

# Asbestos in Grounds, Asbestos Management Plan, Kiama High School, Kiama, NSW

July 2013

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NSW Public Works

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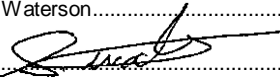
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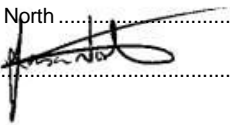
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# 1. Introduction

## 1.1 Document Review

No Activity and/or no re-occurrence of ACM in grounds on this site has occurred since 2005, as such the following is recommended:

This document is to be reviewed and updated:

- when works occur on site
- when works occur on site which may cause grounds disturbance
- when any ACM in grounds is reported
- or in 5 years, if no activity
- until ten years of inactivity, when document review and update will occur every five years.

## 1.2 Background

In November 2005, areas of possible asbestos impacted fill material and exposed fill material were identified at Kiama High School, Saddleback Mountain road, Kiama, NSW 2533 in the following locations:

- Area A - embankment adjacent to access path to Block E
- Area B - embankment between Block F and Block E
- Area C - embankment from Block E to playing fields
- Area D - area east of demountables, north of Block E.

In order to manage the risk of exposure to asbestos, any fibrous cement fragments found are to be removed from the ground surfaces (Refer to Section 1.3). The areas where fibrous cement fragments have been identified within the fill material (and further in-situ asbestos fragments may be present) have been designated as “asbestos zones”.

In the previous ground inspection report, reference 2116240A.015/LT\_2781/AP:ks dated 11 November 2005, it was proposed that the following remediation measures be carried out.

### **Area A - embankment adjacent to access path to Block E**

- The existing path should be widened using a hard stand surface. Drainage may be required to divert water to the existing drain at the base of the path
- The embankment should be stabilised creating terrace levels from the path to the lower section of the slope. The area should be encapsulated with appropriate surface

treatment measures, such as the application of mulched garden beds and/or turfing as appropriate

- Access may need to be restricted to avoid any further erosion.

#### **Area B - Embankment between Block F and Block E**

- The existing path should be widened using a hard stand surface
- The embankment should be stabilised creating terrace levels from the path to the lower section of the slope. The Area should be encapsulated with appropriate surface treatment measures, such as the application of mulched garden beds and/or turfing as appropriate.

#### **Area C - embankment from Block E to playing fields**

- Encapsulate the exposed area and widen existing paths using a hard standing material. Alternatively the exposed slope should be turfed. Access may need to be restricted to avoid any further erosion
- Drainage may be required to divert water to stop any further erosion.

#### **Area D -area east of demountables, north of Block E**

- Encapsulate the exposed surfaces with geofabric followed by mulch. The area should be contained using a retaining wall or similar.
- Access may need to be restricted to avoid any further erosion.
- 

This report outlines the plan for management of the identified asbestos impacted areas (zones), and should be read in conjunction with the existing Department of Education and Communities (DEC) Asbestos Management Plan for all other identified asbestos materials within the school.

### **1.3 Asbestos removal/clean-up works**

Approval for the asbestos removal/clean up works was given in November 2005, and the works comprised:

- Area A – install terracing along eroded edge and install metal hand rails to direct student traffic onto existing pathways
- Area B – encapsulate bare areas with raised mulched garden beds, relocate seating onto concrete plinths and install metal hand railing to direct student traffic onto existing pathways.
- Area C – encapsulated bare areas with turf the removal, clean-up and disposal of the visible fragments of fibrous cement on the ground surface. Removal was limited to the accessible surface areas only.
- Area D - encapsulate bare areas with raised mulched garden beds, relocate seating onto concrete plinths and install metal hand railing to direct student traffic onto existing pathways.

The remediated areas are shown in Figure 1.

