

NSW Site Auditor Scheme

Site Audit Statement

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

This form was approved under the *Contaminated Land Management Act* 1997 on 12 October 2017.

For information about completing this form, go to Part IV.

Part I: Site audit identification

Site audit statement no. SAS188

This site audit is a:

statutory audit

-non-statutory-audit

within the meaning of the Contaminated Land Management Act 1997.

Site auditor details

(As accredited under the Contaminated Land Management Act 1997)

Name	Rebeka Hall				
Company	Geosyntec Consultants Pty Ltd				
Address	Suite 3.04, 1 York St SYDNEY NSW				
		Postcode 2000			
Phone	02 9251 8070				
Email	rebeka.hall@geosyntec.com				
0.4					

Site details

Address 417-445 Abercrombie Street Darlington NSW

Postcode 2008

Property description

(Attach a separate list if several properties are included in the site audit.)

Lot 1 in DP1290656 (formerly known as Lot 592 DP 752049 and Lot 100 DP 623500)

Local government area	City of Sydney Council
Area of site (include units, e.g. hectares)	7256m2
Current zoning	SP2 Infrastructure

Regulation and notification

To the best of my knowledge:

the site is the subject of a declaration, order, agreement, proposal or notice under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985, as follows: (provide the no. if applicable)

₩-	Declaration no.

<mark>___Proposal no.</mark>

- the site is not the subject of a declaration, order, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985*.

To the best of my knowledge:

- the site **has** been notified to the EPA under section 60 of the *Contaminated Land Management Act* 1997
- the site **has not** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*.

Site audit commissioned by

Name	Riley Barns		
Company	A W Edwards Pty Limited		
Address	Level 1, 131 Sailors Bay Road, Northbridge NSW		
	Postcode 2063		
Phone	02 8036 7200		
Email	rbarns@awedwards.com.au		

Contact details for contact person (if different from above)

Name	Cayne Ross, AW Edwards
Phone	0414 050 114
Email	cross@awedwards.com.au

Nature of statutory requirements (not applicable for non-statutory audits)

Requirements under the Contaminated Land Management Act 1997 (e.g. management order; please specify, including date of issue)

Requirements imposed by an environmental planning instrument (please specify, including date of issue)

Development consent requirements under the *Environmental Planning and Assessment Act 1979* (please specify consent authority and date of issue)

SSD9914 approved by DPI, dated 30 November 2020 with the following conditions

Site Contamination

C38. The Applicant must conduct site investigations to confirm the full nature and extent of the contamination at the project area and comply with the following requirements:

- (a) the site investigations must be undertaken, and the subsequent report(s), must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the Contaminated Land Management Act 1997;
- (b) the reports must be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme; and
- (c) the recommendations of the Remedial Action Plan prepared by Douglas Partners dated August 2020, the Interim Advice 2 (IA2) (prepared by Zoic Environmental, dated 21 August 2020) and the unexpected finds procedure must be updated following results of further site investigations and implemented throughout duration of project work.
- C39. Remediation of the site must be carried out in accordance with:
 - (a) the Remedial Action Plan prepared by Douglas Partners dated August 2020; or
 - (b) any variations approved by an NSW EPA-accredited Site Auditor and/or the recommendations of the site investigations undertaken under condition C38 or the unexpected finds protocol prepared in accordance with condition B12(c).
- C40. If work is to be carried out / completed in stages, a NSW EPA-accredited Site Auditor must confirm satisfactory completion of each stage by the issuance of Interim Audit Advice(s).
- C41. The Applicant must ensure the proposed development does not result in a change of risk in relation to any pre-existing contamination on the site that would result in significant contamination.

Site Contamination

D27. Prior to the commencement of operation, the Applicant must submit a Section A1 Site Audit Statement or a Section A2 Site Audit Statement accompanied by an Environmental Management Plan prepared by a NSW EPA accredited Site Auditor. The Section A1 or A2 Site Audit Statement must verify the relevant part of the site is suitable for the intended land use and be provided, along with any Environmental Management Plan to the Planning Secretary and the Certifier.

