	Sampling Location	Photo No.	Type and Content of Asbestos Present
PE90125/18	Flexible Joint	Generator Room, Room 124, 1/F, Block 1	18	Non-ACM
PE90125/19	Flexible Joint	Generator Room, Room 124, 1/F, Block 1	19	Non-ACM
PE90125/20	Chimney Lagging	Generator Room, Room 124, 1/F, Block 1	20	Chrysotile: 70 – 80%
PE90125/21	Beam Plaster	Room G08B, G/F, Block 1	21	Non-ACM
PE90125/22	Beam Plaster	Room G08B, G/F, Block 1	22	Non-ACM
PE90125/23	Beam Plaster	Room G08A, G/F, Block 1	23	Non-ACM
PE90125/24	Corrugated Sheet (Type 3)	Rear side of Block 8	24	Non-ACM
PE90125/25	Vinyl Floor Tiles with Adhesives (Grey)	Room 13-209, 2/F, Block 13	25	Non-ACM
PE90125/26	Vinyl Floor Tiles with Adhesives (Grey)	Room 13-210, 2/F, Block 13	26	Non-ACM
PE90125/27	Pipe Lagging	Fibre Glass Repair Workshop, LG/F, Block 16	27	Chrysotile: 20 – 30%
PE90125/28	Gasket (The previously identified gasket and towngas meter were not found on 20 Oct 2011)	Gas Meter Room, G/F, Block 10	28	Chrysotile: > 90%
PE90125/29	Pipe Lagging	G/F, Block 19	29	Chrysotile: 20 – 30%
PE90125/30	Corrugated Sheet (Type 3)	Rear side of Block 8	30	Non-ACM
PE90125/31	Corrugated Sheet (Type 2)	Toilet, Block 16	31	Non-ACM
PE90125/32	Corrugated Sheet (Type 2) Reported under a separate submission	Entrance Gate, G/F Block 17	32	Chrysotile: 5 – 10%

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5.0 SUMMARY OF FINDINGS

The results of the surveys identified asbestos-containing materials at the locations tabulated below. The exact locations of the materials are shown in Appendix 5 and photographs of these materials are shown in Appendix 2.

ACM Item No.	Nature of Materials	Estimated Quantity	Location	Friability	Condition	Accessibility	Potential of Ventilation Disturbance	Representative Samples Taken	Types and Content of Asbestos	Hazard Rank
ED/0011-1	Cement Board	2 m²	Balcony, 2/F, Block 9	Non-Friable	Fair	Easy	High	PE90125/1	Chrysotile: 5 - 10% & Crocidolite: < 5%	6
ED/0011-2	Corrugated Sheets (Type 1 & Type 2)	1 m² 20 m² 20 m² 1 m² 120 m²	Light Well, 2/F, Block 9 Entrance, G/F, Block 9 Staircase, G/F, Block 8 Entrance, G/F, Block 13 Roof, Block 16	Non-Friable	Good	Difficult	High	PE90125/8 & PE90125/32	Chrysotile: 5 - 15% & Amosite: < 5%	3
ED/0011-3	Insulation inside Switch / Fuse Box	1 no. 9 nos. 1 no.	Generator Room, Room 124, 1/F, Block 1 Pump House, B/F, Block 9 Corridor, 2/F, Block 14 (West Wing).	Friable	Good	Difficult	Low	PE90125/9	Chrysotile: 70 - 80%	3

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ACM Item No.	Nature of Materials	Estimated Quantity	Location	Friability	Condition	Accessibility	Potential of Ventilation Disturbance	Representative Samples Taken	Types and Content of Asbestos	Hazard Rank
ED/0011-4	Chimney Lagging	4 m	Generator Room, Room 124, 1/F, Block 1	Friable	Good	Difficult	Low	PE90125/20	Chrysotile: 70 - 80%	3
ED/0011-5	Pipe Lagging	4 m 4 m	Fibre Glass Repair Workshop, LG/F, Block 16 G/F, Block 19	Friable	Good & Fair	Easy	High	PE90125/27 & PE90125/29	Chrysotile: 20 - 30%	3 & 6

Date of investigation: 18, 20 and 23 February, 3 March and 7 April 2009
Date of verification: 20 October 2011

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 All the asbestos-containing materials that were identified at the time of survey are summarised in Section 5.

6.2 An Asbestos Abatement Plan shall be drawn up for revitalisation work so that the release of asbestos dust is properly controlled and the health hazard to both the workers and the public are minimised. The removal of asbestos-containing material requires special precautions and strict compliance with relevant regulations. An air sampling and monitoring programme is necessary to demonstrate the effectiveness of the abatement plan.

6.3 Every effort has been made to visually examine all materials within the scope of this project and, where appropriate and accessible to us, these materials have been sampled and tested by the Laboratory to ascertain the presence or otherwise of asbestos. The ACMs identified in this report, if any, may not be the only ACMs within the premises.

6.4 Contractors are strongly advised to visit the areas to verify the exact locations and quantities of ACMs themselves before they prepare and submit quotations/tenders for the removal of ACMs in the subject area.

6.5 It should be noted that the information presented in this report describes the conditions at the time of survey. If suspected ACMs not identified or sampled during these surveys are revealed, a registered asbestos consultant should be consulted before proceeding with any asbestos abatement work in the premises.

6.6 On 20 October 2011, MateriaLab Consultants Limited was engaged to conduct a site verification and subsequently submit the Asbestos Investigation Report and Asbestos Abatement Plan to Environment Protection Department for approval.

6.7 During the site verification, previously identified asbestos-containing chalkboard and gaskets were found missing.

6.8 The site was handover to Gammon Construction Limited (GCL) on 30 June 2011 and the chalkboard was found missing during the site handover, therefore the chalkboard was removed between the survey in April 2009 and the site handover to GCL on 30 June 2011. The owner confirmed they had not instructed anyone to remove the chalkboard. Our record shows that the chalkboard in 2009 was found placed loosely on the floor and could be easily be removed. The owner confirmed there are no record or no ideas when and how the chalkboard was removed off-site.

6.9 As for the asbestos-containing gaskets (non-woven non-friable), it was confirmed the gaskets were present on-site during the site handover on 30 June 2011. The gaskets were removed after the contractors from Towngas removed the gas meter and the associated pipes which attached the gaskets.

6.10 Our site verification found no traces of asbestos debris in the concerned areas, however as a precautionary measure, air monitoring has been conducted and the results have all concluded the fibre level to be below 0.01 fibre/ml, the monitoring locations and results are shown in Appendix 7. The concerned areas will be decontaminated before being released for other general works and the

decontamination procedure is stipulated in the Asbestos Abatement Plan. In the meantime GCL have arranged the concerned areas to be seal off, locked and appropriate warning have been posted to prevent any unauthorised access, Photographic records of the seal up are shown in Appendix 8.

6.11 As preventative measures, GCL have clearly label all remaining asbestos-containing materials and have informed all workers on-site the presence of ACM and reminded them not to disturb the ACMs. GCL has also designated a staff to check the ACMs condition on a daily basis to ensure the ACMs are closely monitored. Site entry record have been setup to record who had access the site, all contractors and workers entering the site must register at the security gate.

Prepared by : **Yu Lap Bong**

Certified by :

Colin Yung
Registered Asbestos Consultant

Date : 23 November 2011

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APPENDIX 1

LOCATION PLAN

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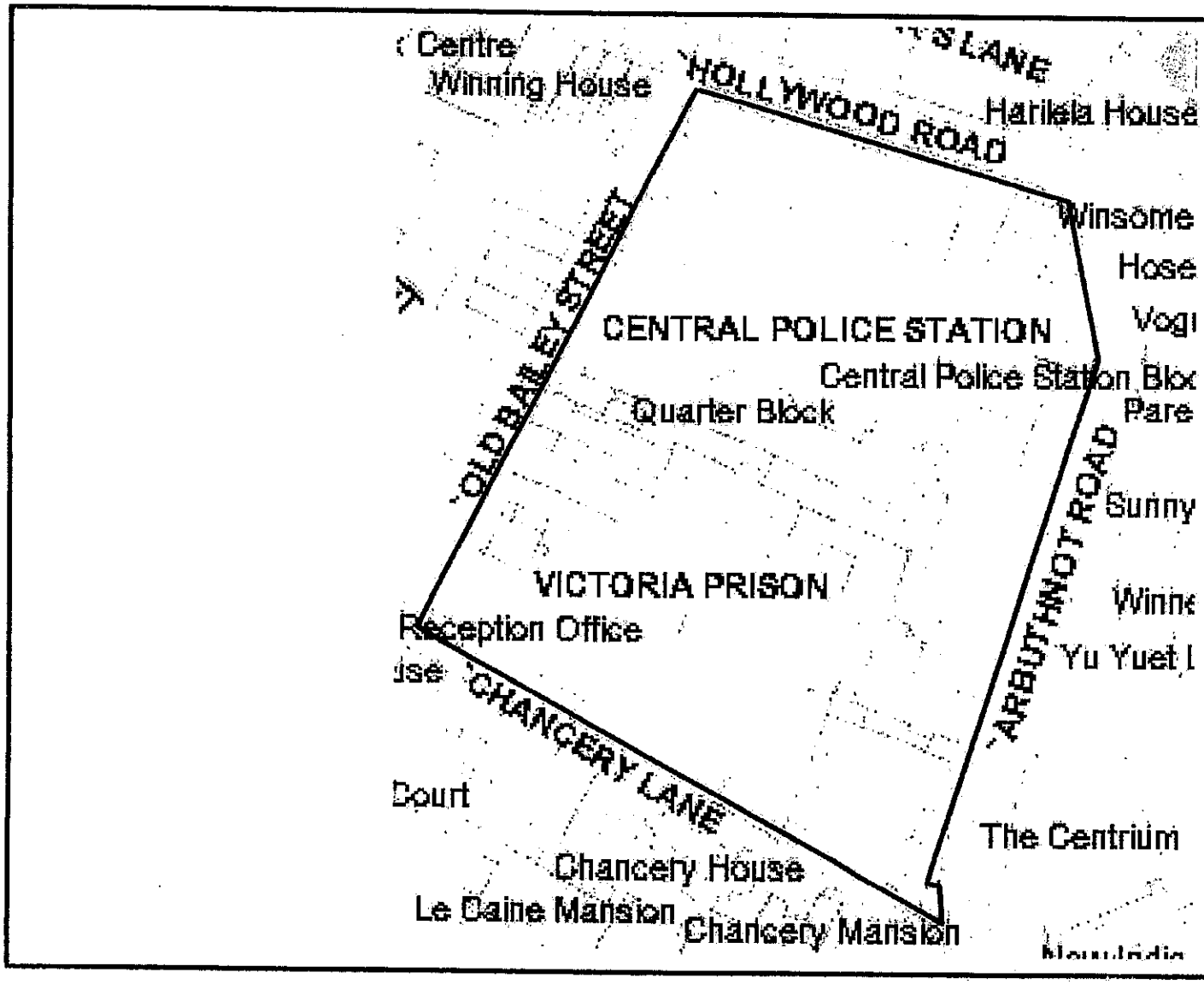

Figure:	1
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	Location Plan
Our ref. no.:	0014/09/ED/0011B
Prepared by:	Yu Lap Bong
Scale:	Not to Scale
Legend:	☐ Subject Area

Rev.	Date
0	23/11/2011

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APPENDIX 2

PHOTOGRAPHIC RECORDS OF SITE SURVEY

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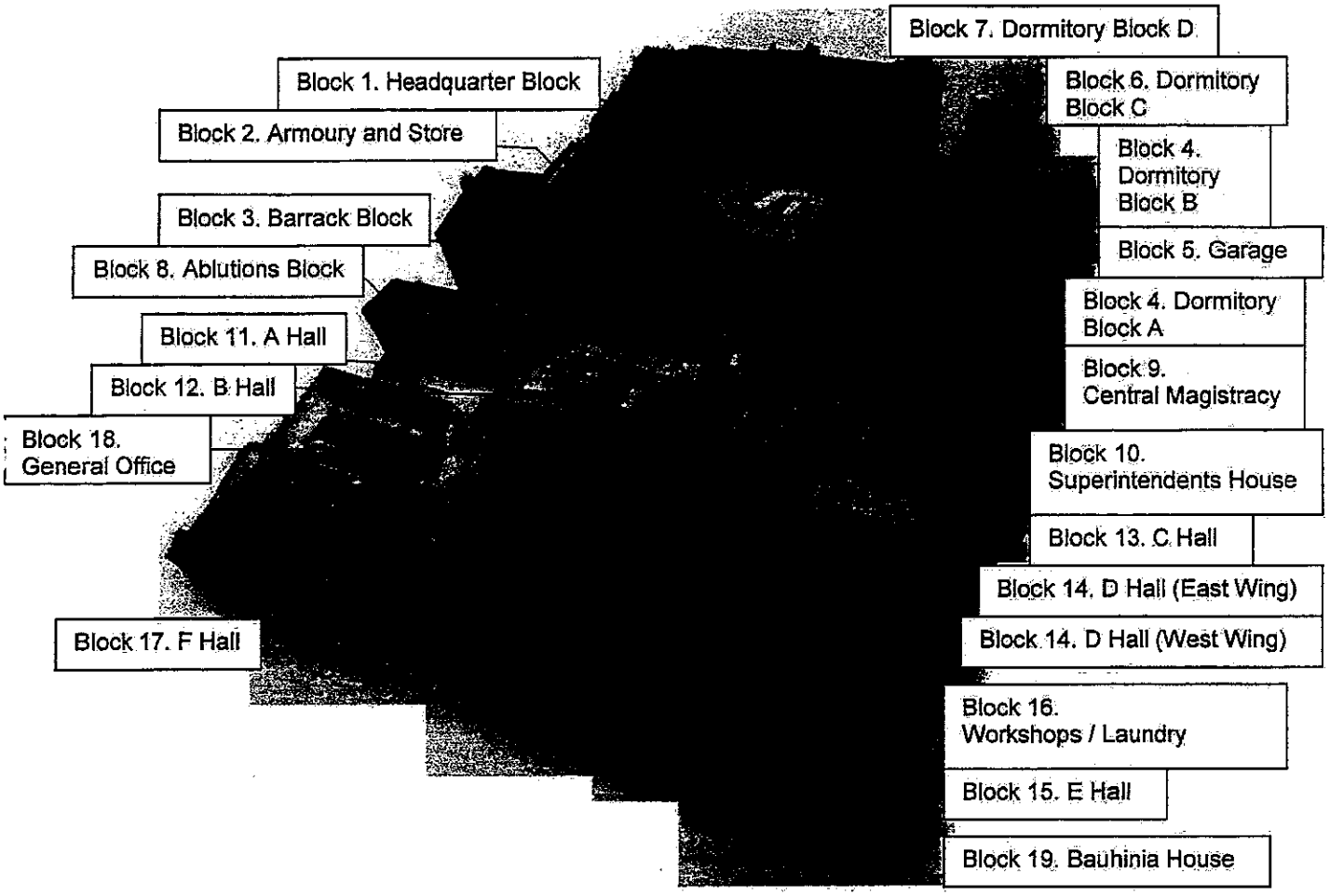

General View of Central Police Station

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Report No.: 0014/09/ED/0011B

Photo 1. Cement Board at Balcony, 2/F of Block 9 was confirmed as ACM (Sample No. PE90125/1, ACM Item No. ED/0011-1).

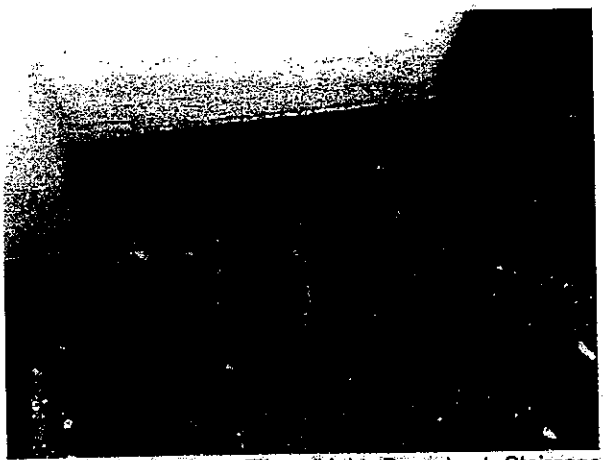

Photo 2. Vinyl Floor Tiles (Light Brown) at Staircase Lobby, 2/F of Block 9 was confirmed as Non-ACM (Sample No. PE90125/2).

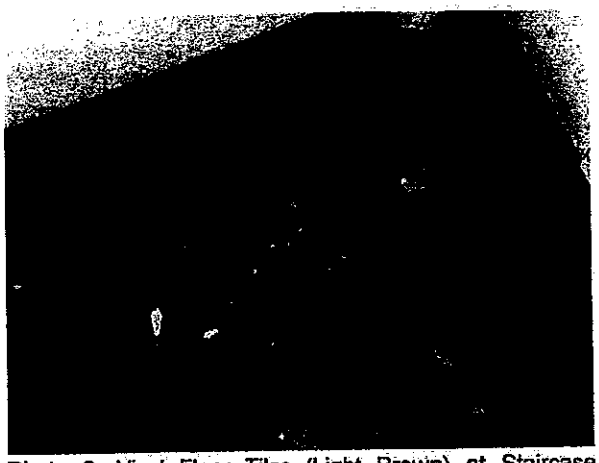

Photo 3. Vinyl Floor Tiles (Light Brown) at Staircase Lobby, 1/F of Block 9 was confirmed as Non-ACM (Sample No. PE90125/3).

Photo 4. Vinyl Floor Tiles (Grey) at Pantry, 1/F of Block 9 was confirmed as Non-ACM (Sample No. PE90125/4).

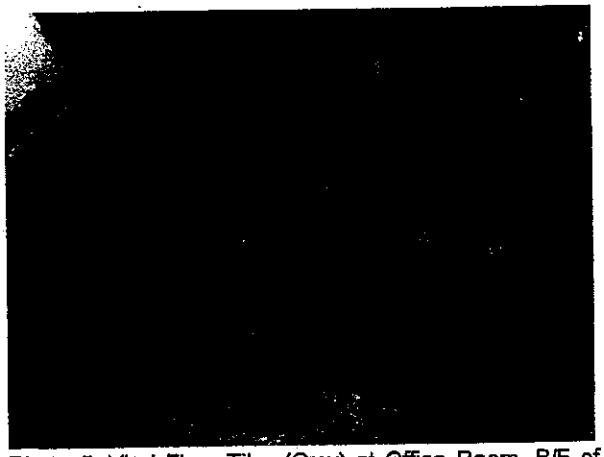

Photo 5. Vinyl Floor Tiles (Grey) at Office Room, B/F of Block 9 was confirmed as Non-ACM (Sample No. PE90125/5).

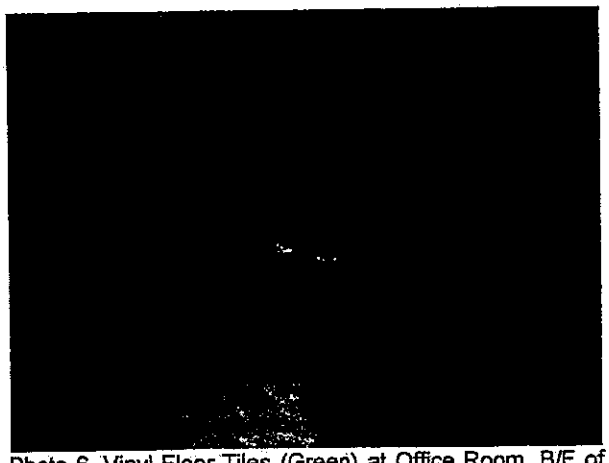

Photo 6. Vinyl Floor Tiles (Green) at Office Room, B/F of Block 9 was confirmed as Non-ACM (Sample No. PE90125/6).

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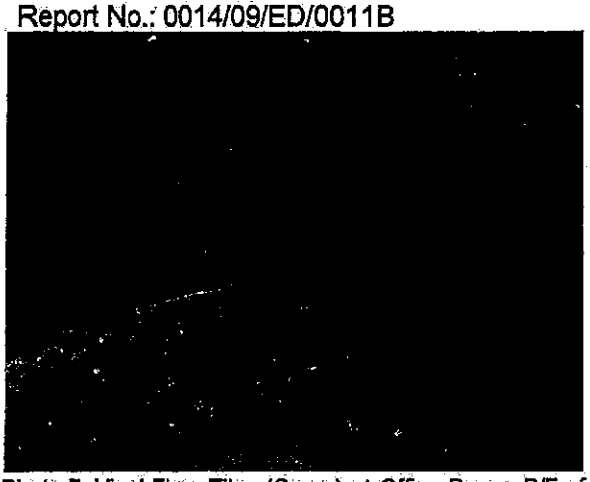

Photo 7. Vinyl Floor Tiles (Green) at Office Room, B/F of Block 9 was confirmed as Non-ACM (Sample No. PE90125/7).

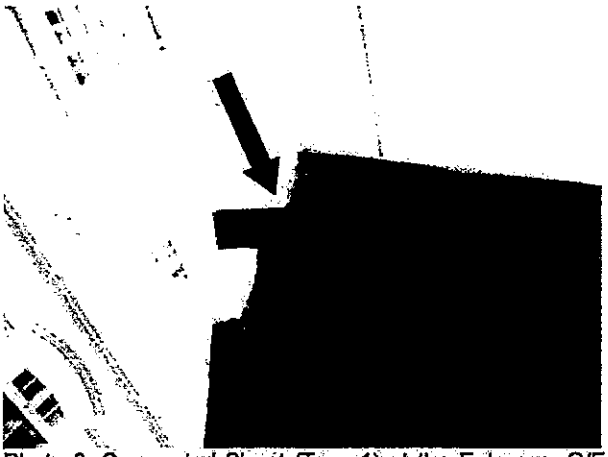

Photo 8. Corrugated Sheet (Type 1) at the Entrance, G/F of Block 9 was confirmed as ACM (Sample No. PE90125/8, ACM Item No. ED/0011-2).

Photo 9. Insulation Material inside the Fuse Box at Pump House, B/F of Block 9 was confirmed as ACM (Sample No. PE90125/9, ACM Item No. ED/0011-3).

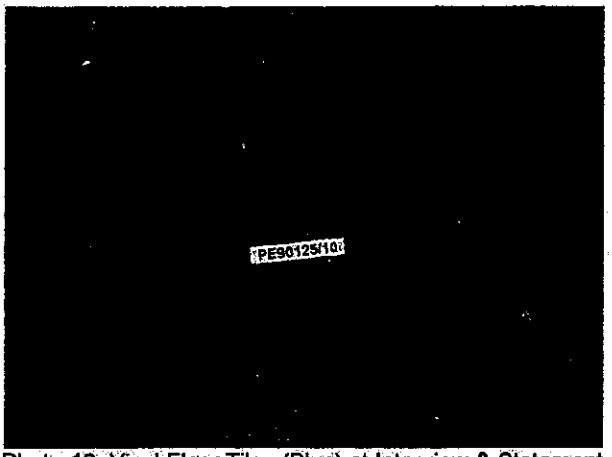

Photo 10. Vinyl Floor Tiles (Blue) at Interview & Statement Taking Room, G/F of Block 3 was confirmed as Non-ACM (Sample No. PE90125/10).

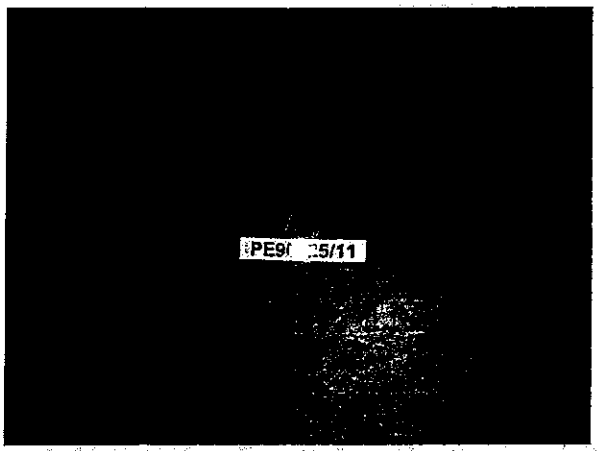

Photo 11. Vinyl Floor Tiles (Blue) at Office Room, G/F of Block 3 was confirmed as Non-ACM (Sample No. PE90125/11).

Photo 12. Vinyl Floor Tiles (Red) at Game Room, 1/F of Block 3 was confirmed as Non-ACM (Sample No. PE90125/12).

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Report No.: 0014/09/ED/0011B

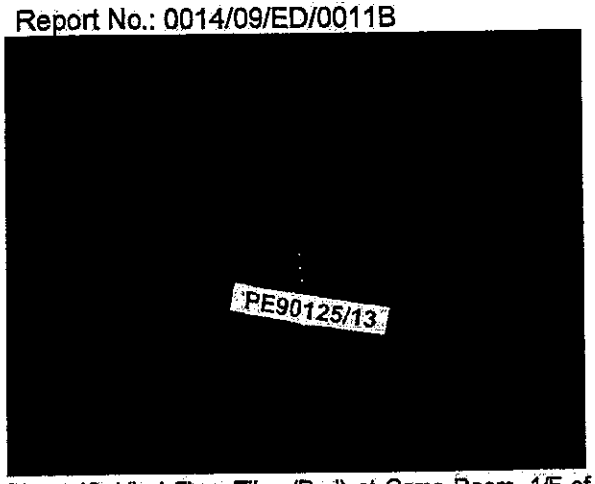

Photo 13. Vinyl Floor Tiles (Red) at Game Room, 1/F of Block 3 was confirmed as Non-ACM (Sample No. PE90125/13).

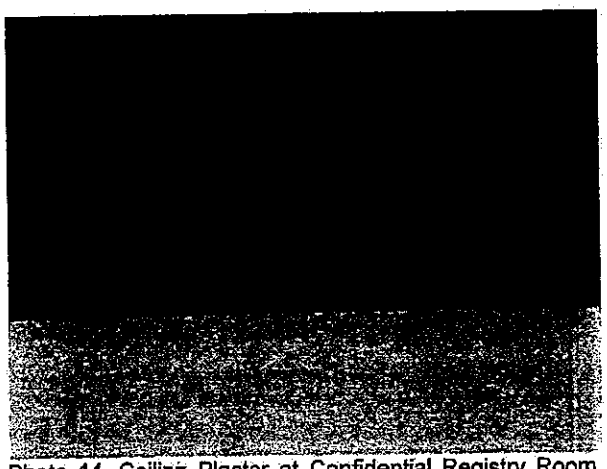

Photo 14. Ceiling Plaster at Confidential Registry Room, Room 205, 2/F of Block 1 was confirmed as Non-ACM (Sample No. PE90125/14).

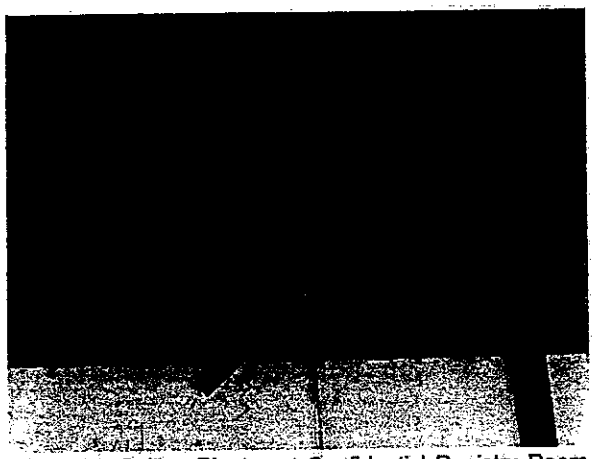

Photo 15. Ceiling Plaster at Confidential Registry Room, Room 205, 2/F of Block 1 was confirmed as Non-ACM (Sample No. PE90125/15).

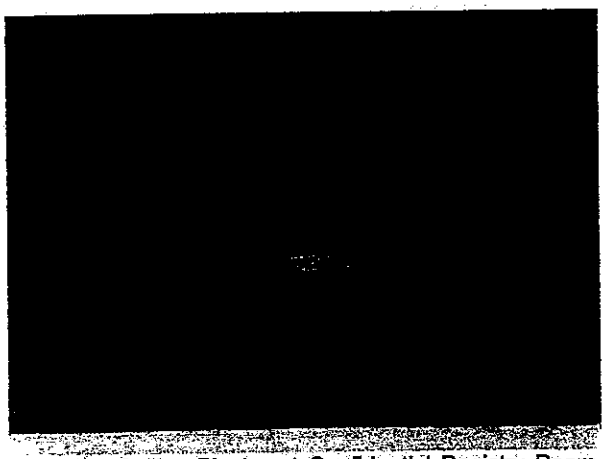

Photo 16. Ceiling Plaster at Confidential Registry Room, Room 205, 2/F of Block 1 was confirmed as Non-ACM (Sample No. PE90125/16).

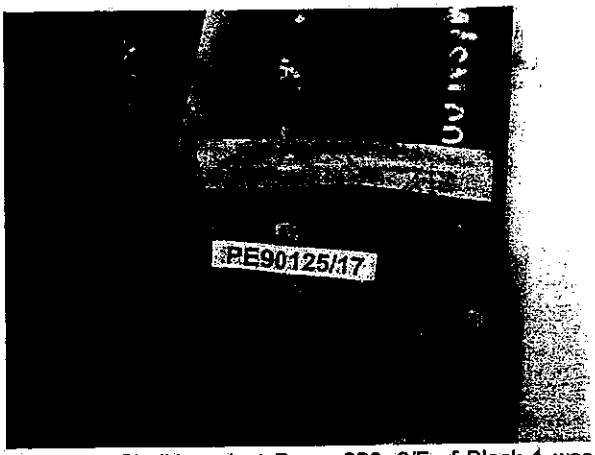

Photo 17. Chalkboard at Room 220, 2/F of Block 1 was confirmed as ACM (Sample No. PE90125/17).

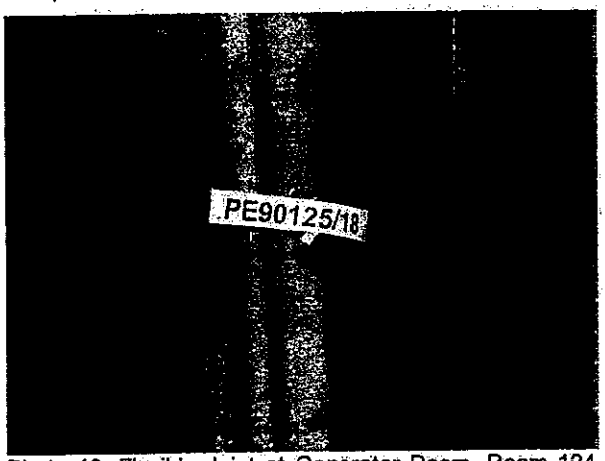

Photo 18. Flexible Joint at Generator Room, Room 124, 1/F of Block 1 was confirmed as Non-ACM (Sample No. PE90125/18).

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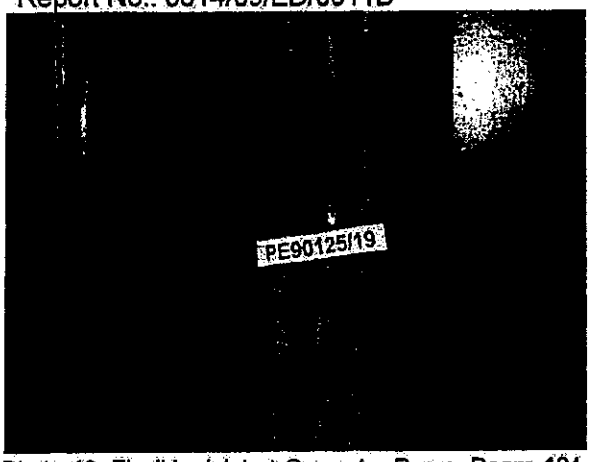

Photo 19. Flexible Joint at Generator Room, Room 124, 1/F of Block 1 was confirmed as Non-ACM (Sample No. PE90125/19).

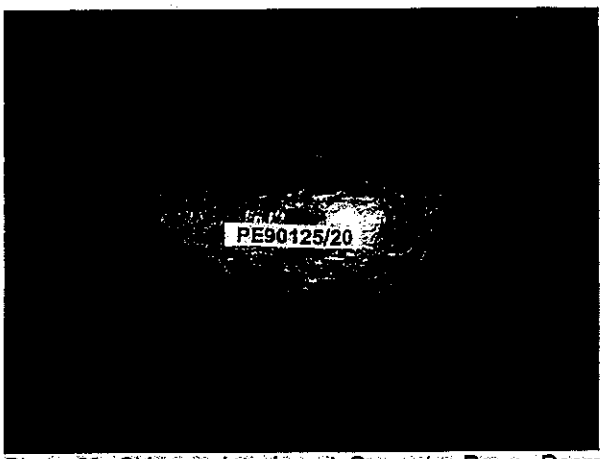

Photo 20. Chimney Lagging at Generator Room, Room 124, 1/F of Block 1 was confirmed as ACM (Sample No. PE90125/20, ACM Item No. ED/0011-4).

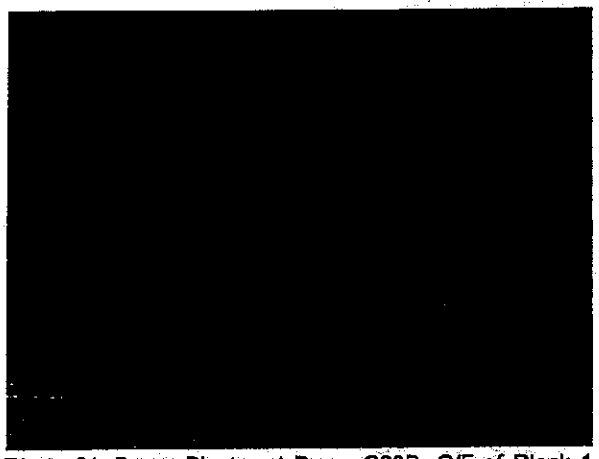

Photo 21. Beam Plaster at Room G08B, G/F of Block 1 was confirmed as Non-ACM (Sample No. PE90125/21).

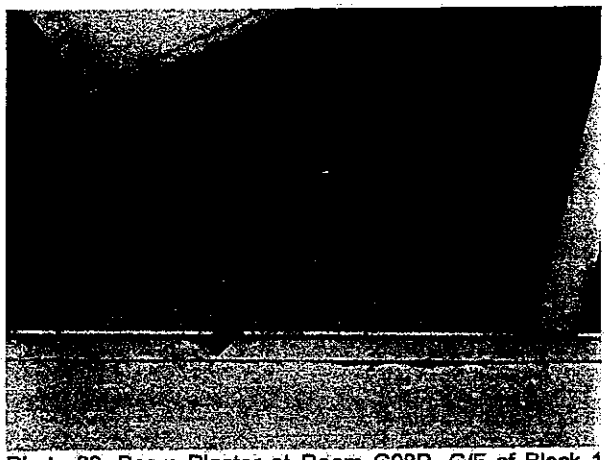

Photo 22. Beam Plaster at Room G08B, G/F of Block 1 was confirmed as Non-ACM (Sample No. PE90125/22).

Photo 23. Beam Plaster at Room G08A, G/F of Block 1 was confirmed as Non-ACM (Sample No. PE90125/23).

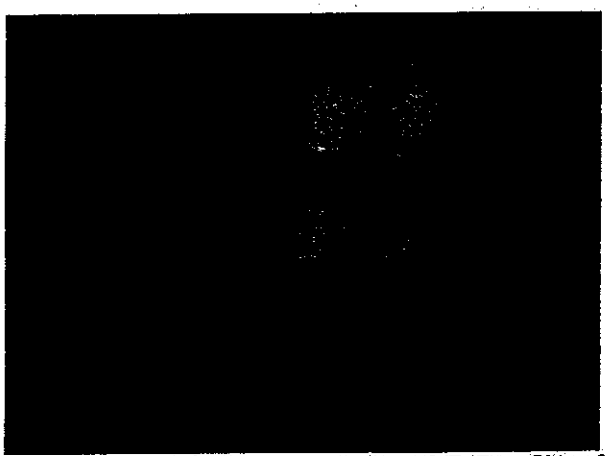

Photo 24. Corrugated Sheet (Type 3) at G/F, Rear Side of Block 8 was confirmed as Non-ACM (Sample No. PE90125/24).

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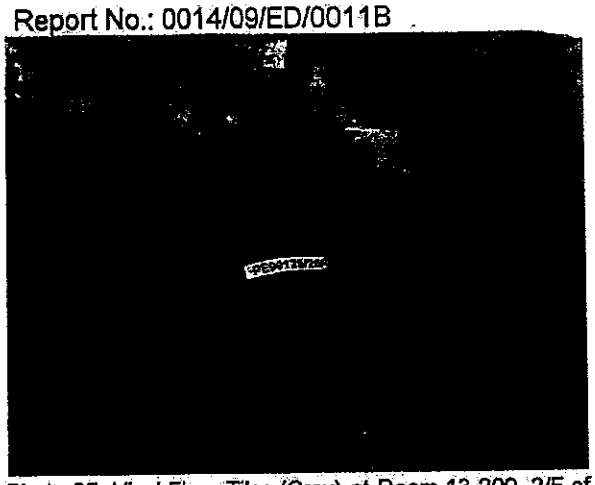

Photo 25. Vinyl Floor Tiles (Grey) at Room 13-209, 2/F of Block 13 was confirmed as Non-ACM (Sample No. PE90125/25).

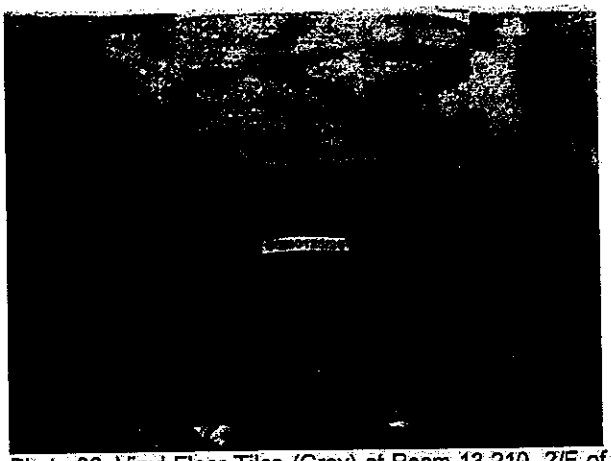

Photo 26. Vinyl Floor Tiles (Grey) at Room 13-210, 2/F of Block 13 was confirmed as Non-ACM (Sample No. PE90125/26).

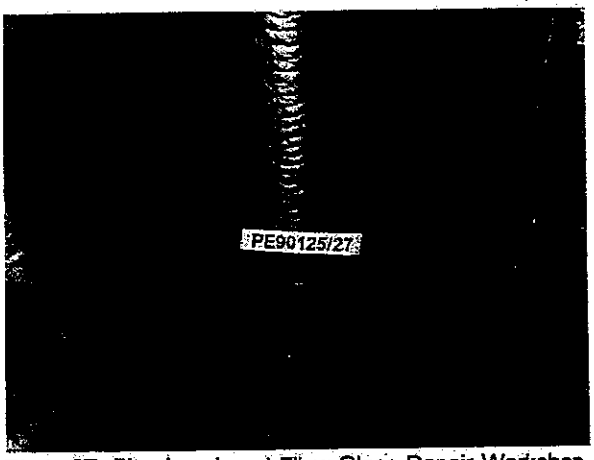

Photo 27. Pipe Lagging at Fibre Glass Repair Workshop, LG/F of Block 16 was confirmed as ACM (Sample No. PE90125/27, ACM Item No. ED/0011-5).

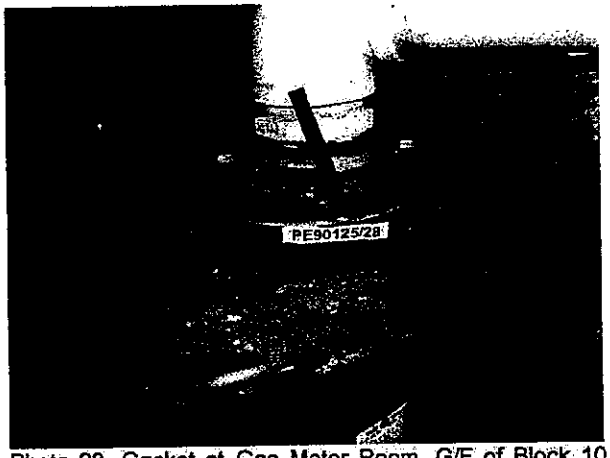

Photo 28. Gasket at Gas Meter Room, G/F of Block 10 was confirmed as ACM (Sample No. PE90125/28).

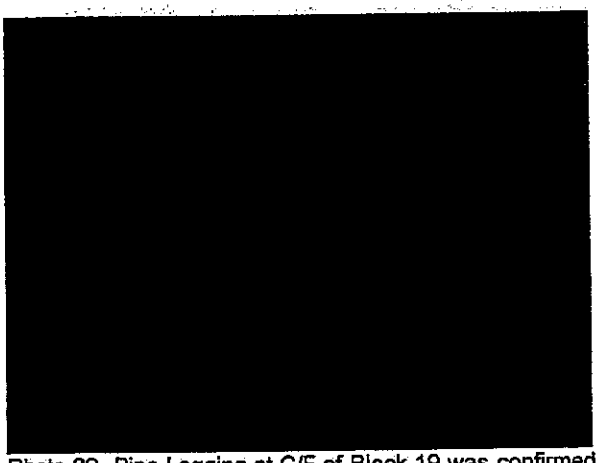

Photo 29. Pipe Lagging at G/F of Block 19 was confirmed as ACM (Sample No. PE90125/29, ACM Item No. ED/0011-5).

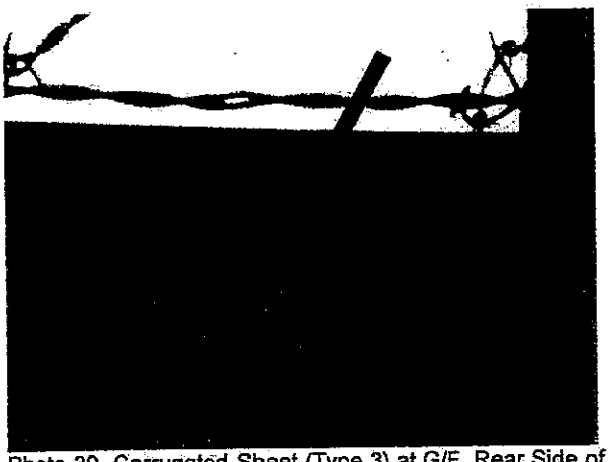

Photo 30. Corrugated Sheet (Type 3) at G/F, Rear Side of Block 8 was confirmed as Non-ACM (Sample No. PE90125/30).

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Photo 31. Corrugated Sheet (Type 2) at the Toilet, G/F of Block 16, Workshops was confirmed as Non-ACM (Sample No. PE90125/31).

Photo 32. Corrugated Sheet (Type 2) at the Entrance Gate, G/F of Block 17 was confirmed as ACM (Sample No. PE90125/32, ACM Item No. ED/0011-2).

Photo 33. Asbestos-containing Corrugated Sheet (Type 1). Photo taken at Light Well, 2/F of Block 9 (ACM Item No. ED/0011-2).

Photo 34. Asbestos-containing Corrugated Sheet (Type 1). Photo taken at Staircase, G/F of Block 8 (ACM Item No. ED/0011-2).

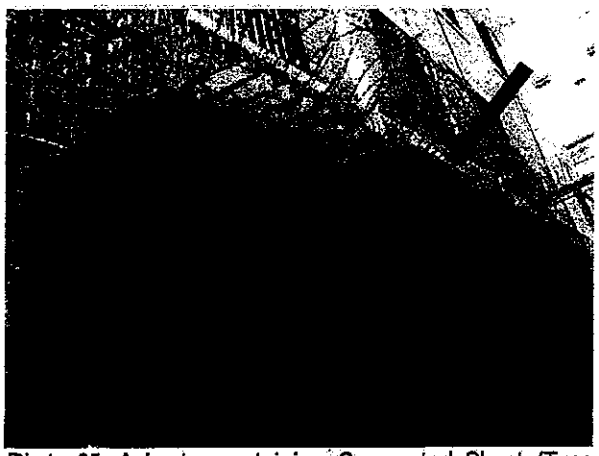

Photo 35. Asbestos-containing Corrugated Sheet (Type 1). Photo taken at Entrance, G/F of Block 13 (ACM Item No. ED/0011-2).

Photo 36. Asbestos-containing Corrugated Sheet (Type 1) at the Roof of Block 18 (ACM Item No. ED/0011-2).

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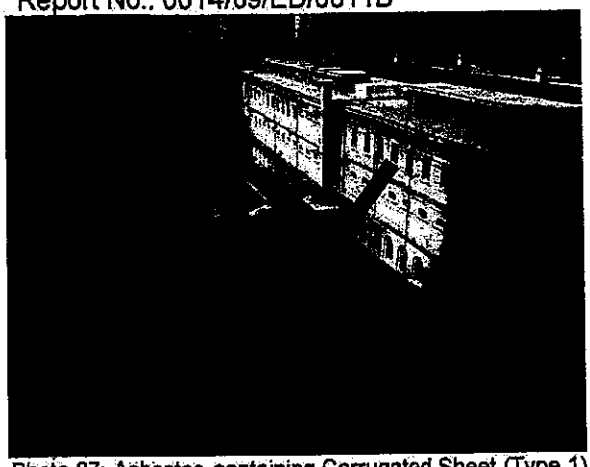

Photo 37. Asbestos-containing Corrugated Sheet (Type 1) at the Roof of Block 16 (ACM Item No. ED/0011-2).