## **2. Asbestos materials**

### **2.1 Asbestos zone locations**

Asbestos cement fragments may be present as a component of buried fill within the asbestos zone areas. Refer to Figure 1 site plan. A hygienist should be engaged to determine whether the asbestos within the Asbestos Zones is considered non-friable or friable in accordance with the NSW WorkCover Authority 'Working with Asbestos, 2008'. This contains safety guidelines and requirements for work involving asbestos.

### **2.2 Risk management**

The in-situ asbestos within the asbestos zones can be classified as low risk provided that the following measures are undertaken:

- the in-situ asbestos remains undisturbed
- an asbestos management plan remains in effect
- any works undertaken on or near the asbestos zones are to be under the control of a permit to work where the contractor has acknowledged the presence of asbestos and has prepared a safe work method statement(s) to ensure that asbestos is not disturbed and therefore airborne asbestos fibres are not generated.

### 3. Asbestos register (Grounds)

Table 3-1 outlines the findings of the inspection of the grounds indicating the areas requiring management.

**Table 3-1 Asbestos Register – Asbestos zones only for Kiama Public School**

Event	Location	Description of Material	Extent	Condition	Risk Status	Control Priority	Control Recommendation/Comments
<b>School Grounds*</b>							
<b>A</b>	Embankment adjacent to access path to block E	Possible buried asbestos cement fragments	Throughout – below ground surface	Unknown	Low	Low	No further fibrous cement fragments have been identified since the clearance was undertaken. The area should be inspected on an annual basis for fibrous cement fragments.
<b>B</b>	Embankment between block F and block E	Possible buried asbestos cement fragments	Throughout – below ground surface	Unknown	Low	Low	No further fibrous cement fragments have been identified since the clearance was undertaken. The area should be inspected on an annual basis for fibrous cement fragments.
<b>C</b>	Embankment from block E to playing fields	Possible buried asbestos cement fragments	Throughout – below ground surface	Unknown	Low	Low	No further fibrous cement fragments have been identified since the clearance was undertaken. The area should be inspected on an annual basis for fibrous cement fragments.
<b>D</b>	Area east of demountables, north of block E	Possible buried asbestos cement fragments	Throughout – below ground surface	Unknown	Low	Low	No further fibrous cement fragments have been identified since the clearance was undertaken. The area should be inspected on an annual basis for fibrous cement fragments.

\* Refer to Figure 1 for detail of area locations



### **Risk assessment factors**

Low risk: Asbestos materials that pose a low health risk to personnel, employees and the general public provided they remain undisturbed.

Medium risk: Asbestos materials that pose a moderate risk to people in the area – there is a medium potential for the material to release asbestos fibres, if disturbed.

High risk: Asbestos materials that pose a high health risk to personnel or the public in the area of the material – there is a high potential for the material to release asbestos fibres, if disturbed.

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## 4. Asbestos zone routine management

### 4.1 Inspections by local staff

In order to monitor the effectiveness of the on-site asbestos zone management, it is essential that the affected areas are regularly inspected. Visual inspections of the asbestos zones should be carried out to ensure that no further fibrous cement fragment have been identified. Such inspections should occur on the following occasions:

- at yearly intervals (e.g. a walkover of remediated areas to ensure that applications of mulch and turf, etc. have been maintained)
- after a period of prolonged heavy rain (e.g. a walkover of remediated areas to ensure that applications of mulch and turf, etc. have not been disturbed by heavy rain)
- whenever damage or disturbance has been reported (e.g. a walkover of remediated areas to ensure that applications of mulch and turf, etc. have not been disturbed by events such as vehicle movements)
- whenever works are about to commence that may cause grounds disturbance.

Should areas be identified where encapsulating measures appear to be damaged or are no longer effective, these areas should be re-covered immediately.

Some remedial measures such as the installation of layers of mulch and top soil will require ongoing maintenance to ensure that a sufficient barrier layer is in place.