Environmental Management Plan

E8. Upon completion of remediation works, the Applicant must manage the site in accordance with the Environmental Management Plan approved by the Site Auditor (if any) under condition D27 and any on-going maintenance of remediation notice issued by EPA under the Contaminated Land Management Act 1997.

—Requirements under other legislation (please specify, including date of issue)

Purpose of site audit

	A1 To determine land use suitability				
	Intended uses of the land:				
OR					
V	A2 To determine land use suitability subject to compliance with either an active or passive environmental management plan				
	Intended uses of the land: Primary School				
or					
(Tick	all that apply)				
	-B1 To determine the nature and extent of contamination				
	-B2 To determine the appropriateness of:				
	<mark>──an investigation plan</mark>				
	a remediation plan				
	a management plan				
	- B3 To determine the appropriateness of a site testing plan to determine if groundwater is safe and suitable for its intended use as required by the <i>Temperary</i> <i>Water Restrictions Order for the Botany Sands Groundwater Resource 2017</i>				
	-B4 To determine the compliance with an approved:				
	──voluntary management proposal or				
	management order under the Contaminated Land Management Act 1997				
	- B5 To determine if the land can be made suitable for a particular use (or uses) if the site is remediated or managed in accordance with a specified plan. Intended uses of the land:				
Info	rmation sources for site audit				

Consultancies which conducted the site investigations and/or remediation:

Douglas Partners, Greencap

Titles of reports reviewed:

- Douglas Partners (DP) (16 April 2018) Report on Preliminary Site Investigation Contamination Darlington Public School Upgrade (Ref: 92277.00.R.001.Rev0).
- DP (19 February 2019) Report on Detailed Site Investigation for Contamination Proposed Upgrade Works (Ref: 92277.01.R.002.Rev1).

- DP (22 May 2020) Soil Vapour Assessment, Proposed Upgrade Works Darlington Public School, 417 Abercrombie Street, Darlington, NSW (Ref: 92277.02.R.003.Rev0).
- DP (19 August 2020) Remediation Action Plan Proposed Upgrade Works (Ref: 92277.02.R.001.Rev4).
- DP (1 February 2021) Further Asbestos Investigation Northern Portion, Proposed Upgrade Works, Darlington Public School, Darlington, NSW. (Ref: R.001.Rev0).
- DP (9 February 2021) Leaching Assessment Proposed Upgrade Works, Darlington Public School, Darlington, NSW (Ref: 002.Rev0).
- Greencap (5 August 2021) Remediation Validation Report Basketball Court- Darlington Public School- 417 Abercrombie Street Darlington NSW 2008.
- Greencap (30 October 2021) Further Investigation and RAP Addendum Darlington Public School – 417 Abercrombie Street Darlington NSW 2000 (Ref: C107251: V2).
- Greencap (7 April 2022) Remediation Validation Report V1 Stage 1 Area, Darlington Public School- 417 Abercrombie Street Darlington NSW 2008.
- Greencap (25 May 2022) Sampling Analysis and Quality Plan (SAQP) Darlington Public School Stage 2 (Ref: C107251: J169905_SAQP_Darlington Public School V1).
- Greencap (10 August 2022) Virgin Excavated Natural Materials Report (Ref: NIL. Document is attached to Greencap (26 August 2022) with Ref: C107251: J169905-01 Darlington Public School Further Investigation Stage 2_V1.
- Greencap (26 August 2022) Stage 2 Further Investigation Darlington Public School (Ref: C107251: J169905-01 Darlington Public School Further Investigation Stage 2_V1).
- Greencap (28 June 2023) Stage 1 Remediation Validation Report Addendum Darlington Public School (C114041:J169905).
- Greencap (28 June 2023) Remediation Validation Report V3, Stage 2 Area Darlington Public School, Ref: C107251:DF J169905 V3.
- Greencap (29 June 2023) Long-Term Environmental Management Plan (LTEMP) Darlington Primary School (Ref: PS136020 V4).

