# Asbestos in soil management guide for DoE facilities

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Scope

This guide has been developed primarily for the use of Officers in Charge of facilities and employees involved in planning and managing construction related scopes of work. The guide supports the departmental Asbestos Management Procedure.

The guide has been developed with regard for the [*Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia*](https://www.health.wa.gov.au/~/media/Files/Corporate/general-documents/Asbestos/PDF/14020-Asbestos-Contaminated-Sites-WA-Guidelines.pdf), Government of Western Australia, Department of Health, (date accessed 11 March 2023), which is identified for use by the Qld Department of Environment and Heritage Protections Guideline for contaminated land professionals.

# Anticipating and recognising the presence of asbestos in soil

## Background

The possibility of asbestos containing materials (ACM) being present in soil and the extent of it, i.e. non-friable (bonded) or friable (crumbles under hand pressure, non-bonded) is dependent on the previous uses of the site, the quantity and nature of the asbestos material used in previous construction activities and the way that previous buildings were demolished or renovated.

Asbestos containing debris in soil may be found within any previously developed land, including commercial and residential sites or where imported fill has been brought onto the site. These properties/sites may not have been properly cleaned up following removal or demolition of structures containing asbestos, particularly where impacts occurred before the introduction of the current legislative controls for asbestos removal and management. The presence of asbestos in soils can also have occurred through previous illegal dumping of building materials and the importation of asbestos contaminated fill/topsoil.

For some sites, there may only be a small number of isolated, sparsely distributed fibre cement fragments arising from past incidental contamination or as residual fragments remaining following removal and demolition of buildings and structures. The possibility of asbestos being present in underground structures, including infrastructure, buildings, footings and slabs, must be considered when work is intended to dig under the soil surface.

## Responsibilities of departmental employees and service providers

While the Officer in charge is the accountable officer for asbestos management at a facility, a range of departmental employees have responsibility for minimising risk from asbestos in soils. This includes ensuring appropriate investigations are made during works planning activities and being involved in decisions about the management of asbestos discovered in soils during the execution of works.

### Project works

The department’s [Asbestos management procedure](https://ppr.qed.qld.gov.au/pp/asbestos-management-procedure) requires a person responsible for planning project works to ensure an asbestos in soils assessment is conducted by a suitably qualified person, before service providers are engaged, if:

1. The works are likely to involve the use of powered mobile plant or hand-held powered plant for excavation, and BEMIR identifies:
* structures at the site contain ‘assumed’ or ‘confirmed’ materials; or
* asbestos has been removed from structures at the site (i.e., ‘removed’ status in BEMIR); or
* asbestos is present in soils at the facility; or
1. There are any other reasons to suggest that asbestos is likely to be present in the soils to be excavated, for example, the site:
* has an existing Asbestos in Soil Site Management Plan; or
* is known to have had demolition of old structures occur.

The person responsible for the planning works must ensure that the suitably qualified person is contracted to provide a report of the assessment that:

1. addresses the extent of ACM contamination in soils where the proposed excavation works are to occur
2. recommends controls for the management of identified contamination, for example, removal, encapsulation, redesign of works
3. recommends ongoing management post implementation of the control options
4. recommends licence types required for any recommended removal of contamination
5. identifies whether the contamination is likely to meet the threshold for registration on the Contaminated Land Register.

The Person responsible for planning project works must ensure:

* the results of the asbestos in soils assessment are considered to determine appropriate management of asbestos in soils associated with the proposed works
* asbestos in soils assessment records are maintained in BEMIR (in addition to any project-specific record maintenance management procedures).

### Suitably Qualified Person

A Suitably Qualified Person (SQP) is a person, as defined in the [*Environment Protection Act 1994* (Qld)](https://www.legislation.qld.gov.au/view/html/inforce/current/act-1994-062).

The following strategies can be used to find a suitably qualified person:

* conduct business searches using the term ‘contaminated land consultant’ and ‘Queensland’
* approach professional associations such as:
* Australasian Land and Groundwater Association
* Australian Contaminated Land Consultants Association
* Environment Institute of Australia and New Zealand
* Soil Science Australia
* seek out recommendations from people who have engaged a suitably qualified person to conduct similar, successful works in the past.