### 4.2 Maintenance

All remediation measures carried out in the affected areas must be maintained as per their original application. In particular:

- All surface cover/treatments within the asbestos zones must be fully maintained at all times. For example, mulch levels should remain as per their original application, turf should be maintained to ensure full coverage and any other measures should be maintained in a good condition.
- All hard standing surfaces must be maintained and re-instated should any works that disturb them be carried out.
- If any portion of an affected area is found to be damaged (i.e. the surface cover has been damaged so that it has resulted or may result in the soil becoming exposed), the DEC local Asset Management Unit (AMU) should be contacted immediately.

### **4.3 Checklist**

A checklist of site management requirements is presented in Appendix A of this document. This checklist should be used whenever walkover inspections are carried out and where maintenance issues have been raised. The checklist is specific to the requirements of the grounds at Kiama High School and sets out the frequency of inspections required. It is recommended that a hard copy of the check-list retained by the school and field copies are taken on-site when required.

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## **5. Asbestos zone maintenance works management**

### **5.1 General**

An Asbestos Management Plan (AMP) has been implemented for all NSW state schools and educational facilities. The plan includes procedures for managing friable asbestos and working on asbestos. A generic permit to work template will also be included in the management plan which will be able to be used where any work is required that may disturb asbestos materials within an asbestos zone.

### **5.2 Sub-soil areas within school grounds**

- Any contractor, maintenance person, Department of Commerce, Department of Education & Communities or other authorised person who may potentially disturb the soil surface must acknowledge the presence of buried asbestos cement materials within these areas. A copy of the asbestos register must be made available to any such person prior to commencing work.
- Any contractor, maintenance person, Department of Commerce, Department of Education & Communities or other authorised person who may potentially disturb the soil surface must complete a permit to work or similar form that ensures that any work will not disturb the buried asbestos.
- If work is to be carried out in grounds that will disturb or potentially disturb the buried asbestos, the contractor, maintenance person, Department of Commerce, Department of Education & Communities or other authorised person must engage a licensed asbestos removal contractor with a friable asbestos licence to undertake the work. The licensed contractor should prepare a safe work method statement detailing procedures that ensure that personnel working in the asbestos zones and any other persons within the school will not be exposed to asbestos fibres. The work area must be completely enclosed and work undertaken out of school hours.
- Work in progress asbestos air monitoring should be carried out during any work that disturbs or could potentially disturb the buried asbestos and/or the soil surface. Air-monitoring should be in accordance with the National Occupational Health & Safety Commission's Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC: 3003 (2005)] and be conducted by National Association of testing Authorities (NATA) accredited personnel operating from a NATA registered laboratory.
- All asbestos management measures originally installed must be re-instated at the completion of work and prior to the removal of the work area enclosure.

## 6. Permit for work

Any contractor who proposes to work in any of the asbestos zones where asbestos may be disturbed or the ground surface may be broken must complete a permit to work form.

Before a permit to work is issued, individuals will be required to read and understand the AMP, as well as copies of the relevant asbestos registers. Individuals must be aware of their legal obligations in relation to health and safety as specified in the Work Health and Safety Act 2011 and the Work Health and Safety Regulation 2011.

Permits to work are designed to ensure appropriate work practices are employed in the vicinity of asbestos-containing materials/products. The permit to work will document what asbestos is to be removed, encapsulated or otherwise protected, prior to the contracted maintenance or building works proceeding. The permit to work will also indicate whether other requirements, such as the use of personal protective equipment (PPE), the installation of barricading and/or airborne fibre monitoring, are necessary.

When the work is completed, or the permit to work expires (whichever occurs first), the permit shall be signed and returned to the DEC Facility Manager for cancellation after that Manager has checked a safe situation exists.

The DEC local AMU shall be advised immediately of any incidents of non-compliance with the AMP.

In accordance with the interpretation of the NSW WorkCover Authority published in 'Working with Asbestos,' Guide 2008, A hygienist should be engaged to determine whether the buried asbestos is considered non-friable or friable. Therefore, any fibrous cement materials or other suspected asbestos-containing materials excavated should be inspected by a hygienist to determine if it's friable. This means that any such asbestos should be worked on only by contractors with an appropriate asbestos licence and a project specific permit issued by WorkCover NSW.