Other information reviewed, including previous site audit reports and statements relating to the site:

• DP (22 May 2020) Report on Hazardous Building Materials Assessment, Darlington Public School Upgrade (Ref: 92277.00.R.003.Rev0)

Site audit report details

Title: Site Audit Report Darlington Public School, 417-445 Abercrombie Street Darlington NSW 2008

Report no. 20209SAR188

Date: 29 June 2023

Part II: Auditor's findings

Please complete either Section A1, Section A2 or Section B, not more than one section. (Strike out the irrelevant sections.)

- Use **Section A1** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **without the implementation** of an environmental management plan.
- Use **Section A2** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **with the implementation** of an active or passive environmental management plan.
- Use **Section B** where the audit is to determine:
 - o (B1) the nature and extent of contamination, and/or
 - (B2) the appropriateness of an investigation, remediation or management plan¹, and/or
 - (B3) the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or
 - (B4) whether the terms of the approved voluntary management proposal or management order have been complied with, and/or
 - (B5) whether the site can be made suitable for a specified land use (or uses) if the site is remediated or managed in accordance with the implementation of a specified plan.

¹ For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

Section A1

I certify that, in my opinion:
The site is suitable for the following uses:
(Tick all appropriate uses and strike out those not applicable.)
Residential, including substantial vegetable garden and poultry
Residential, including substantial vegetable garden, excluding poultry
Residential with accessible soil, including garden (minimal home-grown produce)
contributing less than 10% fruit and vegetable intake), excluding poultry
Day care centre, prescrool, primary school
Residential with minimal opportunity for soil access, including units
Secondary school
Park, recreational open space, playing field
Commercial/industrial
☐ I certify that, in my opinion, the site is not suitable for any use due to the risk of harm
from contamination.
from contamination.
from contamination.

Section A2

I certify that, in my opinion:

Subject to compliance with the <u>attached</u> environmental management plan² (EMP), the site is suitable for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

- Besidential, including substantial vegetable garden and poultry
- Residential, including substantial vegetable garden, excluding poultry
- Residential with accessible soil, including garden (minimal home grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- Day care centre, preschool, primary school
- Residential with minimal opportunity for soil access, including units
- Park, recreational open space, playing field
- Other (please specify):

EMP details

Title: Long Term Environmental Management Plan

Author: Greencap (Ref PS136020 V4)

Date: 29 June 2023

No. of pages 75

EMP summary

This EMP (attached) is required to be implemented to address residual contamination on the site.

The EMP: (Tick appropriate box and strike out the other option.)

requires operation and/or maintenance of active control systems³

 \square requires maintenance of **passive** control systems only³.

² Refer to Part IV for an explanation of an environmental management plan.

³ Refer to Part IV for definitions of active and passive control systems.

Purpose of the EMP:

The purpose of the long term EMP is to manage the residual contamination risk remaining on site following the completed remediation activities and to ensure long-term protection of human health and the environment on site and its vicinity.

Description of the nature of the residual contamination:

Section 3 of the LTEMP states residual impact is present across the entire site (including a borrow pit in the south west of the site under the building) and comprises residual fill impacted with bonded fragments of Asbestos Containing materials (ACM), fibrous asbestos/asbestos fines (FA/AF), PAH, BaP and lead.

Summary of the actions required by the EMP:

Section 4 provides guidance for site inspections, capping layer maintenance, with scenarios for generalised landscaping works & minor works and subsurface works. Section 4 also provides a discussion on the requirement for capping reinstatement works when the cap is breached.

How the EMP can reasonably be made to be legally enforceable:

SSD9914 condition E8 states that the site is to be managed in accordance with an EMP approved by the Auditor. In addition, as asbestos is a contaminant capped at the site, enforcement is also under the WHS regulation 2017 Part 8.3 Cl429

How there will be appropriate public notification:

In Section 1.3 the LTEMP states that it should be noted as a covenant on the land title, and registered on City of Sydney Council Planning documents (10.7 certificates) and noted on the Site's Asbestos Register.