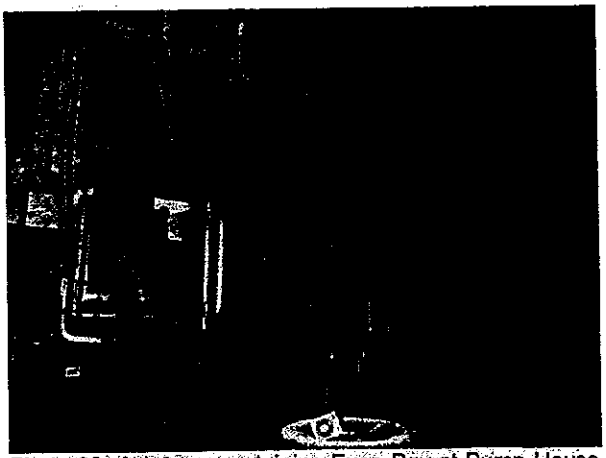

Photo 38. Asbestos-containing Fuse Box at Pump House, B/F of Block 9 (ACM Item No. ED/0011-3).

Photo 39. Asbestos-containing Fuse Box at Generator Room, Room 124, 1/F of Block 1 (ACM Item No. ED/0011-3).

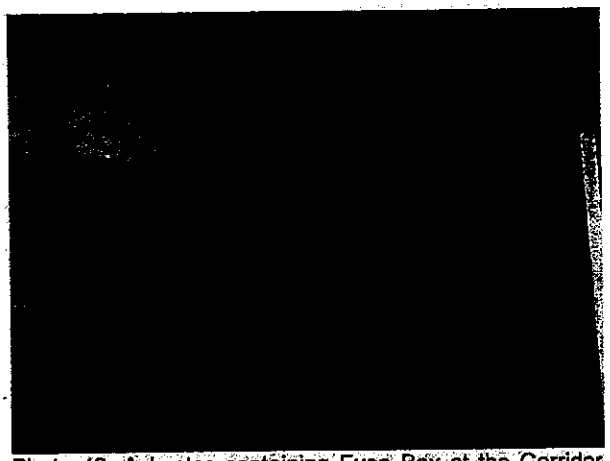

Photo 40. Asbestos-containing Fuse Box at the Corridor, 2/F of Block 14 (West Wing) (ACM Item No. ED/0011-3).

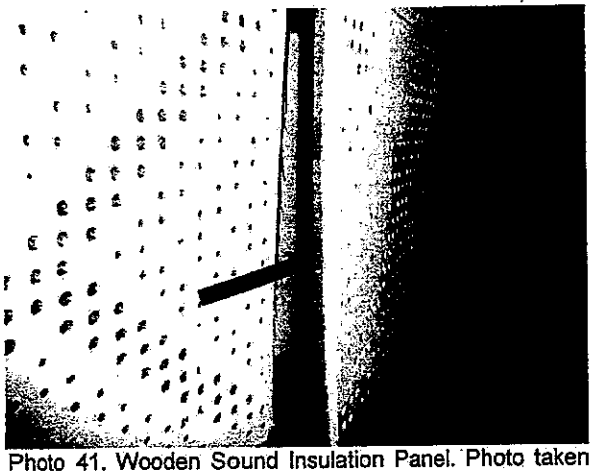

Photo 41. Wooden Sound Insulation Panel. Photo taken at Hall, G/F of Block 9

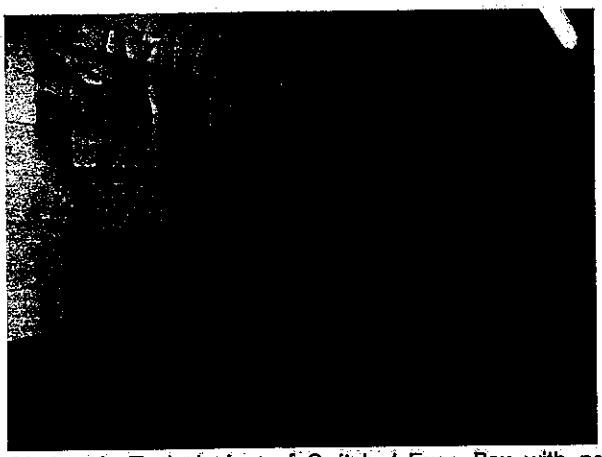

Photo 42. Typical view of Switch / Fuse Box with no suspected asbestos-containing materials. Photo taken at Corridor, B/F of Block 9.

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Photo 43. Glass Fibre Pipe Lagging. Photo taken at Laundry, LG/F of Block 16.

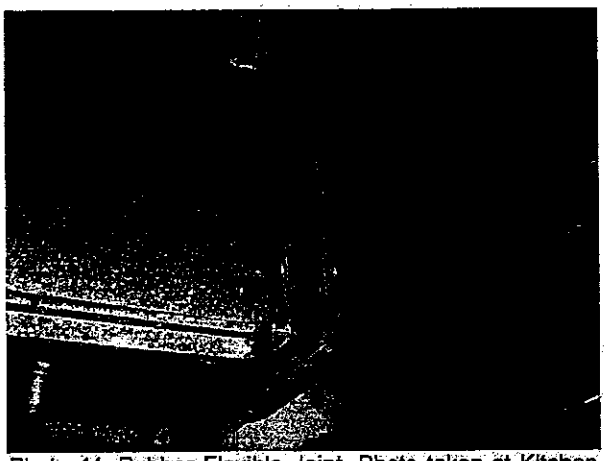

Photo 44. Rubber Flexible Joint. Photo taken at Kitchen, 1/F of Block 3.

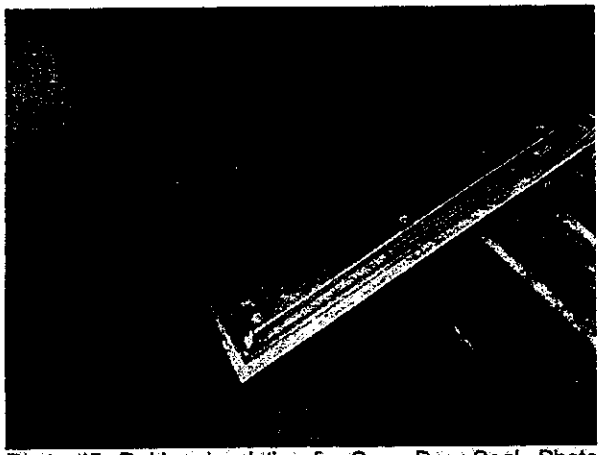

Photo 45. Rubber Insulation for Oven Door-Seal. Photo taken at Kitchen, 1/F of Block 3.

Photo 46. Plastic Rain Pipe. Photo taken at G/F of Block 3.

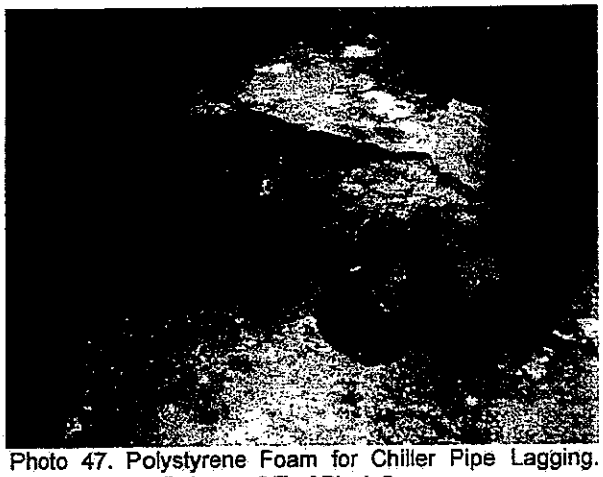

Photo 47. Polystyrene Foam for Chiller Pipe Lagging. Photo taken at Balcony, 2/F of Block 9.

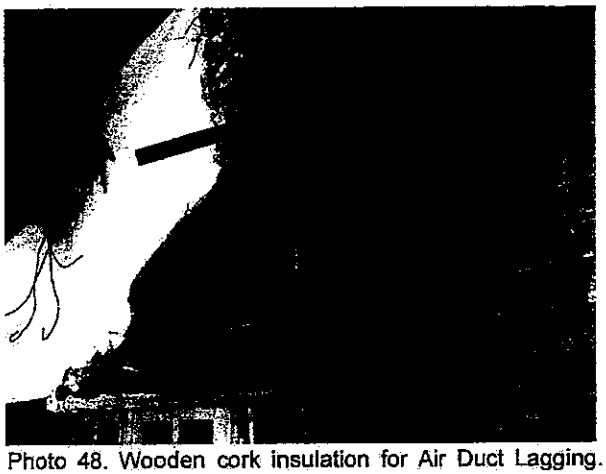

Photo 48. Wooden cork insulation for Air Duct Lagging. Photo taken at Balcony, 2/F of Block 9.

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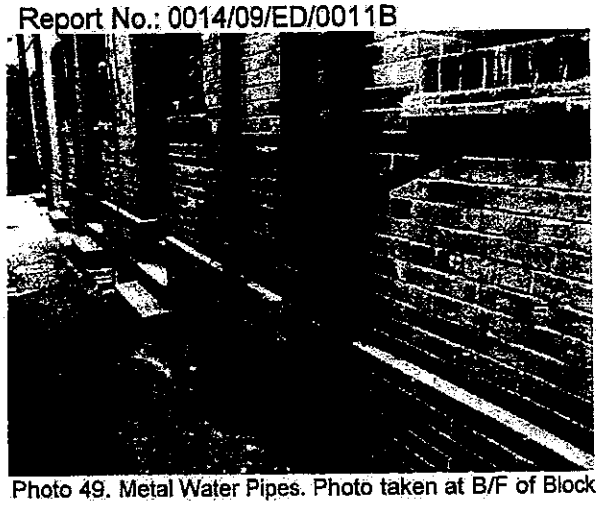

Photo 49. Metal Water Pipes. Photo taken at B/F of Block 9.

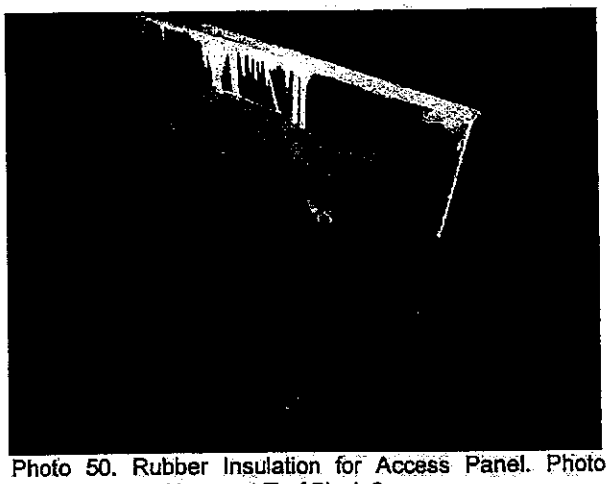

Photo 50. Rubber Insulation for Access Panel. Photo taken at Pump House, 1/F of Block 9.

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MaterialLab

Report No.: 0014/09/ED/0011B

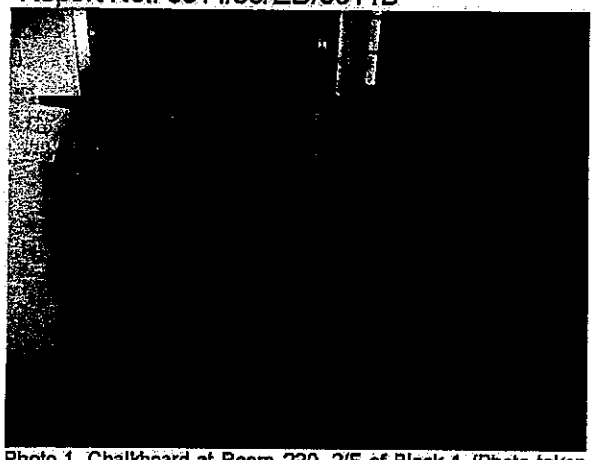

Photo 1. Chalkboard at Room 220, 2/F of Block 1 (Photo taken on 20 Feb 2009).

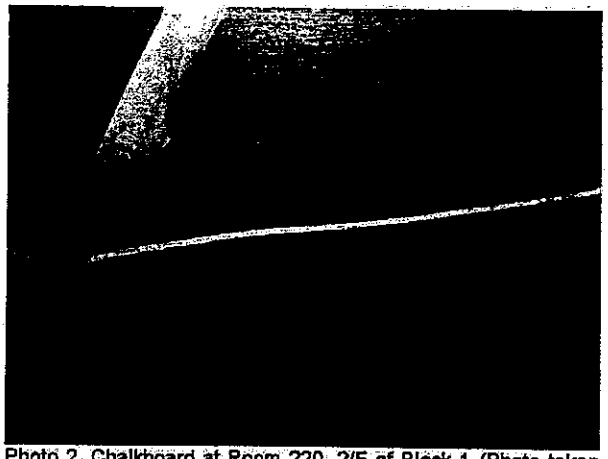

Photo 2. Chalkboard at Room 220, 2/F of Block 1 (Photo taken on 20 Feb 2009).

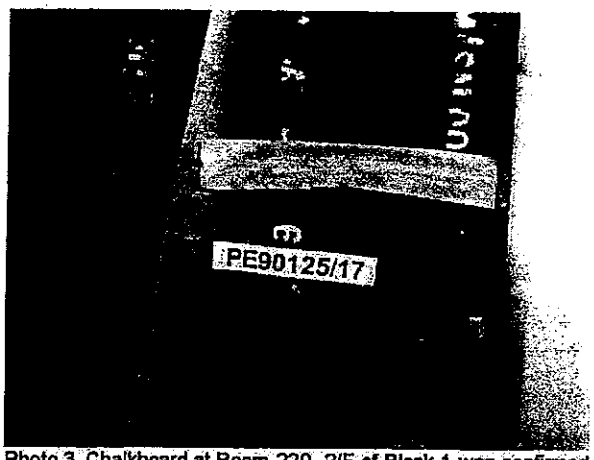

Photo 3. Chalkboard at Room 220, 2/F of Block 1 was confirmed as ACM (Sample No. PE90125/17, ACM Item No. ED/0011-4, photo taken on 03 Mar 2009).

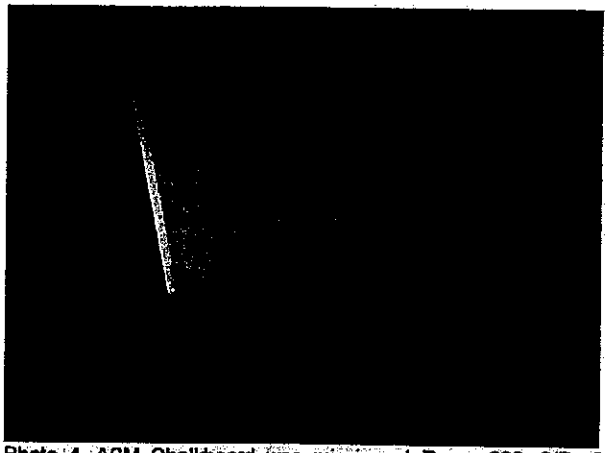

Photo 4. ACM Chalkboard was missing at Room 220, 2/F of Block 1 (Photo taken on 20 Oct 2011).

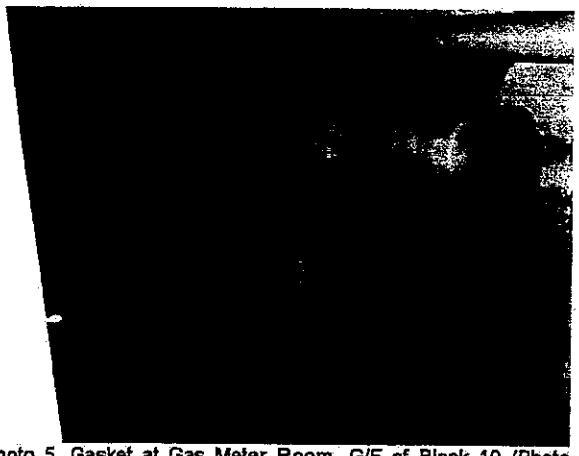

Photo 5. Gasket at Gas Meter Room, G/F of Block 10 (Photo taken on 23 Feb 2009).

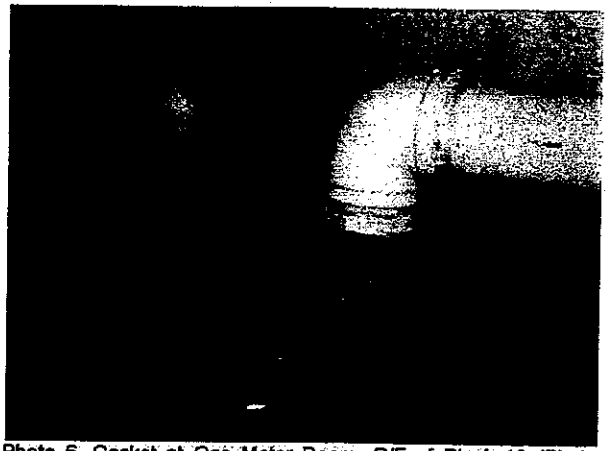

Photo 6. Gasket at Gas Meter Room, G/F of Block 10 (Photo taken on 23 Feb 2009).

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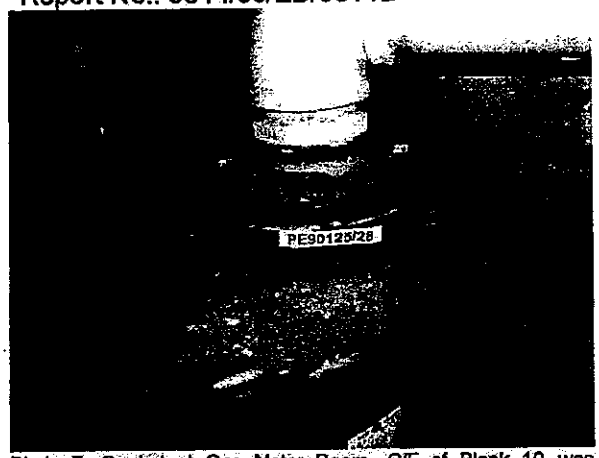

Photo 7. Gasket at Gas Meter Room, G/F of Block 10 was confirmed as ACM (Sample No. PE90125/28, ACM Item No. ED/0011-7, photo taken on 03 Mar 2009).

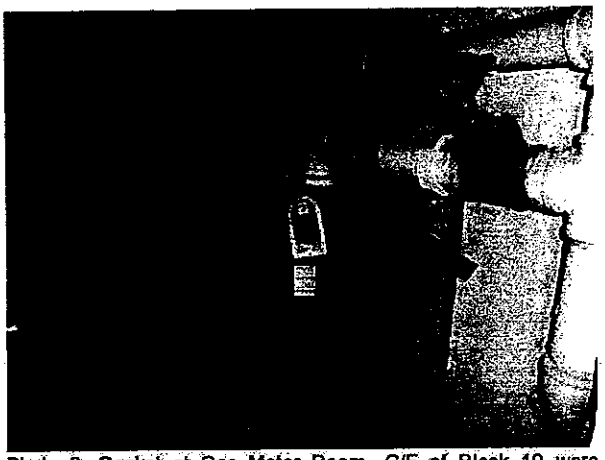

Photo 8. Gasket at Gas Meter Room, G/F of Block 10 were labeled (Photo taken in 2009).

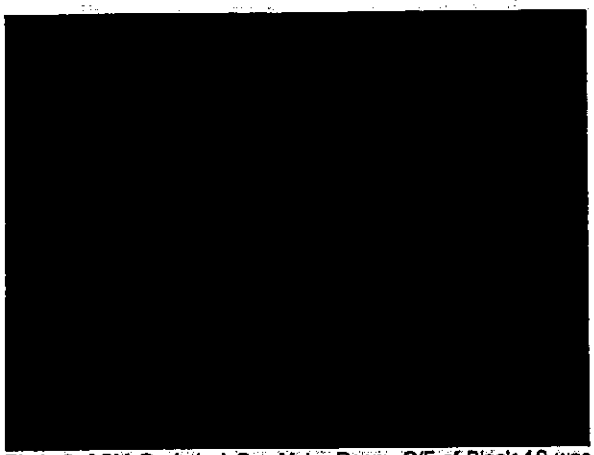

Photo 9. ACM Gasket at Gas Meter Room, G/F of Block 10 was missing (Photo taken on 20 Oct 2011).

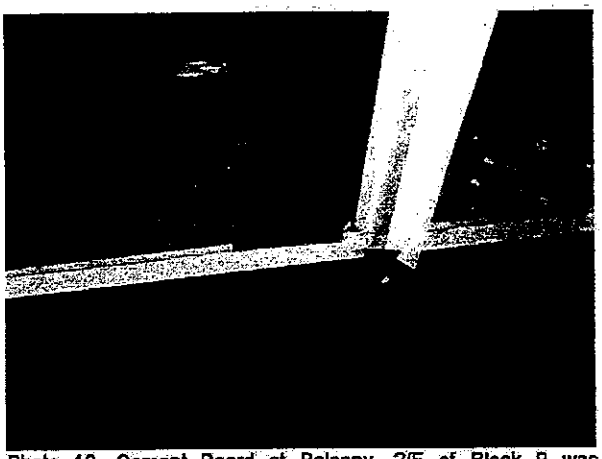

Photo 10. Cement Board at Balcony, 2/F of Block 9 was confirmed as ACM (Sample No. PE90125/1, ACM Item No. ED/0011-1, Photo taken on 20 Feb 2009).

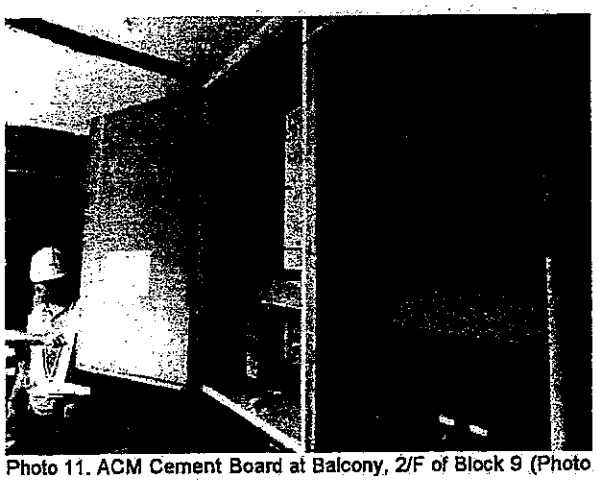

Photo 11. ACM Cement Board at Balcony, 2/F of Block 9 (Photo taken on 20 Oct 2011).

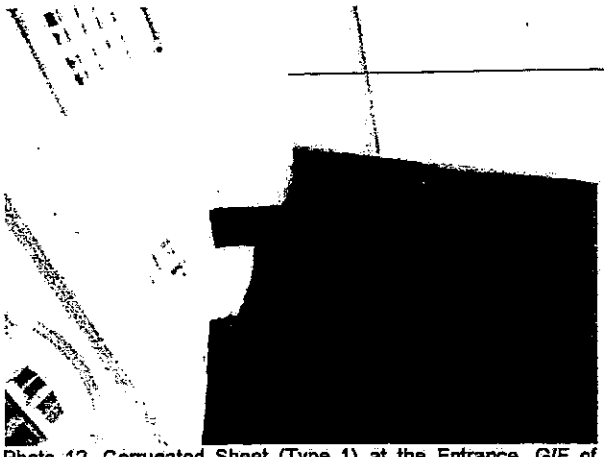

Photo 12. Corrugated Sheet (Type 1) at the Entrance, G/F of Block 9 was confirmed as ACM (Sample No. PE90125/8, ACM Item No. ED/0011-2, photo taken on 20 Feb 2009).

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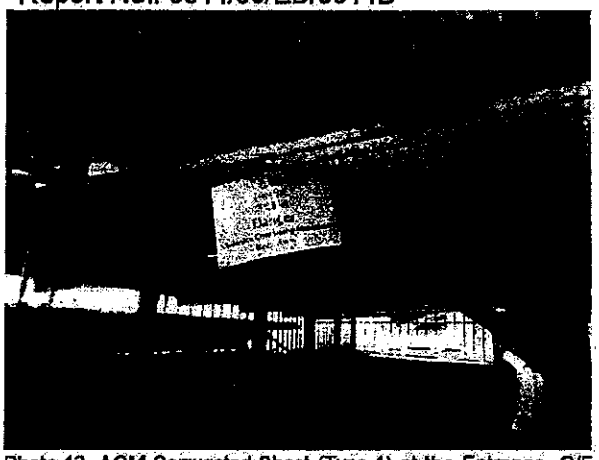

Photo 13. ACM Corrugated Sheet (Type 1) at the Entrance, G/F of Block 9 (Photo taken on 20 Oct 2011).

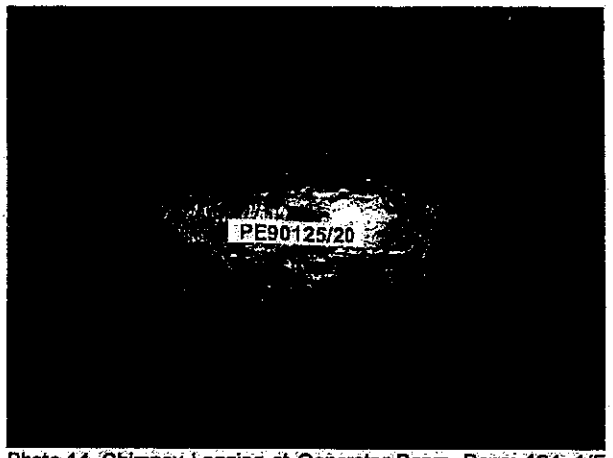

Photo 14. Chimney Lagging at Generator Room, Room 124, 1/F of Block 1 was confirmed as ACM (Sample No. PE90125/20, ACM Item No. ED/0011-5, photo taken on 03 Mar 2009).

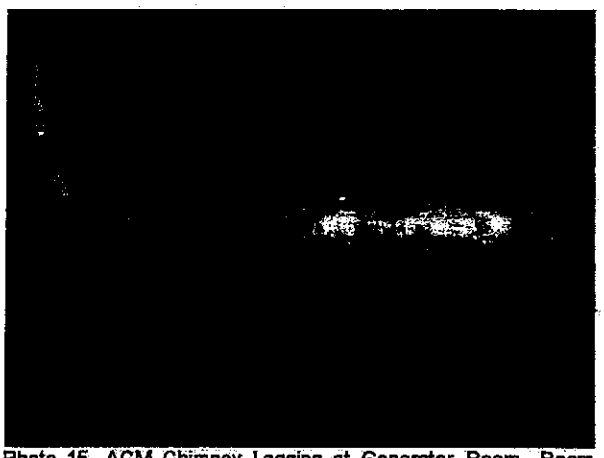

Photo 15. ACM Chimney Lagging at Generator Room, Room 124, 1/F of Block 1 (Photo taken on 20 Oct 2011).

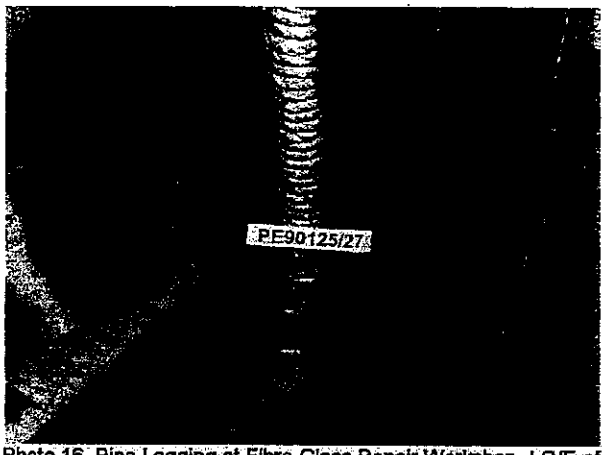

Photo 16. Pipe Lagging at Fibre Glass Repair Workshop, LG/F of Block 16 was confirmed as ACM (Sample No. PE90125/27, ACM Item No. ED/0011-6, photo taken on 03 Mar 2009).

Photo 17. ACM Pipe Lagging at Fibre Glass Repair Workshop, LG/F of Block 16 (Photo taken on 20 Oct 2011).

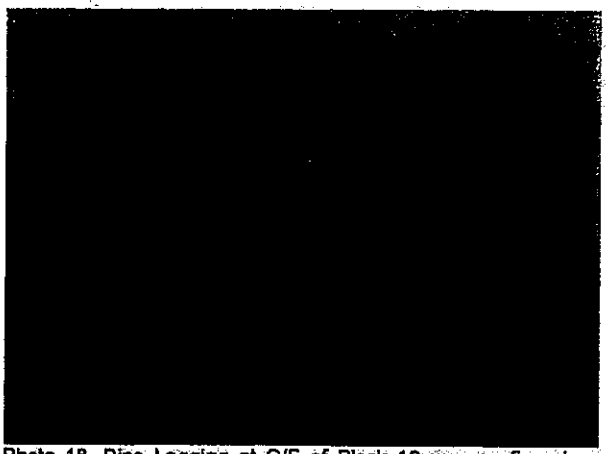

Photo 18. Pipe Lagging at G/F of Block 19 was confirmed as ACM (Sample No. PE90125/29, ACM Item No. ED/0011-6, photo taken on 03 Mar 2009).

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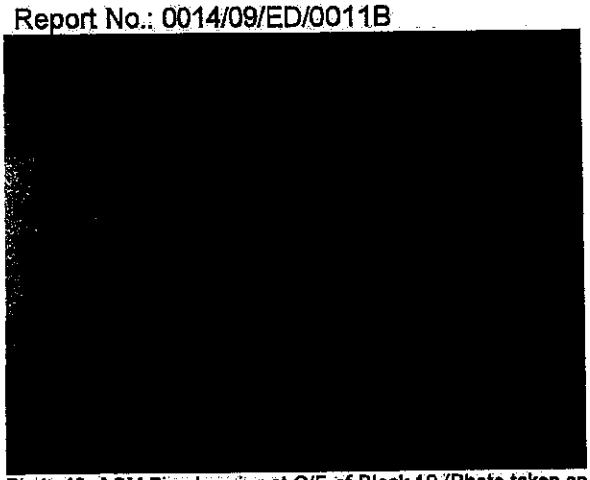

Photo 19. ACM Pipe Lagging at G/F of Block 19 (Photo taken on 20 Oct 2011).

Photo 20. Corrugated Sheet (Type 2) at the Entrance Gate, G/F of Block 17 was confirmed as ACM (Sample No. PE90125/32, ACM Item No. ED/0011-2, photo taken on 07 April 2009).

Photo 21. ACM Corrugated Sheet (Type 2) at the Entrance Gate, G/F of Block 17 (Photo taken on 20 Oct 2011).

Photo 22. Asbestos-containing Corrugated Sheet (Type 1). Photo taken at Light Well, 2/F of Block 9 (ACM Item No. ED/0011-2, photo taken on 18 Feb 2009).

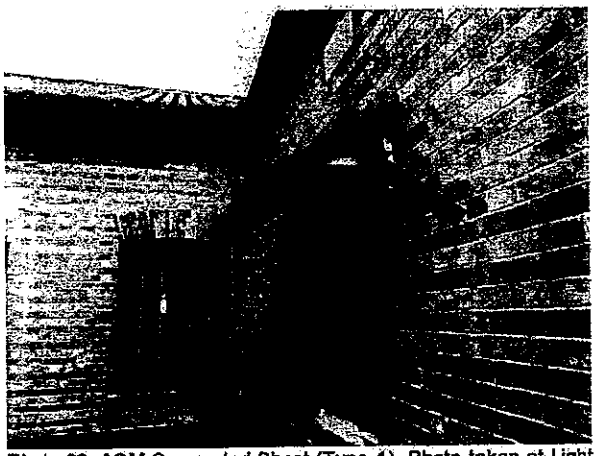

Photo 23. ACM Corrugated Sheet (Type 1). Photo taken at Light Well, 2/F of Block 9 (Photo taken on 20 Oct 2011).

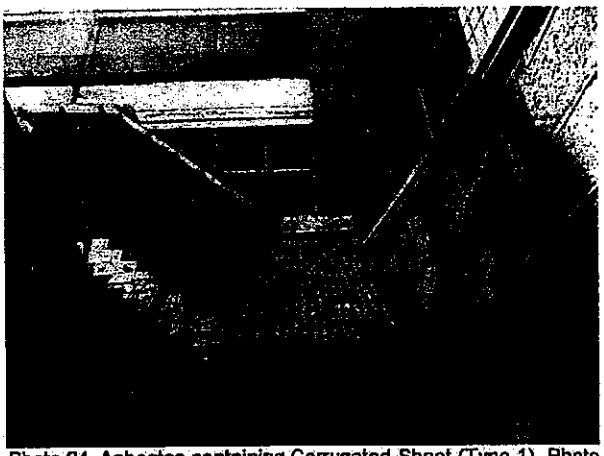

Photo 24. Asbestos-containing Corrugated Sheet (Type 1). Photo taken at Staircase, G/F of Block 8 (ACM Item No. ED/0011-2, photo taken on 07 April 2009).

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Photo 25. ACM (Type 1). Photo taken at Staircase, G/F of Block 8 (Photo taken on 20 Oct 2011).

Photo 26. Asbestos-containing Corrugated Sheet (Type 1). Photo taken at Entrance, G/F of Block 13 (ACM Item No. ED/0011-2, photo taken on 20 Feb 2009).

Photo 27. Asbestos-containing Corrugated Sheet (Type 1). Photo taken at Entrance, G/F of Block 13 (Photo taken on 20 Oct 2011).

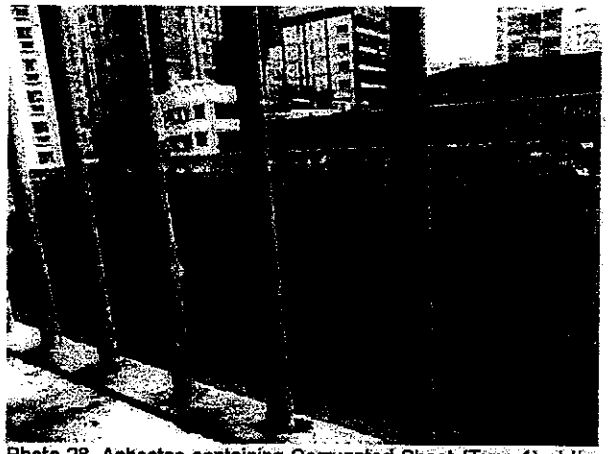

Photo 28. Asbestos-containing Corrugated Sheet (Type 1) at the Roof of Block 18 (ACM Item No. ED/0011-2, photo taken on 23 Feb 2009).

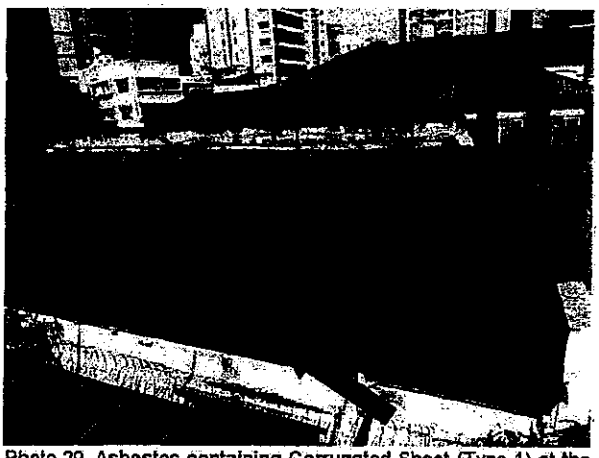

Photo 29. Asbestos-containing Corrugated Sheet (Type 1) at the Roof of Block 18 (Photo taken on 20 Oct 2011).

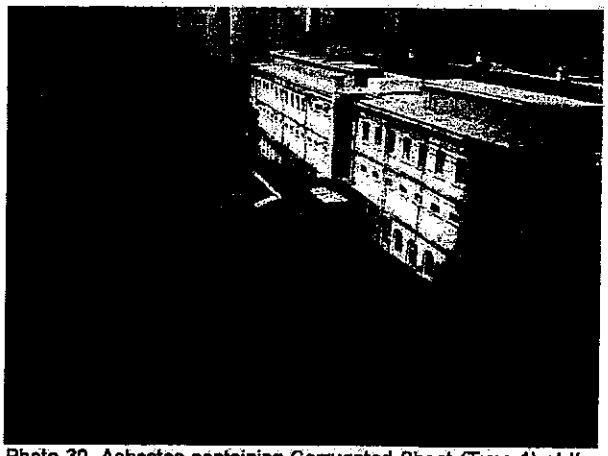

Photo 30. Asbestos-containing Corrugated Sheet (Type 1) at the Roof of Block 16 (ACM Item No. ED/0011-2, photo taken on 23 Feb 2009).

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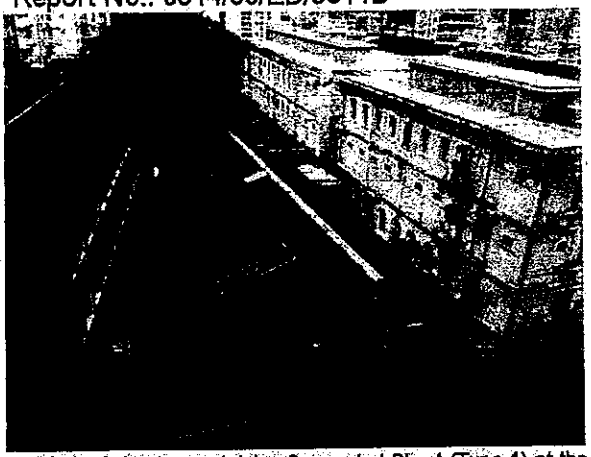

Photo 31. Asbestos-containing Corrugated Sheet (Type 1) at the Roof of Block 16 (Photo taken on 18 Nov 2011).

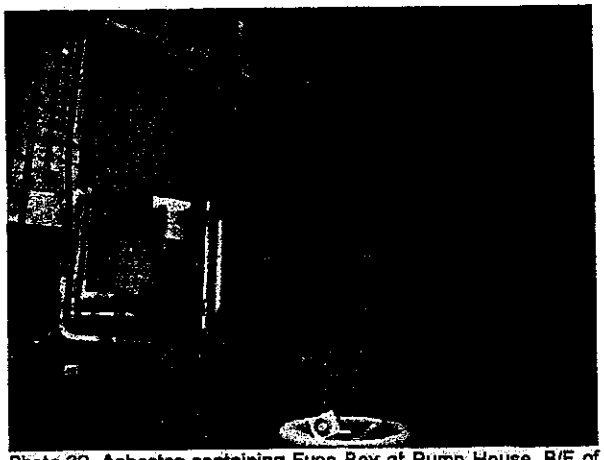

Photo 32. Asbestos-containing Fuse Box at Pump House, B/F of Block 9 (ACM Item No. ED/0011-3, photo taken on 18 Feb 2009).

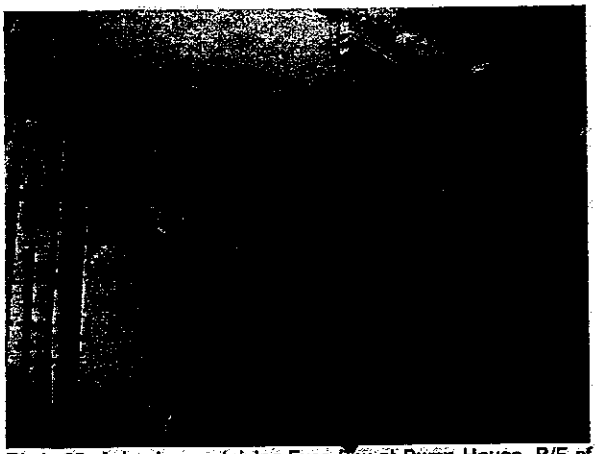

Photo 33. Asbestos-containing Fuse Box at Pump House, B/F of Block 9 (Photo taken on 20 Oct 2011).

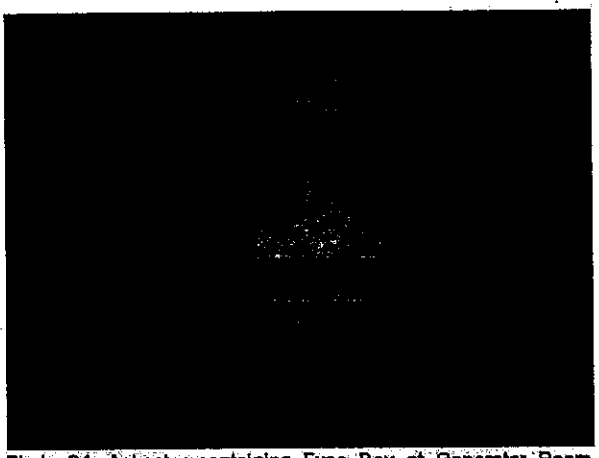

Photo 34. Asbestos-containing Fuse Box at Generator Room, Room 124, 1/F of Block 1 (ACM Item No. ED/0011-3, photo taken on 20 Feb 2009).

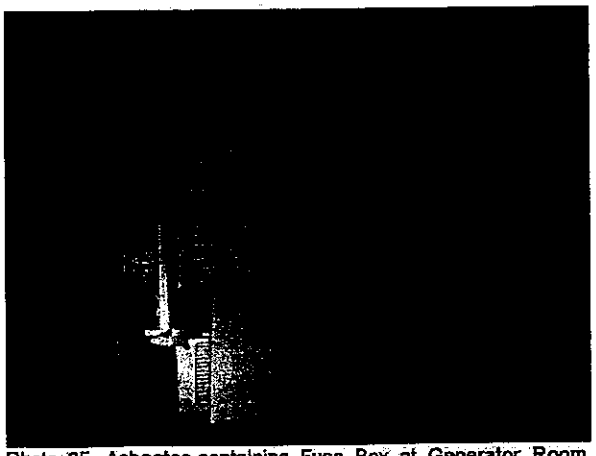

Photo 35. Asbestos-containing Fuse Box at Generator Room, Room 124, 1/F of Block 1 (Photo taken on 20 Oct 2011).

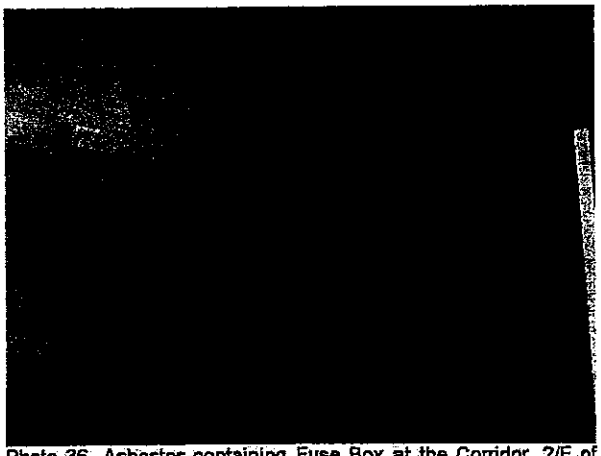

Photo 36. Asbestos-containing Fuse Box at the Corridor, 2/F of Block 14 (West Wing) (ACM Item No. ED/0011-3, photo taken on 23 Feb 2009).

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Photo 37. Asbestos-containing Fuse Box at the Corridor, 2/F of Block 14 (West Wing) (Photo taken on 20 Oct 2011).

