Asbestos in Grounds, Asbestos Management Plan, Merewether Heights Public School, Merewether Heights, NSW

March 2014

NSW Public Works
Asbestos in grounds, asbestos management plan, Merewether Heights Public School, Merewether Heights, NSW

Contents

1. Introduction .......................................................................................................................................... 1
   1.1 Document Review 1
   1.2 Background 1
   1.3 Asbestos removal/clean-up works 2

2. Asbestos materials .............................................................................................................................. 5
   2.1 Asbestos zone locations 5
   2.2 Risk management 5

3. Asbestos register (Grounds) .............................................................................................................. 7

4. Asbestos zone routine management ............................................................................................... 10
   4.1 Inspections by local staff 10
   4.2 Maintenance 10
   4.3 Checklist 11

5. Asbestos zone maintenance works management .......................................................................... 12
   5.1 General 12
   5.2 Sub-soil areas within school grounds 12

6. Permit for work .................................................................................................................................. 14

7. Legislative requirements .................................................................................................................. 16

8. Safe work procedures for asbestos work ....................................................................................... 18

List of Tables
Table 3-1 Asbestos Register – Asbestos zones only for Merewether Heights Public School

List of Figures
Site layout plans

Appendices
Appendix A Grounds management checklist
1. Introduction

1.1 Document Review

No Activity and/or no Re-occurrence of ACM in grounds on this site since October 2012, 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
- every second year, if no activity.
- until ten years of inactivity, when document review and update will occur every five years

1.2 Background

In September 2006, areas of possible asbestos impacted fill material and exposed fill material were identified to:

- **Area A** - embankment north of playground
- **Area B** - pond/Garden area between block C and D

at Merewether Heights Public School, Cedar Crescent, Merewether Heights, NSW 2291.

In order to manage the risk of exposure to asbestos, any fibrous cement fragments 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 2115108A.004/LT_4536/AP/ra dated 21 September 2006, it was proposed that the following remediation measures be carried out.

**Embankment north of playground**

- Encapsulate the bare areas of the embankment using paving and/or mulch as appropriate. The slope should be stabilised using retaining walls. A layer of geo-fabric should be laid before remediation work is done.
- Encapsulate the mound area at the base of the embankment using mulch with retaining walls and/or turf as appropriate. A layer of geo-fabric should be laid before remediation work is done.
- Encapsulate the drainage area at the base of the embankment using paving and/or turf as appropriate. A layer of geo-fabric should be laid before remediation work is done.
Appropriate sealed access areas should be installed to limit traffic on the grassed embankment. Fences may be required to divert traffic onto paths.

Due to the sloping nature of the site, provisions such as, garden edges, retaining walls and appropriate drainage, should be put into place to reduce risk of further erosion.

**Pond/Garden area between block C and D**

- Encapsulate the garden area by using mulch as appropriate. The slope may need to be stabilised using retaining walls.
- Restrict access to garden beds using fences.
- A small paved area may be needed to allow the students to access the pond.

The report of August 2011 outlined the plan for management of the identified asbestos impacted areas (zones), and it was the intention of the report that it 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.

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

Parsons Brinkerhoff were requested to visit the site in August 2012 and inspect Areas A, B and C.

At the time of updating this Management Plan in August 2012, no further occurrence of asbestos in grounds had been reported to Parsons Brinckerhoff. Significant remediation of the northern and north-western sections of the school has been undertaken. These works are detailed in ‘Merewether Heights P.S – Asbestos Remediation Works – Stage 2’ March 2012 report provided to Parsons Brinckerhoff on 3 September 2012 by The Department of Education and Communities. It is understood that the works were undertaken in accordance with the updated asbestos management plan prepared for the school by Parsons Brinckerhoff in August 2011.

From the information provided to Parsons Brinckerhoff by the above mentioned report and our inspection in August 2012, it appears that the asbestos removal/clean-up works completed in 2012 comprised of the following:

**Area A**

- 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.
- Installation and pegging down of bidum A24 geotextile in all accessible ground surfaces within areas to be covered with soil, turfing, mulch, wood chips and native vegetation.
- New soil and turfing imported for the ground surfaces across the sports oval area, and the play area.

- New soil and mulching imported for area D (G1-G9 in clearance reports. Please refer to Appendix A for map for locations)

- Native shrubs planted in south-eastern section of area D (G1-G4 and G6) to act as an effective barrier preventing soil erosion and any solid waste matter from washing down into the oval.

- Terracing between the south-east of area D, the oval (G1-G4 and the oval), and again between the oval and the northern section of area D (G7-G9) which looks on to Summer Place.

- Concrete garden edging, paths, steps and areas around classrooms

**Area B**

- 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.

- The area was encapsulated with mulch and access to the area restricted.

The inspected areas A, B and C, and the remediated areas are shown in Figure 1 below.

Based upon information provided to Parsons Brinckerhoff in August and September 2012 in the form of clearance certificates and asbestos air monitoring reports it is understood that before the addition of new soil and turfing/mulching/wood-chip onto geotextile in the various sections of area D, inspections were undertaken by an independent person to ensure that the fabric satisfactorily covered the area. Airborne asbestos fibre monitoring was undertaken during groundwork and the results were below the lowest detectable level for the estimation of airborne fibres using the filter method. This is comparable with monitoring undertaken for similar projects within the school system.

The August 2012 inspection of Merewether Heights Public School found that the afore mentioned recommended control measures had been satisfactorily implemented.

However, one area of note is a strip adjacent to the main access road to school via Cedar Crescent, directly beneath new fence separating the public school from the kindergarten.

The soil in the area was disturbed during the installation of the fence, but the geotextile fabric was not observed. Consideration should be given to the repair of surface coverage to the area using turf as appropriate.