## 7. Legislative requirements

The following legislative requirements will apply to asbestos zone maintenance works:

- All asbestos removal and disposal work shall be carried out in accordance with the requirements of the WorkCover NSW Guidelines for Licensed Asbestos Removal Contractors.
- The asbestos contractor shall notify WorkCover NSW of the proposed work at least 5 days prior to the commencement of any work in accordance with NSW Occupational Health and Safety Regulation 2011. However this time period may be waived in the case for DEC properties.
- All work shall be carried out in strict accordance with the NSW Work Health and Safety Act 2011, the NSW Work Health and Safety Regulation 2011, How to Safely Remove Asbestos – Code of Practice 2011, and the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition [NOHSC 3003 (2005)].

## 8. Safe work procedures for asbestos work

The following safe work procedures will apply for asbestos work:

- The removal contractor must develop a site-specific asbestos removal plan before commencing the asbestos work. Such a plan must be prepared in accordance with Section 3 of the Work Safe Australia- How to safely remove asbestos: Code of Practice 2011.
- Only personnel who have been trained in work procedures for the safe removal of asbestos shall work on asbestos.
- A trained, experienced operator must remain on duty outside the removal area and/or enclosure (if installed) at all times that asbestos removal is in progress. Curricula vitae for all persons undertaking asbestos removal works must be submitted to the Principal prior to the commencement of work on the sites.
- Removal of asbestos must generally be carried out by wet removal techniques. That is, as the asbestos material becomes accessible during the removal process, it shall be thoroughly wetted down. Care must be exercised to prevent excessive use of water. The contractor will be held responsible for any water damage.
- Decontamination facilities and procedures shall be undertaken to the complete satisfaction of a hygienist.
- Any signage existing prior to removal must be re-affixed to any new or existing assembly.
- The contractor must ensure that persons in the work area(s) are not exposed to fibre levels greater than those stated in the National Exposure Standard for the type of asbestos being removed.