Overall comments:

Section B

Purpase of the plan⁴ which is the subject of this audit:

I certify that, in hy opinion:

(B1)

The nature and extent of the contamination has been appropriately determined

The nature and extent of the contamination has not been appropriately determined

AND/OR (B2)

The investigation, remediation or management plan **is** appropriate for the purpose stated above

The investigation, remediation or management plan is not appropriate for the purpose stated above

AND/OR (B3)

The site testing plan:

is not appropriate to determine

if groundwater is safe and suitable for its intended use as required by the *Temporary* Water Restrictions Order for the Botany Sands Groundwater Resource 2017

AND/OR (B4)

The terms of the approved voluntary management proposal* of management order** (strike out as appropriate):

*voluntary management proposal no.

**management order no.

AND/OR (B5)

The site can be made suitable for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

⁴ For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

•	Residential, including substantial vegetable garden and poultry				
\mathbf{N}	Residential, including substantial vegetable garden, excluding poultry				
	Residential with accessible soil, including garden (minimal home-grown produce				
	contributing loss than 10% fruit and vegetable intake), excluding poultry				
Day care centre, preschool, primary school					
	Residential with minimal opportunity for soil access, including units				
	Secondary school				
	Park, recreational open space, playing field				
	Other (please specify):				
		_			
	e site is remediated/managed ^t in accordance with the following plan (<u>attached</u>):				
	ke out as appropriate				
Plan -					
<u>Plan</u>	author				
Plan	date No. of pages				
SUB.	JECT to compliance with the following condition(s):				
		-			
		-			
		_			
		—			
Overi	all comments:				
		_			
		-			
		_			
	\	_			
	\	_			

Part III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997.*

Accreditation no. 0802

I certify that:

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997,* and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act* 1997 for wilfully making false or misleading statements.

Signed	RUall
Date	29 June 2023

Part IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

How to complete this form

Part I

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

Part II

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remediation plan or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use or uses of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A1 or Section A2 or Section B of Part II, **not** more than one section.

Section A1

In Section A1 the auditor may conclude that the land is *suitable* for a specified use or uses OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further investigation or remediation or management of the site was needed to render the site fit for the specified use(s). **Conditions must not be** imposed on a Section A1 site audit statement. Auditors may include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section A2

In Section A2 the auditor may conclude that the land is *suitable* for a specified use(s) subject to a condition for implementation of an environmental management plan (EMP).

Environmental management plan

Within the context of contaminated sites management, an EMP (sometimes also called a 'site management plan') means a plan which addresses the integration of environmental mitigation and monitoring measures for soil, groundwater and/or hazardous ground gases throughout an existing or proposed land use. An EMP succinctly describes the nature and location of contamination remaining on site and states what the objectives of the plan are, how contaminants will be managed, who will be responsible for the plan's implementation and over what time frame actions specified in the plan will take place.

By certifying that the site is suitable subject to implementation of an EMP, an auditor declares that, at the time of completion of the site audit, there was sufficient information satisfying guidelines made or approved under the *Contaminated Land Management Act* 1997

(CLM Act) to determine that implementation of the EMP was feasible and would enable the specified use(s) of the site and no further investigation or remediation of the site was needed to render the site fit for the specified use(s).

Implementation of an EMP is required to ensure the site remains suitable for the specified use(s). The plan should be legally enforceable: for example, a requirement of a notice under the CLM Act or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of *the Environmental Planning and Assessment Act 1979*.

Active or passive control systems

Auditors must specify whether the EMP requires operation and/or maintenance of active control systems or requires maintenance of passive control systems only. Active management systems usually incorporate mechanical components and/or require monitoring and, because of this, regular maintenance and inspection are necessary. Most active management systems are applied at sites where if the systems are not implemented an unacceptable risk may occur. Passive management systems usually require minimal management and maintenance and do not usually incorporate mechanical components.

Auditor's comments

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section B

In Section B the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or whether the terms of an approved voluntary management proposal or management order made under the CLM Act have been complied with, and/or whether the site can be made suitable for a specified land use or uses if the site is remediated or managed in accordance with the implementation of a specified plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement. The condition must not specify an individual auditor, only that further audits are required.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

Part III

In **Part III** the auditor certifies their standing as an accredited auditor under the CLM Act and makes other relevant declarations.