The person selected should have experience in asbestos in soils contamination matters and a thorough understanding of the:

* [How to safely remove asbestos Code of Practice (Qld)](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0023/72635/how-to-safely-remove-asbestos-cop-2021.pdf)
* [How to manage and control asbestos in the workplace Code of Practice (Qld)](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0021/72633/how-to-manage-control-asbestos-in-the-workplace-cop-2021.pdf)
* [Managing asbestos in or on soil (NSW)](https://www.safework.nsw.gov.au/resource-library/asbestos-publications/managing-asbestos-in-or-on-soil)
* [Guidelines for the assessment, remediation and management of asbestos contaminated sites in Western Australia.](https://www.health.wa.gov.au/~/media/Files/Corporate/general-documents/Asbestos/PDF/14020-Asbestos-Contaminated-Sites-WA-Guidelines.pdf)

# Asbestos in soil discovery events

It is possible for asbestos to be found in soils during works at sites that did not have any of the factors that generally indicate a higher likelihood of asbestos presence. The combination of the department’s [Asbestos management procedure](https://ppr.qed.qld.gov.au/pp/asbestos-management-procedure) and [Asbestos incident management procedure](https://ppr.qed.qld.gov.au/pp/asbestos-incident-management-procedure) inform the actions that need to be taken should this occur. The action will differ depending on whether the incident is considered a ‘departmental asbestos-related incident’ or a ‘non-departmental asbestos related incident’.

Departmental asbestos in soil discovery incident

An asbestos in soils discovery event (involving a service provider) is considered a ‘departmental asbestos-related incident’ if:

1. a SWMS for the discovery of suspected asbestos while using powered mobile plant or hand-held powered plant:
* was not in place (note: a SWMS may not be in place because BEMIR doesn’t identify ACM as being present at the facility or BEMIR does identify ACM as being present at the facility but the service provider hadn’t prepared a SWMS (non-compliance with requirement)); or
* wasn’t required for the work and suspected ACM was discovered during the course of the work; and
1. the event has impacted or potentially impacted the safety of the facility community during the facility’s business operations.

A service provider must take the following steps if an asbestos in soils discovery event that is a departmental asbestos-related incident occurs:

* stop work
* inform the Officer in charge of the facility of the event
* initiate actions as advised by the Officer in charge.

The Officer in charge who has been notified of a departmental asbestos-related incident involving asbestos in soils must:

* initiate the [Asbestos incident management procedure](https://ppr.qed.qld.gov.au/pp/asbestos-incident-management-procedure), which includes, contacting QBuild to respond to the event
* consider the QBuild proposed course of action and approve or reject the proposed course of action
* inform the departmental person responsible for the service provider contract (if not the same person) of the approved course of action.

### Non-departmental asbestos in soil discovery incident

If a service provider discovers asbestos and it is not a departmental asbestos-related incident, the [Working on Department of Education facilities](https://education.qld.gov.au/about/Documents/working-on-doe-facilities.pdf) document requires the service provider to:

* inform the departmental representative responsible for the service provider contract
* have a person with past experience in asbestos in soils contamination matters (competent person) determine, based on the information contained in the [How to safely remove asbestos Code of Practice (Qld)](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0023/72635/how-to-safely-remove-asbestos-cop-2021.pdf) and the [How to manage and control asbestos in the workplace Code of Practice (Qld)](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0021/72633/how-to-manage-control-asbestos-in-the-workplace-cop-2021.pdf), [Managing asbestos in or on soil (NSW)](https://www.safework.nsw.gov.au/resource-library/asbestos-publications/managing-asbestos-in-or-on-soil) and the [Guidelines for the assessment, remediation and management of asbestos contaminated sites in Western Australia](https://www.health.wa.gov.au/~/media/Files/Corporate/general-documents/Asbestos/PDF/14020-Asbestos-Contaminated-Sites-WA-Guidelines.pdf), whether:
* the materials must be removed or may be managed in-situ and works continue
* any required removal must be undertaken by a licensed removalist
* there are reasons to believe that a similar discovery is likely if works continue after dealing with the matter at hand
* decide a proposed course of action, based on the advice of the competent person (which may include obtaining a more thorough assessment of the soils) before further works proceed
* only implement the proposed course of action if the course of action has been approved by the person responsible for the service provider contract
* only undertake asbestos removal as part of the proposed course of action if authorised by the Department to conduct such works (refer asbestos removal service provider criteria)
* ensure the details of the discovery of asbestos in soils, including the response actions, is included in the [Facility change document](https://education.qld.gov.au/about/Documents/facilities-change-document.pdf) submitted at the conclusion of the project.

The departmental person responsible for a service provider contract associated with an asbestos in soils discovery event that is not a departmental asbestos-related incident must:

* consider the course of action proposed by the service provider
* approve or reject the proposed course of action
* if the course of action is rejected - refer the matter back to the service provider for submission of alternative proposed course of action
* initiate steps, as necessary, to support the ‘approved’ course of action.

# Controlling and managing risks associated with asbestos discovered in soil

Asbestos in soils only poses a risk to the health of workers if the fibres become airborne and are then inhaled. The likelihood of exposure depends on the:

* quantity and distribution
* condition, that is, whether it is non-friable (bonded) or friable (crumbles under hand pressure, non-bonded)
* level of disturbance
* systems of work and controls used to limit the release and inhalation of asbestos fibres.