**Area C**

At the time of inspection Parsons Brinckerhoff were directed to an area where foot traffic had impacted upon turfing adjoining the pathway. No fragments of fibrous cement sheeting were seen at the time of inspection. Please to Register below.
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 control measures installed are fully maintained.
- 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 Merewether Heights Public School**

<table>
<thead>
<tr>
<th>Event</th>
<th>Location</th>
<th>Description of Material</th>
<th>Extent</th>
<th>Condition</th>
<th>Risk Status</th>
<th>Control Priority</th>
<th>Control Recommendation/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>Embankment north of playground</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>Low</td>
<td>Low</td>
<td>The area has been successfully remediated. See comments above. No damage to the geotextile has been identified since the clearance was undertaken. The area should be inspected on an annual basis to make sure that the geotextile is sufficiently buried.</td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>Pond/Garden area between block C and D</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>Low</td>
<td>Low</td>
<td>The area has been successfully remediated. See comments above. 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.</td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Year</td>
<td>Area Description</td>
<td>Possible Buried Asbestos Cement Fragments</td>
<td>Fragmentation Risk</td>
<td>Asbestos Risk</td>
<td>Management Recommendations</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
<td>-------------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2011</td>
<td>Area south of building E, on either side of the rear access walkway.</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Low</td>
<td>The area should be regularly monitored for any fragments and a record kept of how many are found and at what frequency. Fragments should be collected and disposed of as asbestos waste. Consideration should be given to the repair of surface coverage to the area using turf as appropriate, which will prevent foot-traffic damage and reduce erosion caused by water run-off.</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2012</td>
<td>Area of landscaped terraces immediately north of the Scenic Drive car park, south-west of building E.</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Low</td>
<td>The area should be regularly monitored for any fragments and a record kept of how many are found and at what frequency. Fragments should be collected and disposed of as asbestos waste. Consideration should be given to the repair of surface coverage to the area using turf as appropriate, which will prevent foot-traffic damage and reduce erosion caused by water run-off. Regular maintenance of the pebbled surfaces should be undertaken to ensure regions of sparse coverage are recovered.</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>2012</td>
<td>Area along the southern portion of the school, along the Scenic Drive fence line, west of the car park, along the nature strip and north-west of the entry walkway.</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Low</td>
<td>The area should be regularly monitored for any fragments and a record kept of how many are found and at what frequency. Fragments should be collected and disposed of as asbestos waste. Consideration should be given to the repair of surface coverage to the area using turf as appropriate, which will prevent foot-traffic damage and reduce erosion caused by water run-off.</td>
<td></td>
</tr>
</tbody>
</table>
Area along the north-west side of building D.  
Possible buried asbestos cement fragments  
Unknown  
Unknown  
Low  
Low

The area should be regularly monitored for any fragments and a record kept of how many are found and at what frequency. Fragments should be collected and disposed of as asbestos waste.

Consideration should be given to the repair of surface coverage to the area using turf as appropriate, which will prevent foot-traffic damage and reduce erosion caused by water run-off.

*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.
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 remedial measures should be carried out to ensure that they are maintained adequately. Such inspections should occur on the following occasions:

- at three monthly 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 the Merewether Heights Public 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.
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; all Department of Commerce, Department of Education & Communities personnel or other authorised persons 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; all 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; all Department of Commerce, Department of Education & Communities personnel 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 licenced asbestos assessor 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 (in addition to the permit to work, mentioned above).
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

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.
Figures

Site layout plans
4416 – Merewether Heights Public School
Site Plan (11933)
Appendix A

Grounds management checklist
# Merewether Heights School grounds asbestos management checklist – Routine three monthly inspections

## Table 1  Routine monthly inspection checklist

<table>
<thead>
<tr>
<th>Area</th>
<th>Location description</th>
<th>Initial inspection</th>
<th>Subsequent three-monthly inspections</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Embankment north of playground</td>
<td>Surface cover adequate (Y/N)</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Pond/Garden area between block C and D</td>
<td>Surface cover adequate (Y/N)</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Area south of building E, on either side of the rear access walkway</td>
<td>Surface cover adequate (Y/N)</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Area of landscaped terraces immediately north of the Scenic Drive car park, south-west of building E.</td>
<td>Surface cover adequate (Y/N)</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Area along the southern portion of the school. Along the Scenic Drive fence line, west of the car park, along the nature strip and north-west of the</td>
<td>Surface cover adequate (Y/N)</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
</tr>
<tr>
<td>Entry Walkway</td>
<td>Area along the north-west side of building D</td>
<td>Surface cover adequate (Y/N)</td>
<td>Suspected asbestos materials visible (Y/N)</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>E 2012</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

entry walkway.
## Merewether Heights School grounds asbestos management checklist – Incident inspections (e.g. after heavy rain or disturbance)

Table 2 Incident inspection checklist

<table>
<thead>
<tr>
<th>Area</th>
<th>Location description</th>
<th>Date of inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Embankment north of playground</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surface cover adequate (Y/N)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
</tr>
<tr>
<td>B</td>
<td>Pond/Garden area between block C and D</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surface cover adequate (Y/N)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
</tr>
<tr>
<td>C</td>
<td>Area south of building E, on either side of the rear access walkway</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surface cover adequate (Y/N)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
</tr>
<tr>
<td>C</td>
<td>Area of landscaped terraces immediately north of the Scenic Drive car park, south-west of building E.</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surface cover adequate (Y/N)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
</tr>
<tr>
<td>D</td>
<td>Area along the southern portion of the school. Along the Scenic Drive fence line, west of the car park, along the nature strip and north-west of the</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surface cover adequate (Y/N)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
</tr>
<tr>
<td></td>
<td>Area along the north-west side of building D</td>
<td>Surface cover adequate (Y/N)</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Suspected asbestos materials visible (Y/N)