ENVIRONMENTAL INVESTIGATION SERVICES

REPORT

TO

LE CHATEAU DEVELOPMENTS PTY LTD

ON

ASBESTOS MANAGEMENT PLAN

FOR

PROPOSED RESIDENTIAL DEVELOPMENT

AT

74-80 RESTWELL & 1-9 LEONARDS STREETS, BANKSTOWN, NSW

25 NOVEMBER 2015

Project Id: E29298KBrpt4AMP

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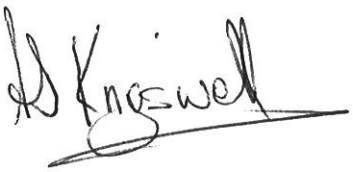

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1 INTRODUCTION

Le Chateau Developments ('the client'), commissioned Environmental Investigation Services (EIS)[1] to prepare an asbestos management plan (AMP) for the proposed residential development at 74-80 Restwell & 1-9 Leonard Streets, Bankstown, NSW.

The Site Location Plan is shown on Figure 1 and the Site Layout and Sampling Plan is shown on Figure 2. The proposed work area is referred to as 'the site' in this report.

This report documents the procedures to be undertaken to remediate and/or manage the asbestos contamination identified previously by EIS. A summary of the EIS site assessment is presented in **Section 2.**

1.1 Proposed Development

The proposed development includes the construction of a six and seven storey residential building with two basement levels over the majority of the site. Landscaping is proposed along the north and south site boundaries. Excavation for the basement level is anticipated to extend to approximately 8m below ground level.

1.2 Objectives

The objectives of the Asbestos Management Plan (AMP) are to set out the procedures to be implemented in order to effectively manage the site asbestos contamination and the potential risks to construction workers and the public during the construction works at the site.

1.3 Scope of Work

The scope of work included development of an Asbestos Management Plan (AMP) incorporating:

- Methodologies for protecting workers during site excavation works (PPE and decontamination requirements); and
- Procedures and protocols to manage the asbestos related risks, minimise potential asbestos exposure risks to personnel/workers involved in the construction works, safe handling of asbestos containing materials and minimisation of potential asbestos exposure risks to the public that may be in the vicinity of the site.

The report was prepared with reference to regulations/guidelines outlined in the table below.

[1] Environmental consulting division of Jeffery & Katauskas Pty Ltd (J&K)

Table 1-1: Guidelines

Guidelines/Regulations/Documents
Contaminated Land Management Act, NSW Government Legislation, 1997 (CLM Act 1997)
Guidelines for Consultants Reporting on Contaminated Sites, NSW EPA, 2011 (Reporting Guidelines 2011)
National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No.1), National Environment Protection Council (NEPC), 2013 (NEPM 2013)
Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, WA Department of health, Perth, Australia, May 2009 (Western Australian Asbestos Guidelines 2009).
National Code of Practice How to Manage and Control Asbestos in the Workplace, Safe Work Australia 2011
National Code of Practice How to Safely Remove Asbestos, Safe Work Australia 2011
Code of Practice for the Safe Removal of Asbestos 2nd Edition, National Occupational Health and Safety Commission: 2002, 2005
Code of Practice for the Management and Control of Asbestos in Workplaces, National Occupational Health and Safety Commission: 2002, 2005
Management of Asbestos In The Non-Occupational Environment, Environmental Health Committee, Department of Health and Ageing, 2005
Working with Asbestos: Guide, WorkCover Authority of New South Wales, 2008

2 BACKGROUND

2.1 Asbestos Finds

EIS has completed a Stage 1 Environmental Site Assessment report and a Stage 2 Environmental Site Assessment report for the site as referenced below:

- EIS (2015a[2]), *'Stage 1 Environmental Site Assessment'*. Report prepared for Le Chateau Developments, Ref: E28298KBrpt, dated 18 May 2015; and
- EIS (2015b[3]), *'Stage 2 Environmental Site Assessment'*. Report prepared for Le Chateau Developments, Ref: E28298KBrpt2, dated 25 November 2015.

Asbestos in the form of fibre cement fragments (FCF) was encountered at the site surface in the vicinity of the former garden beds sample as part of the 2015a Stage 1 ESA.