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APPENDIX 3

SAMPLING LOCATION PLANS

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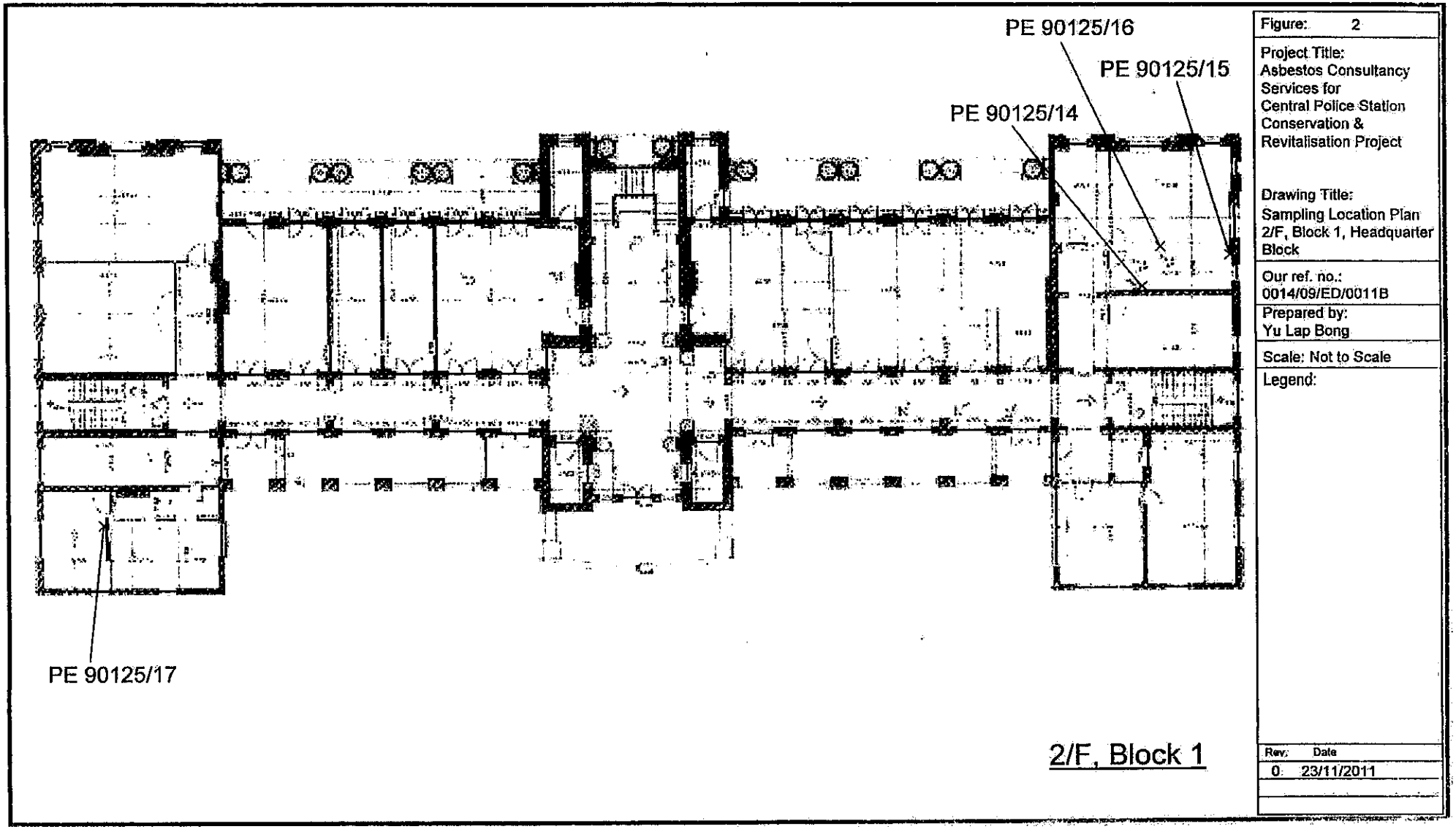

Figure: 2

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Sampling Location Plan 2/F, Block 1, Headquarter Block

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

Rev.	Date
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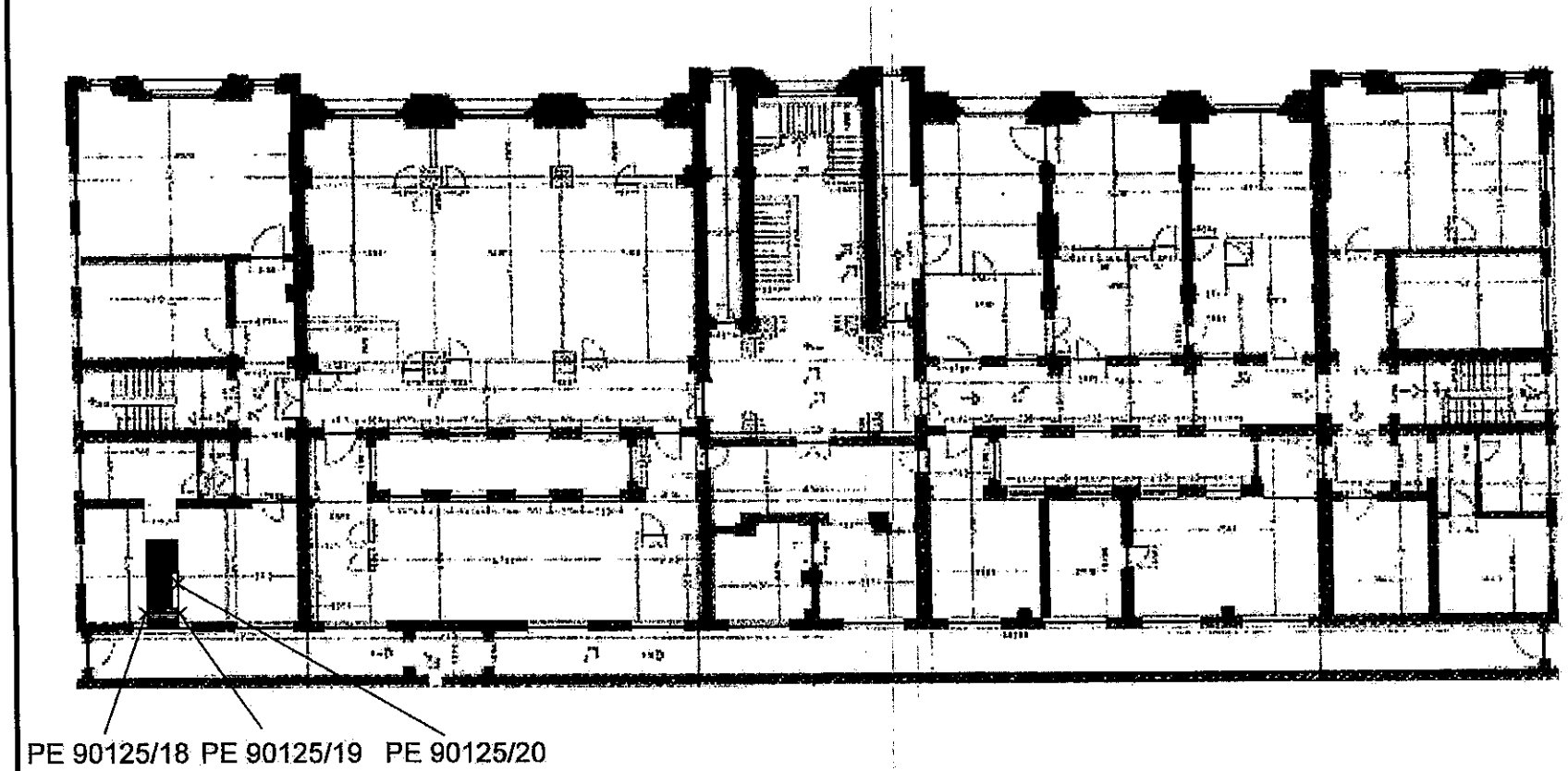

Figure: 3

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Sampling Location Plan 1/F, Block 1, Headquarter Block

Our ref. no.:
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Prepared by:
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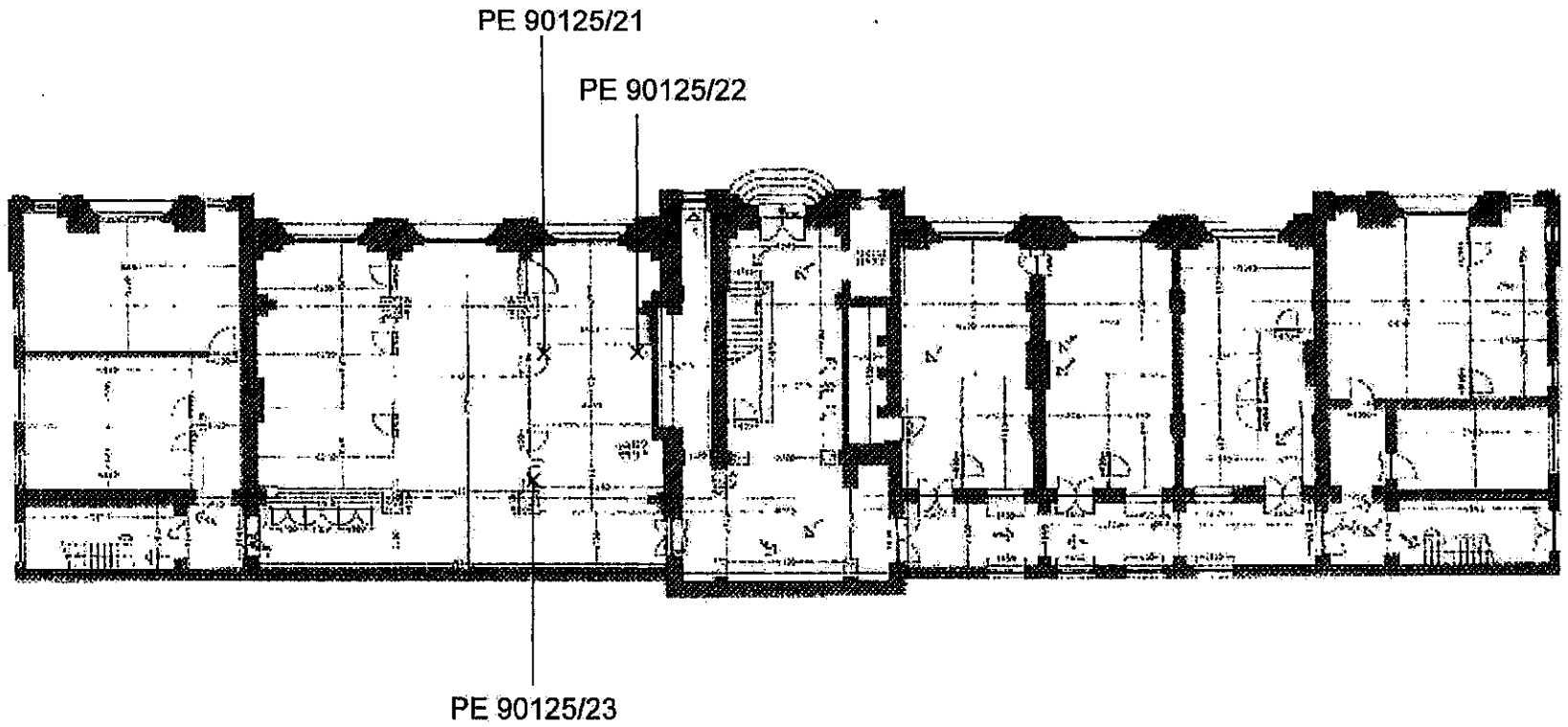

Figure: 4

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Sampling Location Plan G/F, Block 1, Headquarter Block

Our ref. no.:
0014/09/ED/0011B

Prepared by:
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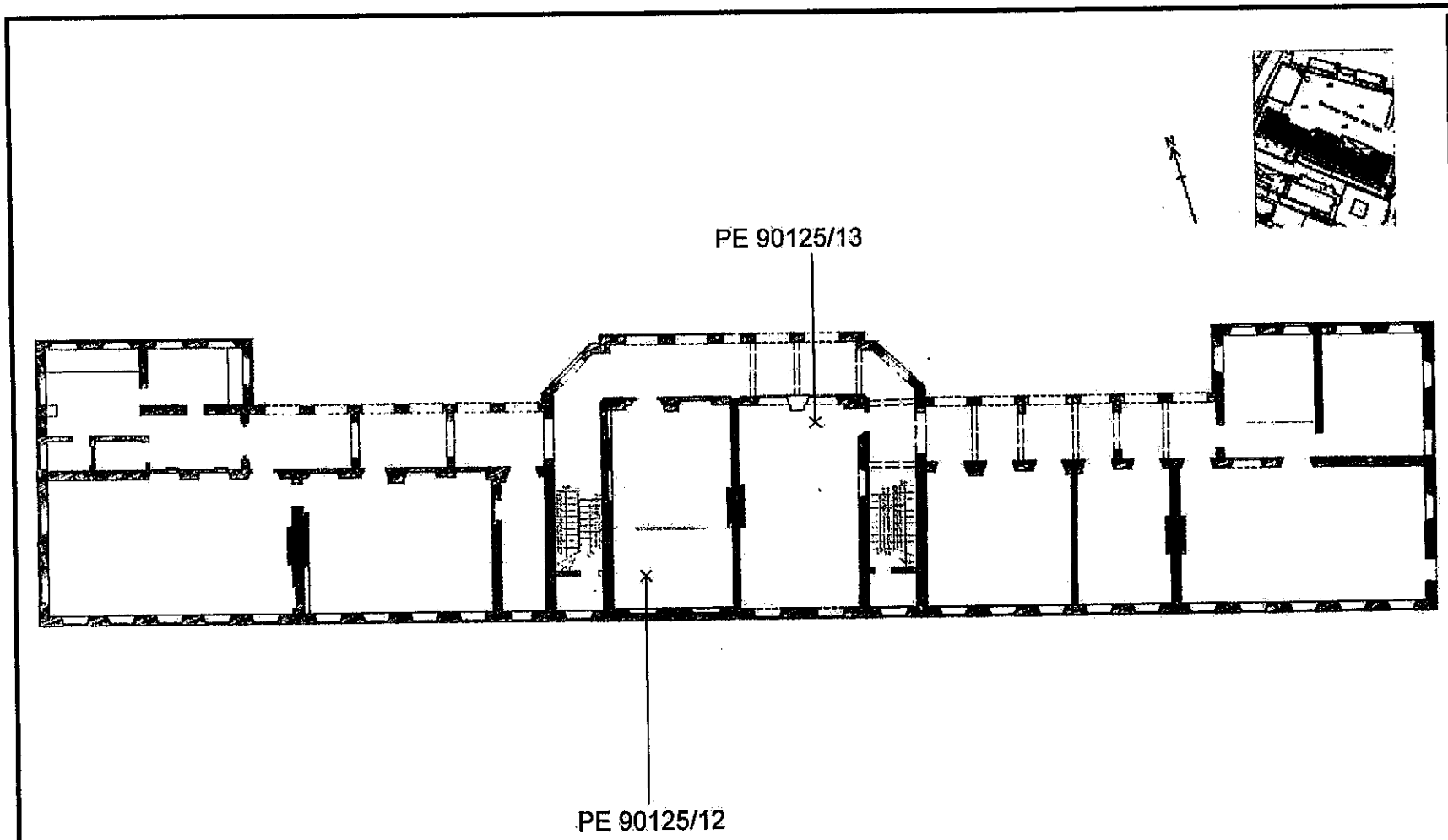

FLOOR PLAN (BLOCK 3 - BARRACK BLOCK - FIRST FLOOR)

Figure: 5

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Sampling Location Plan 1/F, Block 3, Barrack Block

Our ref. no.:
0014/09/ED/0011B

Prepared by:
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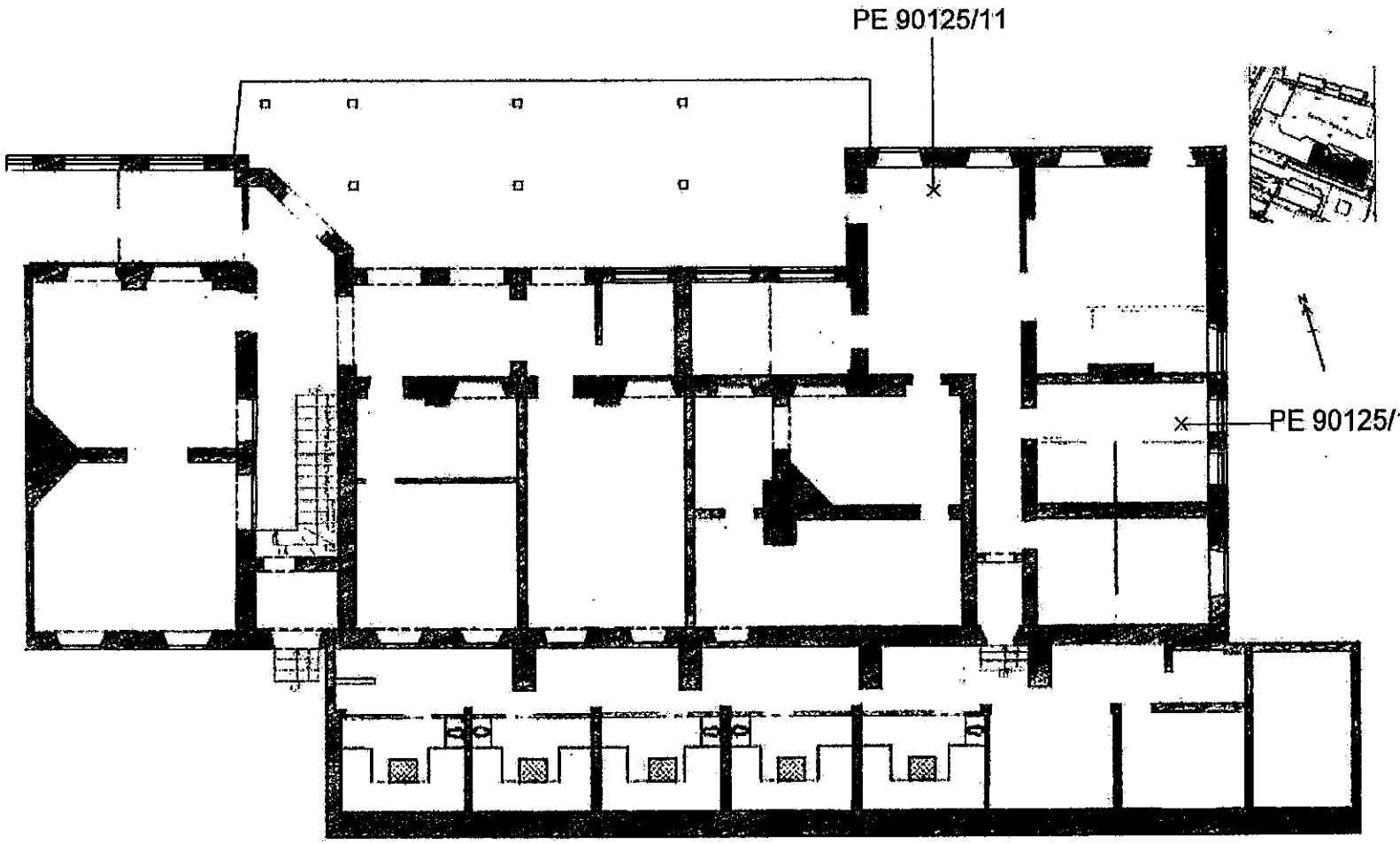

FLOOR PLAN (BLOCK 3 - BARRACK BLOCK - GROUND FLOOR)

Figure:	6
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	Sampling Location Plan G/F, Block 3, Barrack Block
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Prepared by:	Yu Lap Bong
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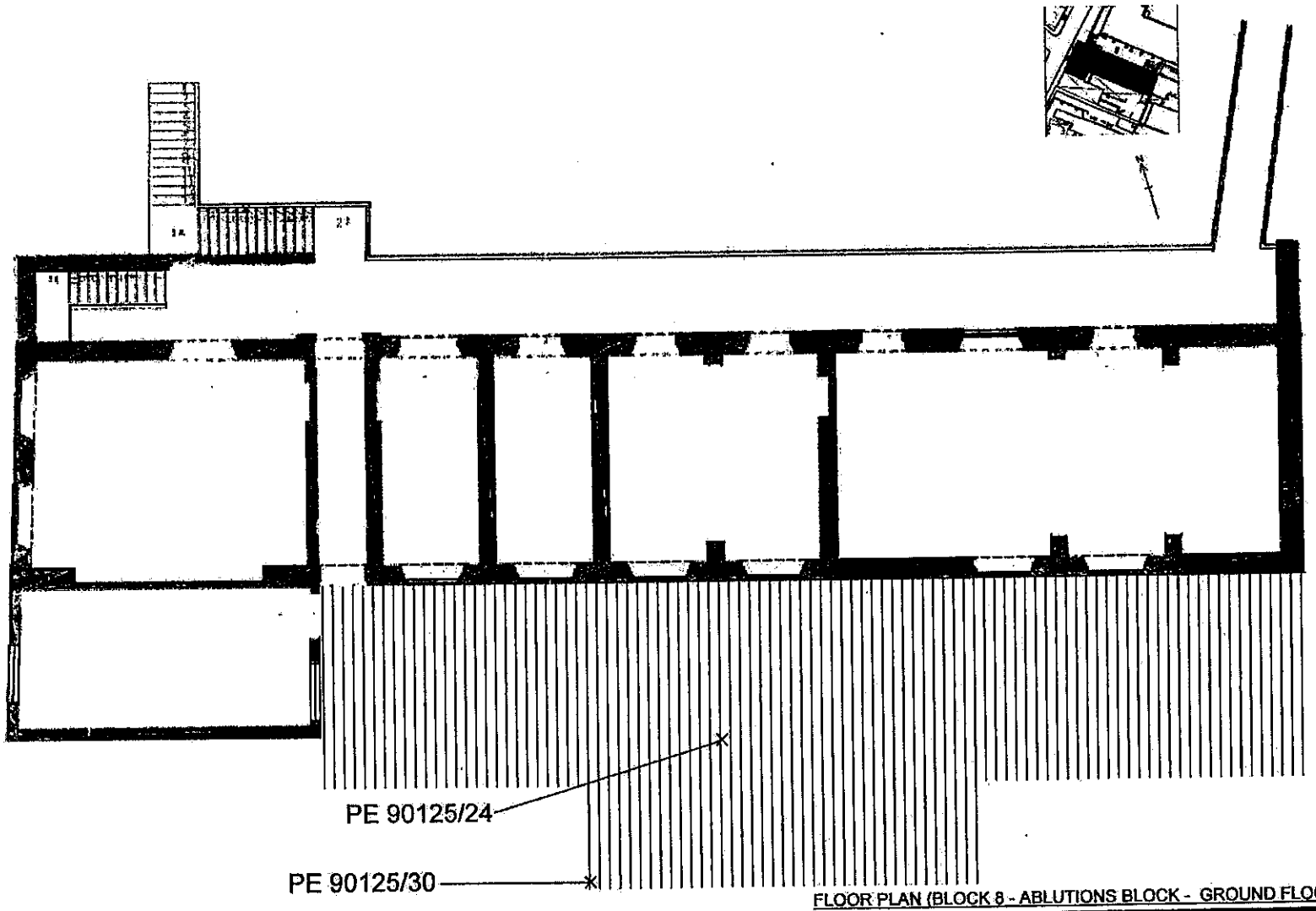

FLOOR PLAN (BLOCK 8 - ABLUTIONS BLOCK - GROUND FLOOR)

Figure: 7

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Sampling Location Plan G/F, Block 8, Ablutions Block

Our ref. no.:
0014/09/ED/0011B

Prepared by:
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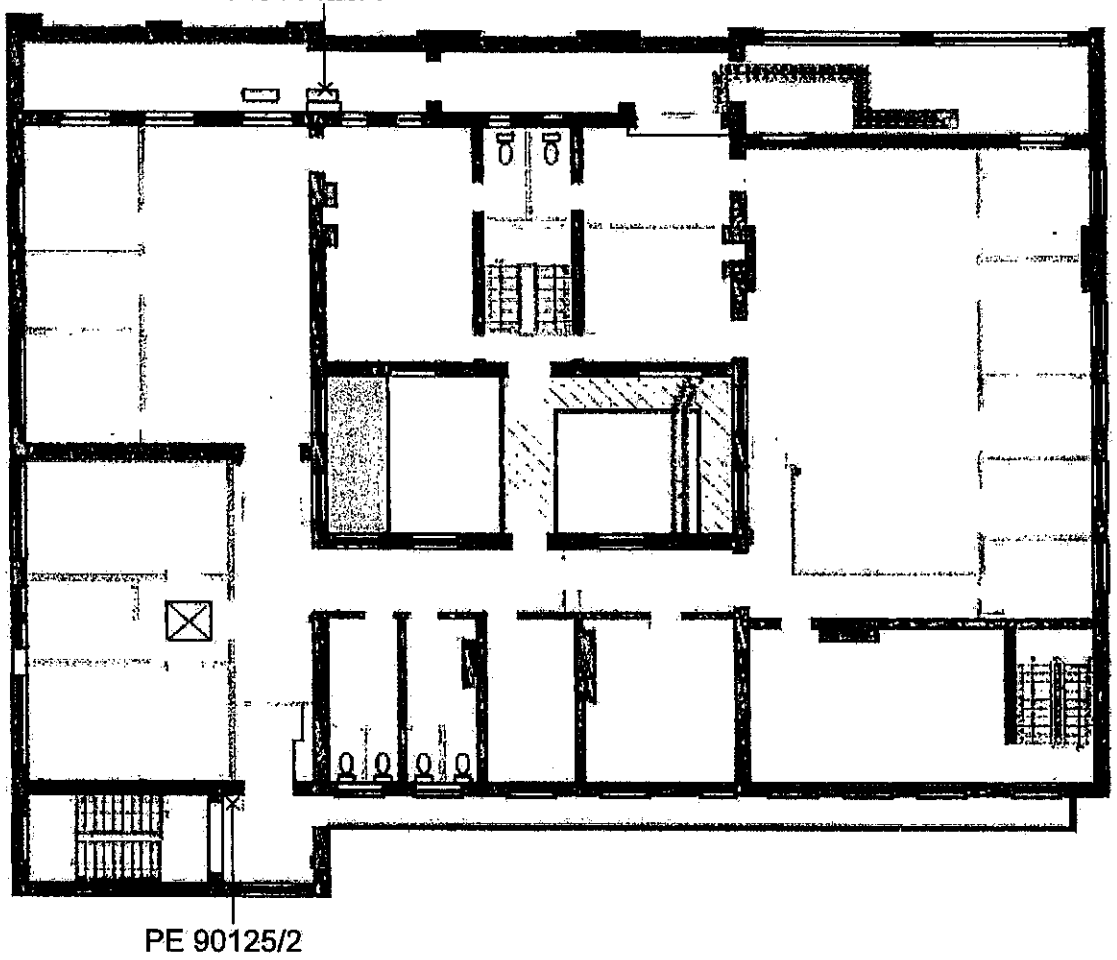

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - SECOND FLOOR)

Figure:	8
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	Sampling Location Plan 2/F, Block 9, Central Magistracy
Our ref. no.:	0014/09/ED/0011B
Prepared by:	Yu Lap Bong
Scale:	Not to Scale
Legend:	

Rev.	Date
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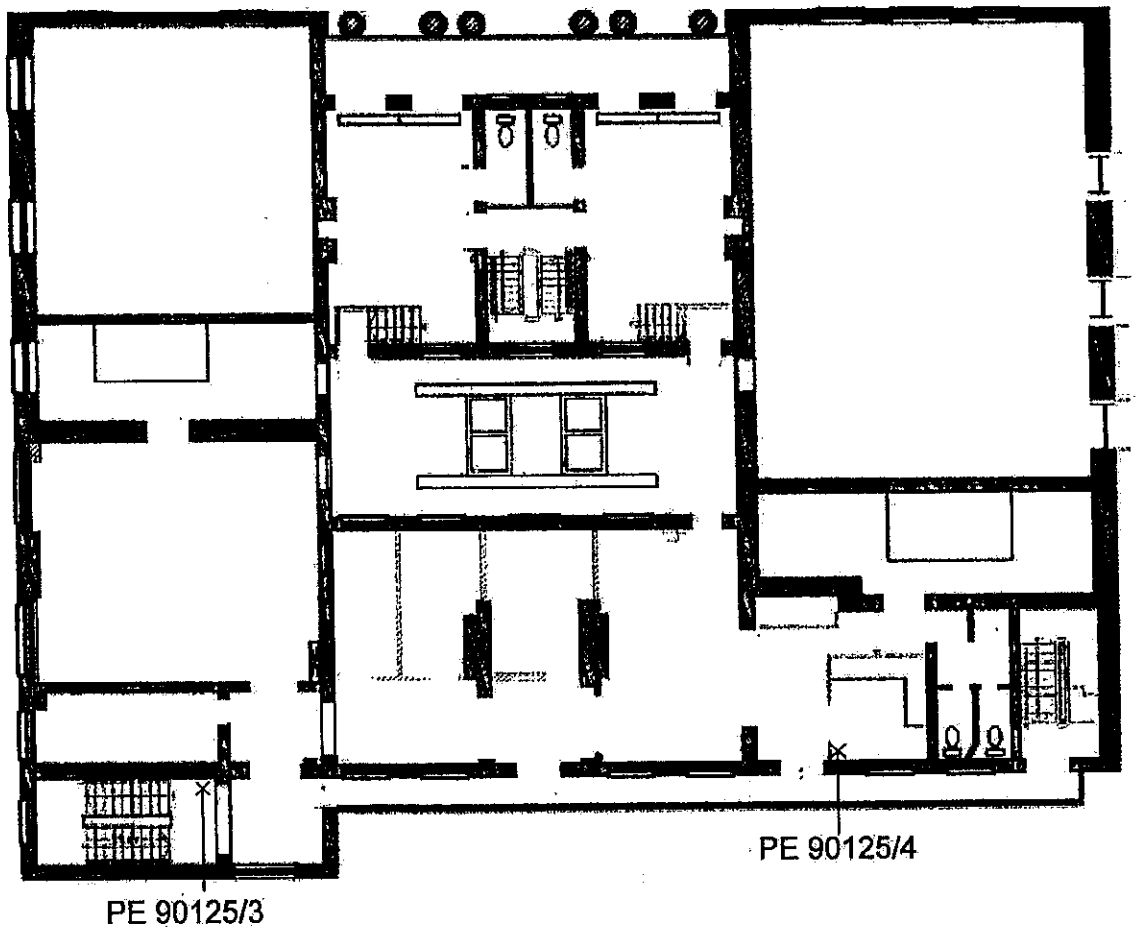

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - FIRST FLOOR)

Figure:	9
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	Sampling Location Plan 1/F, Block 9, Central Magistracy
Our ref. no.:	0014/09/ED/0011B
Prepared by:	Yu Lap Bong
Scale:	Not to Scale
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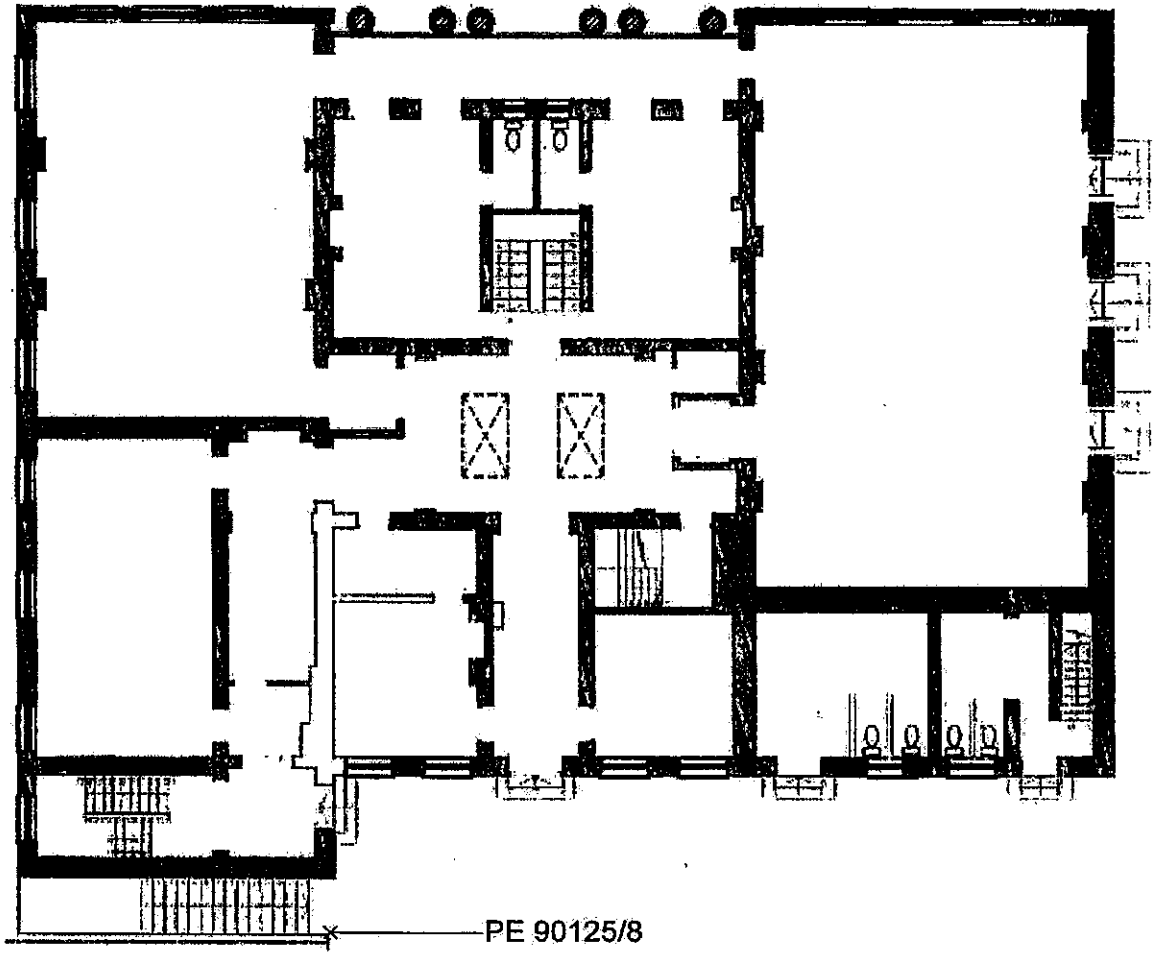

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - GROUND FLOOR)

Figure:	10
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	Sampling Location Plan G/F, Block 9, Central Magistracy
Our ref. no.:	0014/09/ED/0011B
Prepared by:	Yu Lap Bong
Scale:	Not to Scale
Legend:	

Rev.	Date
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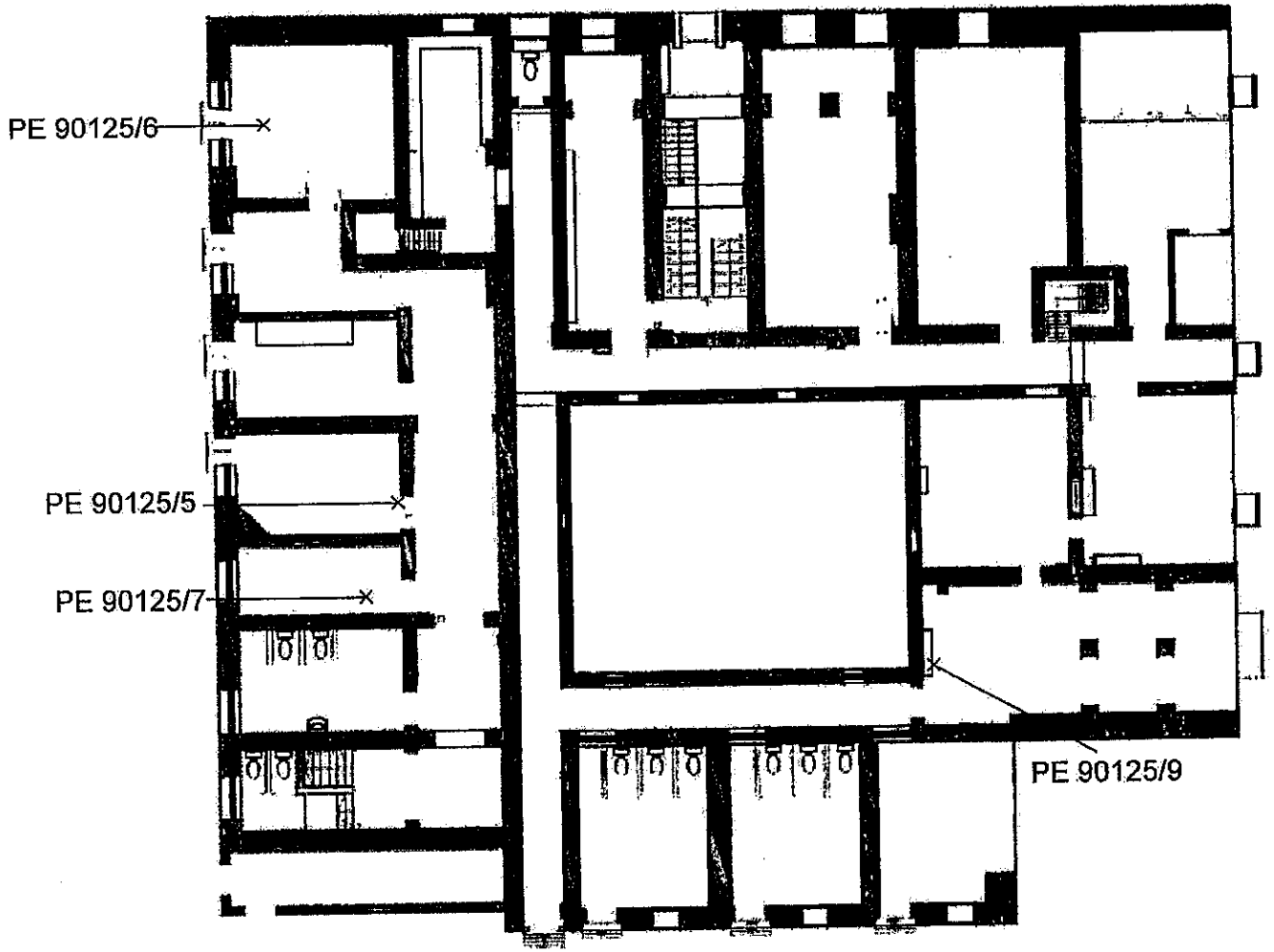

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - BASEMENT FLOOR)

Figure:	11
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	Sampling Location Plan B/F, Block 9, Central Magistracy
Our ref. no.:	0014/09/ED/0011B
Prepared by:	Yu Lap Bong
Scale:	Not to Scale
Legend:	

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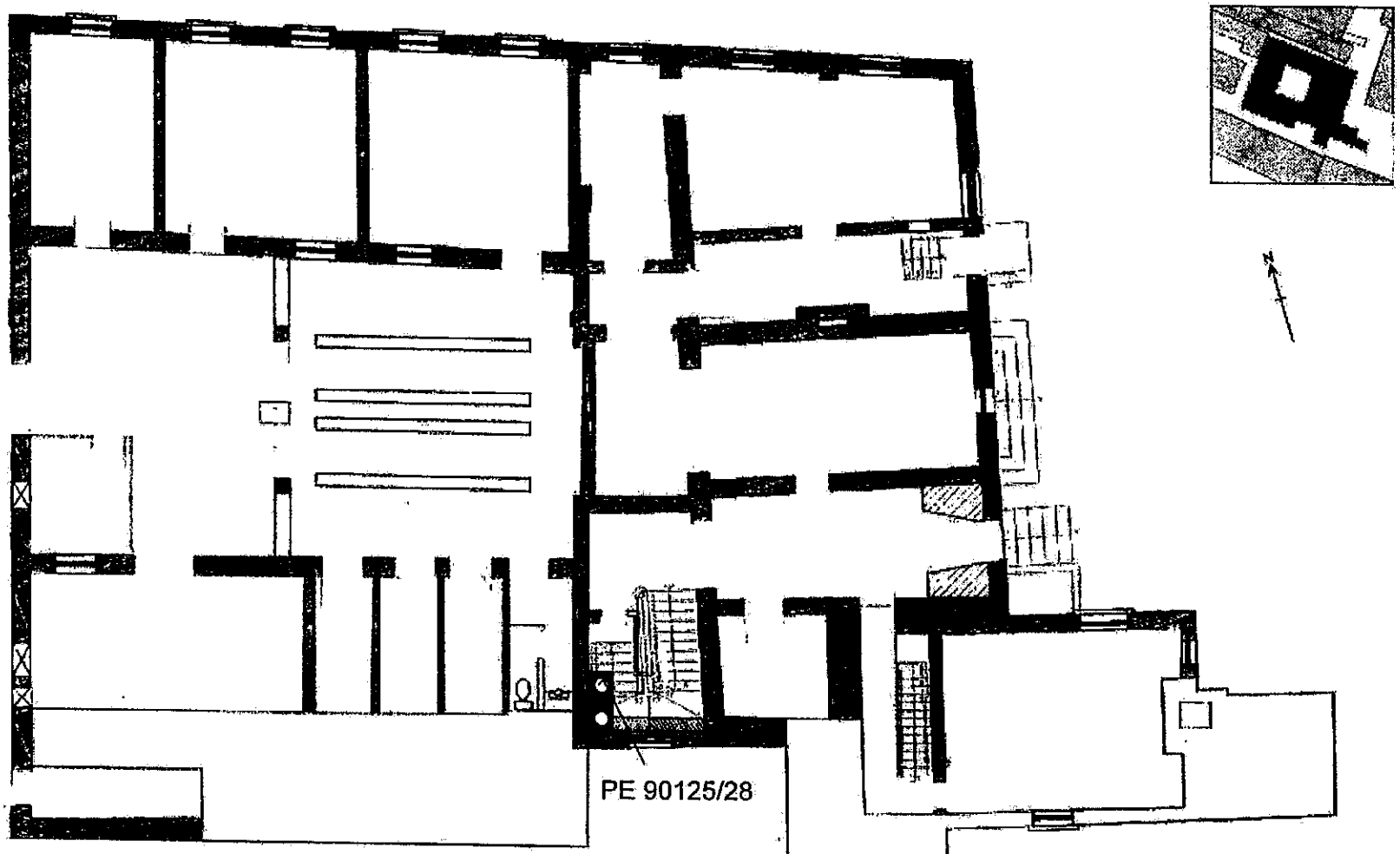

FLOOR PLAN (BLOCK 10 - SUPERINTENDENTS HOUSE & BLOCK 13 - C HALL - GROUND FLOOR)

Figure: 12

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Sampling Location Plan G/F, Block 10, Superintendents House & Block 13, C Hall

Our ref. no.:
0014/09/ED/0011B

Prepared by:
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Scale: Not to Scale

Legend:

Rev.	Date
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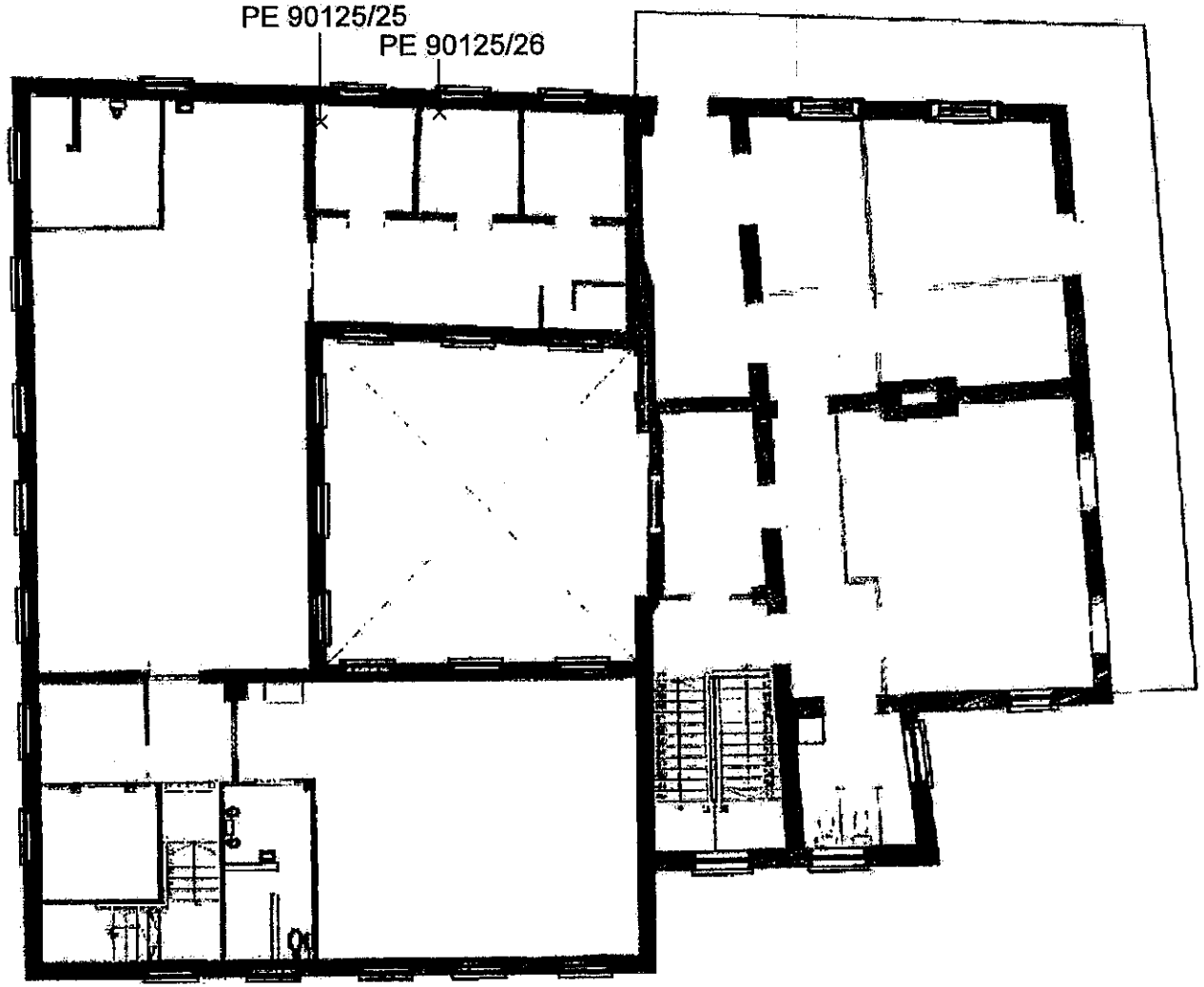

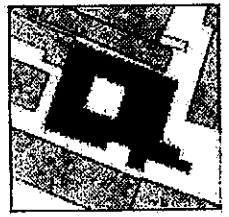

FLOOR PLAN (BLOCK 10 - SUPERINTENDENTS HOUSE & BLOCK 13 - C HALL - SECOND FLOOR)

Figure: 13

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Sampling Location Plan 2/F, Block 10, Superintendents House & Block 13, C Hall