Where to send completed forms

In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to

- the NSW Environment Protection Authority: <u>nswauditors@epa.nsw.gov.au</u> or as specified by the EPA AND
- the **local council** for the land which is the subject of the audit.

Req:R050016 /Doc:DP 1290656 P /Rev:17-Jan-2023 /NSW LRS /Prt:02-Feb-2023 11:35 /Seq:1 of 3
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Greencap Pty Ltd GF, North Building, 22 Giffnock Avenue Macquarie Park NSW 2113 Australia P: (02) 9889 1800 F: (02) 9889 1811

LONG-TERM ENVIRONMENTAL MANAGEMENT PLAN

June 2023 PS136020

A.W. Edwards Pty Ltd

Darlington Public School

greencap.com.au

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Document Control

Document Quality Management Details.				
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Project Number:	PS136020			
Client Name:	A.W. Edwards Pty Ltd			
Client Number:	C107251			
Signatures:	Author:	Reviewed and Authorised By: Matthew Barberson Senior Associate Environmental Consultant CENVP SC: 41191		

Issue Status

Version No.	Date	Creator	Reviewer
V1	05/06/23	Tary Mathew	Andres Grigaliunas
V2	20/06/23	Andres Grigaliunas	Andres Grigaliunas
V3	23/06/23	Tary Mathew Andres Grigaliunas	Andres Grigaliunas
V4	29/06/23	Tary Mathew Andres Grigaliunas	Matthew Barberson

Document Circulation

No of Copies	Туре	Customer Name	Position & Company
1	Electronic	Cayne Ross	A.W. Edwards – Project Coordinator



Statement of Limitations

All and any Services proposed by Greencap to the Client are subject to the Terms and Conditions listed on the Greencap website at: www.greencap.com.au/about-greencap/terms-and-conditions. Unless otherwise expressly agreed to in writing and signed by Greencap, Greencap does not agree to any alternative terms or variation of these terms if subsequently proposed by the Client. The Services are to be carried out in accordance with the current and relevant industry standards of testing, interpretation and analysis. The Services are to be carried out in accordance with Commonwealth, State or Territory legislation, regulations and/or guidelines. The Client will be deemed to have accepted these Terms when the Client signs the Proposal (where indicated) or when the Company commences the Services at the request (written or otherwise) of the Client.

The services were carried out for the Specific Purpose, outlined in the body of the Proposal. To the fullest extent permitted by law, Greencap, its related bodies corporate, its officers, consultants, employees and agents assume no liability, and will not be liable to any person, or in relation to, any losses, damages, costs or expenses, and whether arising in contract, tort including negligence, under statute, in equity or otherwise, arising out of, or in connection with, any matter outside the Specific Purpose.

The Client acknowledges and agrees that proposed investigations rely on information provided to Greencap by the Client or other third parties. Greencap makes no representation or warranty regarding the completeness or accuracy of any descriptions or conclusions based on information supplied to it by the Client, its employees or other third parties during provision of the Services. The Client releases and indemnifies Greencap from and against all Claims arising from errors, omissions or inaccuracies in documents or other information provided to Greencap by the Client, its employees or other third parties. Under no circumstances shall Greencap have any liability for, or in relation to, any work, reports, information, plans, designs, or specifications supplied or prepared by any third party, including any third party recommended by Greencap.

The Client will ensure that Greencap has access to all sites and buildings as required by or necessary for Greencap to undertake the Services. Notwithstanding any other provision in these Terms, Greencap will have no liability to the Client or any third party to the extent that the performance of the Services is not able to be undertaken (in whole or in part) due to access to any relevant sites or buildings being prevented or delayed due to the Client or their respective employees or contractors expressing safety or health concerns associated with such access.