Friable asbestos fibres were detected in one fill material sample from BH9 and asbestos in the form of fibre cement fragments in three fragment samples obtained from the site surface in the vicinity of the former garden beds as part of the 2015b Stage 2 ESA.

EIS are of the opinion that the asbestos contamination is confined to the fill material at the site. The fill extended to depths of approximately 0.3m to 1.5m across the site.

Due to the heterogeneous nature of asbestos contamination through fill material, no distinct hotspots can be identified at the site. All fill material in the proposed development area is considered to be contaminated and should be treated accordingly.

3 ASBESTOS MANAGEMENT PLAN FOR EARTHWORKS

3.1 Introduction to Asbestos Controls and Licensing Requirements

Based on the EIS site assessments, the following requirements should be addressed for excavation works at the site:

- A licenced asbestos removalist is to undertake any asbestos related works. The licenced contractor is to provide a copy of their licence and prepare an Asbestos Removal Control Plan (ARCP) for the site works and inform WorkCover of the removal of friable asbestos;
- All personnel and contractors must be informed of site conditions and asbestos work areas / exclusion zones;
- Background air monitoring should be undertaken during the excavation of fill removal works as confirmation that the asbestos controls are sufficient. All asbestos air monitoring readings should be below the detection limit of 0.01 fibres per millilitre;

[2] Referred to as EIS 2015a Stage 1 ESA
[3] Referred to as EIS 2015b Stage 2 ESA

- The site must be managed in accordance with this plan, the general requirements of WorkCover NSW and strategies outlined in the relevant codes, standards and guidelines; and
- Any waste containing asbestos must be disposed of at a licensed asbestos waste facility. All tip dockets must be kept for evidence of correct disposal of asbestos contaminated waste.

3.2 Off-Site Soil Disposal

The preliminary waste classification presented in the EIS 2015b Stage 2 ESA report is summarised in the following table:

Table 3-1: Waste Classification

Site Extent / Material Type	Classification	Disposal Option
Fill material over the majority of the site	General Solid Waste (non-putrescible) (GSW) containing asbestos (friable) Further testing is required to confirm the classification.	A NSW EPA landfill licensed to receive the waste stream. The landfill should be contacted to obtain the required approvals prior to commencement of excavation.
Natural silty clay soil and shale bedrock	Most likely Virgin excavated natural material (VENM). Pending validation assessment outlined in the RAP.	VENM is considered suitable for re-use on-site, or alternatively, the information included in this report may be used to assess whether the material is suitable for beneficial reuse at another site as fill material. Alternatively, the natural material can be disposed of as VENM to a facility licensed by the NSW EPA to receive the waste stream.

3.3 General Site Set-Up

Barricaded Asbestos Work Area

Access to the barricaded asbestos work area must be restricted by the erection of temporary barrier tape/fencing and asbestos warning signage. Only personnel employed by the licenced asbestos removal contractor are to work in the barricaded asbestos removal area. Normal work procedures are to be adopted outside of this area.

Personal Decontamination and Storage of PPE

A personal decontamination area must be set up in a designated area located at the entry/exit of the asbestos work area. The area must include an asbestos waste bin, wet rags/wet wipes and a sink with

soap to wash hands. Additional PPE must be located in this area. Personnel must enter / exit through this area only.

Protection of Contractors and the General Public

During any asbestos removal works, access to the asbestos work area must be restricted at all times. Appropriate barricading and signage must be erected to warn other contractors and the general public that the work is taking place.

Watering System

A watering system such as a hose must be made available for the spray application to soil during excavation and to decontaminate any trucks exiting the barricaded area. The general ground surface should also be kept damp.

Truck Wash Bay

A temporary wash bay must be set up inside the barricaded area. Trucks should park over the wash bay for loading of soil then be washed down with water prior to existing the barricaded area. Entry and exit to the barricaded area can be maintained simply by the temporary opening of the barrier/flagging tape.

3.4 PPE and Decontamination

Asbestos specific PPE must be made available in a designated area outside of the soil disturbance zone. The minimum PPE requirements at this site are considered to include:

- Disposable coveralls rated type 5, category 3 (prEN ISO 13982–1) or equivalent. The hood must be worn;
- Disposable P2 respirator conforming to the requirements of AS/NZS 1716:2009; and
- If heavy duty work gloves are worn a type should be chosen that are disposable.