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

Rev.	Date
0	23/11/2011

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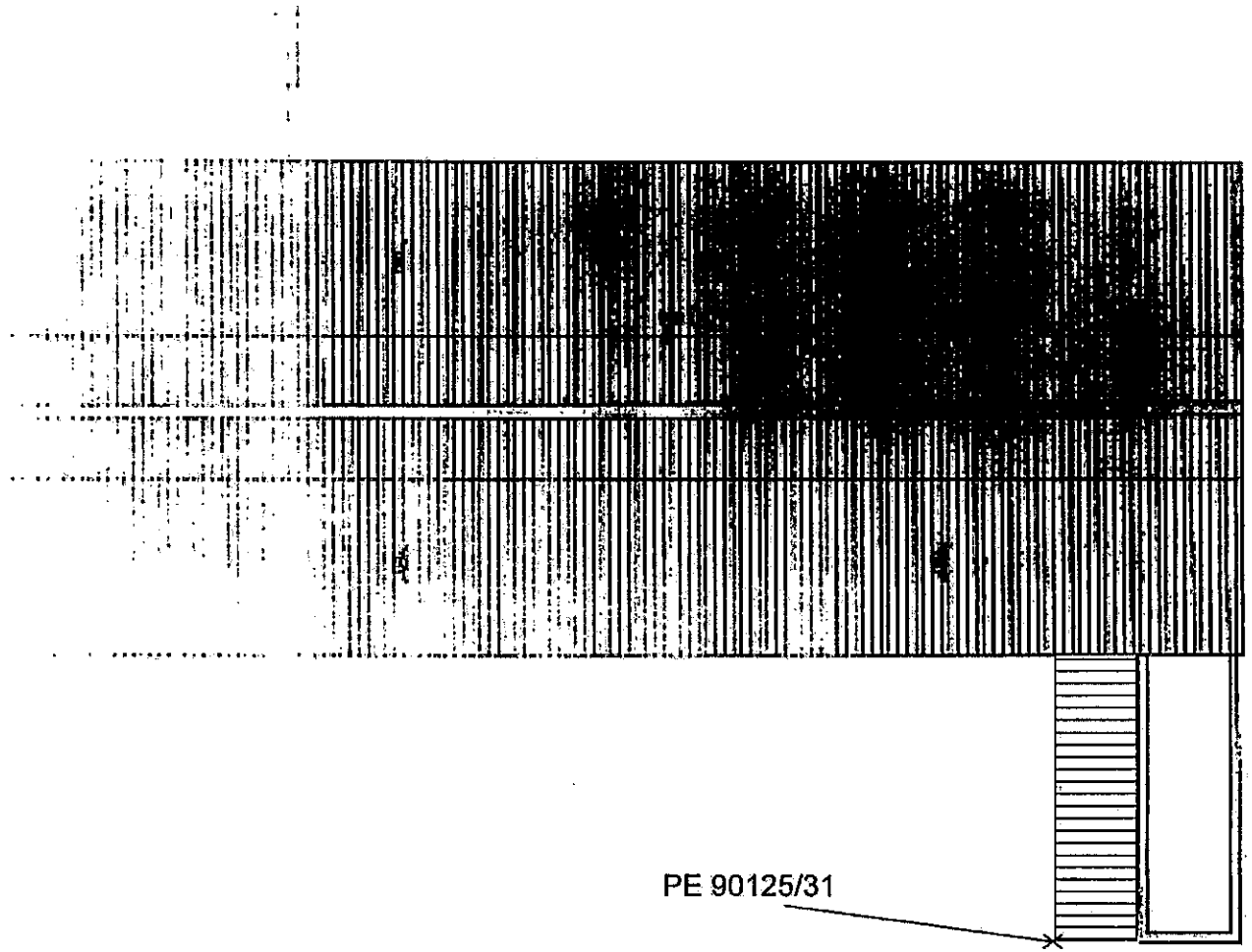

Figure: 14

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Sampling Location Plan Roof, Block 16, Workshops / Laundry

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

Rev.	Date
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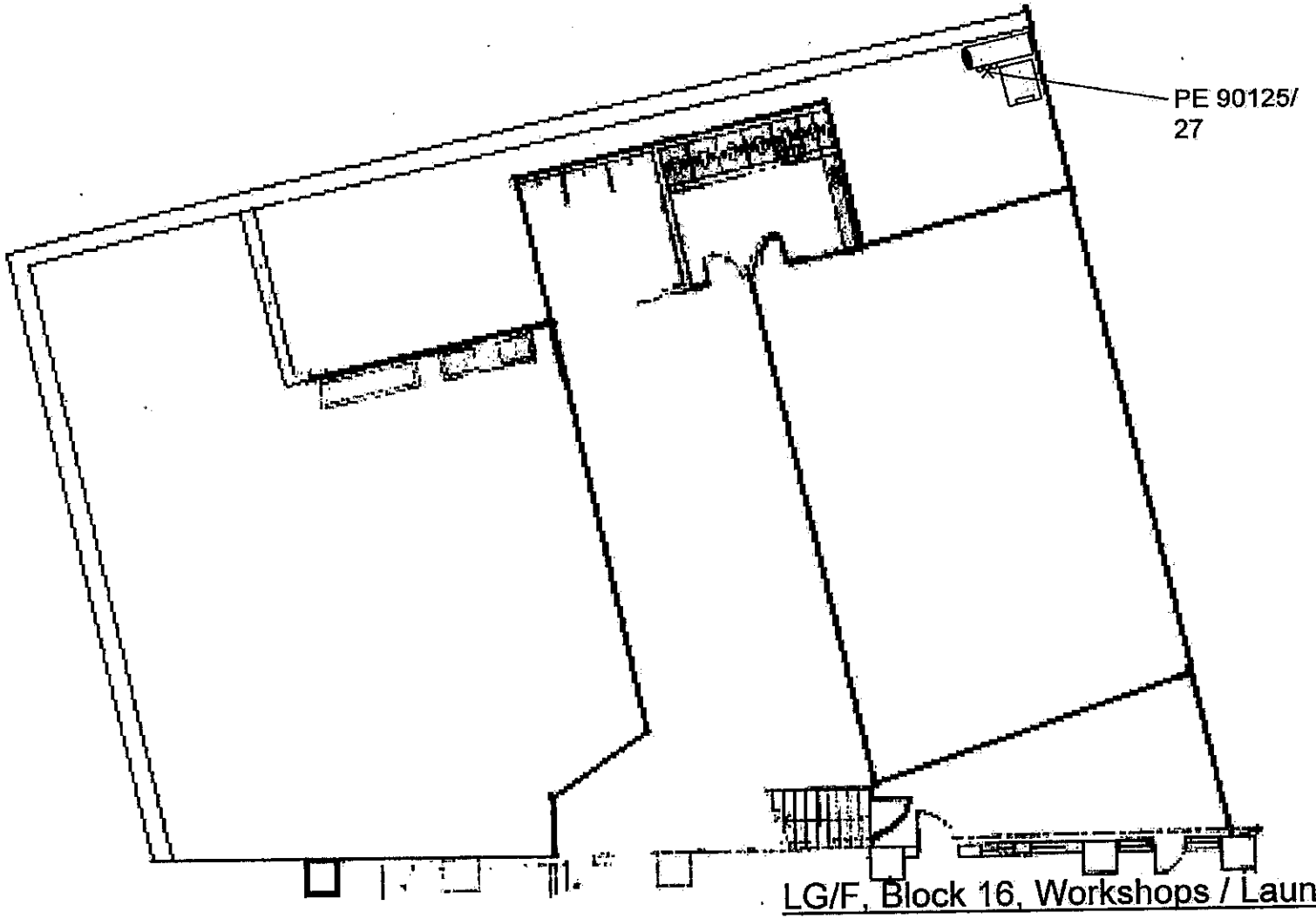

Figure: 15

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Sampling Location Plan LG/F, Block 16, Workshops / Laundry

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

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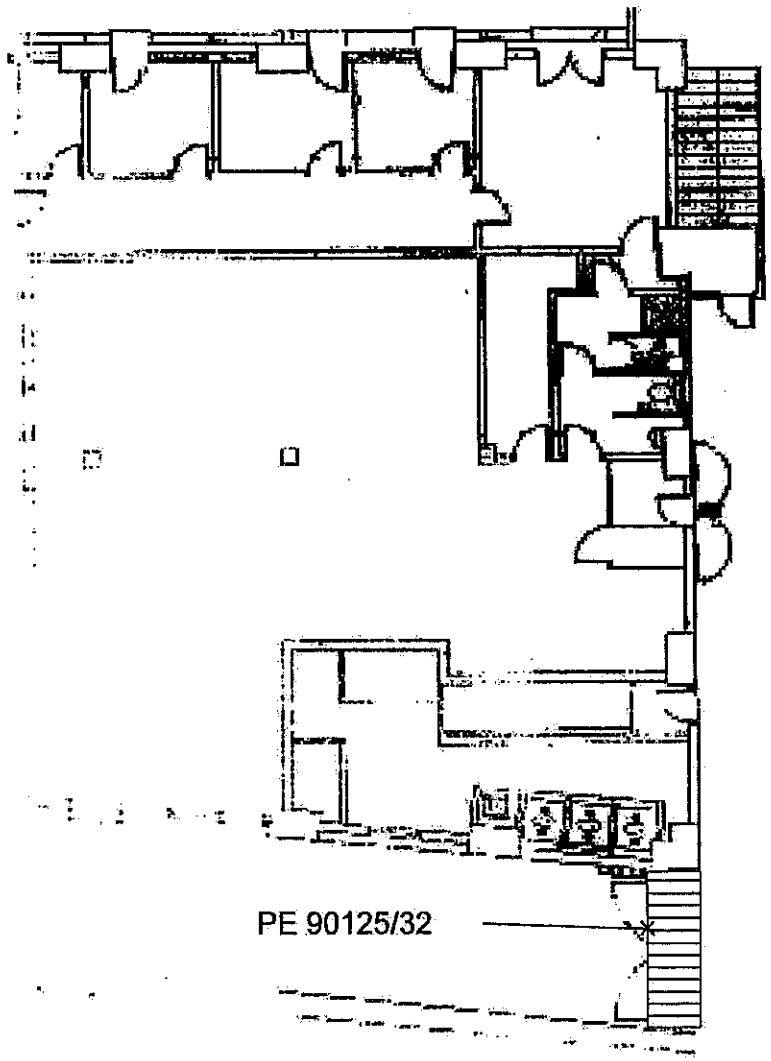

G/F, Block 17

Figure:	16
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	Sampling Location Plan G/F, Block 17, F Hall
Our ref. no.:	0014/09/ED/0011B
Prepared by:	Yu Lap Bong
Scale:	Not to Scale
Legend:	

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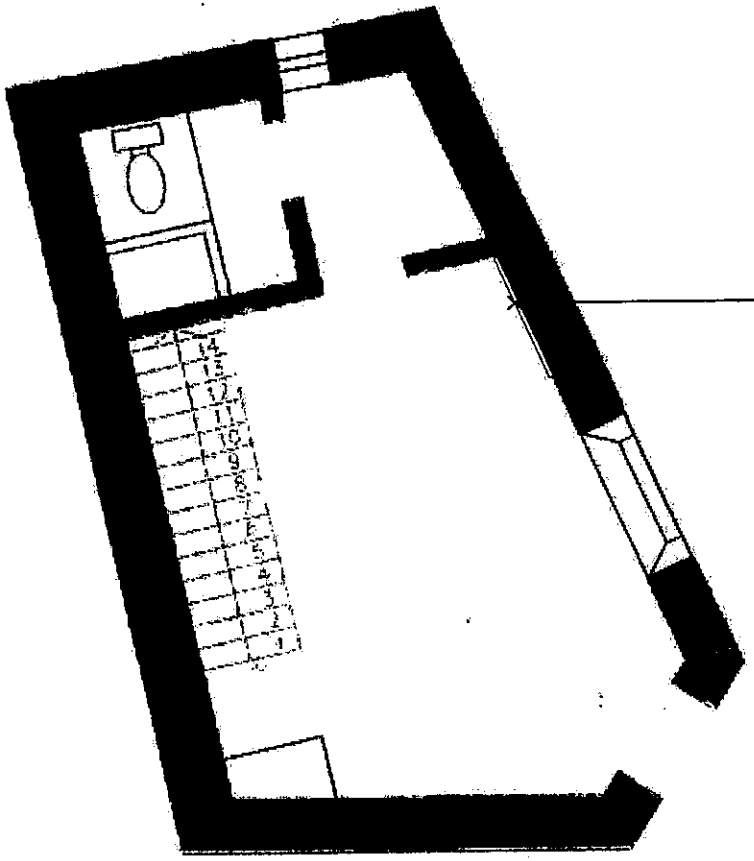

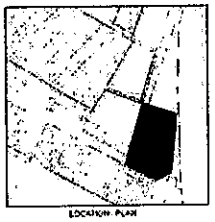

FLOOR PLAN (BLOCK 19 - BAUHINIA HOUSE - GROUND FLOOR)

Figure:	17
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	Sampling Location Plan Block 19, Bauhinia House, G/F
Our ref. no.:	0014/09/ED/0011B
Prepared by:	Yu Lap Bong
Scale:	Not to Scale
Legend:	

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APPENDIX 4

LABORATORY TEST RESULTS

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MateriaLab

HOKLAS 015

Report No. : 090338PE90125

I. TEST REPORT ON SAMPLING AND ANALYSIS OF BULK MATERIALS

Information Supplied by Client

Client : MateriaLab Consultants Limited

Client's address : Fugro Development Centre, 5 Lok Yi Street, 17 M.S. Castle Peak Road, Tai Lam, Tuen Mun, N.T.

Project : Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Test required : 1. Presence of asbestos
2. Type of asbestos, if present
3. Determination of ACM by visual examination

Laboratory Information

Lab. sample I.D. : PE90125/1 to 9

Sample description : 9 nos. bulk material sampled from the project site

Date of sampling : 20/02/2009

Sampling method : In-house method G-T-021 to G-T-022

Sampled by : K.L. Yung

Date of test completed : 02/03/2009

Test method : In-house methods G-T-023 & G-T-028

Test Results :

Lab. Sample I.D.	Sample Nature	Sampling Location	Sampling Method	Asbestos Fibres		ACM / Non-ACM
				Presence	Type	
PE90125/1	Cement Board	Balcony, 2/F, Block 9	G-T-022	Present	Chrysotile & Crocidolite	ACM
PE90125/2	Vinyl Floor Tile	Staircase Lobby, 2/F, Block 9	G-T-022	Not detected	-	Non-ACM
PE90125/3	Vinyl Floor Tile	Staircase Lobby, 1/F, Block 9	G-T-022	Not detected	-	Non-ACM
PE90125/4	Vinyl Floor Tile	Pantry, 1/F, Block 9	G-T-022	Not detected	-	Non-ACM
PE90125/5	Vinyl Floor Tile	Office, B/F, Block 9	G-T-022	Not detected	-	Non-ACM
PE90125/6	Vinyl Floor Tile	B/F, Block 9	G-T-022	Not detected	-	Non-ACM

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Report No. : 090338PE90125

Test Results :

Lab. Sample I.D.	Sample Nature	Sampling Location	Sampling Method	Asbestos Fibres		ACM / Non-ACM
				Presence	Type	
PE90125/7	Vinyl Floor Tile	B/F, Block 9	G-T-022	Not detected	-	Non-ACM
PE90125/8	Corrugated Sheet	Entrance, G/F, Block 9	G-T-022	Present	Chrysotile & Amosite	ACM
PE90125/9	Insulation Inside Fuse Box	Pump House, B/F, Block 9	G-T-021	Present	Chrysotile	ACM

Remarks: 1. The sample is either classified as an ACM (>1% asbestos by weight) or a non-ACM (not >1% asbestos by weight) as defined in the Air Pollution Control Ordinance.
2. Estimated content of asbestos presented in Supplementary Report No. 090338PE90125(1)
3. Sampling location plans and photographic records are detailed in asbestos investigation report.

Tested by : C.F. Lam

Certified by :

Approved Signatory : LEUNG Man Wai, Donney
Assistant Manager – Micro-Materials Section

Date : 04/03/2009

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Report No. : 090338PE90125(1)

SUPPLEMENTARY REPORT ON ANALYSIS OF BULK MATERIALS

(Supplement To Report No. 090338PE90125)

Testing required : Quantification of asbestos – Percentage by weight

Method used : Estimation of asbestos content by visual examination

Results :

Lab. sample I.D.	Estimated asbestos content % by weight	Other fibres present
PE90125/1	Chrysotile : 5 – 10 % & . Crocidolite : < 5 %	-
PE90125/2	-	-
PE90125/3	-	-
PE90125/4	-	-
PE90125/5	-	-
PE90125/6	-	-
PE90125/7	-	-
PE90125/8	Chrysotile : 10 – 15 % & Amosite : < 5 %	-
PE90125/9	Chrysotile : 70 – 80 %	Polymer fibre

Tested by : C.F. Lam

Certified by : Approved Signatory : LEUNG Man Wai, Donney
Assistant Manager – Micro-Materials Section

Date : 04/03/2009

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Report No. : 090338PE90125(2)

I. TEST REPORT ON SAMPLING AND ANALYSIS OF BULK MATERIALS

Information Supplied by Client

Client : MaterialLab Consultants Limited

Client's address : Fugro Development Centre, 5 Lok Yi Street, 17 M.S. Castle Peak Road, Tai Lam, Tuen Mun, N.T.

Project : Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Test required : 1. Presence of asbestos
2. Type of asbestos, if present
3. Determination of ACM by visual examination

Laboratory Information

Lab. sample I.D. : PE90125/10 to 29

Sample description : 20 nos. bulk material sampled from the project site

Date of sampling : 03/03/2009

Sampling method : In-house method G-T-020 to G-T-022

Sampled by : K.L. Yung

Date of test completed : 13/03/2009

Test method : In-house methods G-T-023 & G-T-028

Test Results :

Lab. Sample I.D.	Sample Nature	Sampling Location	Sampling Method	Asbestos Fibres		ACM / Non-ACM
				Presence	Type	
PE90125/10	Vinyl Floor Tiles (Blue)	Interview & Statement Taking Room, G/F, Block 3	G-T-022	Not detected	-	Non-ACM
PE90125/11	Vinyl Floor Tiles (Blue)	Office, G/F, Block 3	G-T-022	Not detected	-	Non-ACM
PE90125/12	Vinyl Floor Tiles (Red)	Game Room, 1/F, Block 3	G-T-022	Not detected	-	Non-ACM
PE90125/13	Vinyl Floor Tiles (Red)	Game Room, 1/F, Block 3	G-T-022	Not detected	-	Non-ACM
PE90125/14	Ceiling Plaster	Confidential Registry, Room 205, Block 1	G-T-020	Not detected	-	Non-ACM

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Report No. : 090338PE90125(2)

HOKLAS 015

Test Results :

Lab. Sample I.D.	Sample Nature	Sampling Location	Sampling Method	Asbestos Fibres		ACM / Non-ACM
				Presence	Type	
PE90125/15	Ceiling Plaster	Confidential Registry, Room 205, Block 1	G-T-020	Not detected	-	Non-ACM
PE90125/16	Ceiling Plaster	Confidential Registry Room 205, Block 1	G-T-020	Not detected	-	Non-ACM
PE90125/17	Chalk board	Room 220, Block 1	G-T-022	Present	Chrysotile	ACM
PE90125/18	Flexible Joint	Generator Room, Room 124, Block 1	G-T-021	Not detected	-	Non-ACM
PE90125/19	Flexible Joint	Generator Room, Room 124, Block 1	G-T-021	Not detected	-	Non-ACM
PE90125/20	Chimney Lagging	Generator Room, Room 124, Block 1	G-T-021	Present	Chrysotile	ACM
PE90125/21	Beam Plaster	Room G08B, Block 1	G-T-020	Not detected	-	Non-ACM
PE90125/22	Beam Plaster	Room G08B, Block 1	G-T-020	Not detected	-	Non-ACM
PE90125/23	Beam Plaster	Room G08A, Block 1	G-T-020	Not detected	-	Non-ACM
PE90125/24	Corrugated Sheet	Rear of Block 8	G-T-022	Not detected	-	Non-ACM
PE90125/25	Vinyl Floor Tile (Grey)	Hall C, 2/F, Block 13	G-T-022	Not detected	-	Non-ACM
PE90125/26	Vinyl Floor Tile (Grey)	Hall C, 2/F, Block 13	G-T-022	Not detected	-	Non-ACM
PE90125/27	Pipe Lagging	Workshop, Hall E, LG/F, Block 15	G-T-021	Present	Chrysotile	ACM
PE90125/28	Gasket	Gas Meter Room, G/F, Block 10	G-T-021	Present	Chrysotile	ACM

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Report No. : 090338PE90125(2)

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Test Results :

Lab. Sample I.D.	Sample Nature	Sampling Location	Sampling Method	Asbestos Fibres		ACM / Non-ACM
				Presence	Type	
PE90125/29	Pipe Lagging	G/F, Block 19	G-T-021	Present	Chrysotile	ACM

Remarks :
1. The sample is either classified as an ACM (>1% asbestos by weight) or a non-ACM (not >1% asbestos by weight) as defined in the Air Pollution Control Ordinance.
2. Estimated content of asbestos presented in Supplementary Report No. 090338PE90125(3).
3. Sampling location plans and photographic records are detailed in asbestos investigation report.

Tested by : C.F. Lam

Certified by :

Approved Signatory : LEUNG Man Wai, Donney
Assistant Manager – Micro-Materials Section

Date : 19/03/2009

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Report No. : 090338PE90125(3)

SUPPLEMENTARY REPORT ON ANALYSIS OF BULK MATERIALS

(Supplement To Report No. 090338PE90125(2))

Testing required : Quantification of asbestos – Percentage by weight

Method used : Estimation of asbestos content by visual examination

Results :

Lab. sample I.D.	Estimated asbestos content % by weight	Other fibres present
PE90125/10	-	-
PE90125/11	-	-
PE90125/12	-	-
PE90125/13	-	-
PE90125/14	-	Mineral wool
PE90125/15	-	Mineral wool
PE90125/16	-	Mineral wool
PE90125/17	Chrysotile : 5 – 10 %	-
PE90125/18	-	Polymer fibre
PE90125/19	-	Polymer fibre
PE90125/20	Chrysotile : 70 – 80 %	Polymer fibre
PE90125/21	-	Mineral wool
PE90125/22	-	Mineral wool
PE90125/23	-	Mineral wool
PE90125/24	-	Polymer fibre & Paper fibre
PE90125/25	-	-
PE90125/26	-	-
PE90125/27	Chrysotile : 20 – 30 %	Polymer fibre

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Report No. : 090338PE90125(3)

Results :

Lab. sample I.D.	Estimated asbestos content % by weight	Other fibres present
PE90125/28	Chrysotile : > 90 %	-
PE90125/29	Chrysotile : 20 – 30 %	Polymer fibre

Tested by : C.F. Lam

Certified by : _____
Approved Signatory : LEUNG Man Wai, Donney
Assistant Manager – Micro-Materials Section

Date : 19/03/2009

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Report No. : 090338PE90125(4)

HKAS 015

I. TEST REPORT ON SAMPLING AND ANALYSIS OF BULK MATERIALS

Information Supplied by Client

Client : MaterialLab Consultants Limited

Client's address : Fugro Development Centre, 5 Lok Yi Street, 17 M.S. Castle Peak Road, Tai Lam, Tuen Mun, N.T.

Project : Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Test required : 1. Presence of asbestos
2. Type of asbestos, if present
3. Determination of ACM by visual examination

Laboratory Information

Lab. sample I.D. : PE90125/30 to 32

Sample description : 3 nos. bulk material sampled from the project site

Date of sampling : 07/04/2009

Sampling method : In-house method G-T-022

Sampled by : K.L. Yung

Date of test completed : 14/04/2009

Test method : In-house methods G-T-023 & G-T-028

Test Results :

Lab. Sample I.D.	Sample Nature	Sampling Location	Sampling Method	Asbestos Fibres		ACM / Non-ACM
				Presence	Type	
PE90125/30	Corrugated Sheet	Rear of Block 8	G-T-022	Not detected	-	Non-ACM
PE90125/31	Corrugated Sheet	Toilet of Block 16, Workshops	G-T-022	Not detected	-	Non-ACM
PE90125/32	Corrugated Sheet	Entrance Gate of Block 17, F Hall	G-T-022	Present	Chrysotile	ACM

Remarks : 1. The sample is either classified as an ACM (>1% asbestos by weight) or a non-ACM (not >1% asbestos by weight) as defined in the Air Pollution Control Ordinance.
2. Estimated content of asbestos presented in Supplementary Report No. 090338PE90125(5).
3. Sampling location plans and photographic records are detailed in asbestos investigation report.

Tested by : C.F. Lam

Certified by : _____
Approved Signatory : LEUNG Man Wai, Donney
Assistant Manager – Micro-Materials Section

Date : 20/04/2009

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Report No. : 090338PE90125(5)

SUPPLEMENTARY REPORT ON ANALYSIS OF BULK MATERIALS

(Supplement To Report No. 090338PE90125(4))

Testing required : Quantification of asbestos – Percentage by weight

Method used : Estimation of asbestos content by visual examination

Results :

Lab. sample I.D.	Estimated asbestos content % by weight	Other fibres present
PE90125/30	-	Polymer fibre & Paper fibre
PE90125/31	-	Polymer fibre & Paper fibre
PE90125/32	Chrysotile : 5 – 10 %	-

Tested by : C.F. Lam

Certified by : _____
Approved Signatory : LEUNG Man Wai, Donney
Assistant Manager – Micro-Materials Section

Date : 20/04/2009

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APPENDIX 5

ASBESTOS-CONTAINING MATERIAL LOCATION PLANS

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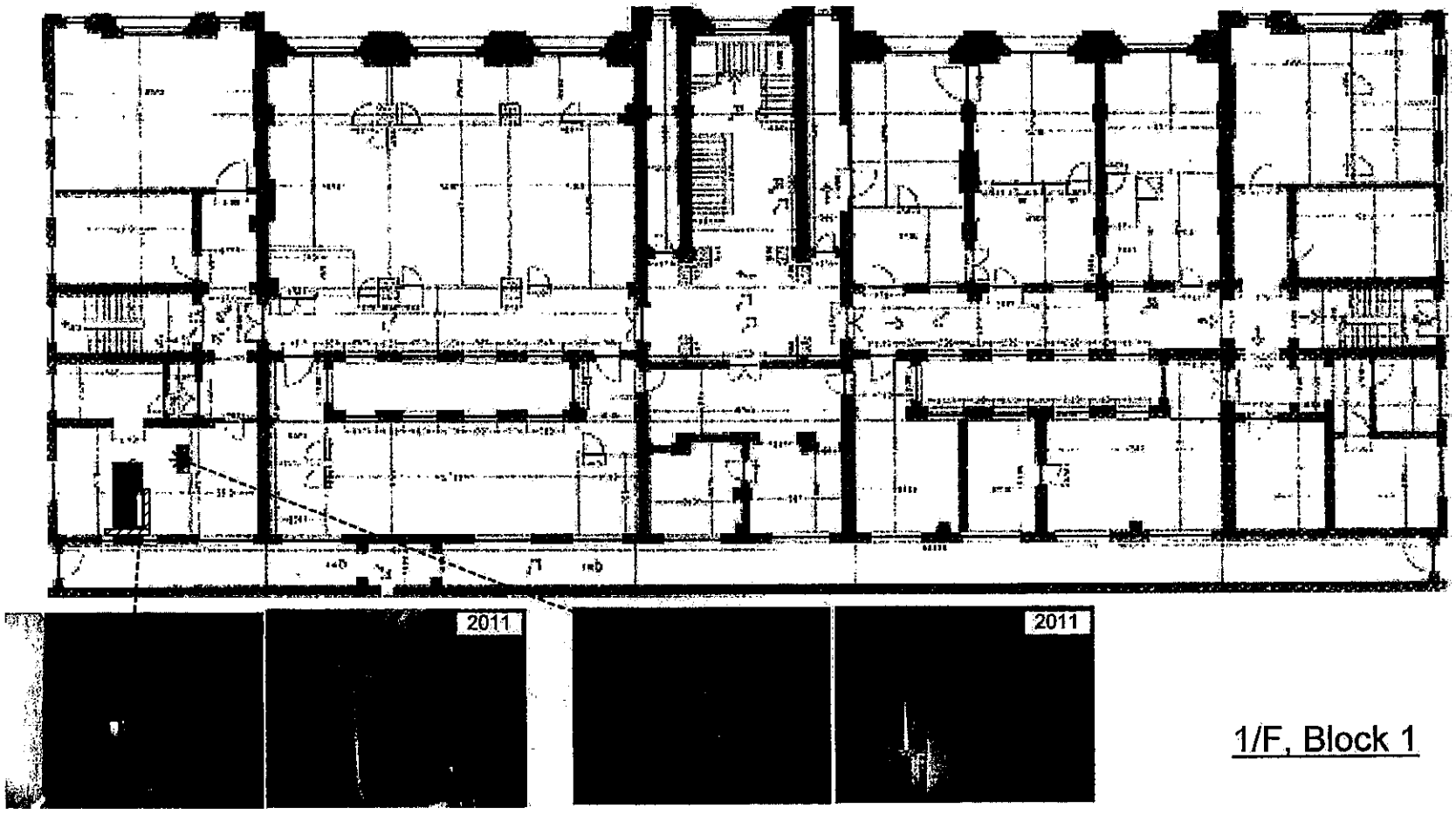

1/F, Block 1

Figure:	18
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	ACM Location Plan 1/F, Block 1, Headquarter Block
Our ref. no.:	0014/09/ED/0011B
Prepared by:	Yu Lap Bong
Scale:	Not to Scale

Legend:

- ACM Chimney Lagging (ACM Item No. ED/0011-4)
- ✱ ACM Switch / Fuse Box (ACM Item No. ED/0011-3)

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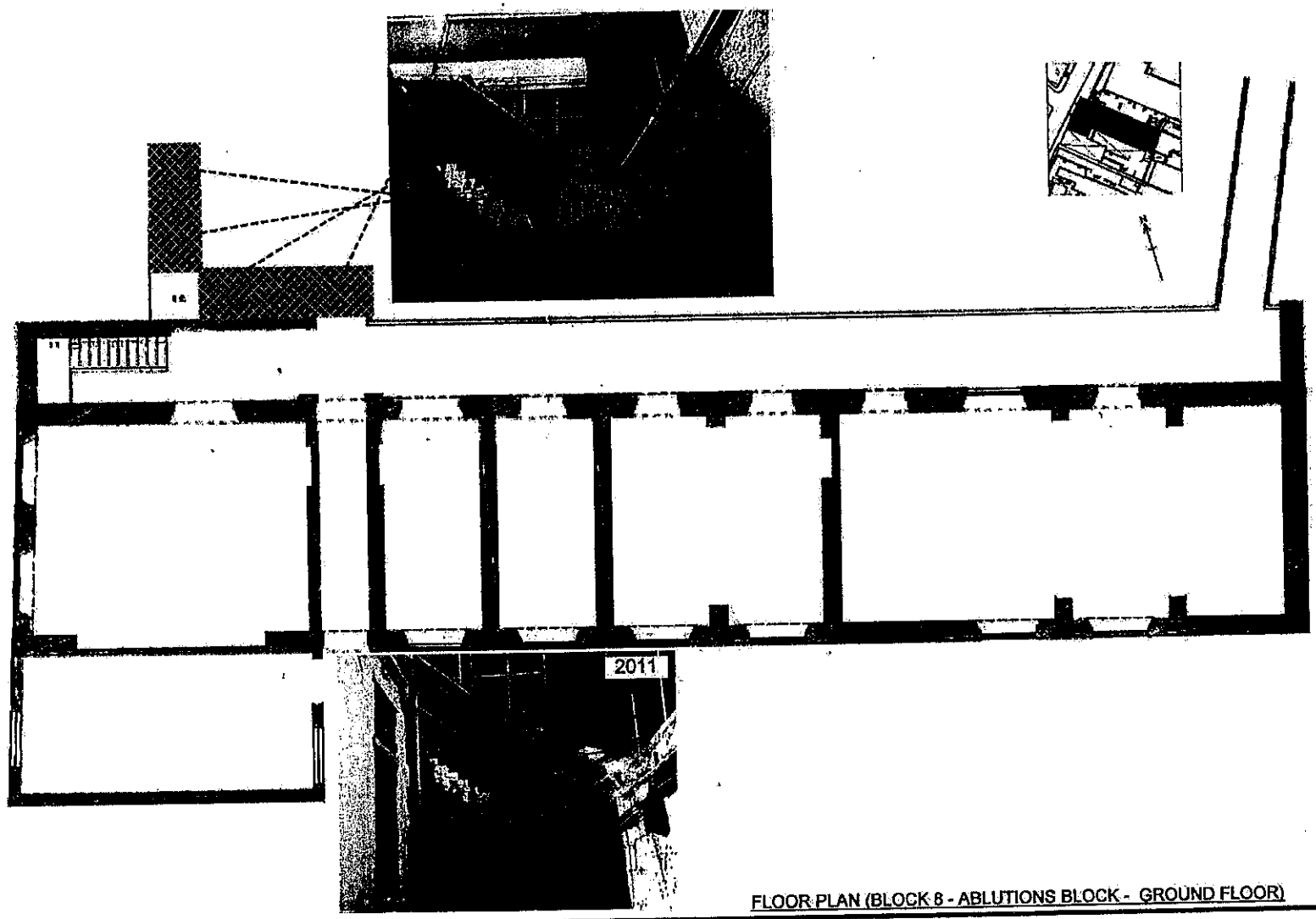

FLOOR PLAN (BLOCK 8 - ABLUTIONS BLOCK - GROUND FLOOR)

Figure:	19
Project Title:	Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project
Drawing Title:	ACM Location Plan G/F, Block 8, Ablutions Block
Our ref. no.:	0014/09/ED/0011B
Prepared by:	Yu Lap Bong
Scale:	Not to Scale
Legend:	ACM Corrugated Sheet (Type 1) (ACM Item No. ED/0011-2)

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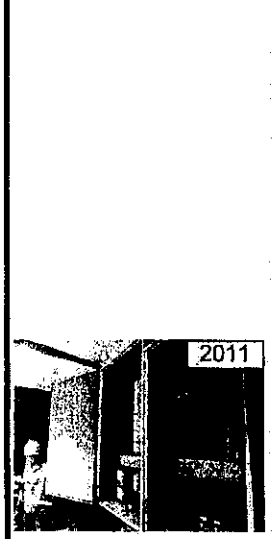

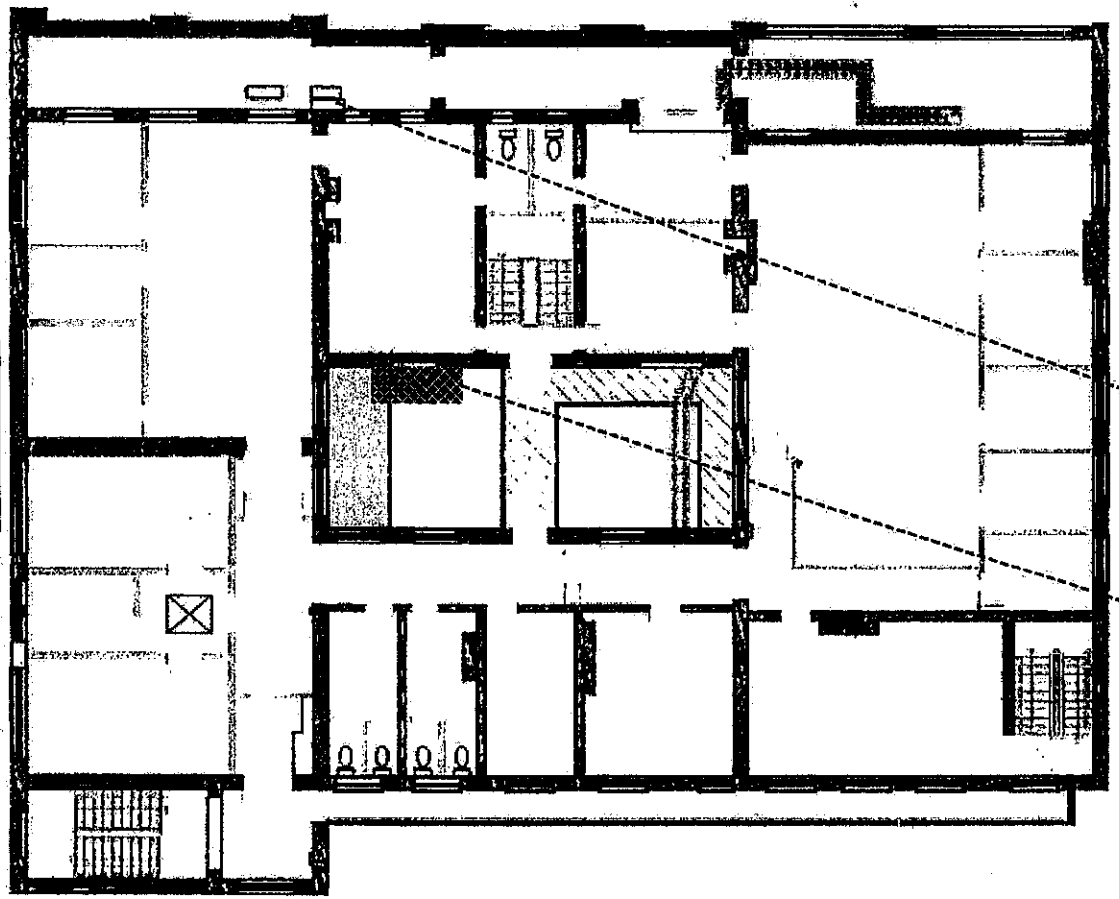

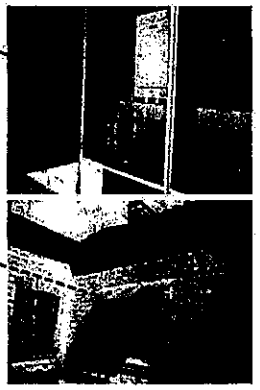

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - SECOND FLOOR)

Figure: 20

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Location Plan 2/F, Block 9, Central Magistracy

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

- ACM Cement Board (ACM Item No. ED/0011-1)
- ACM Corrugated Sheet (Type 1) (ACM Item No. ED/0011-2)

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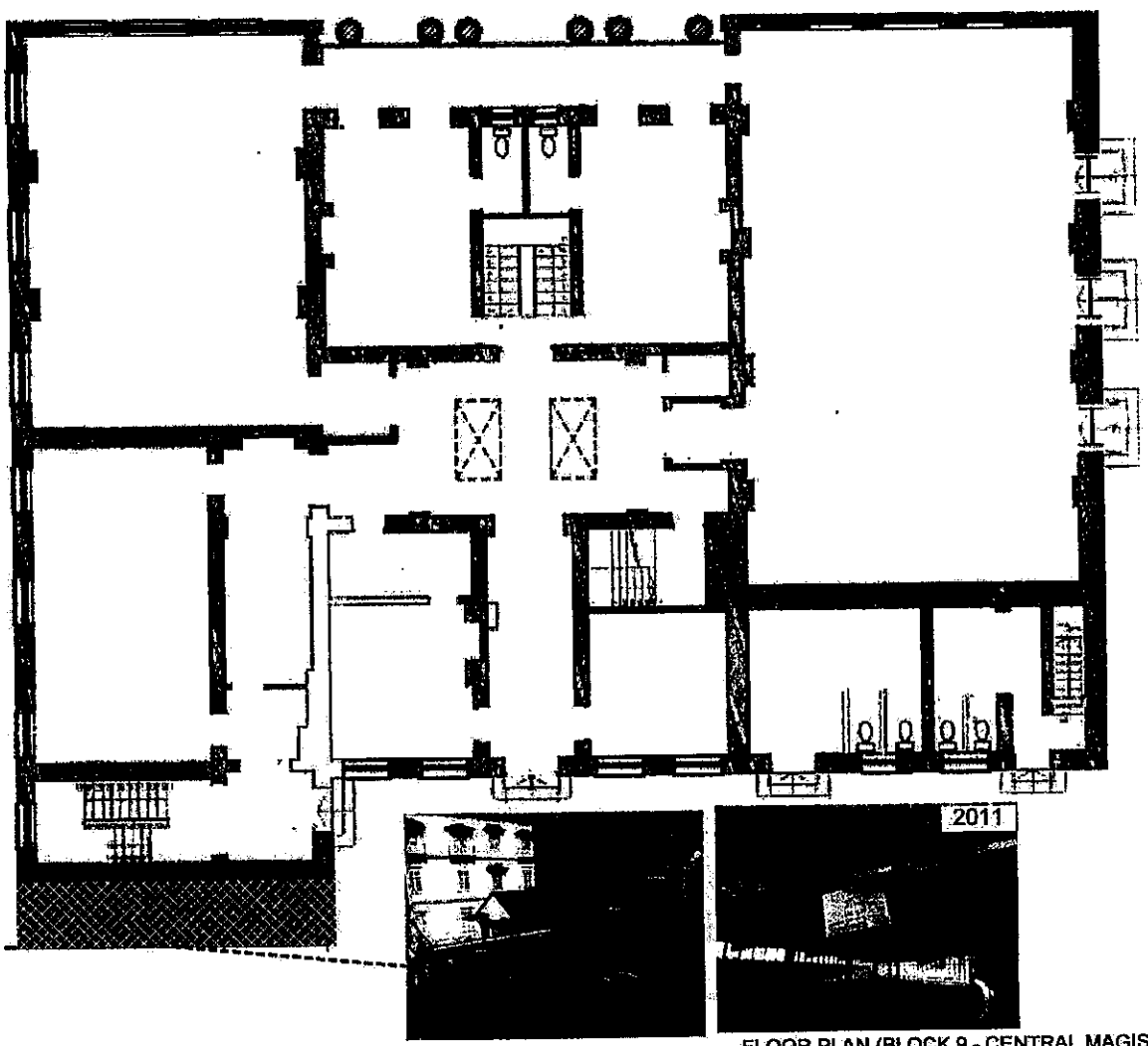

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - GROUND FLOOR)

Figure: 21

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Location Plan G/F, Block 9, Central Magistracy

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

ACM Corrugated Sheet (Type 1) (ACM Item No. ED/0011-2)

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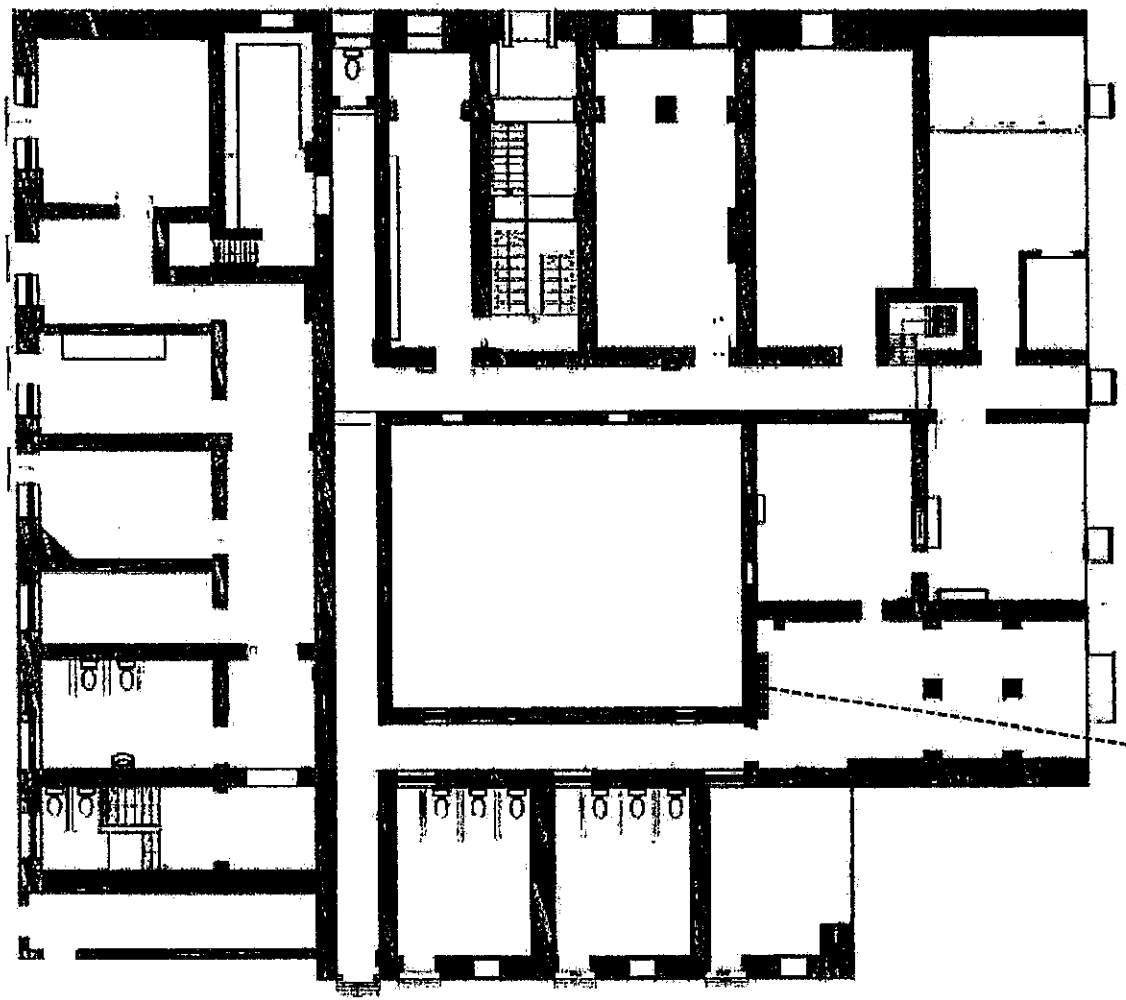

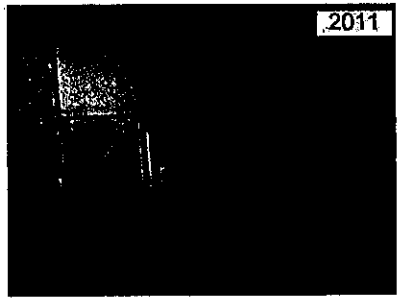

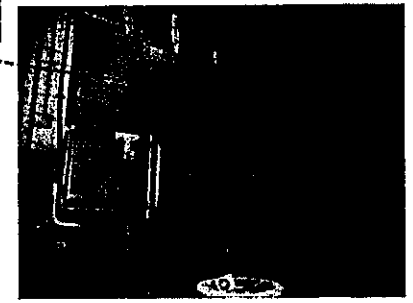

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - BASEMENT FLOOR)

Figure: 22

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Location Plan B/F, Block 9, Central Magistracy

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:
✱ ACM Switch / Fuse Box (ACM Item No. ED/0011-3)

Rev.	Date
0	23/11/2011

MATERIALAB CONSULTANTS LIMITED
Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun, N.T., Hong Kong.
Tel : (852)-24508238
Fax : (852)-24508138
Email : mcl@fugro.com.hk