Greencap, its related bodies corporate, its officers, employees and agents assume no liability and will not be liable for lost profit, revenue, production, contract, opportunity, loss arising from business interruption or delay, indirect or consequential loss or loss to the extent caused or contributed to by the Client or third parties, suffered or incurred arising out of or in connection with our Proposals, Reports, the Project or the Agreement. In the event Greencap is found by a Court or Tribunal to be liable to the Client for any loss or damage arising in connection with the Services, the Client's entitlement to recover damages from Greencap shall be reduced by such amount as reflects the extent to which any act, default, omission or negligence of the Client, or any third party, caused or contributed to such loss or damage, unless otherwise agreed in writing and signed by both parties, Greencap's total aggregate liability will not exceed the total consulting fees paid by the client in relation to this Proposal. For further detail, see Greencap's Terms and Conditions available at www.greencap.com.au/about-greencap/terms-and-conditions

The Report is provided for the exclusive use of the Client for this Project only, in accordance with the Scope and Specific Purpose as outlined in the Agreement, and only those third parties who have been authorised in writing by Greencap. It should not be used for other purposes, other projects or by a third party unless otherwise agreed and authorised in writing by Greencap. Any person relying upon this Report beyond its exclusive use and Specific Purpose, and without the express written consent of Greencap, does so entirely at their own risk and without recourse to Greencap for any loss, liability or damage. To the extent permitted by law, Greencap assumes no responsibility for any loss, liability, damage, costs or expenses arising from interpretations or conclusions made by others, or use of the Report by a third party. Except as specifically agreed by Greencap in writing, it does not authorise the use of this Report by any third party. It is the responsibility of third parties to independently make inquiries or seek advice in relation to their particular requirements and proposed use of the site.

The conclusions, or data referred to in this Report, should not be used as part of a specification for a project without review and written agreement by Greencap. This Report has been written as advice and opinion, rather than with the purpose of specifying instructions for design or redevelopment. Greencap does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise in relation to the site it investigated.

This Report should be read in whole and should not be copied in part or altered. The Report as a whole sets out the findings of the investigations. No responsibility is accepted by Greencap for use of parts of the Report in the absence (or out of context) of the balance of the report.

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Long-Term Environmental Management Plan (EMP) A.W. Edwards Pty Ltd

Darlington Public School

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1 Purpose

Greencap was engaged by A.W. Edwards Pty Ltd (the client), to prepare this Long-Term EMP after the completion of remedial works to remove contamination risks at Stage 1 Area and Stage 2 Area, Darlington Public School- 417 Abercrombie Street Darlington NSW 2008 (hereafter referred to as "the Site"). The site location is indicated in *Figure 1*. This EMP was prepared in accordance with the most recent guidelines NSW EPA (January 2022), "Preparing environmental management plans for contaminated land: Practice Note":

- Implementation of this Long-Term Environmental Management Plan (EMP) is the responsibility of the land/site owner, currently Department of Education (DoE). In accordance with the Environmental Planning and Assessment Act 1979 and NSW EPA guidelines, this Long-Term EMP is required to ensure that the capping material covering the contaminated soils at the site remains intact at Darlington Public School;
- The following SSD9914 development consent conditions are applicable to the EMP:
 - D27: Prior to the commencement of operation, the Applicant must submit a Section A1 Site Audit Statement or a Section A2 Site Audit Statement accompanied by an Environmental Management Plan prepared by a NSW EPA accredited Site Auditor. The Section A1 or A2 Site Audit Statement must verify the relevant part of the site is suitable for the intended land use and be provided, along with any Environmental Management Plan to the Planning Secretary and the Certifier.
 - E8: Upon completion of remediation works, the Applicant must manage the site in accordance with the Environmental Management Plan approved by the Site Auditor (if any) under condition D27 and any on-going maintenance of remediation notice issued by EPA under *the Contaminated Land Management Act 1997.*
- This EMP applies to the extent of the capped area (capped material contains asbestos, PAH and lead impacted soil) referred as Stage 1 and Stage 2, shown on Figure 2 to 7, It applies to the whole site;
- Remediation works involved removal of fill soil and placement of a capping soil layer over the remaining contaminated fill. The contaminants included asbestos ,total PAH, benzo(a)pyrene and lead, The capping works are described in **Section 3.1**;
- This remediation works were carried out between January 2021 and June 2023. A Stage 1 validation report for Basketball Court and Stage 1 works (Greencap August 2021; Greencap April 2022) were issued to document the construction methods for encapsulation of contaminated fill to form a physical barrier over contaminated soils to prevent exposure. Stage 2 validation report for New Block D, Outdoor learning area on the east of Block D consisting of climbing area, handball court area on the south-east portion of site and landscaping area. A 13m (L), x8m(W) and 2m(D) borrow pit was excavated on the southwestern area of the site were an estimated volume of 208m³ was used to level the site while impacted material was used to back fill it. All impacted material placed at the borrow pit and across the site was placed below the marker later and validated material placed above. The location of the capped area in relation to the overall Darlington Public School property is indicated in Figure 2 to 7;
- Long term management (capping layer maintenance and notification) is required, as detailed in this EMP, to prevent disturbance, dispersal, or exposure of contaminated soils in future. On-going maintenance of the capping area will generally require occasional inspection of the capping area to ensure the integrity of the capping system is not being damaged (e.g. by erosion or any unmanaged digging/disturbance) i.e. passive management system. Repairs and reinstatement of the capping layer are required when damage or disturbance occur (as described in detail within Section 4of this EMP report); and