Asbestos specific PPE must only be used within the barricaded asbestos work area. This PPE cannot be re-used.

The personnel decontamination zone must be located on the edge of the barricaded work area and include an asbestos waste bin, wet rags/wet wipes and a sink with soap to wash hands. Decontamination must include:

- Boots and hand tools should be cleaned by wetting down in the work area;
- The worker should then walk to the decontamination area;
- A damp rag or wet wipe is used to wipe down the exterior surface of the coveralls;
- The damp rag or wet wipe is placed in the asbestos waste bin;
- The coveralls are then carefully rolled down, removed and placed in the asbestos waste bin;
- Remove and dispose gloves;
- The disposable respirator is removed and placed in the asbestos waste bin;
- Hands are thoroughly washed with soap and water; and
- After removing PPE the worker must remain in the area of the site free of soil disturbance.

Machinery and equipment should be sprayed with water prior to exiting the site, preferably over the truck bay wash.

3.5 Controls during Excavation Works

3.5.1 General Controls

The following controls are applicable to all earthworks within the barricaded asbestos work area:

- Earthworks must not be undertaken without air monitoring being carried out. The air monitoring results will be reviewed and reported as soon as practicable. The actions for elevated air fibre levels will be undertaken in accordance with page 20 of the National Code of Practice How to Safely Remove Asbestos, Safe Work Australia 2011;
- Dust suppression must be undertaken by the use of a water spray/sprinkler. All excavation works must be undertaken in conjunction with watering;
- At the end of each working shift the site should be inspected and if considered dry/able to generate dust must be watered or covered with plastic sheeting and geofabric;
- During aberrant weather conditions (especially high winds) site work must not be undertaken. The site may need to be inspected and, if required, watered down/covered;
- The minimum PPE requirements must be adhered to; and
- Decontamination must be undertaken.

Personnel found to ignore these conditions may be provided with a written warning or asked not to attend the site. Significant or blatant non-conformances may warrant notification of WorkCover NSW.

3.5.2 Stockpiling Soil within Barricaded Area

- All stockpiled soil must be wetted down then covered with plastic sheeting (200µm builders plastic) weighed down by sand bags or the like; and
- The stockpile area must be isolated by the installation of temporary barricades/barrier tape and asbestos warning signage.

3.5.3 Limiting Exposed Soil

During all earthworks and loading of fill soil into trucks all fill is to be kept moist by the application of water spray.

On areas of the site where excavation has been completed, the ground surface should be covered by either:

- 200 micron plastic sheeting (pegged/weighed down); or
- Impermeable geofabric (pegged/weighed down).

If exposed soils are effectively covered / isolated, normal work may be undertaken in this area following a *Clearance Inspection & Validation Sampling* by the asbestos assessor.

3.5.4 Clearance and Validation of General Site

A final visual clearance inspection must be undertaken by the asbestos assessor on completion of all excavation and/or asbestos removal work.

All documentation relating to the assessment, management, removal and disposal of ACM should be retained.

4 LIMITATIONS

The report limitations are outlined below:

- EIS accepts no responsibility for any unidentified contamination issues at the site. Any unexpected problems/subsurface features that may be encountered during development works should be inspected by an environmental consultant as soon as possible;
- Previous use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during construction work;
- This report has been prepared based on site conditions which existed at the time of the investigation; scope of work and limitation outlined in the EIS proposal; and terms of contract between EIS and the client (as applicable);
- The conclusions presented in this report are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, visual observations of the site and immediate surrounds and documents reviewed as described in the report;
- Subsurface soil conditions encountered between investigation locations may be found to be different from those expected;
- The investigation and preparation of this report have been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
- Where information has been provided by third parties, EIS has not undertaken any verification process, except where specifically stated in the report;
- EIS has not undertaken any assessment of off-site areas that may be potential contamination sources or may have been impacted by site contamination, except where specifically stated in the report;

- EIS accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1990 constructed buildings or fill material at the site;
- EIS have not and will not make any determination regarding finances associated with the site;
- Additional investigation work may be required in the event of changes to the proposed development or landuse. EIS should be contacted immediately in such circumstances;
- Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa;
- This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose;
- Copyright in this report is the property of EIS. EIS has used a degree of care, skill and diligence normally exercised by consulting professionals in similar circumstances and locality. No other warranty expressed or implied is made or intended. Subject to payment of all fees due for the investigation, the client alone shall have a licence to use this report; and
- EIS accepts no liability whatsoever, in respect of any loss or damage suffered by any such third party if this report is used beyond its intended purpose.