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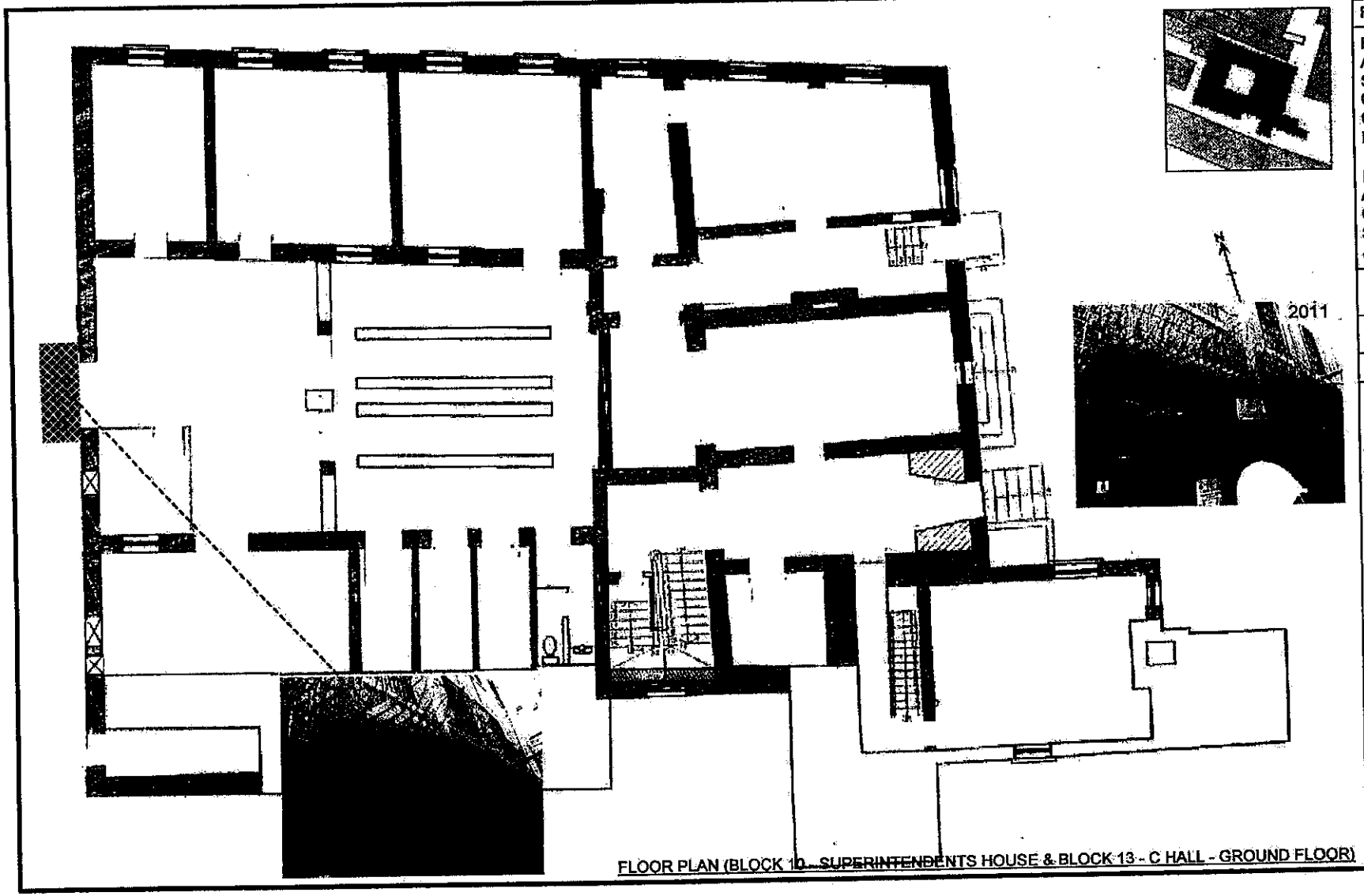

FLOOR PLAN (BLOCK 10 - SUPERINTENDENTS HOUSE & BLOCK 13 - C HALL - GROUND FLOOR)

Figure: 23

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Location Plan G/F, Block 10, Superintendents House & Block 13, C Hall

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

ACM Corrugated Sheet (Type 1) (ACM Item No. ED/0011-2)

Rev.	Date
0	23/11/2011

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17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun, N.T., Hong Kong.
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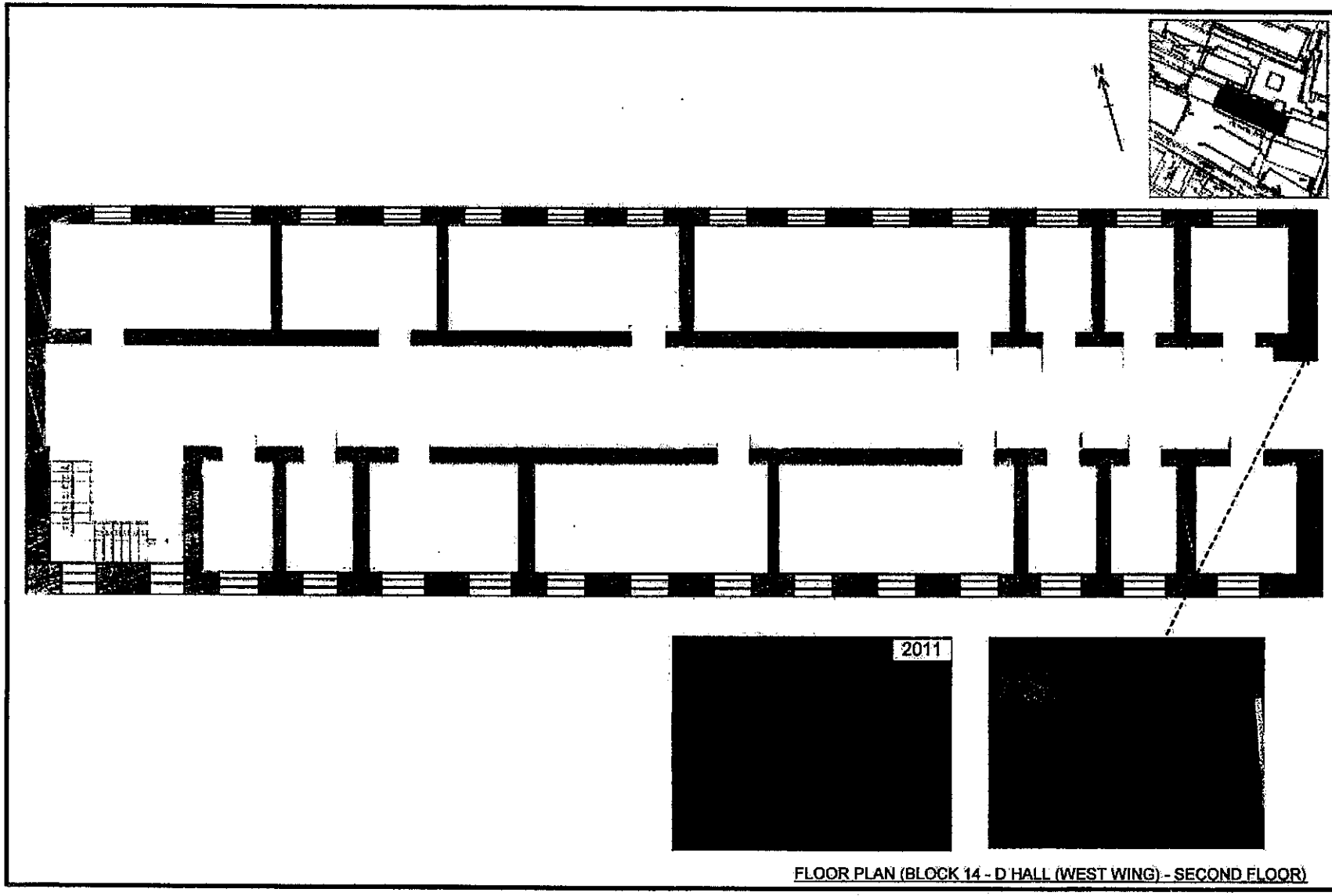

FLOOR PLAN (BLOCK 14 - D HALL (WEST WING) - SECOND FLOOR)

Figure: 24

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Location Plan
2/F, Block 14,
D Hall (West Wing)

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

✳ ACM Switch / Fuse Box (ACM Item No. ED/0011-3)

Rev.	Date
0	23/11/2011

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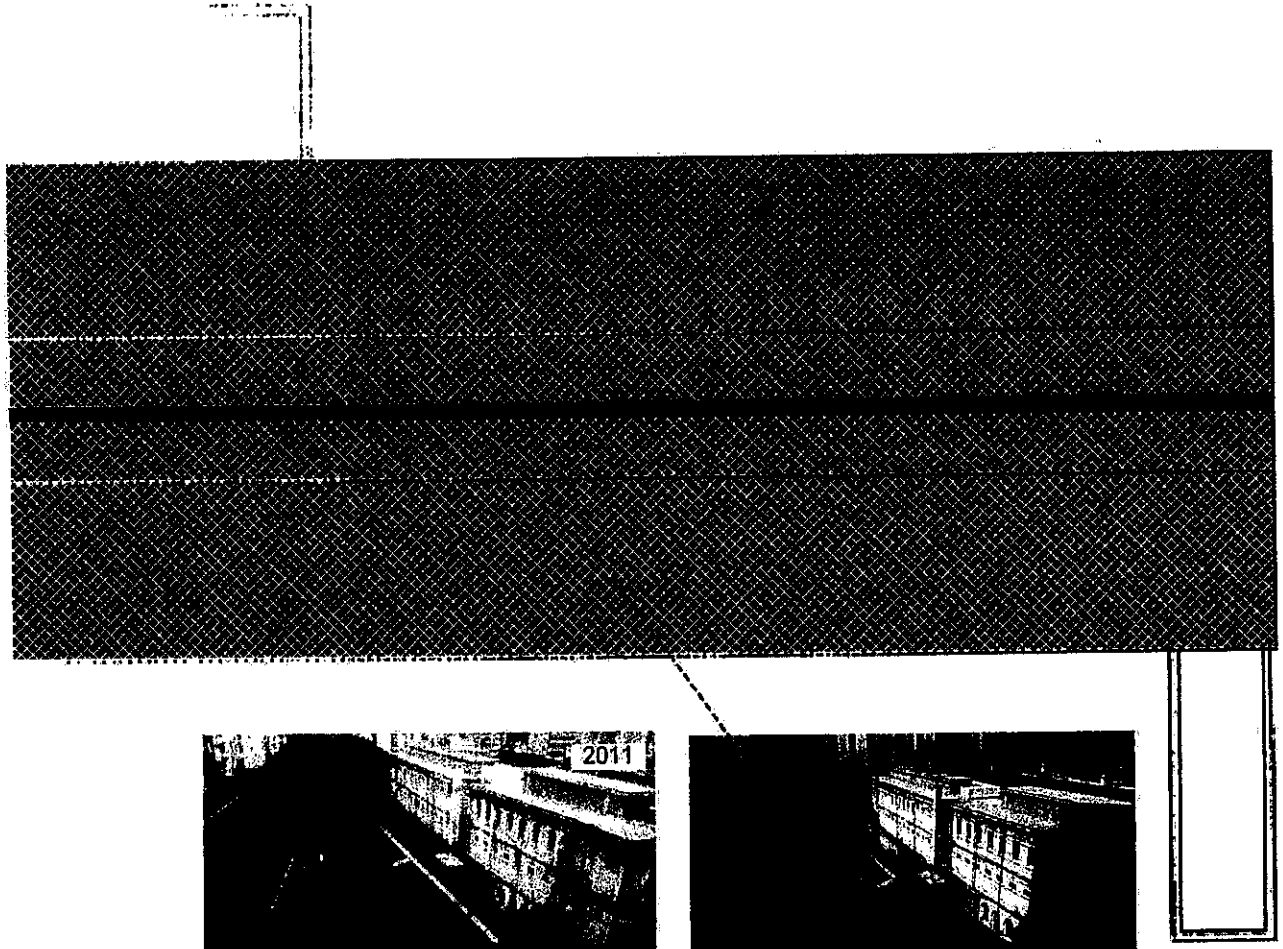

Roof, Block 16

Figure: 25

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Location Plan Roof, Block 16, Workshops / Laundry

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

ACM Corrugated Sheet (Type 1) (ACM Item No. ED/0011-2)

Rev.	Date
0	23/11/2011

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17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun, N.T., Hong Kong.

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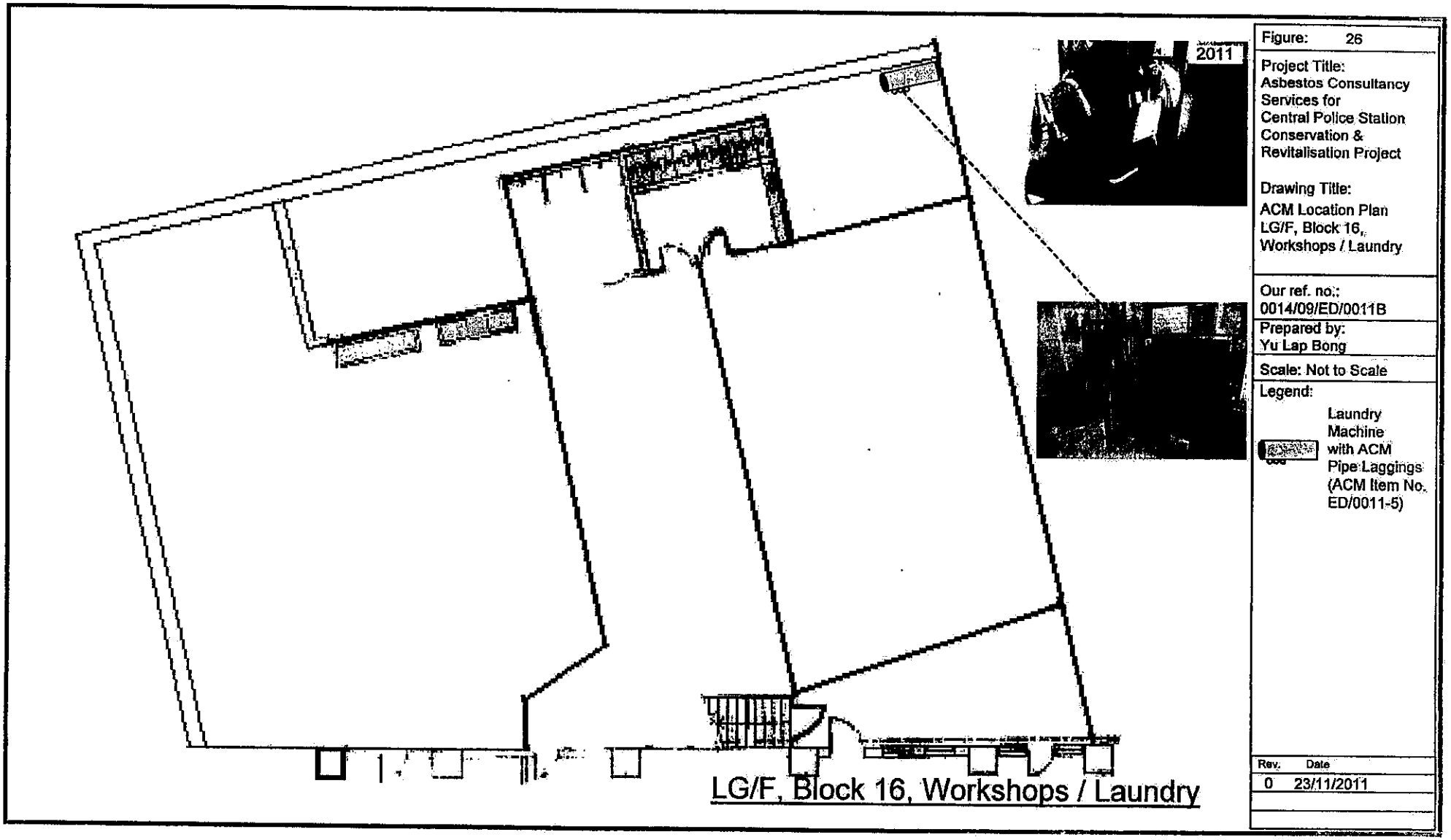

Figure: 26

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Location Plan
LG/F, Block 16,
Workshops / Laundry

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

Laundry Machine with ACM Pipe Laggings (ACM Item No. ED/0011-5)

Rev.	Date
0	23/11/2011

MATERIALAB CONSULTANTS LIMITED

Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun, N.T., Hong Kong.

Tel : (852)-24508238
Fax : (852)-24508138
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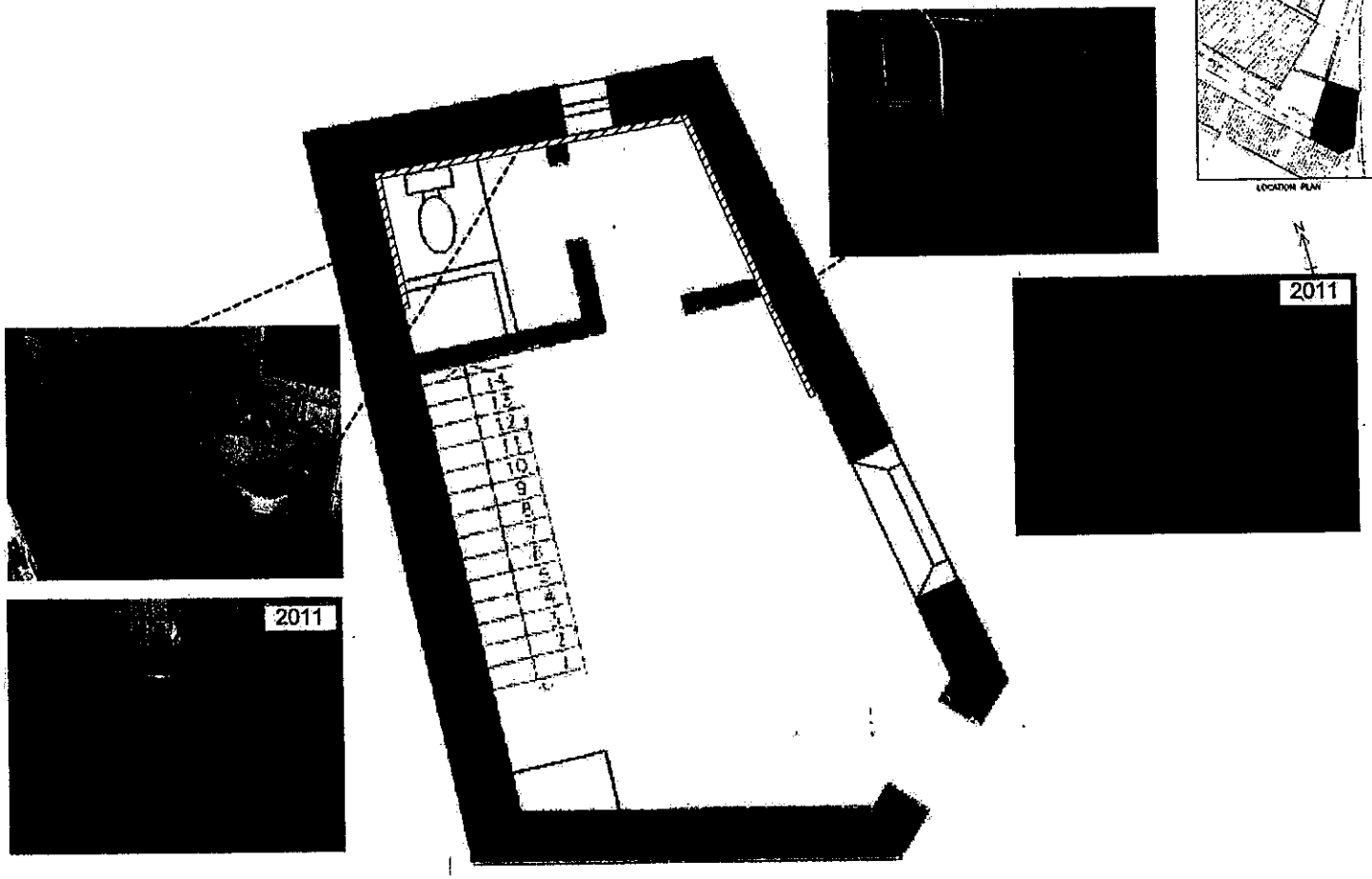
MaterialLab



FLOOR PLAN (BLOCK 19 - BAUHINIA HOUSE - GROUND FLOOR)

Figure: 27

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Location Plan G/F, Block 19, Bauhinia House

Our ref. no.:
0014/09/ED/0011B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

ACM
Pipe Lagging
(ACM Item No. ED/0011-5)

Rev.	Date
0	23/11/2011

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17 M.S. Castle Peak Road,
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APPENDIX 6

HAZARD RANKING SCHEME

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Hazard Ranking Scheme

Hazard Rank	ACM Condition	Disturbance Potential
1 Low	Good	Low
2	Good	Moderate
3	Good	High
4	Fair	Low
5	Fair	Moderate
6	Fair	High
7 High	Poor	Any

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APPENDIX 7

AIR MONITORING LOCATIONS AND RESULTS

MATERIALAB CONSULTANTS LIMITED
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Tai Lam, Tuen Mun, N.T., Hong Kong.
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Email : mcl@fugro.com.hk

Report No.: 0014/09/ED/0011B

Photo 1. Air monitoring set-up in Room 220, 2/F., Block 1

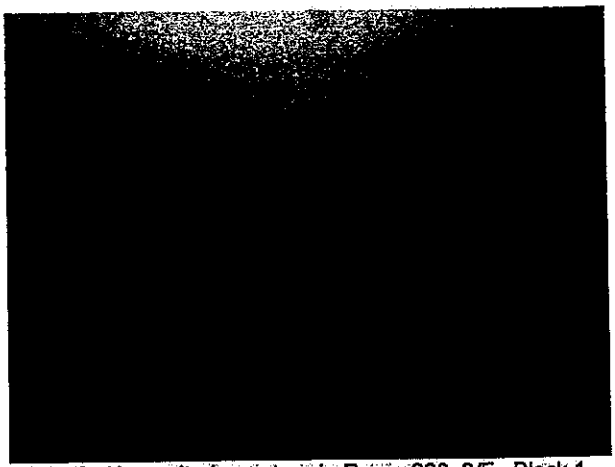

Photo 2. Air monitoring set-up in Room 220, 2/F., Block 1

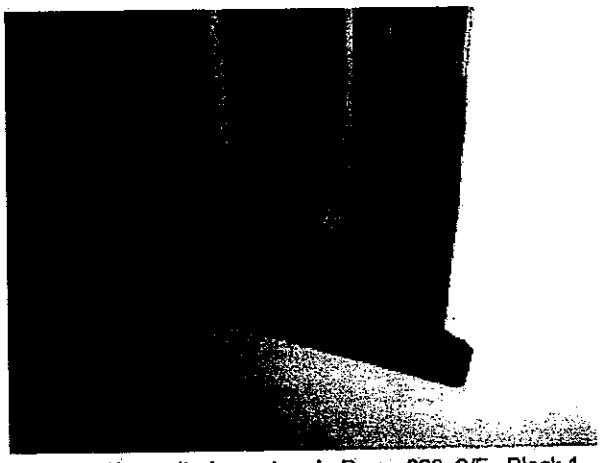

Photo 3. Air monitoring set-up in Room 220, 2/F., Block 1

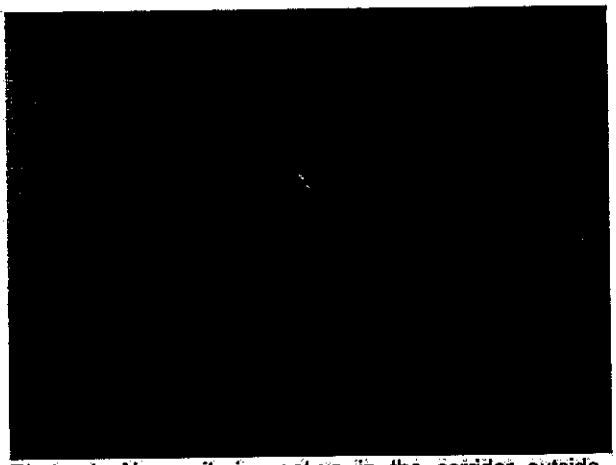

Photo 4. Air monitoring set-up in the corridor outside Room 220, 2/F., Block 1

Photo 5. Air monitoring set-up in Gas Meter Room, G/F., Block 10

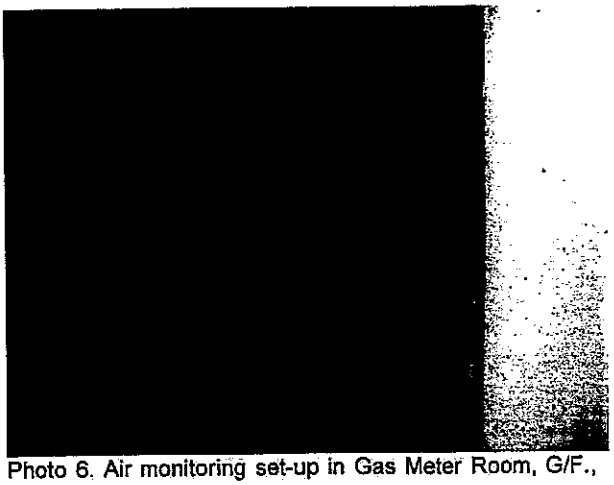

Photo 6. Air monitoring set-up in Gas Meter Room, G/F., Block 10

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Photo 7. Air monitoring set-up in outside the Gas Meter Room, G/F., Block 10

Photo 8. Air monitoring set-up in outside the Gas Meter Room, G/F., Block 10

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
6/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

HOKLAS 022 TEST CAL

TEST REPORT

Form F/AB/R/04/Issue 5 (1/4) [07/07]

REPORT NO. AIA10028

AIRBORNE DUST MONITORING

Project : Asbestos Consultancy Services for Central Police Station Conversation & Vatitalisation Project

(A/028/11)

Report Date : 21 November 2011

Customer : MateriaLab Consultants Limited

Method : In-house method TPE/003/A

Address : 5 Lok Yi Street, Furgo Development Centre, 17 M S Castle Peak Road, Tai Lam Tuen Mun N T, Hong Kong

The concentration of airborne dust has been monitored at Central Police Station on 18 November 2011 as required prior to preliminary decontamination of asbestos at 2/F Block 1 and G/F Block 10.

Method of Monitoring

See Appendix 'A'

Method of Analysis

See Appendix 'B'

Laboratory Reference

Main Laboratory

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

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TEST REPORT

REPORT NO. AIA10028

Results :

Project Sample No.	Sample Reference	Volume Sampled Litres	No. Grat. Areas Examined	No. Fibres Counted	Airborne Dust Conc. fibre/ml
Date of Sampling: 18 November 2011					
Date of Analysis: 18 November 2011					
Location : 2/F Block 1 Headquarter Block					
'background' test prior to preliminary decontamination of Asbestos					
A/028/11/1	Point A	496	200	3	<0.01
A/028/11/2	Point B	502	200	2	<0.01
A/028/11/3	Point C	505	200	3	<0.01
A/028/11/4	Point D	505	200	4	<0.01
Location : G/F Block 10 Superintendents House					
'background' test prior to preliminary decontamination of Asbestos					
A/028/11/5	Point E	496	200	2	<0.01
A/028/11/6	Point F	496	200	3	<0.01
A/028/11/7	Point G	505	200	1	<0.01
A/028/11/8	Point H	505	200	2	<0.01

REPORTED BY : Dary
WONG, Kwong Hung

APPROVED SIGNATORY :
LEE, Siu Fung Clifford

DF/CL/mtl

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

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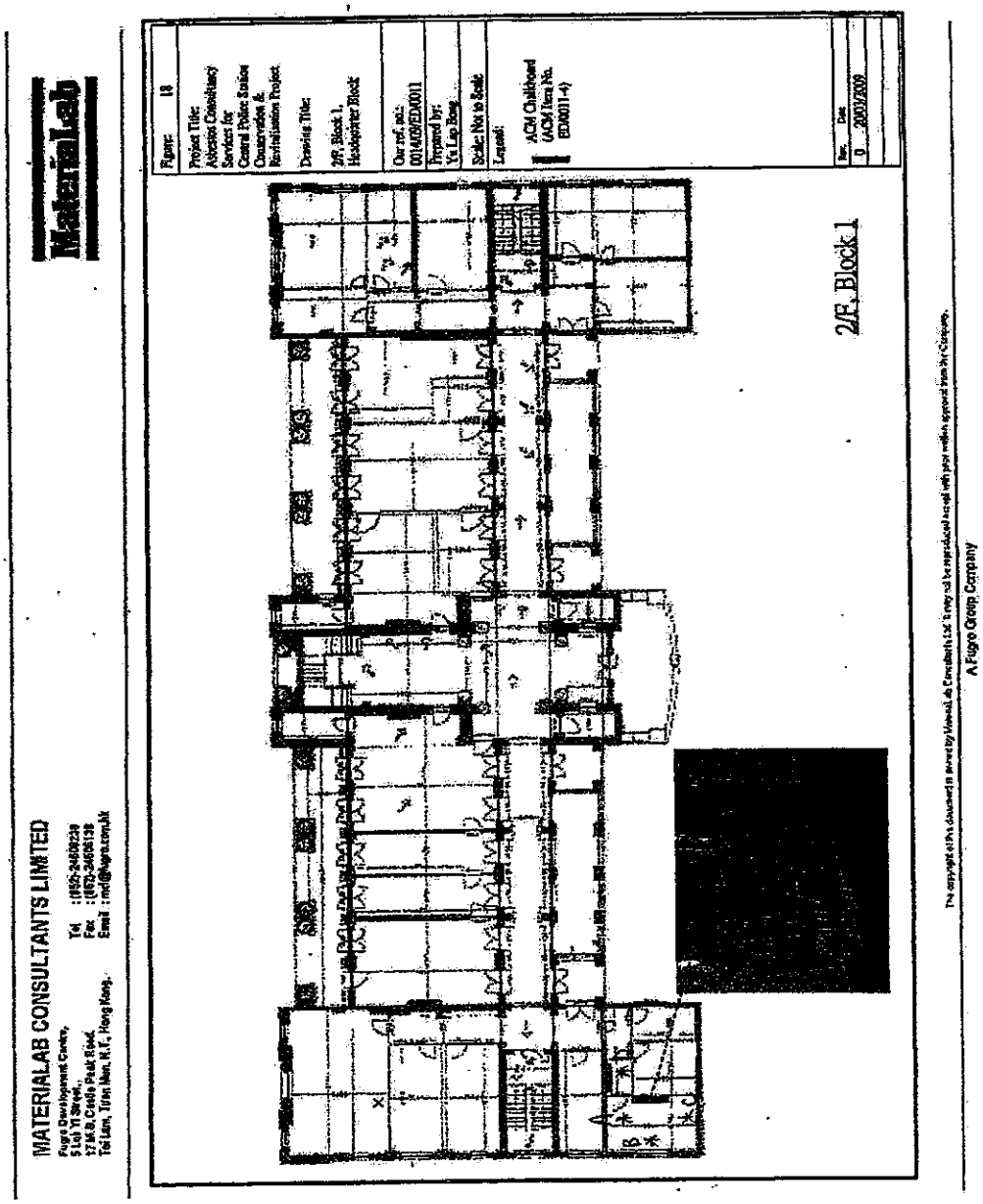
TEST REPORT

REPORT NO. AIA10028

Drawing :



Location Plan of asbestos airborne dust monitoring carried out on 18 November 2011

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

HOKLAS 022
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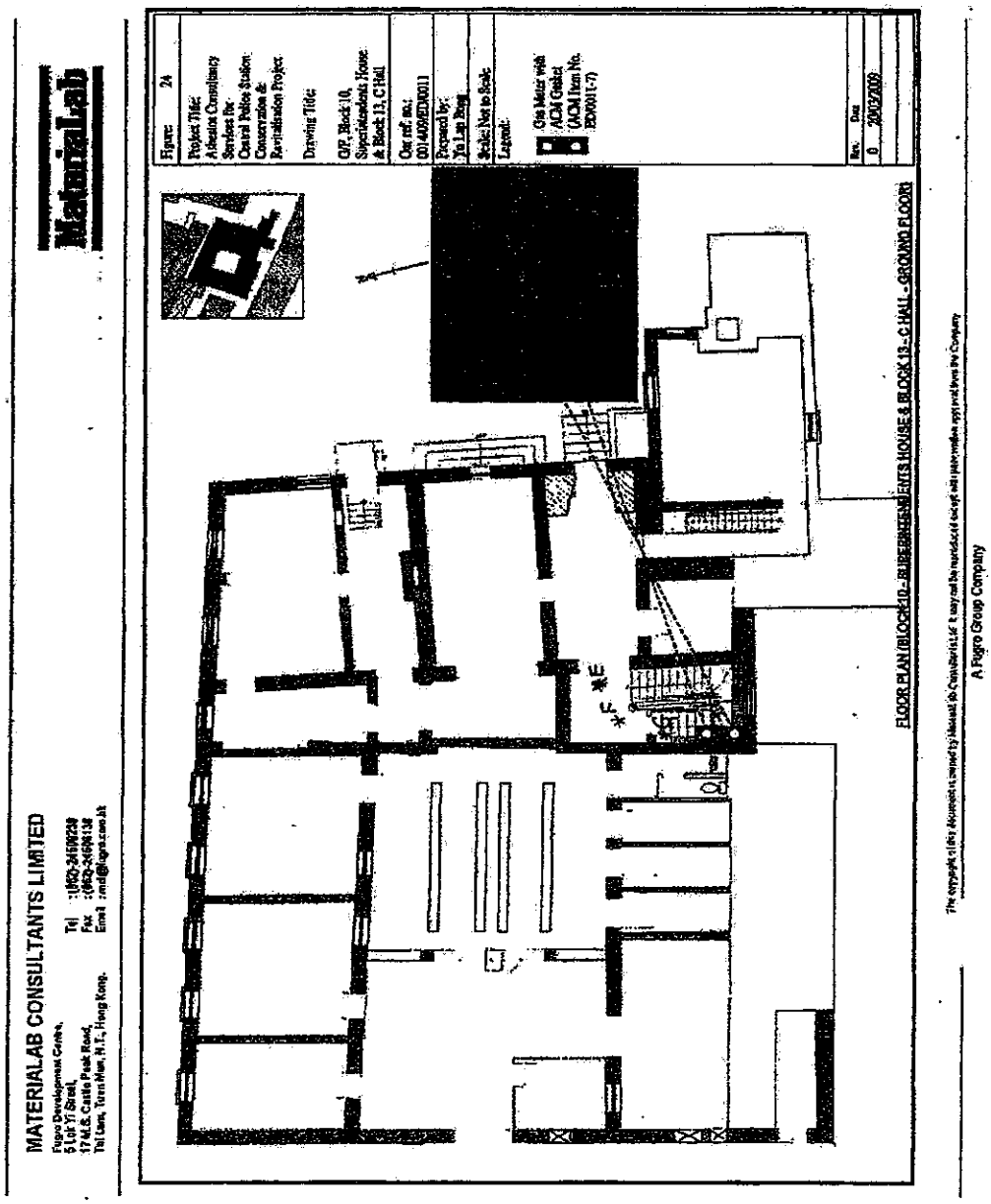
TEST REPORT

Form F/AB/R/04/Issue 5 (3/4) [07/07]

REPORT NO. AIA10028

Drawing :



Location Plan of asbestos airborne dust monitoring carried out on 18 November 2011

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
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TEST REPORT

REPORT NO. AIA10028

Appendix 'A'

METHOD OF MONITORING

This monitoring was carried out using the procedures as set out in the Environmental (Asbestos) Test procedure, TPE/003/A of ETS-Testconsult Limited

These procedures require that monitoring is carried out to the requirements of the Health & Safety Executive Guidance Note EH10 (revised February 1988), "Asbestos : exposure limits and measurement of airborne dust concentration" which in turn invokes the use of the method set out in the Environmental (Asbestos) test procedure, TPE/003/A of ETS-Testconsult Limited that based on MDHS 39/3, "Asbestos fibres in air" for the determination of the 'clearance indicator'.

Appendix 'B'

METHOD OF ANALYSIS

The membrane filter samples were analysed using the method set out Environmental (Asbestos) test procedure, TPE/003/A of ETS-Testconsult Limited that based on MDHS 39/3, "Asbestos fibres in air".

- END OF REPORT -

MATERIALAB CONSULTANTS LIMITED
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APPENDIX 8

SITE MANAGEMENT CONTROL

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Tel : (852)-24508238
Fax : (852)-24506138
Email : mcl@fugro.com.hk

Report No.: 0014/09/ED/0011B

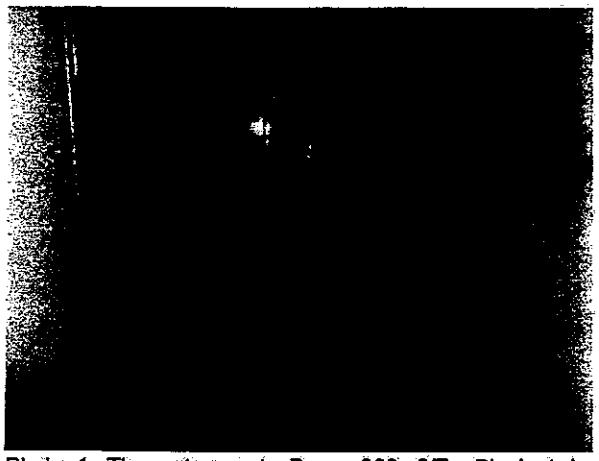


Photo 1. The entrance to Room 220, 2/F., Block 1 is sealed off and locked after the site verification

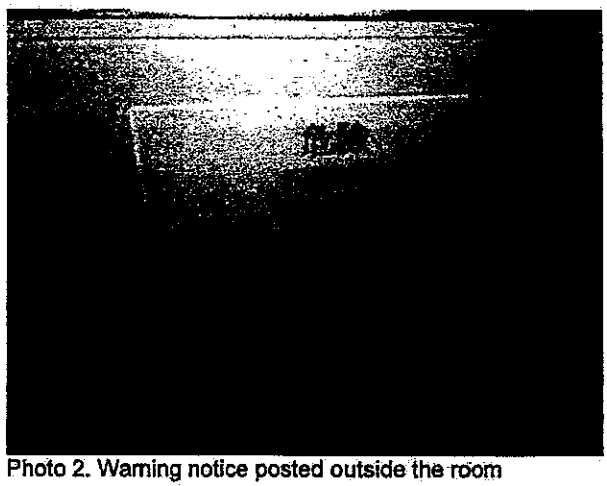


Photo 2. Warning notice posted outside the room

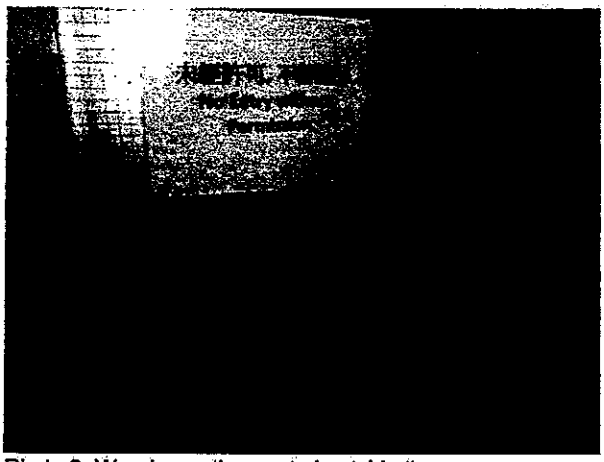


Photo 3. Warning notice posted outside the room

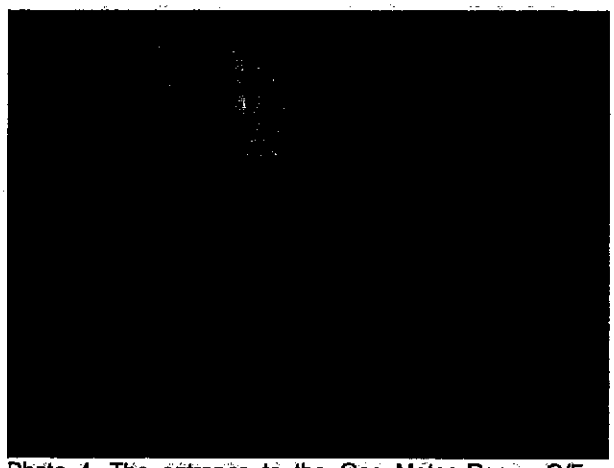


Photo 4. The entrance to the Gas Meter Room, G/F., Block 10 is sealed off and locked after the site verification

Gammon

Gammon Construction Limited
28/F Devon House
TaiKoo Place 979 King's Road
Hong Kong

金門建築有限公司
香港英皇道979號太古坊
德宏大廈廿八樓

Tel 電話 (852) 2516 8823
Fax 傳真 (852) 2516 6260
www.gammonconstruction.com

Ref: J3416/302/D00412

21 November 2011

Mr Colin K.L. Yung
MateriaLab Consultants Limited
5th Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mum, N.T.
Hong Kong

Dear Colin K.L. Yung,

J3416 - Central Police Station Conservation & Revitalization Project
Site Management Control for Asbestos Works

We refer to EPD's letter ref. EPAC/A/4/000/233) regarding the Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project.

As a Management Contractor for this project, we will fully support and manage the subcontractors/labours to prevent any unauthorized disturbance to the asbestos materials identified within the site area.

The following preventive measures will be taken to prevent any further unauthorized disturbance to the Asbestos Containing Materials (ACMs) in other area identified in the Asbestos Investigation Report when the demolition contractors is resident on site.

1. All the asbestos containing materials identified in the report will proper labeled accordingly to the specification given in the Code of Practice on the Preparation of Asbestos Investigation Reports, Asbestos Abatement Plan and Asbestos Management Plans, issued by the Environmental Protection Department.
2. All ACMs shall be identified and demarcated onto the site layout plan for easy monitoring.
3. No construction works is allowed for the identified ACMs area as stipulated from above.
4. The ACMs area should be fenced off to prevent any unauthorized entry with warning notices, relevant photo record attached.
5. A staff will be designated to check the ACMs condition on a daily basis to ensure the ACMs are closely monitored.
6. Site entry record have been setup to record who had access the site, all contractors and workers entering the site must register at the security gate.

安全 SAFETY
卓越 EXCELLENCE
誠信 INTEGRITY

Gammon

Mr Colin K.L. Yung
MateriaLab Consultants Limited

Ref: J3416/302/D00412
21 November 2011

7. A Mandatory Health & Safety Induction Training shall be conducted to all workers/staff before entering to site. The training will outline and brief the location of asbestos containing materials to workers for entering to the area with asbestos containing materials. The training shall be recorded with attendance, please find the attached the template of the Health & Safety Training Attendance Record for your reference.

Should you require further information, please do not hesitate to contact our Mr. Alan Mo at 6290 5360.

Thank you for your kind attention.