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- This report is to be read by any person (including current and future site owners / managers / occupiers) proposing to undertake any subsurface excavation works with potential to disturb the capping layers. Works with potential to disturb the capping layers include:
 - Trenching for installation or maintenance of underground services conduits;
 - Excavations required for maintenance or modification of the concrete slab; and
 - Any new constructions such as light poles or other structures with subsurface foundations anywhere in the vicinity of the capping area.

Any works that may disturb the structural integrity of the capping system require assessment and approval by the DoE. Other consent authorities (such as City of Sydney Council or NSW Department of Planning) involved in assessment of Development Applications for proposed works are also to provide approval. Applications for approval must include detailed description and design of proposed works and compliance with management requirements under this EMP. A copy of this EMP should be included in all submissions for development consent to both the DOE and other consent authorities.

1.1 Purpose and Objectives of the EMP

The purpose of this long term EMP is to manage the residual contamination risk remaining on site following the completed remediation activities and ensure long-term protection of the human health and the environment on site and its vicinity. This plan comes into force from its date of issue, which is 29/06/2023.

The scope of this Long-Term EMP includes the site management requirements associated with:

- The presence of known contamination within the capped area on site (i.e. contaminated soils beneath capping and hardstand pavement);
- Document the location of the contamination and capping layer;
- Maintenance of the capped area (including maintenance of the capping layers) and to detail the requirements for management of future excavations;
- Delegation of Roles and Responsibilities;
- Ensure notification to all stakeholders of the asbestos contamination, capping and location on the site; and
- Ongoing review of compliance of site monitoring and management regimes against this Long-Term EMP by the site owner or appointed certifier.

The long-term management plan has been developed to address site-specific environmental concerns associated with the contamination contained at the site in accordance with the NSW EPA (2022), Preparing environmental management plans for contaminated land: Practice Note.

1.2 Enforceability of the EMP

It is a requirement that this EMP is legally enforceable via a development application/ approvals process for any proposed work at the site which has potential to disturb the capping soil layer area shown on Figure 2 to7. As the site contains a soil cap and containment of contaminated soil, this EMP will apply in perpetuity or until the contaminated soil is removed from the school.

Any works within the capping area, requiring planning approval is to be approved by the DoE and any other consent authority (refer to **Section 4**).

1.3 EMP Notification Requirements

A copy of this EMP is to be notified as a covenant on the land title, the site's asbestos register and registered on City of Sydney Council Planning documents (10.7 certificates to indicate that buried wastes including asbestos have been contained onsite and an ongoing mitigation and monitoring system is in place. Notification requirements are detailed in **Section 5** below.



This EMP is to be made available to site owners, managers, contractors and site workers and any other relevant persons. All relevant personnel at the site should be made aware of the presence of the contaminated soil and the need to ensure it remains undisturbed.