An asbestos in soils assessment informs how the asbestos in soil is to be managed. The person who conducts the assessment (suitably qualified person) would be expected to have made their judgements based on information contained in documents such as the following:

* [Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia](https://www.health.wa.gov.au/~/media/Files/Corporate/general-documents/Asbestos/PDF/14020-Asbestos-Contaminated-Sites-WA-Guidelines.pdf)
* [How to safely remove asbestos Code of Practice (Qld)](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0023/72635/how-to-safely-remove-asbestos-cop-2021.pdf)
* [How to manage and control asbestos in the workplace Code of Practice (Qld)](https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0021/72633/how-to-manage-control-asbestos-in-the-workplace-cop-2021.pdf)
* [Managing asbestos in or on soil (NSW)](https://www.safework.nsw.gov.au/resource-library/asbestos-publications/managing-asbestos-in-or-on-soil).

Generally, remediation/management options include:

* Continuing to manage the asbestos in situ of the soil. This involves isolation of the affected area using barriers or covers such that the contamination cannot be readily disturbed so that the likelihood of release of airborne fibres is minimised.
* Treatment on site, which involves ACM hand-picking, tilling, screening or excavation of the impacted soil and asbestos. An important outcome of the remediation is that the top 10cm of soil should be free of all visible asbestos.
* Removal of contaminated soil from site – this involves the excavation and offsite disposal to a waste facility licensed to receive asbestos.

Remediation options that minimise soil disturbance and public risk are preferred. Management of asbestos in situ is encouraged, which may include covering contamination with uncontaminated fill or other protective or warning layers such as geofabric.

# Asbestos in soil site management plan

The [Asbestos management procedure](https://ppr.qed.qld.gov.au/pp/asbestos-management-procedure) provides for the Officer in Charge to determine whether an asbestos in soil site management plan (ASSMP) is necessary for a facility. The procedure provides some examples of the circumstances that might lead to a determination that an ASSMP is necessary, which includes:

* recurring discovery of asbestos debris at the facility
* a recommendation from an asbestos in soils assessment
* knowledge of asbestos in soil encapsulated at the facility.

The OIC may also choose to develop an ASSMP after a departmental incident that involves the discovery of asbestos in soil. The determination should have regard for:

* the likelihood of there being more debris in the area that the ACM was discovered;
* the likelihood of students and staff being in the vicinity of the area where the ACM was discovered in the future; and
* how the asbestos got there – a different position may be appropriate if it is established that it seems to have arisen from a recent illegal dumping of materials on the facility versus if has been discovered in soil.

An ASSMP must:

* reference:
* any asbestos in soils reports relevant to the plan
* relevant history of discovered ACM (location, type and response treatment)
* address:
* facility locations to be inspected
* frequency of inspections
* relevant additional control strategies, for example, area permanently restricted, grass coverage to be maintained
* other circumstances when inspections may be necessary, for example, significant weather events
* persons responsible for conducting the inspections
* actions to be taken in response to inspection outcomes
* mechanisms for ensuring the inspections are conducted in accordance with the identified frequencies recorded.

The Officer in charge must review an Asbestos in Soil Site Management Plan for a facility at least every two years for ongoing suitability.

Service providers must be alerted to any ASSMP relevant to the facility.

### Instructions for completing the Asbestos in Soil Site Management Plan template

1. Insert relevant information in the Asbestos in soils site management arrangements section:
2. Facility details
3. Details of Officer in Charge approval
4. ASSMP review details
5. Details of relevant asbestos in soils assessment reports that have been prepared for the site
6. Update the Discovered ACM management table.
* Use a suitable number referencing for the Discovered ACM reference numbers, for example, the first entry for Red Brick State School’s could be RBSS0001, the second RBSS0002 and so on.
* Ensure there is a separate entry for each ACM discovery
* Ensure the inspection frequency to be applied is nominated (the frequency will depend on factors such as the likelihood of the area being used and the extent of ACM that was discovered).
1. Insert a diagram of the site with detail of the discovery locations (using the ACM discovery reference numbers).
2. Prepare an inspection log
* Use the same referencing as used in the Discovered ACM management table
* Ensure the log is updated after each inspection of the discovered ACM
1. Update the Plan as new items are discovered or if control measures change.

Refer to Appendix 1 for the Asbestos in Soil Site Management Plan template.

Refer to Appendix 2 for an example of how parts of the ASSMP would be prepared for a particular scenario.

# Appendix 1



Descriptor (Insert division, branch or project name if required)

z

Descriptor (Insert division, branch or project name if required)

z

Insert facility name

Asbestos in Soil Site Management Plan

# Foreword

This plan has been prepared to communicate how asbestos discovered in soils at this site will be managed. This document has been developed in accordance with the department’s [Asbestos management procedure](https://ppr.qed.qld.gov.au/pp/asbestos-management-procedure).

