Asbestos in Grounds, Asbestos Management Plan, Newbridge Heights Public School, Moorebank, NSW

March 2013

NSW Public Works
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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 August 2005 and September 2008, areas of possible asbestos impacted fill material were identified in the main playing field at Newbridge Heights Public School, Lewin and Magree Crescent, Moorebank, NSW 2170.

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”.


Parsons Brinckerhoff conducted an extensive grounds investigation between September 2011 and November 2011 to assess the validity of implemented control measures to the known ‘asbestos zones’ and areas of potential concern to establish their effectiveness in accordance with the existing Asbestos Management Plan: NSW Department of Education and Training, Asbestos Management Plan, Asset Directorate, dated September 2008. The outcome of the investigation found that no asbestos containing materials or asbestos contaminated soil was identified throughout the site with the exception of six (6) ground surface fragments which were found to contain Chrysotile asbestos. These fragments were identified on the ground surface in the general surroundings of the staff car park in the north east portion of the school.
Parsons Brinckerhoff recommended that the material comprising the path in the north east portion be ‘emu pick’ and as a precautionary measure the existing fill be removed and replaced with imported material, as outlined in the report: Newbridge Heights PS Ground Investigation, Parsons Brinckerhoff reference: 2116799B LT4910_RevB.1, dated November 2011.

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

The recommended management of ground surfaces detailing requirements based on the Newbridge Heights PS AMP, 2011 and site observation during the assessment in September 2011 are presented in Table 1-1 below.

<table>
<thead>
<tr>
<th>Location</th>
<th>Required control recommendations</th>
<th>Actual control recommendations observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turf general play area (oval)</td>
<td>Maintain existing surface. Do not disturbed soil beyond depth of 150mm.</td>
<td>It has been noted that a layer of at least 0.15m of clean fill is capping the playing field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minor disturbance of the soil is permitted provided no mixing of soil at depth occurs. Normal maintenance works such as aeration are appropriate, but digging below 0.1m must be managed by an appropriate AMP. Minor disturbance by students playing with toys is not considered to be a risk</td>
</tr>
<tr>
<td>Mulched garden beds</td>
<td>Maintain mulch levels to a minimum depth of 40mm.</td>
<td>The garden beds have been capped with a geo fabric and covered with a layer of mulch to a minimum depth of 70mm</td>
</tr>
<tr>
<td>Turf area surrounding BER building</td>
<td>Footprint of new BER building was not incorporated in previous management plan.</td>
<td>A layer of approximately 0.15m of clean fill is present north east, south and east of the building. It has been noted that the north west is covered by a garden bed and the west covered with a bitumen hard stand.</td>
</tr>
</tbody>
</table>

1.4 Additional works

In January 2012, remedial works were undertaken on the grounds that would enable Newbridge Heights Public School to better maintain their grounds and to provide a greater play area for the students of the school. Parsons Brinckerhoff understands that the following works were undertaken during the school break in January 2012:

1.4.1 Mulched garden beds

The mulched garden beds located within the general play area west of the school were reduced in size and planted with additional scrubs. The timber frame surrounding the garden beds was increased in height to ensure an adequate depth of mulch remains within the area.
1.4.2 Turf general play area (oval)

In the location where the garden beds were reduced in size or removed all together, a geotextile fabric was laid on the surface as a visible layer. This was then topped with certified clean fill and turf laid. The same process was undertaken in the position of the demountable building that was removed located east of the multipurpose play area.

1.4.3 Hardstand car park

A hardstand staff car park was established in the north east corner of the site. This was established with the use of crushed gravel and compressed to allow for cars to park. On inspection the hard stand only covers half the car park area. Parsons Brinckerhoff has been advised that the remainder of the car park shall be covered with the same material in due course.