Yours faithfully
For and on behalf of
Gammon Construction Limited

pp.
Cliff Leung
Senior Project Manager

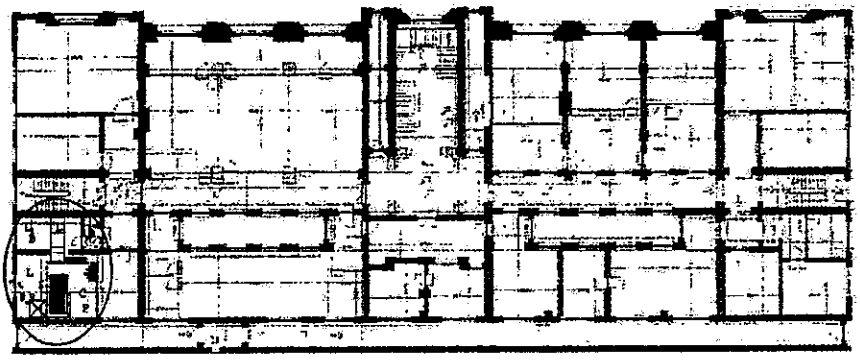
CL/AM/YTL/mm

Encl

cc: JCCPS - Mr Kenneth Lee
RDA - Mr David Chan
ERM - Ms Paggy Wong / Ms Katie Yu
YSK2 - Mr. Thomas Wong
GCL - E&M / QS / BE/ Planning / Safety / Environment

Block 1

1/F Floor Plan



Air Monitoring
B - Background
P - Personal
C - Penultimate / Final Clearance
L - Leakage

1/F, Block 1

Figure: 1
Project Title: Asbestos Consultancy Services for Central Police Station Conservation & Revitalization Project
Drawing Title: 1/F, Block 1, Headquarter Block ACM Abatement Plan
Our ref. no.: C014/08/ED/0012A
Prepared by: Yu Lap Bong
Scale: Not to Scale
Legend:
Electric Generator with ACM Pipe Lagging (ACM Item No. ED/0011-4)
ACM Switch / Fuse Box (ACM Item No. ED/0011-3)
Decontamination Unit
Containment
Viewing Panel
Air Mover
Flexible Duct
Rev. Date
0 20/03/2009

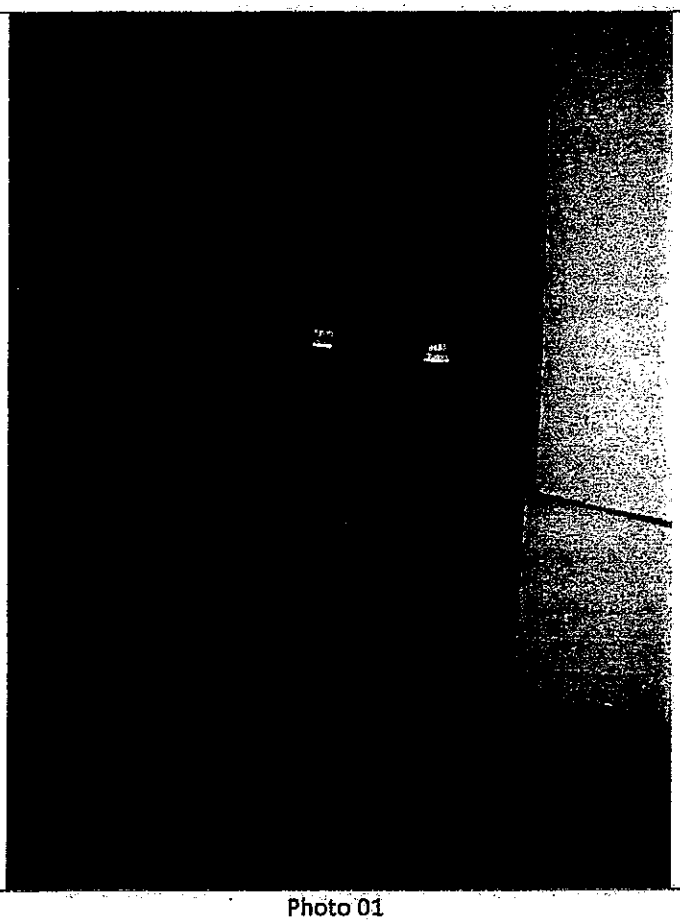
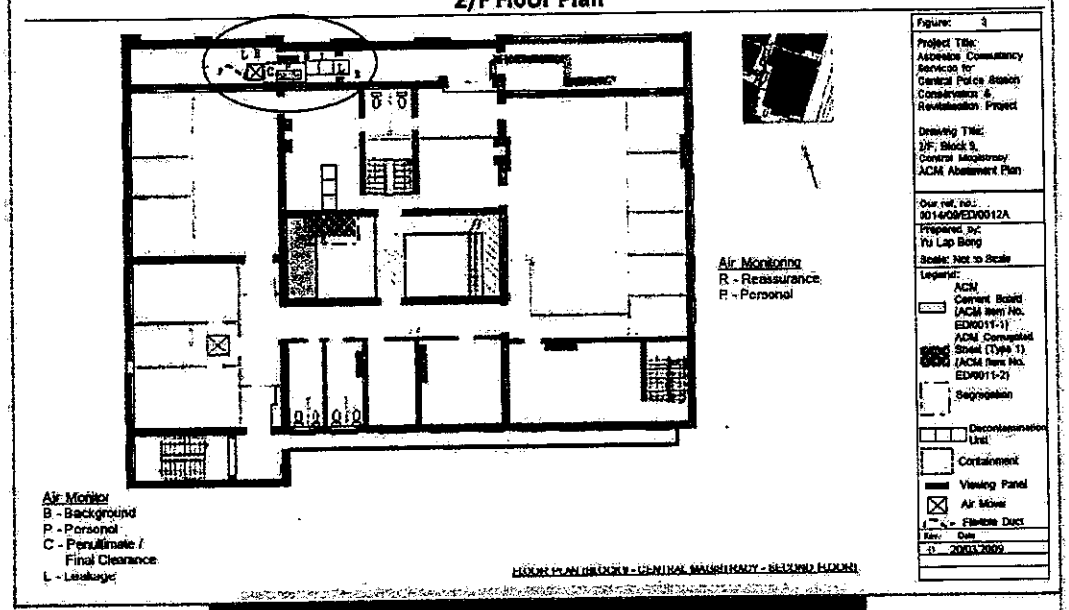


Photo 01
Door is locked with warning notice

Block 9

2/F Floor Plan



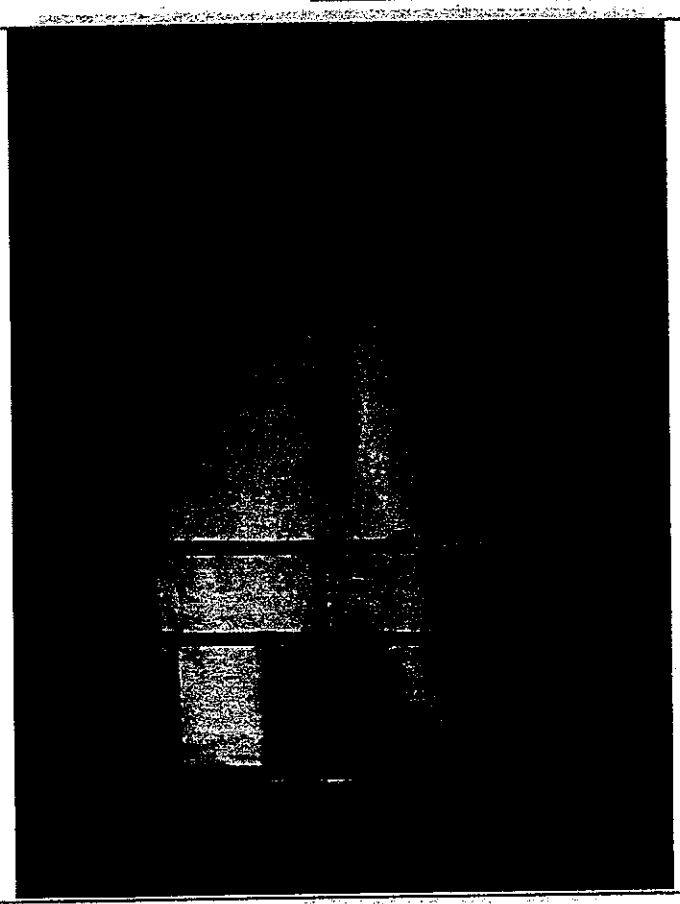
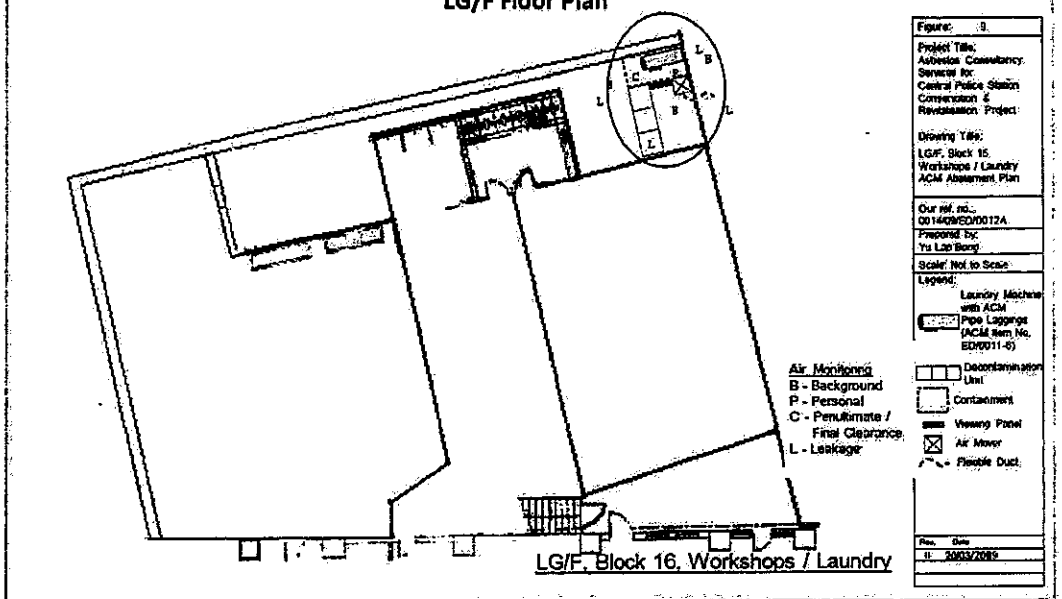
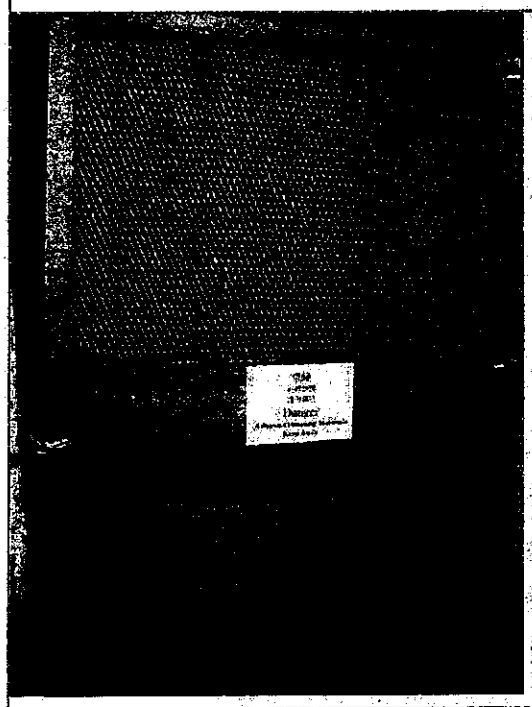


Photo 2
The corridor is fenced off with warning notice

Block 16

LG/F Floor Plan





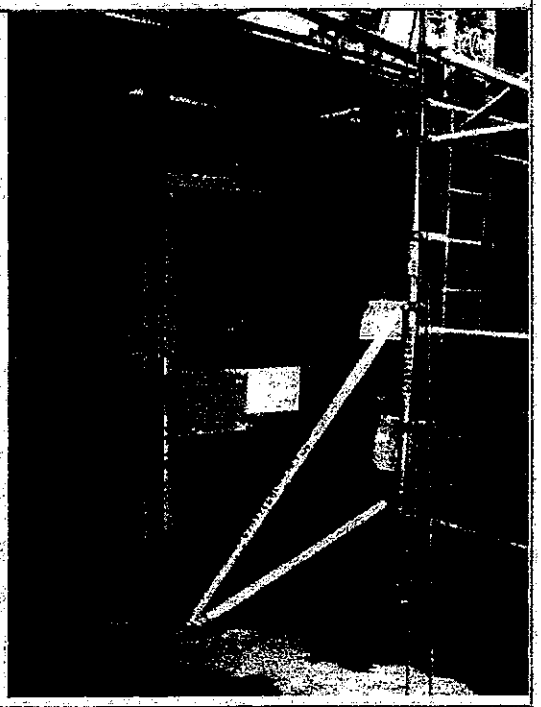
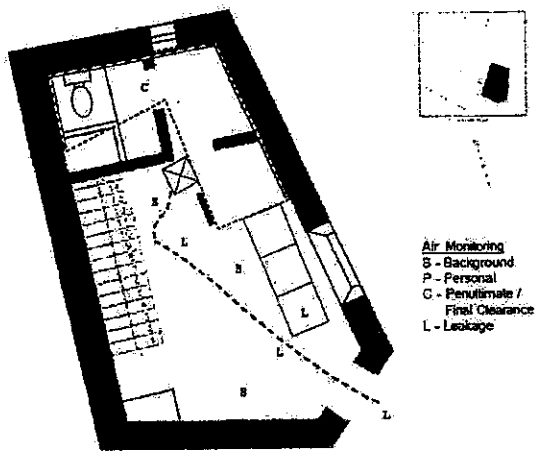


Photo 3 & 4
The metal door is locked with warning notice

Block 19

G/F Floor Plan



FLOOR PLAN (BLOCK 19 - BAUHINIA HOUSE - GROUND FLOOR)

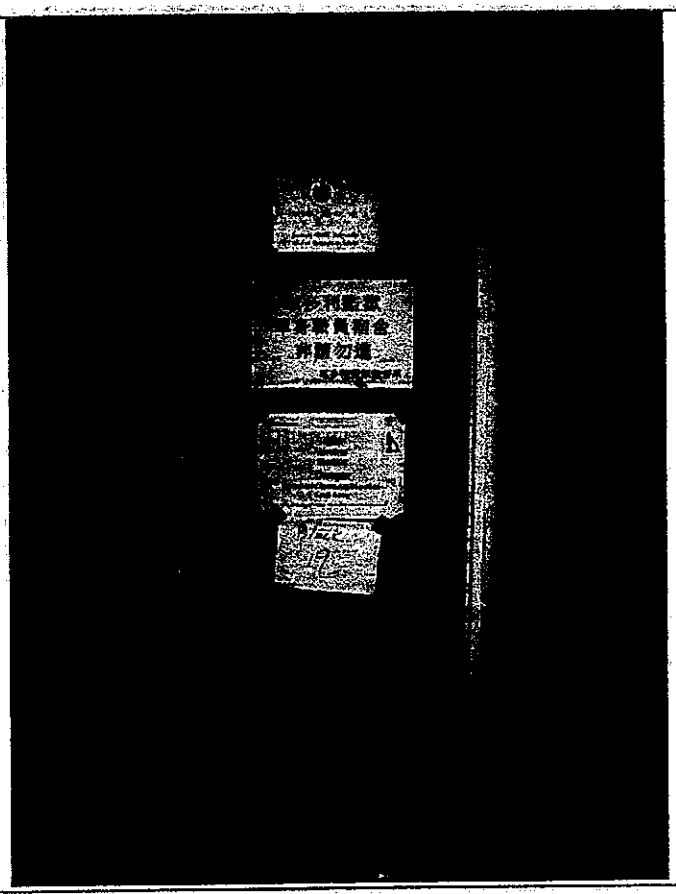


Photo 5
The door is locked with warning notice

Gammon

健康及安全訓練出席記錄
Health & Safety Training Attendance Record

Trainer Use Only 導師專用

☐ 入職安全訓練 Induction Training
☐ 特別安全訓練 Specific Safety Training : _____
☐ 工具箱安全講座 Tool Box Talk : _____

日期 Date : _____ 時間 Time : _____ 所需時間 Duration: _____

部門 Division / Department : *Building* 工程項目 Job No : *J3416 Central Police Station*

地點 Location : _____

導師 / 機構 Trainer / Organisation : _____

受訓員工記錄/Name of Trainee

數目 No	1. 姓名 (中文) Name (Chinese)	2. 姓名 (英文) Name (English)	3. 身份証號碼 HKID No.	4. 職員類別 *Employee Nature (M/D/S/I)	5. 公司 Company	6. 職位 Position	7. 簽名 Signature	評估 Evaluation Pass☑ Fail☒
1.								☐
2.								☐
3.								☐
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6.								☐
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11.								☐
12.								☐
13.								☐
14.								☐
15.								☐

訓練項目 Training Topic:

1. 高空工作安全 Safe work at height
2. 防止物料下墮 Falling object prevention
3. 預防火警 Fire hazard prevention
4. 電力安全 Electric safety
5. 人力搬運安全 Safety on manual handling
6. 安全使用個人防護設備 Safe use on PPE
7. 工地整潔 Housekeeping
8. 緊急程序 Emergency preparedness
9. 安全使用化學品 Safe use on Chemical
10. 報報意外/事故程序 Accident / incident reporting procedure

*M-Monthly, D-Daily, S-Subcontractor, I-Imported Labour

Trainer Use Only 導師專用

_____
導師簽名 Trainer's Signature

MATERIALAB CONSULTANTS LIMITED
Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun, N.T., Hong Kong.
Tel : (852)-24508236
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Email : mcl@fugro.com.hk

MaterialLab

ASBESTOS ABATEMENT PLAN

Client : Alliance Professional Surveyors Co. Ltd. / Gammon Construction Ltd.

Project : Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project (Phase 2 – Remaining Blocks)

Report No. : 0014/09/ED/0012B

MATERIALAB CONSULTANTS LIMITED
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1.0 INTRODUCTION

MateriaLab Consultants Limited was appointed by Alliance Professional Surveyors Company Limited to conduct an asbestos investigation for Central Police Station Compound.

Asbestos survey was carried out on 18, 20 and 23 February, 3 March, and 7 April 2009, and verification survey on 20 October 2011 at the above premises and asbestos containing cement board, corrugated sheets, insulation inside switch / fuse boxes, chimney lagging, and pipe lagging were identified and shown in Section 3.0.

During the site verification, previously identified asbestos-containing chalkboard and gaskets were found missing. The rooms have since been sealed off pending decontamination work before being released for general works. The procedures for the decontamination are described in Section 8.

This Asbestos Abatement Plan is drawn up to ensure that the health hazard to both workers and the public can be minimized during the removal works, and the works will comply with all relevant local regulations related to asbestos removal. The contractor's tentative work programme is shown in Appendix 12.

2.0 PARTICULARS OF CONCERNED PARTIES

Owner

The Jockey Club CPS Limited
Address: 1 Sports Road,
Happy Valley,
Hong Kong
Tel.: 2966 7224
Fax: 2838 8942
Contact person: Mr. Kenneth Lee

Owner's Representative

The Jockey Club CPS Limited
Address: 1 Sports Road,
Happy Valley,
Hong Kong
Tel.: 2966 8063
Fax: 2838 8942
Contact person: Mr. C.W. Sham

Registered Asbestos Consultant

Mr. Colin Yung (1063) Verification Survey
Mr. Steven Wong (1071) Initial Survey
Address: Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun,
N.T., Hong Kong.
Tel.: 2450 8238
Tel.: 2450 8238

Registered Asbestos Contractor

Asbestos Removal Contactors (HK) Company Limited
Address: Rm 701, Yuen Fat Industrial Building,
25 Wang Chiu Road,
Kowloon Bay, Kowloon.
Tel.: 2850 8876
Fax.: 2850 8927
Contact person: Mr. S.M. Cheng

Registered Asbestos Laboratory

Fugro Technical Services Limited
MaterialLab Division (4001)
Address: Fugro Development Centre,
5 Lok Yi Street,
17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun,
N.T., Hong Kong.
Tel.: 2450 8238
Tel.: 2450 8238
Contact person: Mr. John Ho

Duties of Registered Asbestos Consultant, Contractor, Laboratory and Main Contractor are described in Appendix 1.

3.0 SUMMARY OF IDENTIFIED ASBESTOS-CONTAINING MATERIALS AND SUSPECT MATERIALS AND ASBESTOS REMOVAL STRATEGY

The asbestos-containing materials found in the survey are summarised in Section 5.0 of our Asbestos Investigation Report Ref. 0014/09/ED/0011A and listed below.

ACM Item No.	Nature of Materials	Estimated Quantity / Size	Location	Types and Content of Asbestos	Hazard Rank	Abatement Method
ED/0011-1	Cement Board	2 m²	Balcony, 2/F, Block 9	Chrysotile: 5 - 10% & Crocidolite: < 5%	6	Full-Containment
ED/0011-2	Corrugated Sheets (Type 1 & Type 2)	1 m² 20 m² 20 m² 1 m² 120 m²	Light Well, 2/F, Block 9 Entrance, G/F, Block 9 Staircase, G/F, Block 8 Entrance, G/F, Block 13 Roof, Block 16	Chrysotile: 5 - 15% & Amosite: < 5%	3	Segregation
ED/0011-3	Insulation inside Switch / Fuse Box	1 no. 9 nos. 1 no.	Generator Room, Room 124, 1/F, Block 1 Pump House, B/F, Block 9 Corridor, 2/F, Block 14 (West Wing).	Chrysotile: 70 - 80%	3	Segregation
ED/0011-4	Chimney Lagging	4 m	Generator Room, Room 124, 1/F, Block 1	Chrysotile: 70 - 80%	1	Full-Containment
ED/0011-5	Pipe Lagging	4 m 4 m	Fibre Glass Repair Workshop, LG/F, Block 16 G/F, Block 19	Chrysotile: 20 - 30%	3 & 6	Full-Containment

Due to the Fair Condition of the ACM, the removal of asbestos-containing cement board (ED/0011-1) will be conducted inside full containment areas as described in Section 4 and Appendix 2.

The asbestos-containing corrugated sheets (ED/0011-2) are cementitious materials, which are non-friable in nature. The corrugated sheets could be easily unbolted from the metal frame by using hand tools. The removal of these corrugated sheets will be conducted inside segregation areas as described in Section 5 and Appendix 2.

The insulation inside switch / fuse box (ED/0011-3) would be removed by detaching the intact switch / fuse box which contain the ACM. The removal of this ACM item would be conducted inside segregation areas as described in Section 6 and Appendix 2.

The asbestos-containing chimney lagging (ED/0011-4) and pipe lagging (ED/0011-5) are friable in nature. Asbestos dust would be generated during the removal operation. Therefore, the removal of chimney lagging and pipe lagging will be conducted inside full containment areas as described in Section 7 and Appendix 2.

Before the start of the works the Main Contractor and Asbestos Contractor should follow the requirements shown in Appendices 4 to 7. Local regulations and codes of practice relevant to the removal work are shown in Appendix 8.

4.0 METHOD FOR THE REMOVAL OF ASBESTOS-CONTAINING CEMENT BOARD

The procedures described below are applicable to the asbestos-containing cement board in the premises (ACM Item No.: ED/0011-1 described in AIR Report No.: 0014/09/ED/0011B) and the set up of work area is illustrated in Appendix 2.

4.1 All workers should wear approved full-face respirators of minimum nominal protection factor 100, equipped with HEPA replaceable cartridge type filters; and full-body protective clothing with hoods and shoe covers.

4.2 Cloths used for wet cleaning, gloves and polythene sheeting used in the following procedures should be treated as asbestos waste and be disposed of with ACM removed.

4.3 The abatement area should be pre-cleaned systematically by HEPA-vacuuming and wet-wiping methods.

4.4 All openings of the unit such as windows, should be individually sealed off with 2 layers of polythene sheeting securely taped in place.

4.5 Movable objects within the area should be decontaminated before being removed. Those objects that would remain should be decontaminated and enclosed with a minimum of 2 layers of polythene sheeting sealed to protect from re-contamination.

4.6 A visual inspection should be carried out by the Consultant to verify that preliminary decontamination has been satisfactorily completed.

4.7 Background air samples should be taken in the abatement area.

4.8 The abatement area that contains the ACM to be abated should be segregated from the remainder of the work site by construction of a full containment using 0.15 mm polythene sheeting, temporary structural partition and/or raised platform. The full containment should be of a manageable size and should not exceed 2800 cu.m.. The removal work of ACM should be performed inside the full containment.

4.9 Partitions should be constructed of wood and framing or equivalent material of sufficient strength (maximum spacing 400 mm centre-to-centre) to support plastic barrier sheeting on all openings larger than 2.9 sq.m. except where one dimension is 0.3 m or less or where openings are for emergency exit. As a general rule, each expanse of plastic sheeting should not exceed 2.9 sq.m. without adequate continuous support.

4.10 Individual polythene sheeting should be fixed to the timber frame by running a length of duct tape on the sheeting along a line of support provided by the frame then stapling through the duct tape and applying another length of tape on top to strengthen the grip. Timber battens (say, 25 mm x 50 mm) or equivalent material may be used instead but they need to be dyed red for easy identification later on as contaminated items.

4.11 All floor and wall surfaces inside the containment and not covered by asbestos should be masked and sealed with polythene sheeting. Each layer of plastic sheeting should be applied separately and the minimum number required is as follows : -

- 2 individual layers to solid wall
- 2 individual layers to solid floor
- 3 individual layers to temporary partition wall
- 4 individual layers to temporary platform

4.12 The plastic layer on the floor should extend at least 300 mm up all wall surfaces to form a continuous skirting while plastic sheeting on the walls should overlap this floor skirting by a minimum of 300 mm. Floor sheeting should be applied first and followed by wall sheeting, and then alternatively until the required number of layers are met. Joints throughout should be lapped for at least 150 mm and securely sealed with moisture resistant duct tape.

4.13 Sufficient number of clear viewing panels (300 mm x 450 mm with the lower edge no more than 1.2 m above floor level) as illustrated in Appendix 2 should be provided in the barrier walls of the containment at strategic locations and complete with proper means of access to facilitate observation of the abatement work from outside. The panel should comprise one 2 mm thickness clear acrylic sheet per layer of polythene sheeting, have at least 50 mm overlap with the polythene sheeting at the edges, and be securely fixed with 50 mm wide duct tape.

4.14 A 3-chamber decontamination unit should be constructed to isolate the work area permit safe access and egress of authorised working personnel. Refer to Appendix 5 for the construction and use of decontamination facilities.

4.15 A 2-chamber debris port (consisting of a washing room fitted with cold water supply and waste water filtration facility, and a clean room) should also be constructed, where practical, for controlled transfer of bagged wastes and equipment. Each compartment

should have a minimum size of 2 m (height) x 1 m (width) x 1 m (length). Use of debris port should follow the procedures described in Appendix 5.

4.16 The locations and arrangement of the full containments, decontamination units, debris ports etc. as illustrated in Appendix 2 should be confirmed by the Contractor and Consultant appointed for the removal work, and submitted to EPD in case of any changes before the commencement of work.

4.17 HEPA-filtered air movers should be used to continuously exhaust the enclosed work area. Openings made in the full containment to accommodate the air movers must be made airtight. A minimum of six air changes per hour is required. The system should maintain a static negative air pressure of 1.5 to 4 mm water gauge inside the containment across all faces. An additional air mover should also be installed to function as a standby in the case when any of the other units breaks down. The flow capacity of the standby unit should match that of the largest unit in use.

4.18

4.19 The number of air movers required to achieve the specified air changes can be calculated

$$\text{Number of air movers required} = \frac{\text{6 air changes / hr x volume of containment } (m^3)}{\text{capacity of single air mover } (m^3 / hr)}$$

* As most air movers only work to around 60-75 % of the capacity claimed by the manufacturer, spare capacity should be estimated for the discrepancy.

Containment No.	Estimated Volume of Containment	No. of Air Movers Required (Assumption - capacity of each air mover: 1,600 cfm)
2	20 m^3	1

4.20 No air mover should be added to or disconnected from the containment after commencement of removal of the ACMs.

4.21 Exhaust of the air mover should be ducted to the outside of the building. All ducting should be properly sealed and supported to maintain air-tight joints.

4.22 A portable, purpose-built smoke generator should be used to test for air-tightness of the containment before any abatement work commences.

4.23 The entire volume of the containment, including various chambers of the decontamination unit(s), should be filled with sufficient amount of smoke to reduce the visibility inside to no more than 2 m. The smoke generator should be switched off and a thorough check for smoke leakage can proceed from outside the containment. Any leaks spotted should be immediately rectified.

4.24 When integrity of the containment is satisfactorily concluded, the air movers (other than the ones on standby which should be tested separately) should be switched on and timed to find out how long it would take to clear 90% of the smoke for 6 air changes per hour. The acceptable time limit should be within 30 minutes. Meanwhile, filtration efficiency of the air movers should be checked qualitatively by looking for traces of white fume at their exhaust.

4.25 The full containment and the decontamination unit(s) should be thoroughly checked for leaks by the supervisor with the aid of smoke tubes for at least twice per shift.

4.26 A negative pressure monitoring equipment with an audible alarm should be installed at the location of containment with the lowest pressure differential to monitor the static negative pressure inside the containment. The monitoring equipment should also produce hard copy time record of pressure differential on a continuous basis and the records (in the form of chart recording) should be kept on site for inspection by the Consultant.

4.27 Leakage air samples outside the containment in uncontaminated areas should be carried out daily during the removal work. If air samples indicate fibre counts greater than original background levels or greater than 0.01 fibre/ml, whichever is larger, work should stop immediately for inspection and remedy.

4.28 After completion of the removal work, all visible residue should be removed from the containment. During this process, the surfaces being cleaned must be kept wet. Only non-powered hand tools should be used and all debris should be removed by wet-wiping and HEPA vacuuming as soon as they are produced.

4.29 Upon completion of wire-brushing of surfaces previously covered with asbestos, final clean-up of work area can start. A HEPA vacuuming followed by wet-wiping should be performed on all surfaces from top to bottom and in a direction from the decontamination unit towards the air movers. Wet-wiping materials such as rags, mops and sponges must be discarded after a single use to avoid re-contamination.

4.30 All exposed plastic surfaces inside the containment including the decontamination unit(s) should be sprayed with a PVA solution, allowed to dry, peeled off (only the innermost layer) and placed in approved plastic bags for disposal as asbestos waste.

4.31 The 'new' plastic surfaces i.e. the second plastic layer, should be HEPA vacuumed and wet-wiped to remove any visible debris. The work area should then be ready for penultimate air tests (evenly distributed inside the abatement area) to check on the effectiveness of cleaning.

4.32 If the result of the test is below 0.01 fibre/ml, a thorough visual inspection should be made by the Consultant to certify that all visible asbestos has been removed to a satisfactory approved standard and no debris or dust deposit are present.

4.33 Upon approval by the Consultant, all surfaces stripped of cement board should be sealed with PVA or other suitable sealing materials. The second layer of plastic sheeting should be PVA sprayed and removed for disposal as asbestos waste. Peripheral barrier sheeting including the decontamination unit(s) should remain in place so that the work area should still be segregated from the environment.

4.34 The area should be vacated for 12 hours to allow fibres to settle and then all objects and surfaces in the work area should be HEPA vacuumed and wet-cleaned systematically from top to bottom and in a general direction from the decontamination unit(s) towards the air movers.

4.35 Final clearance air tests evenly distributed inside the abatement area should be performed to confirm an air quality of no more than 0.01 fibre/ml is attained or else the work area should be recleaned and further clearance air tests should be carried out.

4.36 Upon a satisfactory test result, all remaining plastic sheeting, decontamination facility, air movers, etc. may be dismantled. All used plastic sheeting, etc. should be disposed of as contaminated waste.

4.37 All used cloths, gloves and polythene sheeting should be treated as asbestos waste and be disposed of with the ACM removed. All asbestos wastes generated are to be treated as type 3 asbestos waste.

4.38 The site should be thoroughly cleaned with a HEPA vacuum cleaner. The site should be declared clean for re-occupation only after a satisfactory final inspection carried out by the Consultant.

If during the course of asbestos abatement works an accident or adverse weather is encountered the emergency procedures as described in Appendix 9 should be followed.

5.0 METHOD FOR THE REMOVAL OF ASBESTOS-CONTAINING CORRUGATED SHEETS

The procedures described below are applicable to the asbestos-containing corrugated sheets present in the premises (ACM Item No.: ED/0011-2 described in AIR Report No.: 0014/09/ED/0011B) and the set up of work area is illustrated in Appendix 2.

5.1 All workers should wear approved half-face respirators of minimum nominal protection factor 10, equipped with HEPA replaceable cartridge type filter, and full-body protective clothing with hoods and shoe covers.

5.2 A 3-chamber decontamination unit should be constructed to provide safe access and egress for authorised working personnel. Refer to Appendix 5 for the construction requirements and use of decontamination facilities.

5.3 Before the start of the asbestos removal work, a continuous dust barrier and wind screen of height two-metre higher than the corrugated sheet, sealed to the floor should be constructed around the work area. All opening of the work area i.e. the area under the corrugated sheet should be individually sealed off with 2 layers of polythene sheeting securely taped in place. Non-transparent tarpaulin sheets should be used to cover up the abatement work.

5.4 All floor should be masked and sealed with 2 individual layers of polythene sheeting. Each layer should be applied separately. The layers should extend at least 300 mm up all wall surfaces to form a continuous skirting and should be securely sealed with moisture resistant duct tape.

5.5 In the process of the asbestos removal only hand tools should be allowed.

5.6 Mortars or concrete materials bonding the corrugated sheet and walls should be wetted with amended water and removed using hand tools and disposed of as asbestos wastes.

5.7 The corrugated sheet should then be sprayed (using airless spray equipment) in a fine mist with amended water with sufficient frequency and quantity for enhanced penetration.

5.8 The corrugated sheet should be taken down by loosening the nuts and bolts. Great care must be exercised to minimise breakage.

5.9 Corrugated sheets removed intact should be maintained wet, wrapped in two layers of 0.15 mm polythene sheeting, labelled for disposal.

5.10 All debris should be removed by wet-wiping and HEPA vacuuming as soon as they are produced. The work area must be cleaned up thoroughly at the end of each work shift.

5.11 After completion of the removed work, surfaces which have been in contact with the corrugated sheet should be wire-brushed and wiped to remove all visible residue.

5.12 A HEPA vacuuming followed by wet-wiping should be performed on all surfaces from top to bottom.

5.13 If the Contractor is satisfy with the clean up, the floor polythene sheets should be removed so that the floor tile removal can commence.

5.14 A thorough visual inspection should then be performed by the Contractor to ensure that any debris in the form of contaminated items, dust, chips, untreated effluent, etc. have been cleared from the work area.

5.15 Reassurance air samples will be taken to monitor the cleanliness of the site after all the ACM have been removed. The air sample which shows fibre counts in excess of 0.01 fibres/ml will not be acceptable and the area will be re-cleaned again until the specified fibres level in air is attained.

5.16 When satisfactory air test result is attained, all exposed plastic surfaces inside the work area should be sprayed with a PVA solution, allowed to dry and peeled off.

5.17 All used cloth, gloves and polythene sheeting should be treated as asbestos waste and be disposed of with the corrugated sheet removed.

5.18 The site should be declared clean for re-occupation after a satisfactory final inspection carried out by the Contractor.

6.0 METHOD FOR THE REMOVAL OF ASBESTOS-CONTAINING INSULATION INSIDE SWITCH / FUSE BOX

The procedures described below are applicable to the asbestos-containing insulation inside switch / fuse box present in the premises (ACM Item No.: ED/0011-3 described in AIR Report No.: 0014/09/ED/0011B) and the set up of work area is illustrated in Appendix 2.

6.1 It is recommended to dispose of the switch / fuse box intact.

6.2 A 3-chamber decontamination unit should be constructed to provide safe access and egress for authorised working personnel. Refer to Appendix 5 for the construction requirements and use of decontamination facilities.

6.3 Before the start of the asbestos removal work, a continuous dust barrier at least 1m higher than the switch / fuse box sealed to the floor should be constructed around the work area.

6.4 All workers should wear approved half-face respirators of minimum nominal protection factor 10, equipped with HEPA replaceable cartridge type filters.

6.5 Cloths used for wet cleaning, gloves and polythene sheeting used in the following procedures should also be treated as asbestos waste and be disposed of with the fuse box removed.

6.6 All electricity supply should be cut off before the commencement of work.

6.7 Before the start of the asbestos abatement work, preliminary decontamination of the areas around the switch / fuse box should be carried out.

6.8 Movable objects around the switch / fuse box should be decontaminated before being removed.

6.9 The floor below the switch / fuse box should be covered with two layers of polythene sheeting which extend 300mm up to the wall and are sealed with adhesive tape.

6.10 The insulation materials inside switch / fuse box shall be thoroughly wetted with amended water to avoid fibre release during subsequent removal work.

6.11 All workers shall wear a pair of disposable impervious gloves and take down the whole fuse box by loosening the bolts and nuts.

6.12 Each removed switch / fuse box shall be double-bagged immediately with approved polythene bags for disposal.

6.13 The affected areas shall be wet wiped and vacuum cleaned.

6.14 Reassurance air samples should be taken to monitor the cleanliness of the site. Air sample which shows fibre counts in excess of 0.01 fibres/ml is not acceptable and the areas should be re-cleaned again until satisfactory result is obtained.

6.15 The site should be thoroughly cleaned with a HEPA vacuum cleaner. The site should be declared clean for other general renovation work only after a satisfactory visual inspection carried out by the Contractor and satisfactory reassurance test results of the site are confirmed.

If during the course of asbestos abatement works an accident or adverse weather is encountered the emergency procedures as described in Appendix 9 should be followed.

7.0 METHOD FOR THE REMOVAL OF ASBESTOS-CONTAINING CHIMNEY LAGGING AND PIPE LAGGING

7.1 The procedures described below are applicable to all asbestos-containing chimney lagging and pipe lagging in the premises (ACM Item No.: ED/0011-4 and ED/0011-5 described in AIR Report No.: 0014/09/ED/0011B) and the set up of work area is illustrated in Appendix 2.

7.2 All workers should wear approved full-face respirators of minimum nominal protection factor 100, equipped with HEPA replaceable cartridge type filters; and full-body protective clothing with hoods and shoe covers.

7.3 Cloths used for wet cleaning, gloves and polythene sheeting used in the following procedures should be treated as asbestos waste and be disposed of with the rope lagging removed.

7.4 The abatement area that contains the rope lagging to be abated should be segregated from the remainder of the work site by construction of a full containment using 0.15 mm polythene sheeting, temporary structural partition and/or raised platform. The full containment should be of a manageable size and should not exceed 2800 m^3. The removal work of rope lagging should be performed inside the full containment.

7.5 Partitions should be constructed of wood and framing or equivalent material of sufficient strength (maximum spacing 400 mm centre-to-centre) to support plastic barrier sheeting on all openings larger than 2.9 m^2 except where one dimension is 0.3 m or less or where openings are for emergency exit. As a general rule, each expanse of plastic sheeting should not exceed 2.9 m^2 without adequate continuous support.

7.6 Individual polythene sheeting should be fixed to the timber frame by running a length of duct tape on the sheeting along a line of support provided by the frame then stapling through the duct tape and applying another length of tape on top to strengthen the grip. Timber battens (say, 25 mm x 50 mm) or equivalent material may be used instead but they need to be dyed red for easy identification later on as contaminated items.

7.7 All floor and wall surfaces inside the containment and not covered by asbestos should be masked and sealed with polythene sheeting. Each layer of plastic sheeting should be applied separately and the minimum number required is as follows: -

- 2 individual layers to solid wall
- 2 individual layers to solid floor
- 3 individual layers to temporary partition wall
- 4 individual layers to temporary platform

7.8 The polythene sheeting on the floor should extend at least 300 mm up all wall surfaces to form a continuous skirting while polythene sheeting on the walls should overlap this floor skirting by a minimum of 300 mm. Floor sheeting should be applied first and followed by wall sheeting, and then alternatively until the required number of layers are met. Joints throughout should be lapped for at least 150 mm and securely sealed with moisture resistant duct tape.

7.9 Sufficient number of clear viewing panels (300 mm x 450 mm with the lower edge no more than 1.2 m above floor level) should be provided in the barrier walls of the containment at strategic locations and complete with proper means of access to facilitate observation of the abatement work from outside. The panel should comprise one 2 mm thickness clear acrylic sheet per layer of polythene sheeting, have at least 50 mm overlap with the polythene sheeting at the edges, and be securely fixed with 50 mm wide duct tape.

7.10 A 3-chamber decontamination unit should be constructed to isolate the work area permit safe access and egress of authorised working personnel. Refer to Appendix 5 for the construction and use of decontamination facilities.

7.11 The locations and arrangement of the full containments and decontamination units etc. as illustrated in Appendix 2 should be confirmed by the Contractor and Consultant appointed for the removal work, and submitted to EPD in case of any changes before the commencement of work.

7.12 HEPA-filtered air movers should be used to continuously exhaust the enclosed work area. Openings made in the full containment to accommodate the air movers must be made airtight. A minimum of six air changes per hour is required. The system should maintain a static negative air pressure of 1.5 to 4 mm water gauge inside the containment across all faces. An additional air mover should also be installed to function as a standby in the case when any of the other units breaks down. The flow capacity of the standby unit should match that of the largest unit in use.

7.13 The number of air movers required to achieve the specified air changes can be calculated

$$\text{Number of air movers required} = \frac{\text{6 air changes / hr x volume of containment } (m^3)}{\text{capacity of single air mover } (m^3 / hr)}$$

* As most air movers only work to around 60-75 % of the capacity claimed by the manufacturer, spare capacity should be estimated for the discrepancy.

Containment No.	Estimated Volume of Containment	No. of Air Movers Required (Assumption - capacity of each air mover: 1,600 cfm)
1	30 m^3	1
3	30 m^3	1
4	50 m^3	1

7.14 No air mover should be added to or disconnected from the containment after commencement of removal of the ACMs.

7.15 Exhaust of the air mover should be ducted to the outside of the building. All ducting should be properly sealed and supported to maintain air-tight joints.

7.16 A portable, purpose-built smoke generator should be used to test for air-tightness of the containment before any abatement work commences.

7.17 The entire volume of the containment, including various chambers of the decontamination unit(s), should be filled with sufficient amount of smoke to reduce the visibility inside to no more than 2 m. The smoke generator should be switched off and a thorough check for smoke leakage can proceed from outside the containment. Any leaks spotted should be immediately rectified.

7.18 When integrity of the containment is satisfactorily concluded, the air movers (other than the ones on standby which should be tested separately) should be switched on and timed to find out how long it would take to clear 90% of the smoke for 6 air changes per hour. The acceptable time limit should be within 30 minutes. Meanwhile, filtration efficiency of the air movers should be checked qualitatively by looking for traces of white fume at their exhaust.

7.19 The full containment and the decontamination unit(s) should be thoroughly checked for leaks by the supervisor with the aid of smoke tubes for at least twice per shift.

7.20 A negative pressure monitoring equipment with an audible alarm should be installed at the location of containment with the lowest pressure differential to monitor the static negative pressure inside the containment. The monitoring equipment should also produce hard copy time record of pressure differential on a continuous basis and the records (in the form of chart recording) should be kept on site for inspection by the Consultant.

7.21 As the pipe-works are not retained, the rope laggings should be sprayed (by airless spray equipment) in a fine mist with amended water with sufficient frequency and quantity. The spray should be generous without excessive dripping and delaminating of the ACMs. The pipe-works / chimney should be cut into manageable sections by hand tools. Extreme care must be taken to minimize breakage of the ACMs.

7.22 The removal direction should be from the end where the decontamination unit is located towards the other end where the air movers are installed. The rope lagging should be removed and double-bagged immediately with approved polythene bags, labeled and disposed as asbestos waste.

7.23 Leakage air samples outside the containment in uncontaminated areas should be carried out daily during the removal work. If air samples indicate fibre counts greater than original background levels or greater than 0.01 fibre/ml, whichever is larger, work should stop immediately for inspection and remedy.

7.24 After completion of the removal work in a zone, surfaces from which rope lagging has been removed should be wire-brushed and wiped to remove all visible residue. During this process, the surfaces being cleaned must be kept wet. Only non-powered hand tools should be used and all debris should be removed by wet-wiping and HEPA vacuuming as soon as they are produced.

7.25 Upon completion of wire-brushing of surfaces previously covered with asbestos, final clean-up of work area can start. A HEPA vacuuming followed by wet-wiping should be performed on all surfaces from top to bottom and in a direction from the decontamination unit towards the air movers. Wet-wiping materials such as rags, mops and sponges must be discarded after a single use to avoid re-contamination.

7.26 All exposed plastic surfaces inside the containment including the decontamination unit(s) should be sprayed with a PVA solution, allowed to dry, peeled off (only the innermost layer) and placed in approved plastic bags for disposal as asbestos waste.

7.27 The 'new' plastic surfaces i.e. the second plastic layer, should be HEPA vacuumed and wet-wiped to remove any visible debris. The work area should then be ready for penultimate air tests (evenly distributed inside the abatement area) to check on the effectiveness of cleaning.

7.28 If the result of the test is below 0.01 fibre/ml, a thorough visual inspection should be made by the Consultant to certify that all visible asbestos has been removed to a satisfactory approved standard and no debris or dust deposit are present.

7.29 Upon approval by the Consultant, all surfaces stripped of rope lagging should be sealed with PVA or other suitable sealing materials. The second layer of plastic sheeting should be PVA sprayed and removed for disposal as asbestos waste. Peripheral barrier sheeting including the decontamination unit(s) should remain in place so that the work area should still be segregated from the environment.

7.30 The area should be vacated for 12 hours to allow fibres to settle and then all objects and surfaces in the work area should be HEPA vacuumed and wet-cleaned systematically from top to bottom and in a general direction from the decontamination unit(s) towards the air movers.

7.31 Final clearance air tests evenly distributed inside the abatement area should be performed to confirm an air quality of no more than 0.01 fibre/ml is attained or else the work area should be recleaned and further clearance air tests should be carried out.

7.32 Upon a satisfactory test result, all remaining plastic sheeting, decontamination facility, air movers, etc. may be dismantled. All used plastic sheeting, etc. should be disposed of as contaminated waste.

7.33 All used cloths, gloves and polythene sheeting should be treated as asbestos waste and be disposed of with the rope lagging removed. All asbestos wastes generated are to be treated as type 2 asbestos waste.

7.34 The site should be thoroughly cleaned with a HEPA vacuum cleaner. The site should be declared clean for re-occupation only after a satisfactory final inspection carried out by the Consultant.

If during the course of asbestos abatement works an accident or adverse weather is encountered the emergency procedures as described in Appendix 11 should be followed.

8.0 DECONTAMINATION PROCEDURE FOR MISSING ACM

8.1 Site Management

- According to the Air Pollution Control Ordinance (APCO), the owner should employ a registered asbestos contractor (RACr) to conduct the decontamination work.
- The entrances and windows inside the rooms should remain locked and seal off any edges/cracks with duct tapes. Warning labels shall be posted outside the rooms
- The RACr constructs a 3-chamber decontamination unit at the entrance to the rooms to isolate the contaminated areas and to permit safe access and egress of authorized working personnel. The construction requirement of the decontamination unit refers to the Appendix 5. The layout of the work areas are shown in Appendix 2

8.2 Method of Decontamination

- The RACr's workers shall wear appropriate respirators and full-body protective clothing to enter the contaminated rooms through the 3-chamber decontamination unit;
- All movable objects within the work area should be decontaminated by wet wiping and vacuuming before being removed. Those objects which will remain should be decontaminated and sealed with a minimum of 2 layers of polythene sheets to protect them from re-contamination.
- After carrying out the preliminary decontamination, the work area should be vacated for 12 hours to allow fibres to settle and then all objects and all surfaces of the work area should be HEPA vacuumed and wet cleaned second time. The innermost plastic sheet should be PVA sprayed and removed.
- Two re-assurance air test of the work area will be performed by the RAL inside the full containment. The re-assurance air test is considered satisfactory only when every collected sample is less than 0.01 fiber/ml as determined by phase contrast microscopy.
- If the result of the re-assurance air test is satisfactory. A thorough visual inspection should be made by a supervising registered asbestos consultant to certify that preliminary decontamination has been satisfactorily completed.

9.0 AIR MONITORING STRATEGIES

The following air monitoring tests should be conducted before, during and after the asbestos abatement work.