# Asbestos in soils site management arrangements

## Facility details

**Name:** *click here to insert name of school or education centre*

**Address:** *click here to insert facility address*

## Details of Officer in Charge approval

**Officer in Charge (OIC):** *click to insert name*

**Position title:** *click to insert (e.g. Principal)*

**Phone:** *click to insert*

**Signature:**

**Date of ASSMP approval:** *click to insert date*

## ASSMP review details

**Date ASSMP last reviewed:** *click to insert date*

*Note: This Plan is to be reviewed every two years to confirm its ongoing suitability.*

## General

The OIC is to ensure mechanisms are in place for inspections to be conducted and recorded in accordance with the identified frequencies – see template at attachment A.

QBuild may be contacted for advice if an inspection identifies that asbestos in soils management controls are not effective.

## Relevant asbestos in soil assessment reports

|  |  |  |
| --- | --- | --- |
| Report title | Report date | Report author |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

|  |
| --- |
| Discovered ACM management |
| **Discovered ACM reference number** | **Location** | **ACM discovery description** | **Date of discovery** | **Control strategies**  | **Inspection frequency to be applied** | **Person and position responsible for inspection** |
|  |  |  |  |  | [ ] Weekly[ ] Monthly [ ] Quarterly [ ] After Significant Weather Event |  |
|  |  |  |  |  | [ ] Weekly[ ] Monthly [ ] Quarterly [ ] After Significant Weather Event |  |
|  |  |  |  |  | [ ] Weekly[ ] Monthly [ ] Quarterly [ ] After Significant Weather Event |  |

## Site diagram identifying ACM discoveries

|  |
| --- |
| **Attachment A**Inspection log |
| **Inspection date** | **Discovered ACM reference number** (refer ASSMP) | **Name of inspector** | **Is control still effective?**(yes/no) | **Action taken if control is not effective** |
|  |  |  |  |  |
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|  |  |  |  |  |

# Appendix 2

#### Example on preparing key parts of the ASSMP

#### Scenario:

Red Brick State School has an existing Asbestos in Soil Site Management Plan as a result of a discovery that was made during excavation work in the area between the between the bottom oval and visitors carpark near the garden (RBSS0001).

The following discovery has subsequently occurred.

A fragment of material suspected to contain asbestos was found by a teacher on the edge of the top sports oval after heavy rain. The material appeared to be a fragment from wall sheeting and measured 2cm x 3cm.

At the time of the discovery, the side of the oval that is edged by an embankment had become eroded following constant and heavy rain. The fragment was treated as asbestos containing and QBuild contacted to arrange its removal and disposal. An inspection was conducted of the oval but no further suspected asbestos containing materials (ACMs) were found.

Sampling of the material confirmed it contained asbestos. QBuild arranged for geofabric textile to be laid across the embankment and a sleeper retainment wall with backfill of clean soil to a depth of 50cm were installed. Ground cover plants were planted across the slope of the embankment and schools officers were informed of the discovered material and actions taken in a bid to alert them of the potential fo other discoveries to occur.

## Discovered ACM management

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Discovered ACM reference number** | **Location** | **ACM discovery description** | **Date of discovery** | **Control strategies**  | **Inspection frequency to be applied** | **Person and position responsible for inspection** |
| RBSS0001 | Between the bottom oval and visitors carpark near the garden | Pieces of ACM wall sheetingDiscovered during excavation works  | 20/01/2023 | * Materials were removed and clean fill to a depth of 50cm was used to cover the area of the discovery.
* Grass installed.
* Service providers alerted to facility’s Asbestos in Soil Site Management Plan during start work meetings
* Schools officers advised of discovery and encouraged to be alert to other potential discoveries and report any diminution of grass coverage.
 | [ ] Weekly[ ] Monthly[x] Quarterly[x] After Significant Weather Event | Sally Soil, Schools Officer  |
| RBSS0002 | Top oval adjoining embankment | Small fragment suspected to be from ACM wall sheeting | 3/03/2022 | * Geofabric textile laid across the embankment
* Sleeper retainment wall installed and backfilled with clean soil to depth of 50cm
* Ground cover plants planted across the slope of the embankment.
* Service providers alerted to facility’s Asbestos in Soil Site Management Plan during start work meetings
* Schools officers advised of discovery and encouraged to be alert to other potential discoveries particularly while conducting gardening in the area.
 | [ ] Weekly[ ] Monthly[x] Quarterly[x] After Significant Weather Event | Sally Soil, Schools Officer |

## Site diagram identifying ACM discoveries

**RBSS0002**

N

**RBSS0001**