Details locations of these areas are presented in Figure 2 – Newbridge Heights Public School Layout.
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 Newbridge 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>1</td>
<td>Turf general play area (oval)</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>Low</td>
<td>Low</td>
<td>Maintain existing surface/ new surface. Do not disturb / dig soil below 0.1m, without being appropriately managed through AMP. Minor disturbance by students playing with toys is considered to not be a risk. Inspect every three months or after adverse weather conditions for signs of surface wear and possible fragments at surface. Returf areas of general wear with exposed soil.</td>
</tr>
<tr>
<td>2</td>
<td>Mulched garden beds (to oval)</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>Low</td>
<td>Low</td>
<td>Maintain mulch levels (currently at a depth of 0.04m). Do not disturb overlying mulch. Inspect every three months or after adverse weather conditions for signs of mulch depletion and possible fragments at surface. Increase mulch if exposed geo-fabric material becomes visible.</td>
</tr>
<tr>
<td>3</td>
<td>Play areas</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>medium</td>
<td>high</td>
<td>Cricket pitch and multipurpose court pose not risk. The long jump pit ‘potentially’ installed in asbestos impacted material. Sampling to a minimum depth of 0.15m resulted in no presence of asbestos. It is recommended that no disturbance occurs beyond surface level.</td>
</tr>
<tr>
<td>4</td>
<td>Turfed area surrounding BER building</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>Low</td>
<td>Low</td>
<td>Area discovered and remediated during BER project, limited to the building footprint. This assessment for this area is based on information provided to PB by the AMU (Jan Egan, 22 July 2011); the area has not</td>
</tr>
<tr>
<td>Event</td>
<td>Location</td>
<td>Description of Material</td>
<td>Extent</td>
<td>Condition</td>
<td>Risk Status</td>
<td>Control Priority</td>
<td>Control Recommendation/Comments</td>
</tr>
<tr>
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<td>----------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Mulched garden beds (surrounding BER building)</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>Low</td>
<td>Low</td>
<td>Area discovered and remediated during BER project, limited to the building footprint. This assessment for this area is based on information provided to PB by the AMU (Jan Egan, 22 July 2011); the area has not been inspected by PB due to the build up nature of the area.</td>
</tr>
<tr>
<td>6</td>
<td>Hardstand car park</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>Low</td>
<td>Low</td>
<td>Maintain existing surface/ new surface. Do not disturb / dig soil below the hardstand material without being appropriately managed through AMP. Inspect every six months for signs of surface wear and possible fragments at surface.</td>
</tr>
<tr>
<td>7</td>
<td>Original landscaped area (north portion garden beds)</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>Low</td>
<td>Low</td>
<td>No asbestos was identified during the investigation. General maintenance work within the original landscaped area does not pose a risk. However, if excavation beyond 0.15m should be appropriately managed through AMP.</td>
</tr>
<tr>
<td>8</td>
<td>Original turf (south east grassed open)</td>
<td>Possible buried asbestos cement fragments</td>
<td>Throughout – below ground surface</td>
<td>Unknown</td>
<td>Low</td>
<td>Low</td>
<td>Maintain existing surface. Soil work beyond 0.18m should be appropriately managed through AMP. Minor disturbance by students playing with toys is considered to not be a risk.</td>
</tr>
</tbody>
</table>

*Refer to Figures 2 and Figure 3 for detail of area locations status on impact

**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 Newbridge 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
NEWBRIDGE HEIGHTS PUBLIC SCHOOL
DEPARTMENT OF EDUCATION AND COMMUNITIES

Figure 1

Site location

Newbridge Heights Public School

Study area
Figure 2
Newbridge Heights Public School layout

- BER building
- Bitumen hard stand
- Play area
- Mulched garden beds
- Hardstand carpark
- Original landscaped area
- Original turf
- Turfed area surrounding BER building
- Turf general play area

Source: GoogleEarth ©SKM 2011 (Acquired October 2011)
Figure 3
Asbestos areas
Newbridge Heights Public School
Appendix A

Grounds management checklist
# Newbridge Heights Public 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>Three monthly inspections</th>
<th>Initial inspection</th>
<th>Subsequent three-monthly inspections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Turf general play area (oval)</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mulched garden beds (to oval)</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Play areas</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Turfed area surrounding BER building</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Mulched garden beds (surrounding BER building)</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Hardstand car park</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Newbridge Heights Public 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>Three monthly inspections</th>
<th>Initial inspection</th>
<th>Subsequent three-monthly inspections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Turf general play area (oval)</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td>2</td>
<td>Mulched garden beds (to oval)</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td>3</td>
<td>Play areas</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td>4</td>
<td>Turfed area surrounding BER building</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td>5</td>
<td>Mulched garden beds (surrounding BER building)</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td>6</td>
<td>Hardstand car park</td>
<td>Surface cover adequate (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected asbestos materials visible (Y/N)</td>
<td>Date:</td>
<td>Date:</td>
</tr>
</tbody>
</table>