9.1 For the removal of asbestos-containing cement board, chimney lagging and pipe lagging (ACM Item No. ED/0011A-1, ED/0011A-5 and ED/0011A-6):

Type of Sampling	No. of sample	Location
Background	3	Inside each work area.
Leakage	2 1 1	Outside each containment. Inside each clean room. 1.5 m from each operating air mover.
Personal	1 per 4 workers	Inside each containment.
Penultimate and Final Clearance*	2	Inside each containment.

* The number of penultimate / final clearance sample are derived from the method describe in the Code of Practice on Asbestos Control – Asbestos Work Using Full Containment or Mini Containment Method.

9.2 For the removal of asbestos-containing corrugated sheets (ACM Item No. ED/0011A-2):

Type of Sampling	No. of sample	Location
Personal	1 per 4 workers	Inside the segregation.
Reassurance	2 5 (for Block 16)	Inside the work area, segregation.

Detailed descriptions and requirements of the air tests are given in Appendix 10.

9.3 For the removal of asbestos-containing insulation inside switch / fuse box (ACM Item No.: ED/0011A-3):

Type of Sampling	No. of sample	Location
Personal	1 per 4 workers	Inside each segregation.
Reassurance	1	Inside each work area.

Detailed descriptions and requirements of the air tests are given in Appendix 10.

9.4 For the decontamination work of missing ACM

Type of Sampling	No. of sample	Location
Personal	1 per 4 workers	Inside the segregation.
Reassurance	2	Inside the segregation.

After the removal of all asbestos wastes in the temporary waste storage area, one reassurance air test should be carried out in each storage area.

Detailed description and requirements of the tests are contained in Appendix 10.

10.0 HANDLING OF ASBESTOS WASTE

The amount of asbestos-containing materials to be removed is estimated to be as follows:

Nature of Materials	Type	Estimated Quantity	Estimated Nos. of Bags
Cement Board	3	2 m^2	5
Corrugated Sheets	3	162 m^2	545
Switch / Fuse Box	2	11 nos.	6
Chimney Lagging and Pipe Lagging	2	12 m	10

Asbestos waste generated should be handled and stored according to procedures documented in Appendix 11.

Prepared by : **Steven Wong and Yu Lap Bong**

Certified by :

Colin Yung
Registered Asbestos Consultant

Date : 23 November 2011

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APPENDIX 1

Duties of Registered Asbestos Consultant, Contractor, Laboratory and Main Contractor

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DUTIES OF REGISTERED ASBESTOS CONSULTANT, CONTRACTOR, LABORATORY AND MAIN CONTRACTOR

Duties of registered asbestos consultant, contractor, laboratory and main are summarised below:-

Duties of Registered Asbestos Consultant

Before the commencement of asbestos abatement works, a registered asbestos consultant (hereinafter called "the Consultant") should be appointed to supervise the asbestos abatement work and perform the following duties:-

- to supervise the carrying out of the Asbestos Abatement Plan and the conduct of any asbestos abatement work;
- to certify completion of asbestos abatement work as specified in the Asbestos Abatement Plan;
- to advise on alternative control methods and their technical and cost implication;
- to advise on air and bulk sampling;
- to advise on other matters relating to the use and handling of asbestos containing materials;
- to notify the Environmental Protection Department of any modification of the content of the Asbestos Abatement Plan before implementing the modification; and
- to notify the Environmental Protection Department of any contravention of a requirement under the APCO.
- to submit a Completion Report to Environmental Protection Department after completion of work within 1 month which include the waste trip tickets and air monitoring results.

Duties of Registered Asbestos Contractor

A specialist contractor from the register kept by the Environmental Protection Department (hereinafter called "the Contractor") should be employed to carry out the abatement works. A full-time registered asbestos supervisor should be employed for the daily supervision of the abatement work. The abatement procedures should comply with the asbestos abatement plan, current local regulations and codes of practice.

Duties of Registered Asbestos Laboratory

A HOKLAS accredited laboratory from the register kept by the Environmental Protection Department (hereinafter called "the Laboratory") should be engaged to conduct air monitoring before, during and after the completion of the asbestos abatement works.

Duties of Main Contractor

The main contractor should provide all support and access for the registered asbestos consultant, contractor and laboratory during the course of asbestos abatement works. The main contractor should prevent any unauthorised disturbance to the asbestos materials identified within the site area. The main contractor should provide the double bamboo scaffolds and dust barriers as mentioned in Section 4.

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APPENDIX 2

Layout Plan for Abatement

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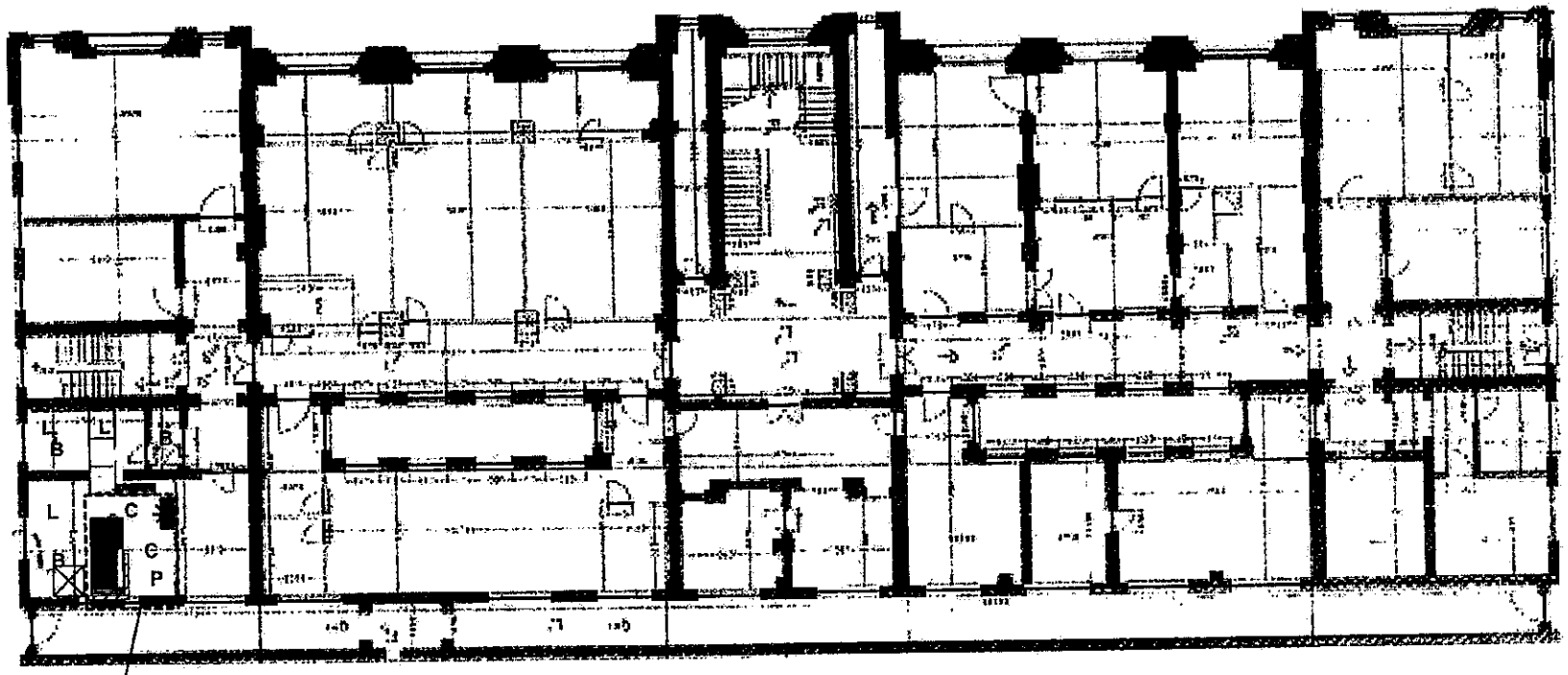

Containment No. 1
Vol. ~ 30 cu.m
Min. Air Mover Capacity Required ~ 177 cfm

Air Monitoring
B - Background
P - Personal
C - Penultimate / Final Clearance
L - Leakage

1/F, Block 1

Figure: 1

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Abatement Plan 1/F, Block 1, Headquarter Block

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:
- Electric Generator with ACM Pipe Lagging (ACM Item No. ED/0011-4)
- ACM Switch / Fuse Box (ACM Item No. ED/0011-3)
- Decontamination Unit
- Containment
- Viewing Panel
- Air Mover
- Flexible Duct

Rev.	Date
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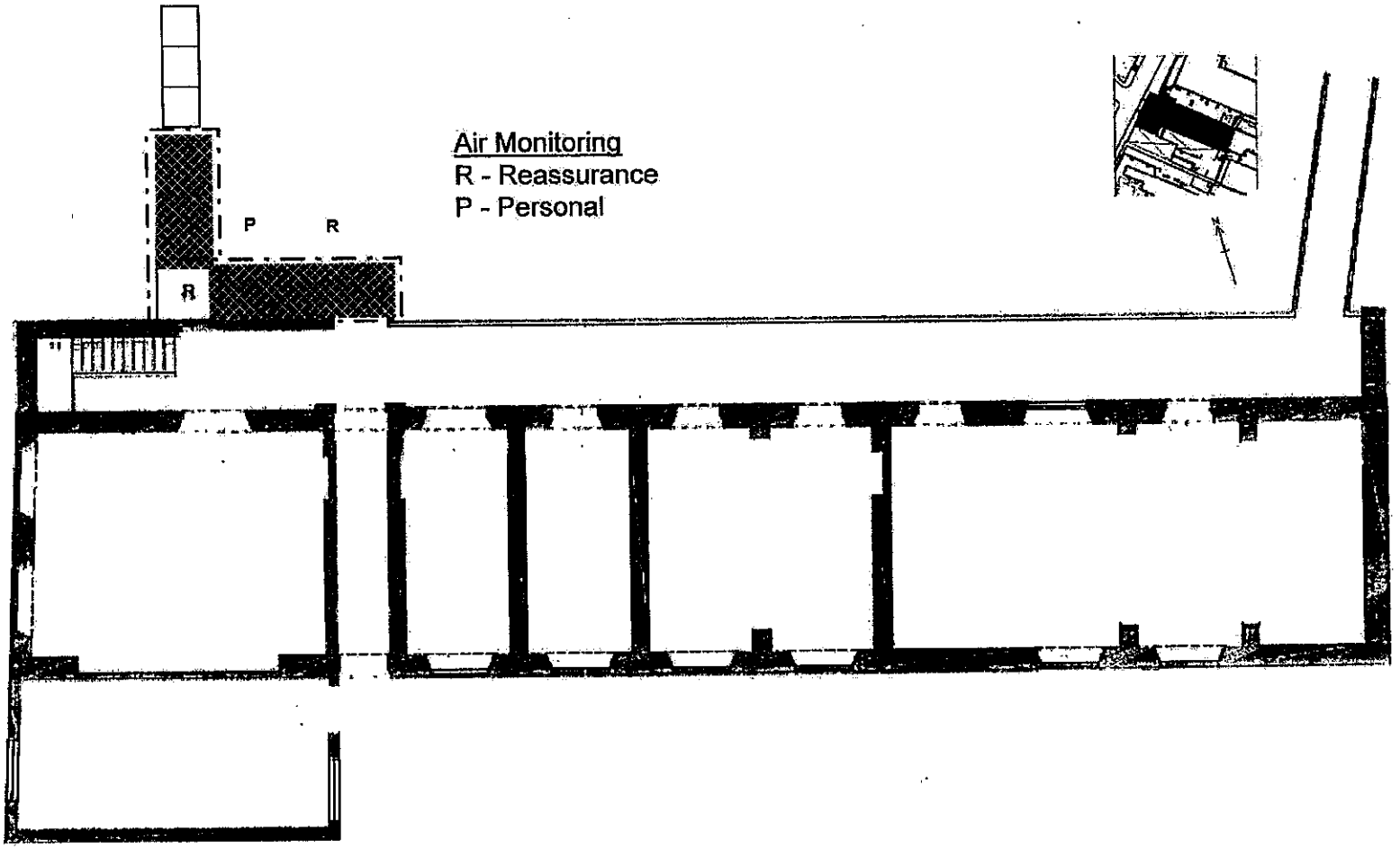

FLOOR PLAN (BLOCK 8 - ABLUTIONS BLOCK - GROUND FLOOR)

Figure: 2

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Abatement Plan G/F, Block 8, Ablutions Block

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

ACM Corrugated Sheet (Type 1) (ACM Item No. ED/0011-2)

Segregation

Decontamination Unit

Rev.	Date
0	23/11/2011

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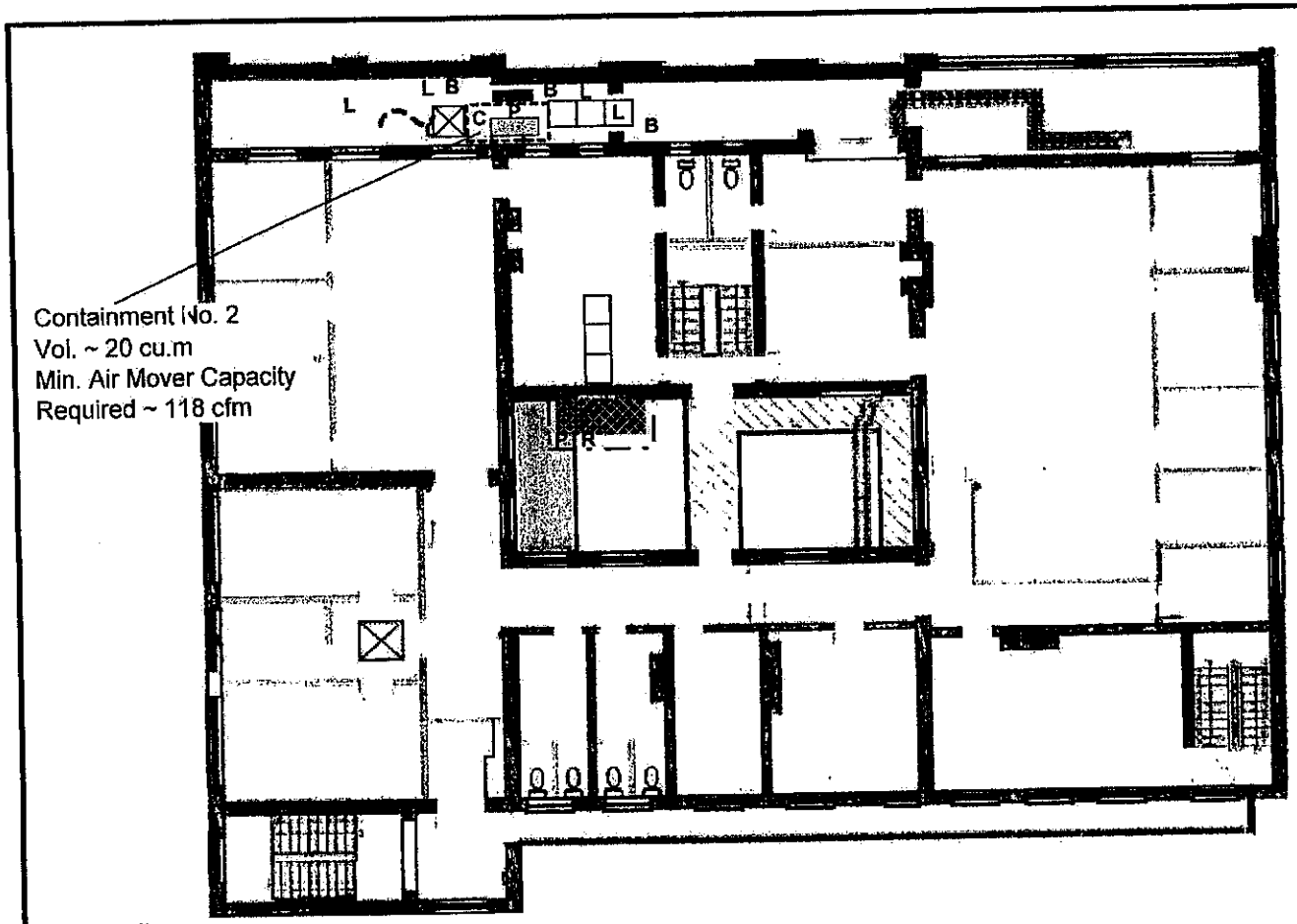

Air Monitoring
R - Reassurance
P - Personal

Air Monitor
B - Background
P - Personal
C - Penultimate / Final Clearance
L - Leakage

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - SECOND FLOOR)

Figure: 3

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Abatement Plan 2/F, Block 9, Central Magistracy

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:
- ACM Cement Board (ACM Item No. ED/0011-1)
- ACM Corrugated Sheet (Type 1) (ACM Item No. ED/0011-2)
- Segregation
- Decontamination Unit
- Containment
- Viewing Panel
- Air Mover
- Flexible Duct

Rev.	Date
0	23/11/2011

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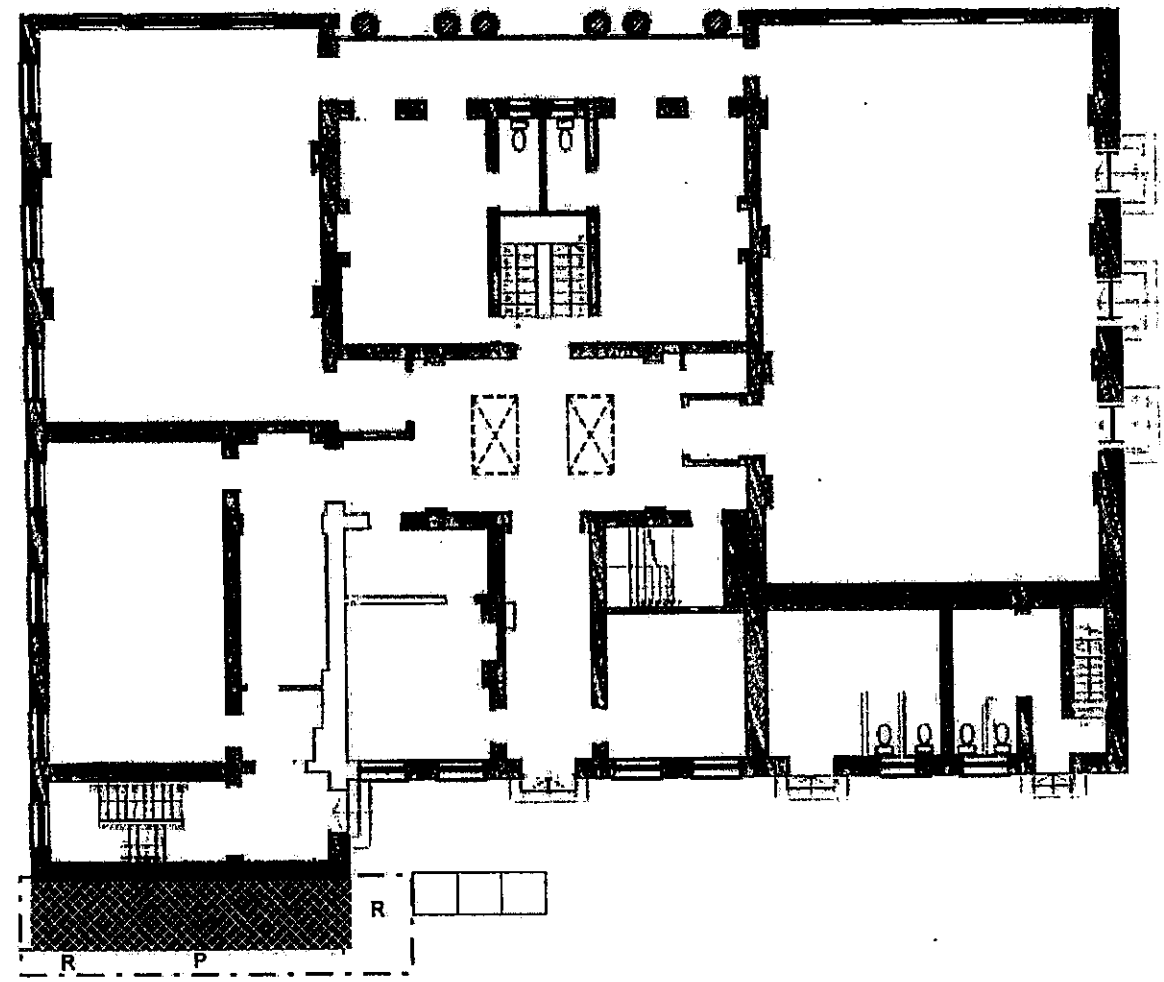

Air Monitoring
R - Reassurance
P - Personal
B - Background

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - GROUND FLOOR)

Figure: 4

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Abatement Plan G/F, Block 9, Central Magistracy

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

ACM Corrugated Sheet (Type 1) (ACM Item No. ED/0011-2)

Segregation

Decontamination Unit

Rev.	Date
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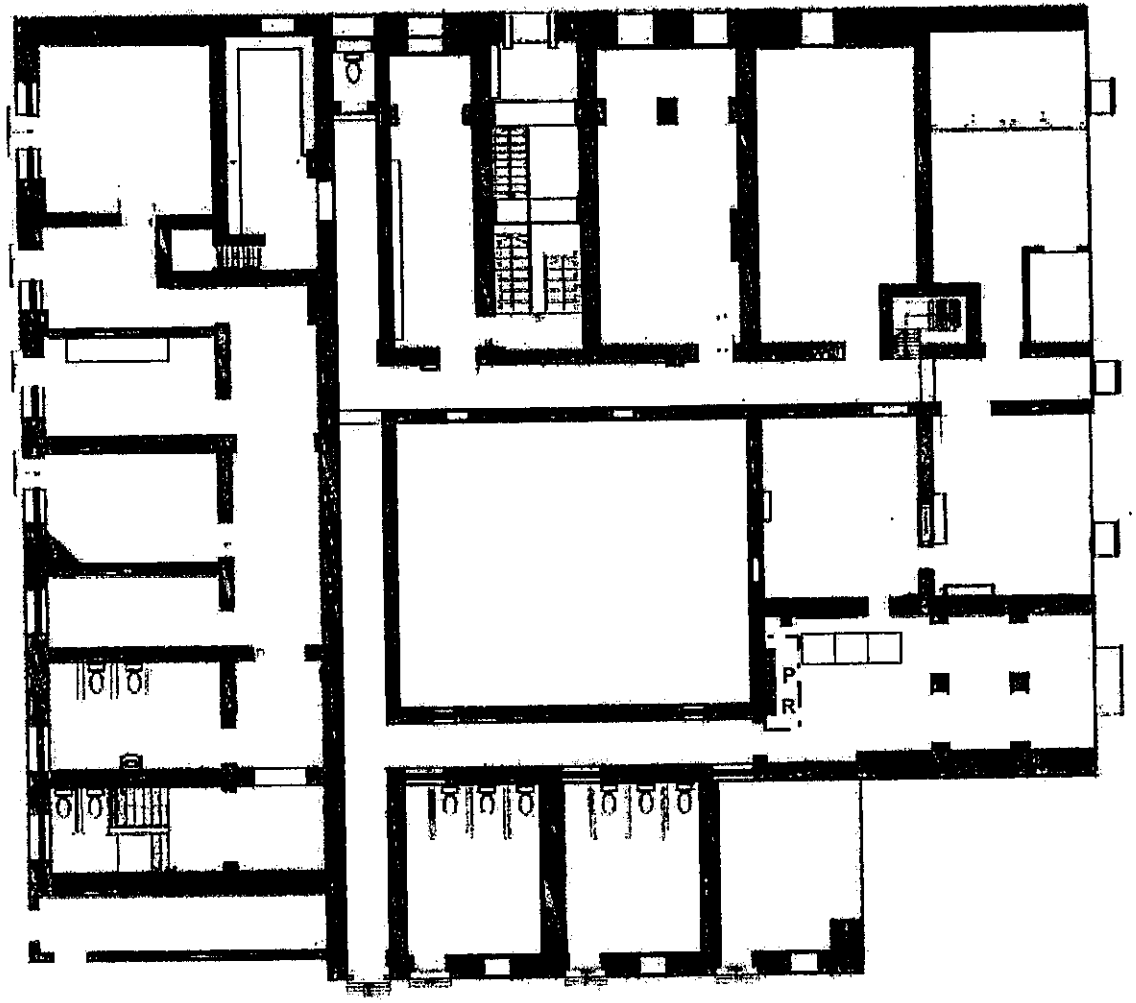

Air Monitoring
R - Reassurance
P - Personal

FLOOR PLAN (BLOCK 9 - CENTRAL MAGISTRACY - BASEMENT FLOOR)

Figure: 5

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
B/F, Block 9, Central Magistracy ACM Abatement Plan

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

- ACM Switch / Fuse Box (ACM Item No. ED/0011-3)
- Segregation
- Decontamination Unit

Rev.	Date
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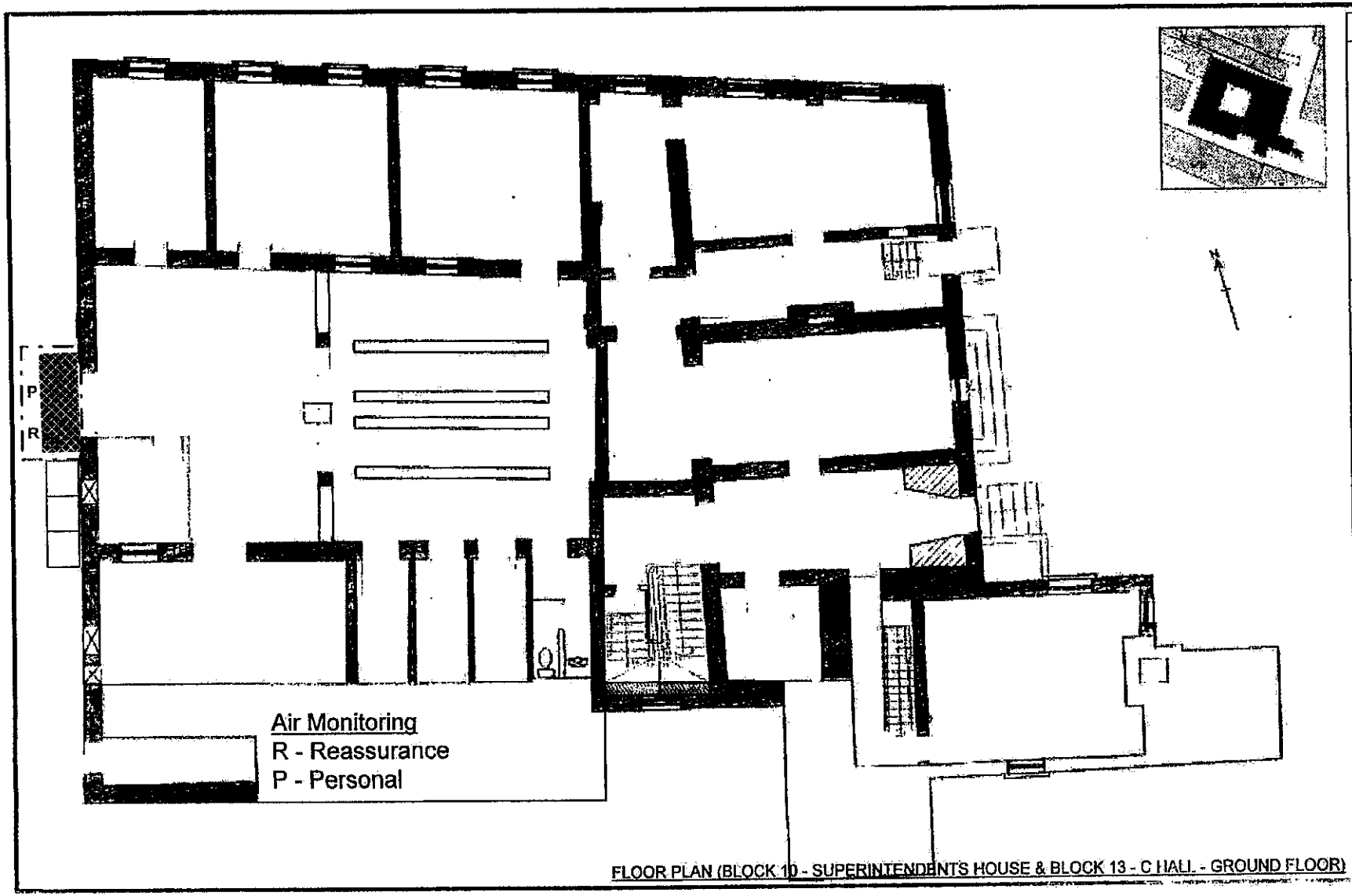

FLOOR PLAN (BLOCK 10 - SUPERINTENDENT'S HOUSE & BLOCK 13 - C HALL - GROUND FLOOR)

Figure: 6

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Abatement Plan G/F, Block 10, Superintendents House & Block 13, C Hall

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:
ACM Corrugated Sheet (Type 1) (ACM Item No. ED/0011-2)
Segregation
Decontamination Unit

Rev.	Date
0	23/11/2011

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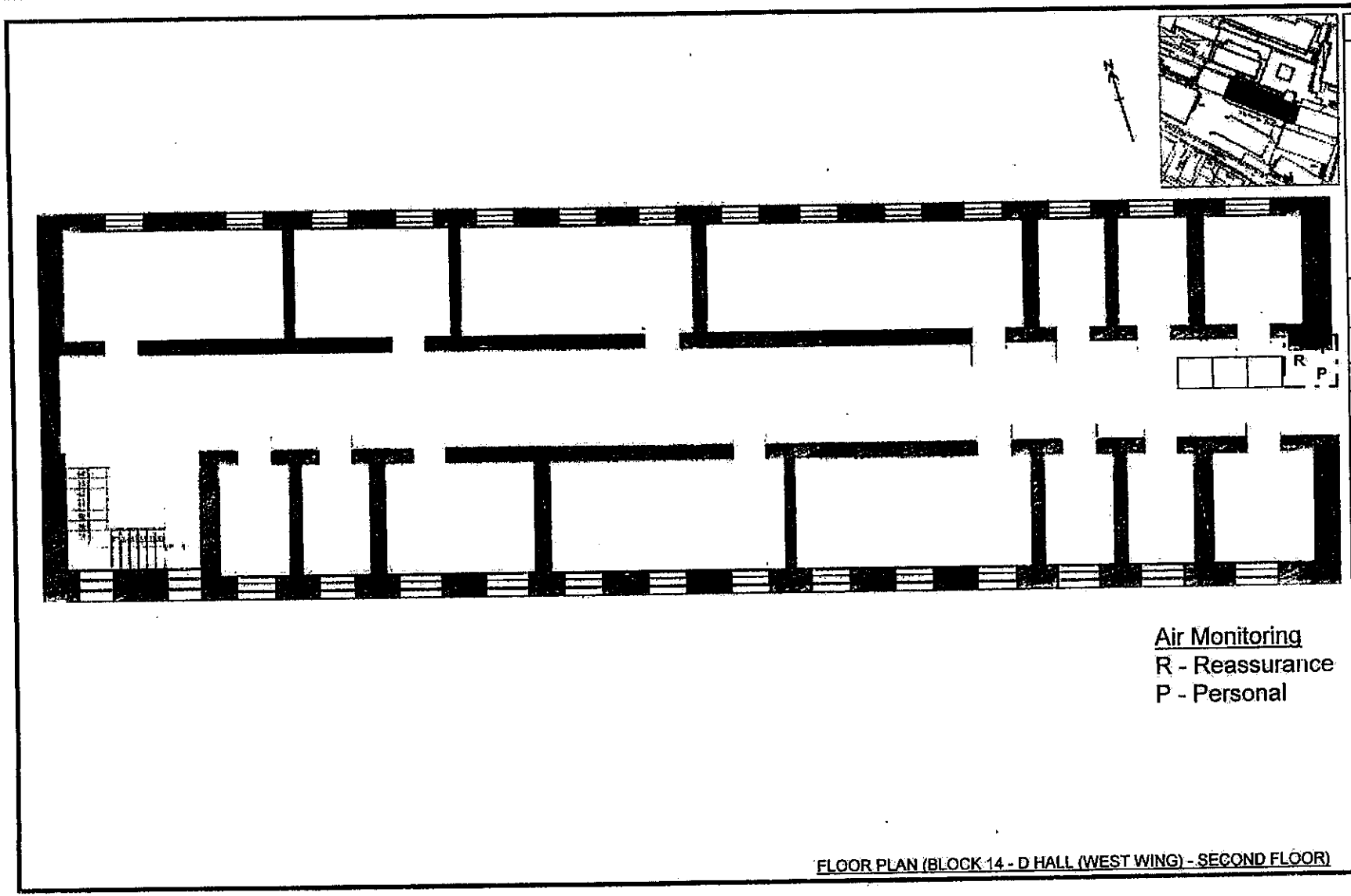

FLOOR PLAN (BLOCK 14 - D HALL (WEST WING) - SECOND FLOOR)

Figure: 7

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Abatement Plan
2/F, Block 14,
D Hall (West Wing)

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

- ACM Switch / Fuse Box (ACM Item No. ED/0011-3)
- Segregation
- Decontamination Unit

Rev.	Date
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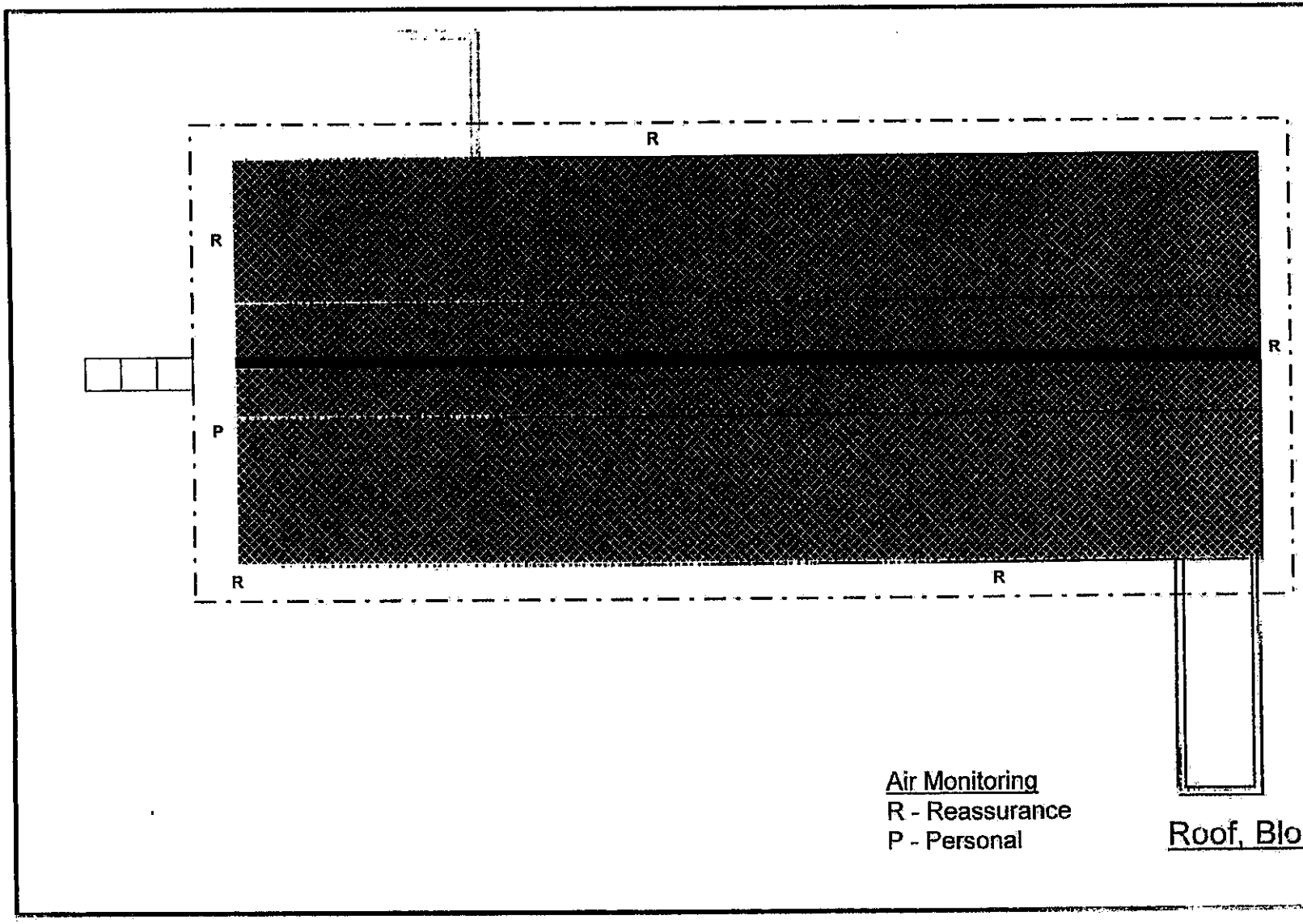

Figure: 8

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Abatement Plan Roof, Block 16, Workshops / Laundry

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

ACM Corrugated Sheet (Type I) (ACM Item No. ED/0011-2)

Segregation

Decontamination Unit

Rev.	Date
0	23/11/2011

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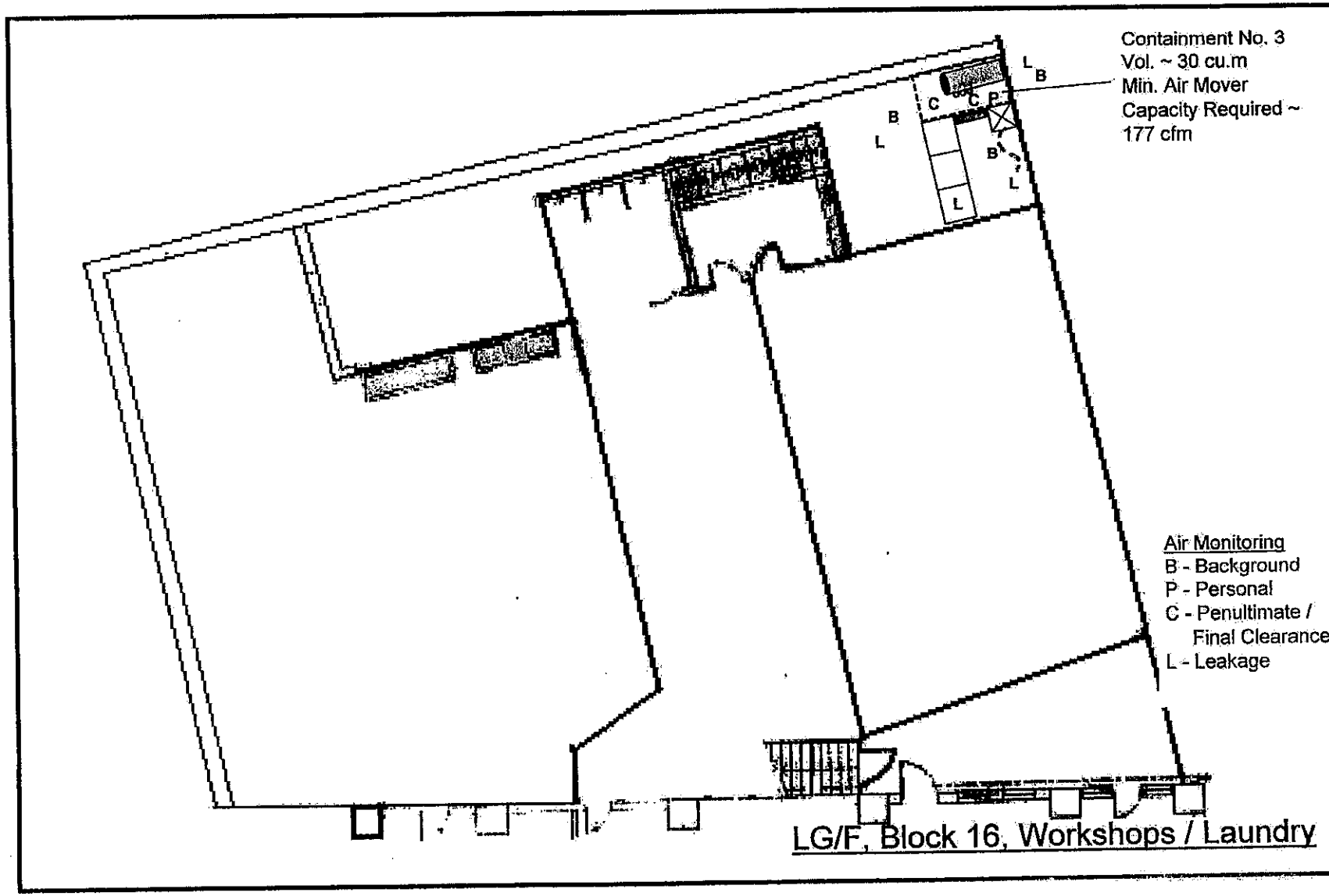

Figure: 9

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Abatement Plan LG/F, Block 16, Workshops / Laundry

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

- Laundry Machine with ACM Pipe Laggings (ACM Item No. ED/0011-6)
- Decontamination Unit
- Containment
- Viewing Panel
- Air Mover
- Flexible Duct

Rev.	Date
0	23/11/2011

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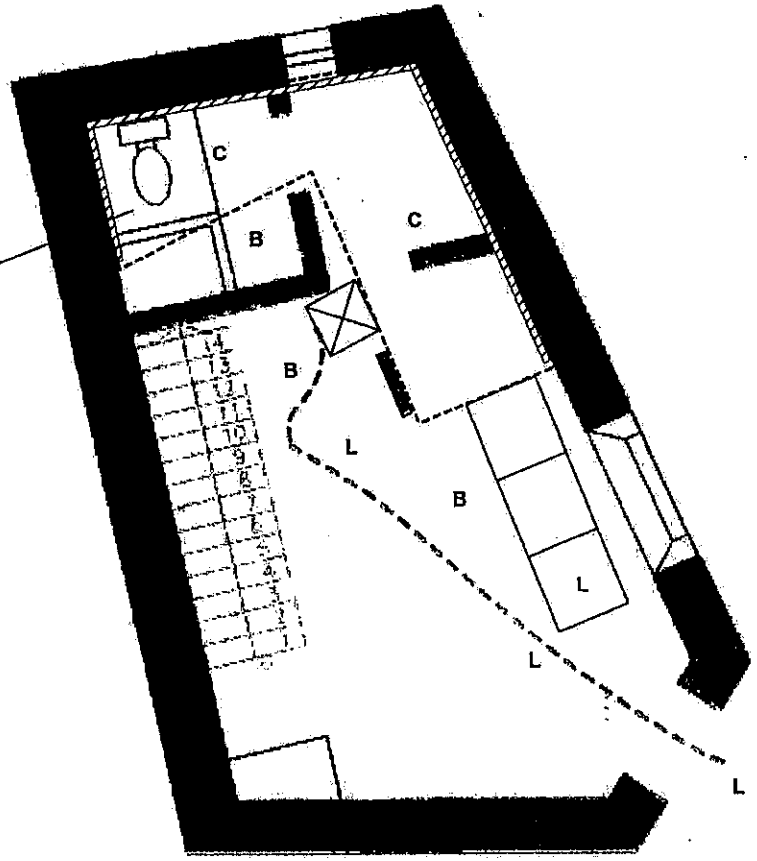
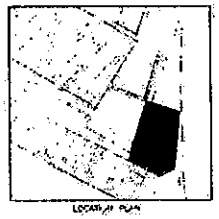
Containment No. 4
Vol. ~ 50 cu.m
Min. Air Mover Capacity
Required ~ 294 cfm





Air Monitoring
B - Background
P - Personal
C - Penultimate / Final Clearance
L - Leakage

FLOOR PLAN (BLOCK 19 - BAUHINIA HOUSE - GROUND FLOOR)

Figure: 10

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
ACM Abatement Plan G/F, Block 19, Bauhinia House

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:
- ACM Pipe Lagging (ACM Item No. ED/0011-5)
- Decontamination Unit
- Containment
- Viewing Panel
- Air Mover
- Flexible Duct

Rev.	Date
0	23/11/2011

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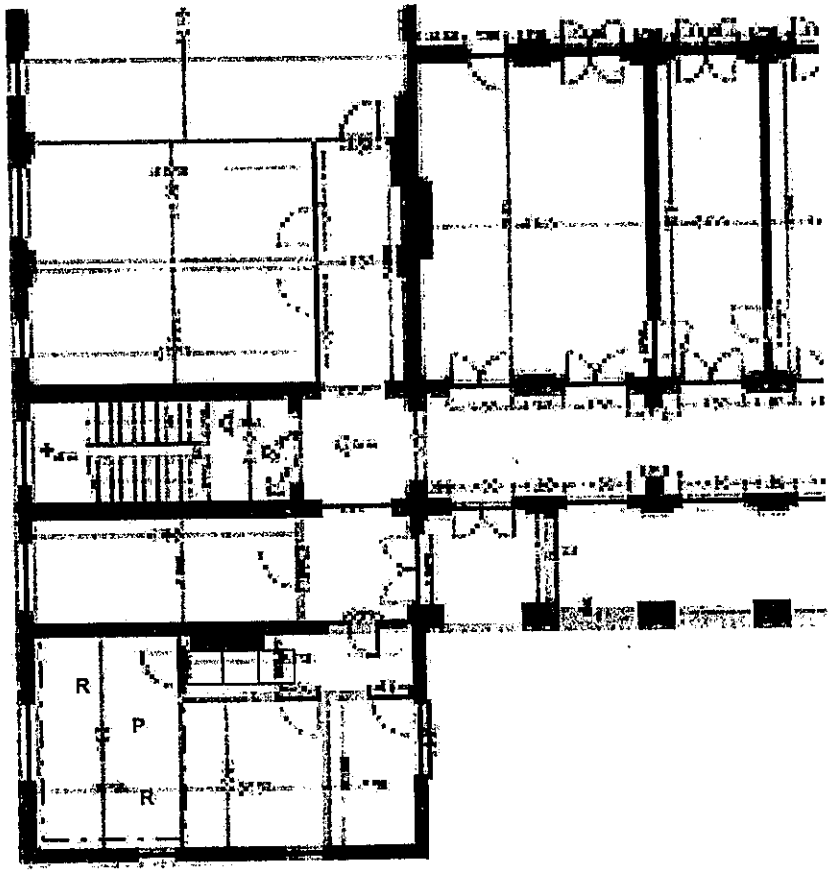

Air Monitoring
R - Reassurance
P - Personal
B - Background

2/F., Block 1

Figure: 11

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Decontamination Layout Plan
2/F., Block 1

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale.