IMPORTANT INFORMATION ABOUT THIS REPORT

These notes have been prepared by EIS to assist with the assessment and interpretation of this report.

The Report is Based on a Unique Set of Project Specific Factors:
This report has been prepared in response to specific project requirements as stated in the EIS proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- the proposed land use is altered;
- the defined subject site is increased or sub-divided;
- the proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- the proposed development levels are altered, eg addition of basement levels; or
- ownership of the site changes.

EIS/J&K will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the assessment. If the subject site is sold, ownership of the assessment report should be transferred by EIS to the new site owners who will be informed of the conditions and limitations under which the assessment was undertaken. No person should apply an assessment for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions
Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an assessment report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is Based on Professional Interpretations of Factual Data
Site assessments identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Assessment Limitations
Although information provided by a site assessment can reduce exposure to the risk of the presence of contamination, no environmental site assessment can eliminate the risk. Even a rigorous professional assessment may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Site Assessments by Design Professionals

Costly problems can occur when other design professionals develop plans based on misinterpretation of an assessment report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Assessment Report

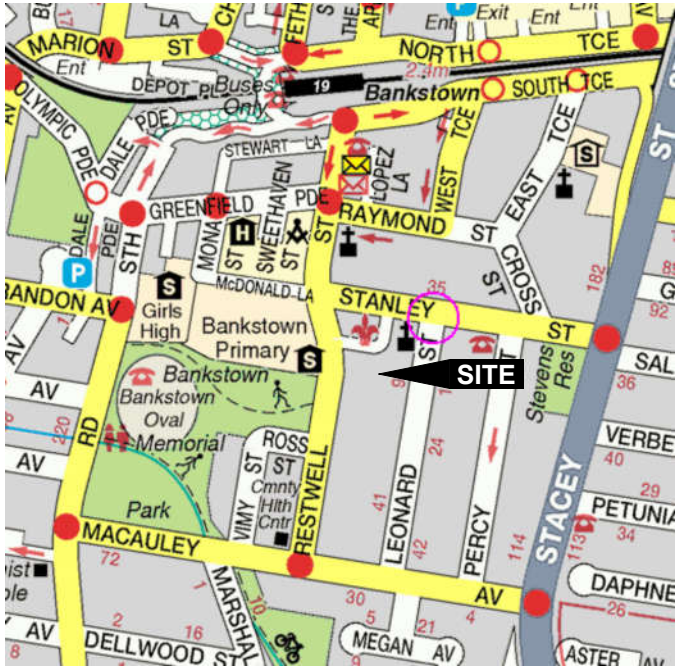
Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the assessment. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the assessment. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete assessment should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely

Because an environmental site assessment is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site assessment, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

Report Figures



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NOTES:
Figure 1 has been recreated from UBD on disc (version 5.0) and NSW Department of Lands SIX Maps. Figure is not to scale.

UBD Map ref: 272 A2

Reference should be made to the report text for a full understanding of this plan.

ENVIRONMENTAL INVESTIGATION SERVICES

Project Number: E28298KB	Title: SITE LOCATION PLAN
Figure: 1	Address: 74-80 RESTWELL & 1-9 LEONARD STREETS, BANKSTOWN, NSW

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LEGEND:

- Approximate site boundary
- BH1 (0.2) — Borehole location, number and depth of fill (m)
- Groundwater monitoring well location
- SF02 — Surface fragment sample location and number
- Soil contamination data above SAC

NOTES:
Figure has been recreated from http://maps.six.nsw.gov.au

The borehole locations presented on this plan have been established from site measurements only and should not be construed as survey points. The fill depths include the pavement thickness where pavement was encountered.

Reference should be made to the report text for a full understanding of this plan.

Approximate Scale (m): 0 5 10 15 20

ENVIRONMENTAL INVESTIGATION SERVICES

Project Number:	Title:
E28298KB	SITE LAYOUT AND CONTAMINATION DATA PLAN
Figure: 2	Address: 74-80 & 1-9 LEONARD STREETS, BANKSTOWN, NSW