**Figure**

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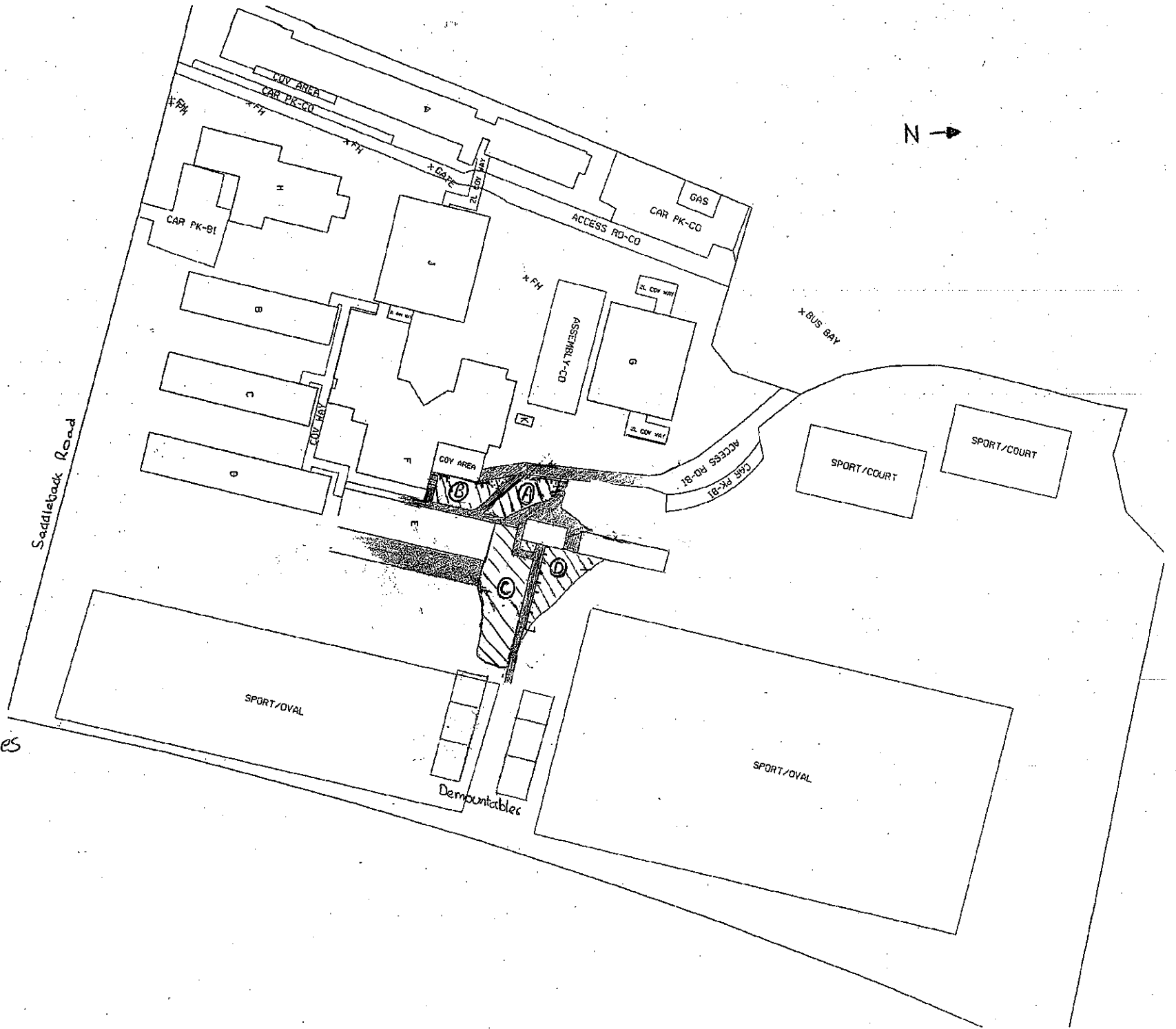
Site layout plan



# Kiama High School

Legend

 Asbestos zones



## **Appendix A**

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### Grounds management checklist

## Kiama Public School grounds asbestos management checklist – Routine annual inspections

**Table 1** Routine annual inspection checklist

		Annual inspections	Initial inspection	Subsequent three-monthly inspections			
Area	Location description		Date:	Date:	Date:	Date:	Date:
A	Embankment adjacent to access path to block E	Surface cover adequate (Y/N)					
		Suspected asbestos materials visible (Y/N)					
B	Embankment between block F and block E	Surface cover adequate (Y/N)					
		Suspected asbestos materials visible (Y/N)					
C	Embankment from block E to playing fields	Surface cover adequate (Y/N)					
		Suspected asbestos materials visible (Y/N)					
D	Area east of demountables, north of block E	Surface cover adequate (Y/N)					
		Suspected asbestos materials visible (Y/N)					

## Kiama Public School grounds asbestos management checklist – Incident inspections (e.g. after heavy rain or disturbance)

Table 2 Incident inspection checklist

		Incident inspections	Date of inspection				
Area	Location description		Date:	Date:	Date:	Date:	Date:
A	Embankment adjacent to access path to block E	Surface cover adequate (Y/N)					
		Suspected asbestos materials visible (Y/N)					
B	Embankment between block F and block E	Surface cover adequate (Y/N)					
		Suspected asbestos materials visible (Y/N)					
C	Embankment from block E to playing fields	Surface cover adequate (Y/N)					
		Suspected asbestos materials visible (Y/N)					
D	Area east of demountables, north of block E	Surface cover adequate (Y/N)					
		Suspected asbestos materials visible (Y/N)					