Legend:

Decontamination Unit

Segregation

Rev.	Date
0	23/11/2011

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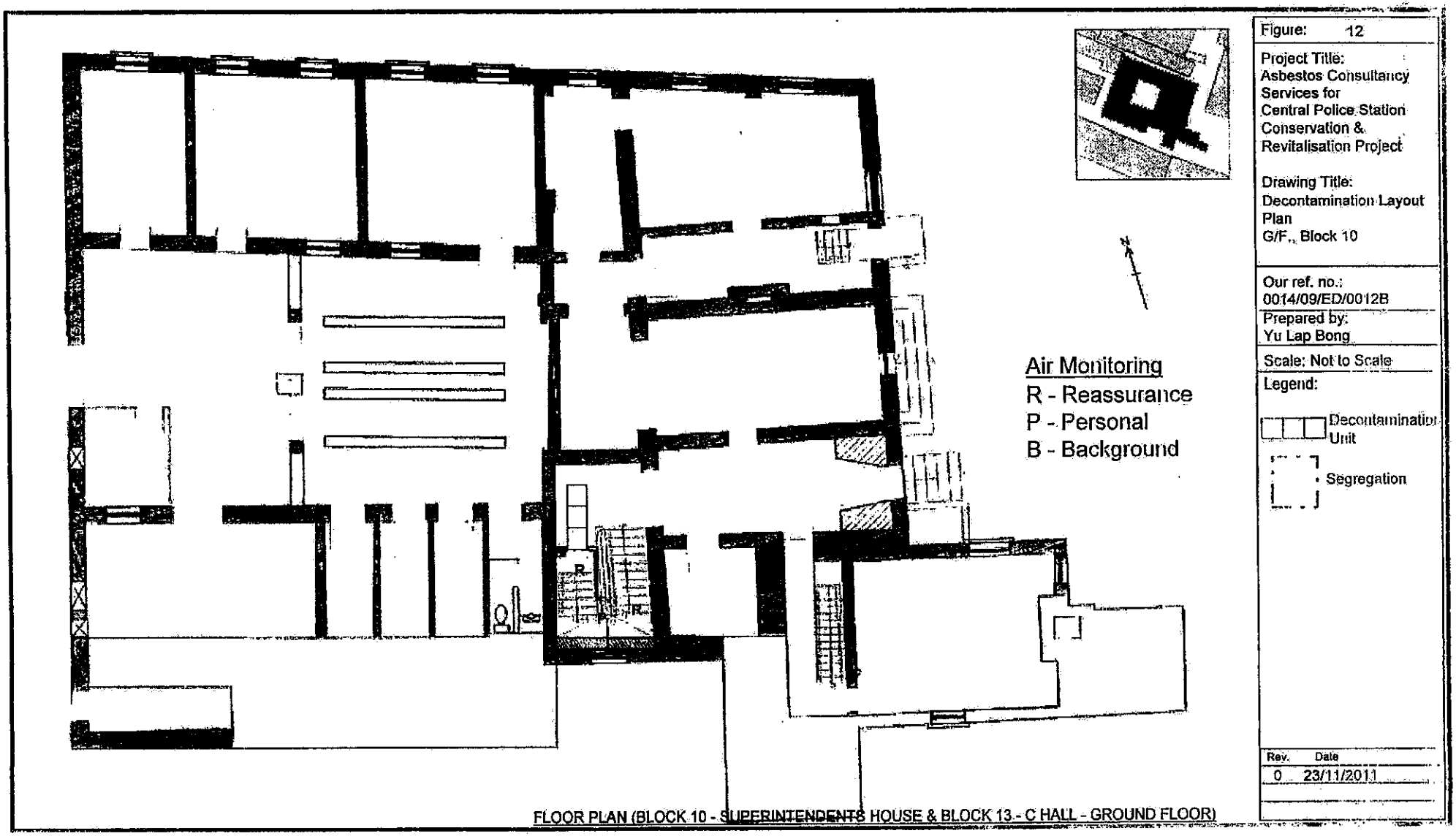

FLOOR PLAN (BLOCK 10 - SUPERINTENDENTS HOUSE & BLOCK 13 - C HALL - GROUND FLOOR)

Figure: 12

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Decontamination Layout Plan
G/F., Block 10

Our ref. no.:
0014/09/ED/0012B

Prepared by:
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Scale: Not to Scale

Legend:

Decontamination Unit

Segregation

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0	23/11/2011

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APPENDIX 3

Location of Temporary Asbestos Waste Storage Area

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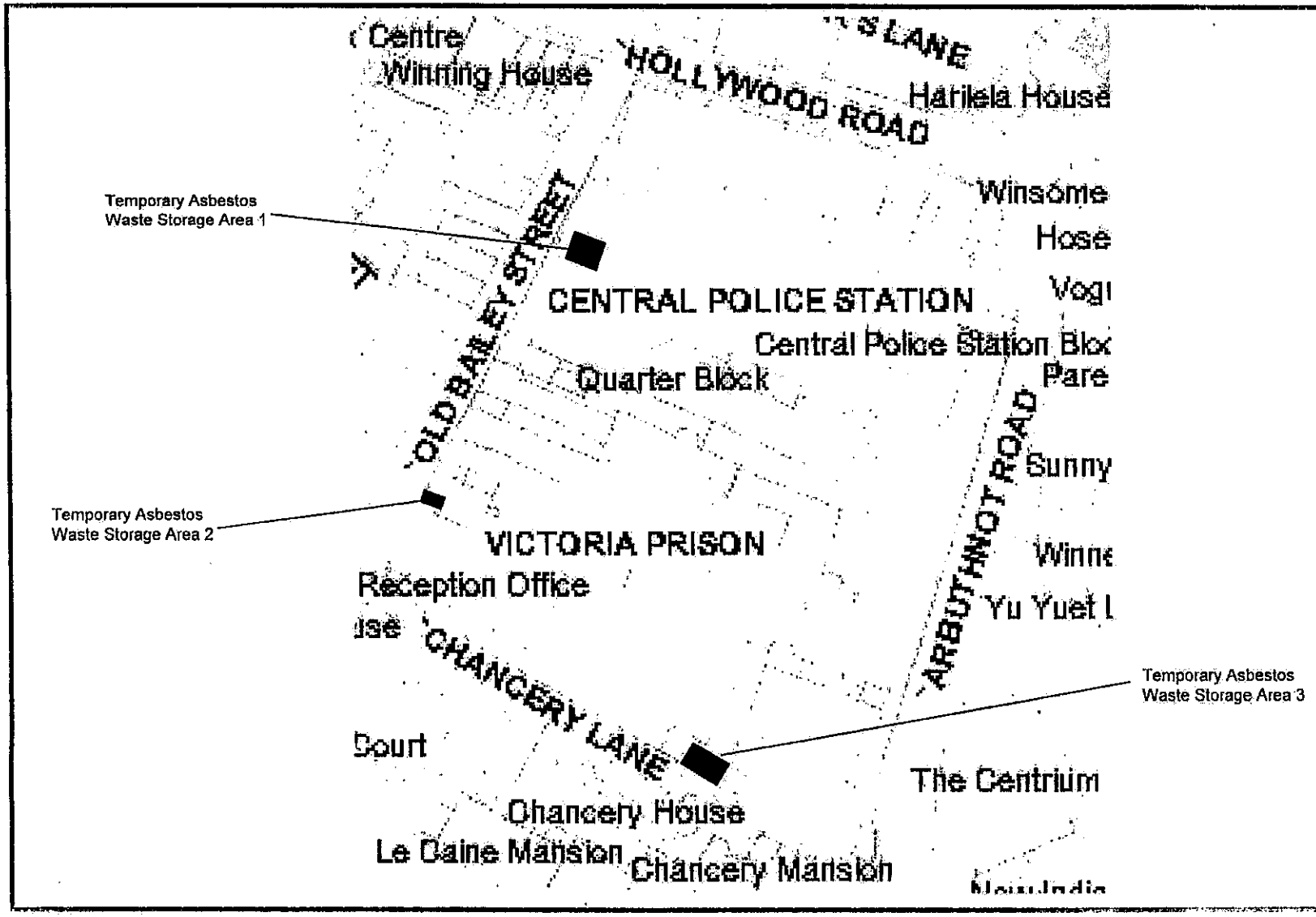

Figure: 13

Project Title:
Asbestos Consultancy Services for Central Police Station Conservation & Revitalisation Project

Drawing Title:
Temporary Asbestos Waste Storage Area

Our ref. no.:
0014/09/ED/0012B

Prepared by:
Yu Lap Bong

Scale: Not to Scale

Legend:

Temporary Asbestos Waste Storage Area

Rev.	Date
1	23/11/2011

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APPENDIX 4

Site Management

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SITE MANAGEMENT

The Contractor is required to visit all areas within the premises and acquaint themselves with the facilities for access, services, local condition, nature, volume and particular conditions which appertain to the asbestos materials, as stated in the Asbestos Investigation Report, to be removed from the site. Details of site management as outlined below should be followed.

- The owner of the premises shall ensure that all the identified ACMs are required to be labelled according to the specification given in the Code of Practice on the Preparation of Asbestos Investigation Reports, Asbestos Abatement Plans and Asbestos Management Plans, issued by the Environmental Protection Department (EPD).

- After the site visit, the Contractor shall prepare a proposed work program to show the commencement and completion of each and every stage of the works and provide copies of this program to the Main Contractor and EPD for reference.

- Prior to commencement of the asbestos abatement works, the Contractor shall notify the Labour Department and the Environmental Protection Department of the intended work on a specified notification form 28 days in advance.

- The Contractor should also coordinate the asbestos disposal work with and give notice to the Chemical Waste Disposal Section of the Waste and Water Management Group of the EPD (located at 25/F., Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong; phone 2835-1187; fax. 2305-0453) in a prescribed form as required under section 17 of the Waste Disposal Ordinance for dumping of the asbestos waste at the government appointed disposal site, and comply with the trip ticket system for disposal.

- All workers prior to working on asbestos must have valid medical certificates or equivalent examination certifying their fitness to work on asbestos. The Contractor should also keep X-ray films or certificates available on site for inspection.

- The working area should be fenced off to prevent any unauthorised entry either by temporary hoarding or tarpaulin sheeting with warning notices.

- Warning notices and signs worded in English and Chinese characters should be displayed outside the site.

- Electricity supply to the work area should be shut down and locked out before the commencement of work. The Contractor should also make sure that the water and electricity supplies are sufficient for the daily operations. Otherwise, the Contractor should make alternative arrangements for providing an adequate water and electricity supply.

- The Contractor should ensure that materials, mechanical plants and equipment brought to the site is uncontaminated and well maintained.

- A registered asbestos supervisor should be present during the course of the abatement works to oversee all safety procedures in the work area and to ensure that the work is carried out properly. Daily report should be filled by the supervisor and kept available on site for inspection by the Contractor appointed for the project. The items to be included in the daily report are listed below:-

    - Name and I.D. number of the full-time Registered Asbestos Supervisor(s) on site;
    - Name and I.D. number of all workers involved in the removal work;

- Name and I.D. number of authorised personnel visiting the work site and purpose of their visit;
- Hours and particulars of work;
- Inspection details of barrier or segregation if applicable, and action required;
- Details of air monitoring carried out;
- Number of waste bags produced and number taken for disposal; and
- Detailed account on any abnormality taking place, the corrective action adopted and the approval obtained for resumption of work.

- All personnel entering work area are required to wear approved respirators and protective clothing which should comply with the requirements of the Factories & Industrial Undertakings (Asbestos) Special Requirements enforced by the Labour Department. Respiratory protective equipment should be an approved type respirator, equipped with HEPA (High-efficiency Particulate Air) replaceable cartridge type filters.

- All air test results from the laboratory should be sent to the Consultant, Main Contractor and EPD as soon as they are available and should be made available within 24 hours of sampling. A copy of these test reports should be available on site for inspection. (It should be noted that the air monitoring requirements specified in this Abatement Plan are aimed at providing a guide to the monitoring strategy. The Consultant, who is appointed to supervise the project, based on the site situation, should decide exact sampling points).

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APPENDIX 5

Construction Requirements and Use of Decontamination Facilities

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CONSTRUCTION REQUIREMENT AND USE OF DECONTAMINATION FACILITIES

A 3-chamber airlock decontamination hygiene unit with water supply, waste water filters and HEPA vacuum unit should be constructed at the entrance of each work area. In case of the abatement area having sufficient space, a 2-chamber debris port should also be established for transferring of asbestos wastes. Workers who have entered contaminated areas must carry out thorough decontamination every time they leave the site. Detailed construction requirements and use of decontamination facilities as outlined below should be followed.

1 Construction of the Decontamination Unit

1.1 The decontamination unit should consist of three sealable compartments namely the dirty room, the shower room and the clean room. Each compartment should have a minimum size of 2m (height) x 1m (width) x 1m (length). The size of the shower room should be 1m square and 2m headroom for every shower head provided. Appropriate warning notices should be posted conspicuously at eye level at the clean entrance of the decontamination unit.

1.2 The unit can either be of a prefabricated design (thoroughly cleaned and decontaminated before re-use) or it can be constructed on site with 3 individual layers of plastic sheeting with sealed taped joints supported on suitable framing.

1.3 Each compartment is separated by a curtained doorway consisting of a polythene sheet with an I-shaped slit opening covered by a plastic flap which hangs and lifts in the direction of access. The plastic flap should have an overlap of at least 100mm on each side of the slit opening and weighted at the bottom to maintain a good seal when negative air pressure ventilation is not in use.

1.4 The shower room should be constructed and tested against water leakage and fitted with a tray of adequate size to collect waste water. Water adjustable at the shower should be provided at a minimum of one shower per 6 workers calculated on the basis of the largest shift. All waste water should be taken by a sump pump through pipework/hosing to an aquarium type filter unit to remove suspended particles (down to 5 microns) before being discharged either to the soil drainage system or drummed and then properly disposed of. The sump pump should be switched on while the facility is in use to prevent overflow of waste water. The electrical fittings, etc. must also be installed and protected to eliminate any chance of electrocution.

1.5 The shower room should be wet-cleaned and HEPA-vacuumed after each shift change and meal break.

2 Construction of the Debris Port

A 2-chamber debris port, consisting of a washing room fitted with water supply and waste water filtration facility, and a clean room, should be constructed for controlled transfer of bagged waste and equipment. Each compartment should have a minimum size of 2 m (height) x 1 m (width) x 1 m (length). The specifications of debris port are the same as those of the decontamination unit. This debris port is normally sealed and used only during the period of active waste/equipment transfer. An asbestos warning sign should be posted conspicuously at the entrance of the clean end.

3 Use of Decontamination Facilities

3.1 Procedures for Using the 3-chamber Decontamination Unit

Preparing for work

IN THE CLEAN ROOM, WORKER:

1. Enters clean room
2. Removes clothing, places in locker
3. Puts on nylon swim suit (optional)
4. Puts on clean coveralls
5. If separate disposable foot coverings are used, these are put on
6. Applies tape around ankles, wrists, etc.
7. Inspects respirator, puts it on, checks fit
8. Puts on hood over respirator headstraps
9. Proceeds to equipment room

IN THE EQUIPMENT ROOM, WORKER:

10. Puts on any additional clothing - deck shoes, hard hat, etc.
11. Collects necessary tools and proceeds to Work Area

Exiting

IN INDIVIDUAL WORK AREA, WORKER:

12. Cleans tools and equipment by HEPA vacuum cleaner and wet-wiping
13. HEPA vacuum or wet-wipe protective clothing
14. Removes all protective clothing except respirator
15. Wipes clean the hands and the respirator externally
16. Disposes of used wet cloths and contaminated coveralls into the labelled asbestos waste bags
17. Leaves the work area and enter the equipment room of the decontamination unit for further cleaning and disinfection

IN THE EQUIPMENT ROOM, WORKER:

18. Stores used tools and any other cleaned articles
19. Proceeds to the shower

IN THE SHOWER ROOM, WORKER:

20. Washes respirator and soaks filters (without removing)
21. Removes respirator, washes with soap and water
22. Washes swim suit
23. Thoroughly washes body and hair

IN THE CLEAN ROOM, WORKER:

24. Dries off, dresses in clean coveralls or street clothes
25. Cleans and dries respirator, replaces filters (if applicable)

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4 Procedures for Waste/Equipment Transfer through the Debris Port

4.1 Before entering the debris port, external surfaces of contaminated materials and equipment should be cleaned by HEPA vacuuming and wet-wiping in the work area. The surfaces should be further decontaminated in the washing room by 'flushing' with a fine water spray followed by wet-wiping. Workers in the clean room, who should receive the materials/equipment in 0.15mm transparent plastic bags (or sheeting as the item's physical features demand) which are then vacuum packed and gooseneck-sealed with tape.

4.2 Workers in the clean room must not enter the washing room and upon completion of work, they should discard their protective clothing/gloves etc. as contaminated waste and exit by the clean room.

4.3 Every time the debris port is in use, the main decontamination unit (for personnel access) should be closed and kept airtight in order to maintain the negative air pressure of the work area and to facilitate favourable ingress of fresh air through the debris port for dust control purpose.

4.4 The washing room should be wet-cleaned twice using amended water upon completion of waste/equipment transfer. When the main decontamination unit alternates as a debris port, the shower room should be washed immediately with cloth saturated with a detergent solution prior to wet cleaning.

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APPENDIX 6

Preliminary Decontamination

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PRELIMINARY DECONTAMINATION

Following the completion of the decontamination facilities, the work areas should be pre-cleaned systematically by HEPA-vacuuming and wet-wiping methods. Procedures of preliminary decontamination as outlined below should be followed.

1 Workers should wear half-face respirators and protective clothing.

2 All openings of the work areas such as windows, doors, power points, etc. should be individually sealed off with 2 layers of polythene sheeting securely taped in place.

3 If the asbestos-containing materials have been damaged or in poor condition, the whole unit might have been contaminated with released asbestos fibres.

4 Immediate repair to these damaged asbestos-containing materials to curb further deterioration should be carried out, but care must be taken not to disturb any of the other part of the asbestos-containing materials unnecessarily.

5 Movable objects within the areas should be decontaminated before being removed.

6 Those objects which would remain should be decontaminated and enclosed with a minimum of 2 layers of polythene sheeting sealed to protect from re-contamination.

7 Large asbestos debris should be collected and removed by hands. The work areas will be pre-cleaned by HEPA vacuuming and wet-wiping methods.

8 All used filters as well as contaminated cloths, etc. should be removed and packed for disposal as asbestos waste.

9 The work areas should be vacated for 12 hours to allow fibres to settle and then all objects and surfaces in the area should be HEPA vacuumed and wet cleaned a second time.

10 A visual inspection should be carried out by the Consultant who should verify that preliminary decontamination has been satisfactorily completed and the area deemed temporarily uncontaminated.

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APPENDIX 7

Materials and Equipment

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Materials and Equipment

The Contractor should have adequate working knowledge, standby materials and equipment for the abatement work. Documentary proof on their safety and specification e.g. Material Safety Data Sheets for chemicals, may be required for submission to EPD for endorsement. The materials and equipment used during all abatement activities are outlined below:-

- Transparent plastic sheeting of 0.15mm thickness manufactured from extruded low-density polythene to B.S. 4932 : 1973 or equivalent, in sizes to minimise the frequency of joints, should be employed.

- Duct tape and spray adhesive should be capable of sealing joints of adjacent sheets of polythene, facilitating attachment of polythene sheets to finished and unfinished surfaces, and of adhering under both wet and dry conditions, including during the use of amended water.

- Amended water should be 50% polyoxyethylene ester and 50% polyoxyethylene ether or equivalent, diluted to a specific concentration in accordance with the manufacturer's instructions.

- HEPA-filtered appliances which include air movers, vacuum cleaners should be fitted with a high efficiency particulate air filter capable of trapping and retaining 99.97% of particles (asbestos fibres) greater than 0.3 micron mass median aerodynamic equivalent diameter. For the HEPA-filtered appliances used on site, they should be properly certified as per EPD's Code of Practice on Asbestos Control. Log sheets for these appliances should also be kept on site for inspection.

- Water-based polyvinyl acetate (PVA) adhesives should be used during final clean-up of work area to encapsulate all exposed surfaces that may still be contaminated with traces of asbestos. The adhesives should be dyed, say 'red', to indicate where (and whether) they have been applied to facilitate cross-checking at a later stage.

- Polythene sheeting, transparent/colour-coded bags and containers used for packing of asbestos waste should meet the specifications given in the Code of Practice on the Handling, Transport and Disposal of Asbestos Waste issued by the Solid Waste Control Group of the EPD.

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- Respiratory protective equipment and protective clothing used for asbestos abatement should comply with the requirements of the Factories & Industrial Undertakings (Asbestos) Special Regulations enforced by the Labour Department.

Types of Respiratory Protective Equipment	Assigned Protection Factor	Maximum Use Concentration (fibres/ ml)
Disposable, half-face particulate respirator	5	0.5
Half-face particulate filter (cartridge) respirator	10	1
Powered air-purifying, loose-fitting helmet or hood respirator	25	2.5
Supplied-air, continuous-flow, loose-fitting helmet or hood respirator	25	2.5
Full-face particulate filter (cartridge) respirator	50	5
Powered air-purifying, full-face particulate respirator	100	10
Supplied-air, positive pressure demand, full-face respirator	>1000	>100
Supplied-air, continuous flow, full suit	>1000	>100

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APPENDIX 8

Local Regulations and Codes of Practice

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LOCAL REGUALTIONS AND CODES OF PRACTICE

Local regulations and codes of practice to be complied for the asbestos removal works are summarised below:-

- The Air Pollution Control Ordinance, Environmental Protection Department, Hong Kong.
- The Waste Disposal (Chemical Waste) Ordinance, Environmental Protection Department, Hong Kong.
- The Factories and Industrial Undertakings (Asbestos) Regulation (1997), Labour Department, Hong Kong.
- Code of Practice on the Preparation of Asbestos Investigation Reports, Asbestos Abatement Plans and Asbestos Management Plans, Environmental Protection Department, Hong Kong.
- Code of Practice on Asbestos Work Using Full Containment or Mini Containment Method, Environmental Protection Department, Hong Kong.
- Code of Practice on Safe Handling of Low Risk Asbestos-containing Materials, Environmental Protection Department, Hong Kong.
- Code of Practice on the Handling, Transport and Disposal of Asbestos Wastes, Environmental Protection Department, Hong Kong.
- Code of Practice on Safety and Health at Work with Asbestos, Occupational Safety and Health Branch, Labour Department, Hong Kong.

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APPENDIX 9

Emergency Procedures

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EMERGENCY PROCEDURES

Procedures in the Case of a Fire Breaks Out

If during the course of asbestos abatement work, a fire breaks out, the Contractor should immediately: -

1. Stop all work.
2. Leave the work area and follow normal decontamination procedures. For life threatening situations, however, decontamination should take a lower priority. The operatives evacuated from the containment should avoid contact with other parties to prevent spread of asbestos fibres unless proper decontamination has been performed.
3. Switch off power fuel supply to machinery and plant.
4. Seal up the decontamination unit with adhesive tape, and the exhaust outlet of the air mover(s) with plastic sheeting.
5. Leave the premises as quickly as possible.
6. Urge and assist other workers in the premises to leave if necessary.
7. Supervisor should take roll calls for this workers.

<u>After Fire</u>

8. Spray all surfaces and debris with amended water in a fine mist spray, using airless spray equipment, when the site is safe for re-entry.
9. Place all loose asbestos materials/debris into suitably labelled containers.
10. Wipe clean the surfaces and thoroughly clean the contaminated area with a HEPA vacuum cleaner once the surfaces become dry.
11. The works are allowed to proceed only after a satisfactory visual inspection by the Consultant.

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Procedures in the Case of an Accident

If during the course of asbestos abatement work, a worker collapses or some other accident occurs, the Contractor should immediately :-

1. Stop all work and if necessary remove worker or workers to safety.

2. Assist the victim(s) to follow normal decontamination procedures before exiting the work area. For life-threatening situations, however, decontamination should take a lower priority and every effort should be made to ensure the victim(s) receives immediate medical treatment.

3. Carry out normal Emergency First Aid procedures. Dial 999, and arrange for the victim(s) to be taken to a Hospital, if necessary.

4. Clean thoroughly any area contaminated during the emergency by wet-wiping and HEPA vacuuming at the earliest opportunity and ask the Consultant to verify before works are allowed to continue.

Procedures in the Case of a Rain-Storm or Typhoon

If during the course of asbestos abatement work, a Number Three Typhoon Signal or above is raised or there is a rain-storm, the Contractor should immediately :-

1. Stop all processes which would result in producing more asbestos debris.

2. Place all loose asbestos materials/debris into suitably labelled containers and remove to the secure storage area.

3. Clean the contaminated area thoroughly with a HEPA vacuum cleaner. Cut off all power and water supplies and secure all loose equipment and materials against rain-storm or typhoon damage.

4. Move all bags of asbestos waste to a secure storage area.

5. Prepare the site for visual inspection by the Contractor, who shall verify that the above measures have been carried out, before workers are allowed to leave the site.

6. Recommence the abatement works only after the rain-storm or after the Number Three Typhoon Signal has been lowered in the case of a typhoon, and the Consultant has verified that any necessary cleaning up work and repairs to the setup have been completed.

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APPENDIX 10

Air Monitoring

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AIR MONITORING

Types of Air Monitoring Tests

In order to ensure the safety of the work personnel and surrounding occupants of the premises, the following air monitoring tests are necessary: -

Background

To be carried out in each abatement area after preliminary decontamination and before abatement process to establish the normal fibre level of the area. Background sample is used to measure the concentration of fibres before any works starts, for example, to check on the presence of other sources of fibres, which may affect interpretation of the clearance indicator. If fibre level is greater than 0.01 fibre/ml, interfere sources should be identified and removed. When the interfere sources cannot be removed, the guideline of the action level should be adjusted to the measured background fibre level.

Leakage

To be carried out around the containment during asbestos work. Leakage test exceed 0.01 fibre/ml indicate leak of contaminated air from the containment or work area. If leakage test result is equal to or greater than 0.01 fibre/ml, work should be stopped immediately. The cause for elevated fibre counts should be identified. Remedial action, such as cleanup of surfaces outside but within 6 m of the containment by HEPA vacuuming and wet-wiping methods, should then be carried out prior to resuming the asbestos abatement works.

Personal

To be carried out by the worker (the filter holder should be placed within 200 mm of the worker's breathing zone) when carrying out asbestos work. The personal test is used to evaluate the exposure level of the workers to asbestos dust and the workmanship. When the personal test result exceeds the control limit, the contractor should review the work method to minimize the generation of dust. In addition, the protection level of the RPE should be evaluated to ensure that all workers are under adequate protection.

Penultimate

To be carried out after removal of asbestos containing material and a thorough cleaning of all surfaces inside the work area. When penultimate test result exceeds 0.01 fibre/ml, it indicates that high level of asbestos dust present inside work area. The whole work area should be HEPA vacuumed and wet wiped again and penultimate air test should be retaken. These procedures will be repeated until the penultimate test result is satisfactory.

Final Clearance

To be carried out following satisfactory visual inspection by the Consultant and a further thorough wet cleaning and vacuuming of all surfaces. When clearance test result exceeds 0.01 fibre/ml, it indicates that high level of asbestos dust present inside work area. The whole work area should be HEPA vacuumed and wet wiped again and clearance air test should be retaken. These procedures will be repeated until the penultimate test result is satisfactory.

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Reassurance

To be carried out after the removal and a thorough visual inspection of the work area (by the Contractor) that is clean, dry and free of any debris. When reassurance test result exceeds 0.01 fibre/ml, it indicates that high level of asbestos dust present inside work area. The whole work area should be HEPA vacuumed and wet wiped again and reassurance air test should be retaken. These procedures will be repeated until the penultimate test result is satisfactory.

Reference Standards

The following standards are adopted: -

Type of air monitoring test	Reference Standards
Background	<0.01 fibre/ml
Leakage	<0.01 fibre/ml
Personal	<0.2 fibre/ml for amosite and crocidolite <0.5 fibre/ml for other asbestos
Penultimate, Final Clearance	<0.01 fibre/ml
Reassurance	<0.01 fibre/ml

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APPENDIX 11

Handling and Storage of Asbestos Waste

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HANDLING AND STORAGE OF ASBESTOS WASTE

1 Asbestos waste generated during the disposal operation should be placed directly into suitably labelled containers, vacuum packed and sealed (debris with sharp edges should be first placed in a nylon woven bag to prevent the plastic bags from being damaged).

2 As stated in the Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste, the maximum size of the packages should be restricted to 3m (L) x 1.5m (W) x 0.75m (H).

3 External surfaces of asbestos waste plastic bags (or sheeting as the item's physical features demand) should be cleaned by HEPA vacuuming and wet-wiping in the work area.

4 Asbestos waste placed in suitably labeled containers from individual work areas should be transported to the rigid containment described below at the end of each work shift.

5 Should the licensed asbestos waste collector deem that transit area for temporary storage of asbestos waste is needed, the area should be properly segregated, labelled and secured as described below:-

6 A room with lockable access should be set (See Appendix 3) for temporary storage of asbestos waste produced which are to be stacked not more than 3 bags high. Access to this containment should be restricted to the licensed asbestos waste collector only and the door should be kept shut all the times. The place should bear adequate warning notice and particular attention should be given to maintain good fire safety measures.

7 The containment should be wet cleaned twice using amended water upon completion of waste disposal.

8 Workers handling and transporting waste should wear plastic gloves, protective clothing and approved half-face respirators with minimum nominal protection factor 10, equipped with HEPA replaceable cartridge type filters.

9 All asbestos wastes should be disposed of according to the "Code of Practice on the Handling, Transportation and Disposal of Asbestos Wastes". The licensed asbestos waste collector should have registered with the EPD as a waste producer in order to dispose the asbestos wastes.

10 Care should be taken at all times when handling the asbestos waste to avoid causing damage to the bags or containers. When moved the bags should be lifted and not dragged.

11 All asbestos waste should be transported by designated vehicles equipped as stated in the above code of practice issued by EPD. Care shall be taken to avoid overloading of the vehicle.

12 At the disposal site the asbestos waste should be unloaded by hand and not thrown or dropped. If any bag or container is found to be broken, immediate action should be taken to prevent the release of fibres as set out in the code of practice, and the waste rebagged.

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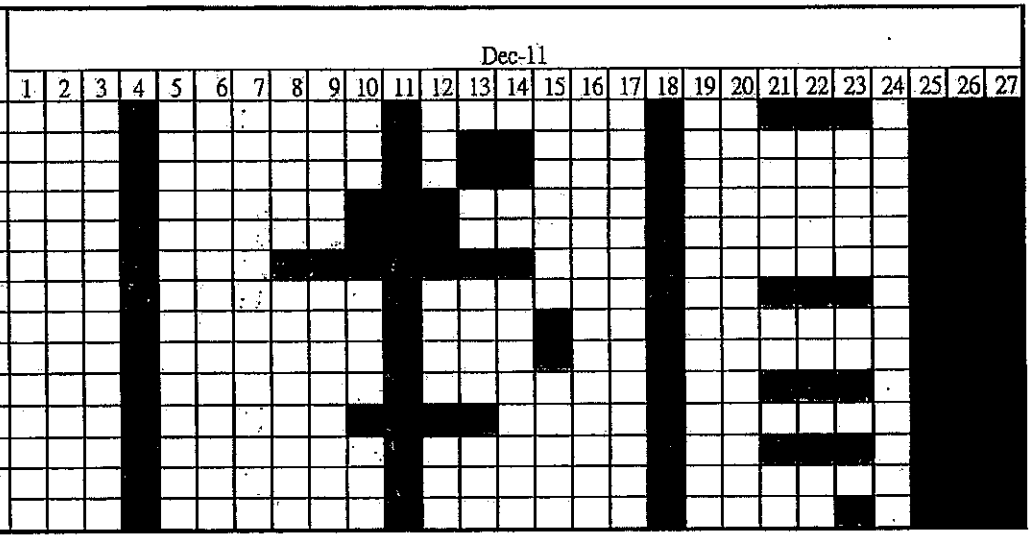
APPENDIX 12

Tentative Work Programme

香港荷里活道10號中區警署

石棉消減工程 工程時間表 (Phase 2) 22/11/2011 rev A

Phase 2	ACM Item No.	Nature of Materials	Location
1	ED/0011-1	Cement Board	Balcony, 2/F, Block 9
2	ED/0011-2	Corrugated Sheets (Type 1 & Type 2)	Light Well, 2/F, Block 9
3			Entrance, G/F, Block 9
4			Staircase , G/F, Block 8
5			Entrance, G/F, Block 13
6			Roof, Block 16
7	ED/0011-3	Insulation inside Switch / Fuse Box	Generator Room, Reom124, 1/F, Block 1
8			Pump House, B/F, Block 9
9			Corridor, 2/F, Block 14 (West Wing)
10	ED/0011-4	Chimney Lagging	Generator Room, Room124, 1/F, Block 1
11	ED/0011-5	Pipe Lagging	Fibre Glass Repair-Workshop, LG/F, Block 16
12			G/F, Block 19
			Asbestos Waste Storage
			Asbestos Waste Disposal



Legend
Holiday Preparation Execution / Removal

APPENDIX G

The Results of Asbestos Investigation for Internal Walls and Slabs at Shower Room

R00967 RECEIVED 18 APR 2012

MATERIALAB CONSULTANTS LIMITED

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Website : www.materialab-consultants.com

Date 16 April 2012
Our Ref. MCL/ED/0085/2012/C

4 Apr Ariel

Environmental Protection Department
28/F., Southorn Centre,
130 Hennessy Road,
Wanchai, Hong Kong.

BY POST

Attn.: Ms. Doris Leung

Dear Sir,

Asbestos Consultancy Services for
Central Police Station Conservation & Revitalisation Project (Phase 2 – Remaining Blocks)

With refer to EPD's letter ref. (7) in EPAC/A/4/000/233 II dated on 19 December 2011 and our letter ref. MCL/ED/0353/2011/C dated 4 January 2012, on behalf of our client we would like to submit supplementary information regarding the embedded pipes at Block No. 8, Shower Rooms for your comment and approval.

The wall inspection was conducted on 11 April 2012 under direct supervision of the Registered Asbestos Consultant, 5 openings were made and n o asbestos-containing material was identified. The embedded sections of the pipes were found insulated with uPVC materials. Enclosed are the photo records of the wall openings for your information.

Should you require further information, please do not hesitate to contact the undersigned on 2452 7130.

Assuring you of our best attention at all times.

Yours faithfully,
for and on behalf of
MATERIALAB CONSULTANTS LIMITED

Colin Yung
Registered Asbestos Consultant

CY/ylb

Encl.

c.c. The Jockey Club CPS – Mr. Kenneth Lee w/e (by email)
Rocco Design Architects Limited – Ms. Angela Fong (by email)
Gammon Construction Limited – Mr. Alan Mo (by email)

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Report No.: 0014/09/ED/0011B – Supplementary Information

Photo 1. Hot water pipes supplying to the sinks were selected for inspection

Photo 2. Embedded hot water pipe was insulated with uPVC material

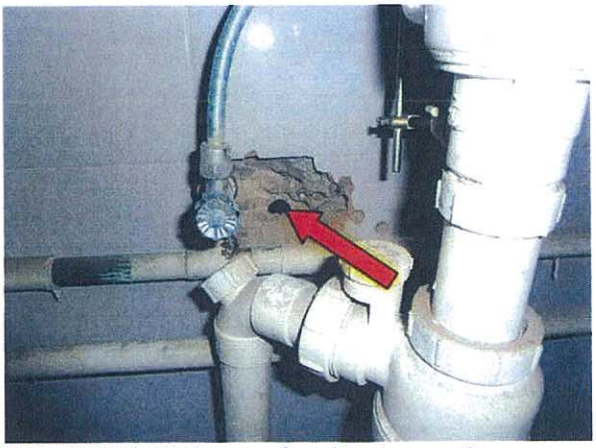

Photo 3. No insulation was found in pipe opening

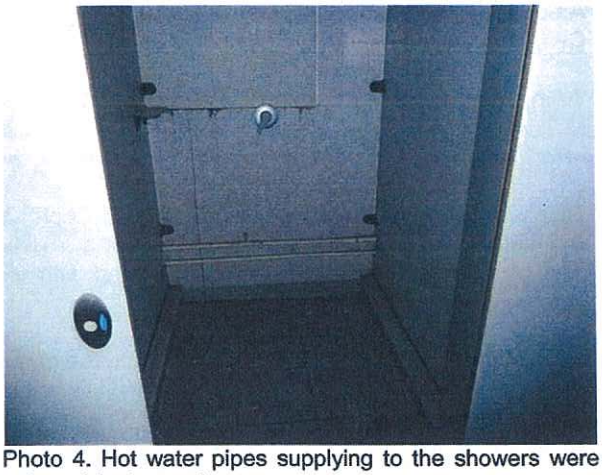

Photo 4. Hot water pipes supplying to the showers were selected for inspection

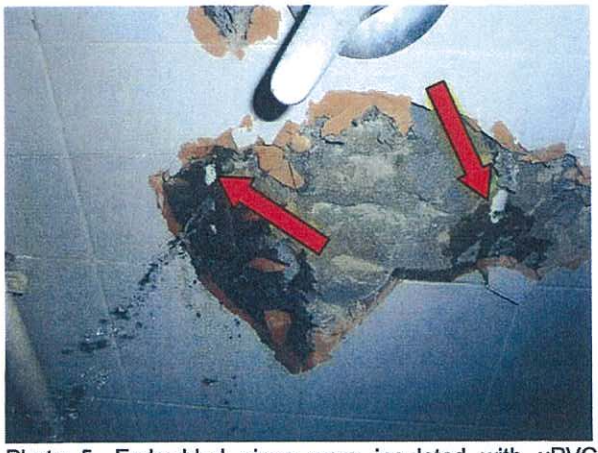

Photo 5. Embedded pipes were insulated with uPVC material

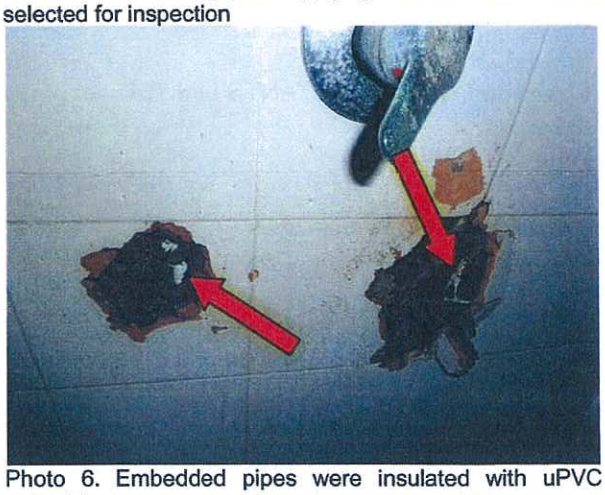

Photo 6. Embedded pipes were insulated with uPVC material

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Report No.: 0014/09/ED/0011B – Supplementary Information

Photo 7. Embedded pipe was insulated with uPVC material

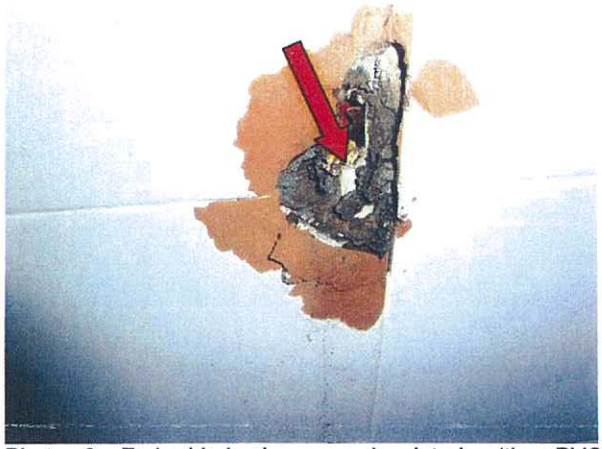
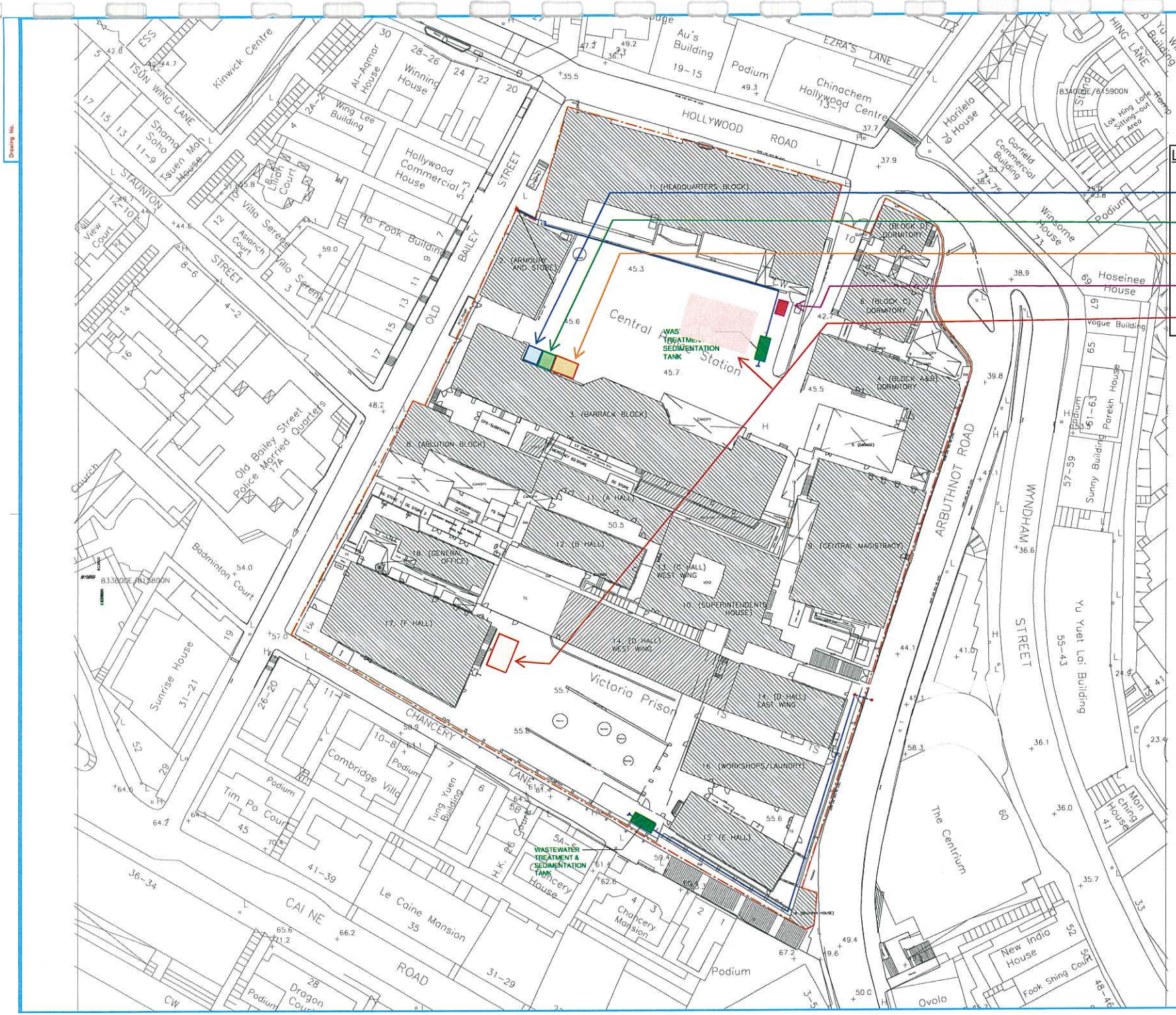


Photo 8. Embedded pipe was insulated with uPVC material

Figure 1

Waste Management & Storage Plan



NOTES:

1. DIMENSIONS ARE IN MM
2. DO NOT SCALE DRAWING
3. ALL DIMENSION TO BE VERIFIED ON SITE

Legend of Waste Collection Area

- General Refuse
- Recycling paper
- Inert-waste
- Chemical Waste Storage
- C&D waste sorting area

Rev	Description	Date	Dgn	Chk	App
B	SECOND SUBMISSION	DEC 11	GCL	GCL	
A	FIRST SUBMISSION		GCL	GCL	
0	FIRST ISSUE				

CENTRAL POLICE STATION CONSERVATION & REVITALIZATION

Contractor

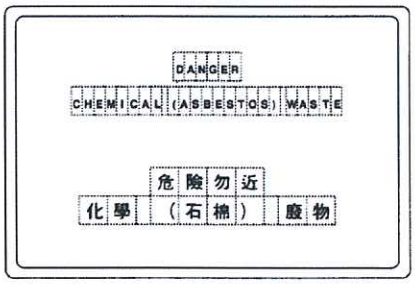
Gammon

Waste management & storage plan Rev. 1

Drawn		Scale	N.T.S. (A3)
Designed		Status	
Checked			
Approved		Drawing No.	Rev
CAD Ref		CPS-D-01	B

Figure 2

Typical warning panel posted on storage area for asbestos waste



Specifications:

1. Material:	Durable, weather resistant and rigid on a vertical plane of the storage structure.	
2. Colours:	Background	White
	Characters & Letters	Red
3. Size:	Letters	Height ≥ 60mm
	Characters	Height ≥ 60mm

Figure 2: Typical warning panel posted on storage area for asbestos waste