Consent includes the following requirements, which enforces the establishment and implementation of a Long-Term EMP (referred to as EMP in SSD9914):

- D27: Prior to the commencement of operation, the Applicant must submit a Section A1 Site Audit Statement or a Section A2 Site Audit Statement accompanied by an Environmental Management Plan prepared by a NSW EPA accredited Site Auditor. The Section A1 or A2 Site Audit Statement must verify the relevant part of the site is suitable for the intended land use and be provided, along with any Environmental Management Plan to the Planning Secretary and the Certifier; and
- E8: Upon completion of remediation works, the Applicant must manage the site in accordance with the Environmental Management Plan approved by the Site Auditor (if any) under condition D27, Part 8.3 CI429 of the Work Health and Safety Regulation (WHS) regulation 2017 due to the presence of asbestos and any on-going maintenance of remediation notice issued by EPA under the Contaminated Land Management Act 1997.

2 Background

2.1 Site Identification and Setting

Table 1: Site Information				
Site Address:	Darlington Pul	olic School, 417 Abercrombie Street Darlington NSW 2008		
Property Identification:	Lot 1 DP1290656			
Local Government Area	City of Sydney	City of Sydney		
Approximate Area (Accessible Areas):	approximate area: 7267 m ²			
Current Site Use:	Public School			
Proposed Site Use:	Public School			
Site Users:	Children/teachers/visitors of the school, workers undertaking service/maintenance works and associated temporary visitors.			
Surrounding Site Use:	North East South West	Sydney University building (residential and educational) with Darlington Lane and residential properties beyond. Sydney University accommodation buildings (residential) with Sydney Campus buildings beyond. School Premises and Abercrombie Street with residential properties beyond Golden Grove Street with residential properties beyond		
Surface Water Bodies:	North	Lake Northham located within Victoria Park approx. 850 m northeast of the site. Sydney Harbour further north-east, Alexandra Canal to the Southeast.		

Nearest sensitive human receptors are the students and staff of Darlington Public School, students and the residents living at the high-density residential houses and Sydney University Campus Building towards the east and north of the site and residential properties beyond Golden Grove Street and on the south of the site. Lake Northham located approximately 850 m towards the northeast of the site is considered as the nearest environmental receptor.

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2.2 Geology and Soils

A review of the Sydney 1:100,000 Geological Series Sheet indicated the site is underlain by Ashfield Shale (Rwa) of the Wianamatta Group of Triassic age. This formation is described as shale, carbonaceous claystone, laminate, fine to medium grained lithic sandstone and some minor coal bands.

A review of 1:100,000 Sydney Geological Series indicated the shallow soils at the site comprise Blacktown Soil Landscape (bt), which consist of up to two soil horizons that vary from shallow to moderately deep red and brown podzolic soils on crests, upper slopes and well drained areas to yellow podzoic soils on lower slopes and in areas of poor drainage.

2.3 Topography

Topography of the site and surrounds slopes gently towards the south and at approximately elevation of 37 m AHD.

2.4 Groundwater

A search of the NSW Office of Water groundwater bore data carried out by Douglas Partners (DP) in 2020 and summarised in Section 3.4 of the Remediation Action Plan for the proposed upgrade works at 417 Abercrombie Street, Darlington NSW in 2020 identifies one domestic bore located upgradient at approximately 200m northwest of the site. No groundwater was detected during field works carried out by DP and Greencap at the site and during the excavation of the borrow pit to a depth of 2m bgl. The depth of groundwater at the site is unknown. DP in 2021 carried out leaching assessment of the fill soils requiring remediation at the site and its potential to impact groundwater. The assessment showed that the leachability potential of the soils at the site is low.

The geology of the natural material at the site is dominated by silty clay and weathered sandstone with generally low permeability

The site is not considered to pose a risk to groundwater quality and local water courses based on leachability assessments for contaminated soil below the capping layer

3 Description of existing/residual contamination

Several contamination investigations have been carried out at the site since 2014 by various consultants including Parsons Brinckerhoff, Douglas Partners (DP) and Greencap. The assessments included a preliminary site investigation, detailed site investigation, asbestos management plans and remediation action plans (RAP). The assessments identified contamination across the site of the following contaminants of concern:

- Friable Asbestos (AF/FA) and bonded Asbestos (ACM in the form of bonded cement sheet fragments were observed across the site, with ACM isolated to fill soils (ACM not observed within natural soils));
- Total PAH;
- Benzo(a)pyrene; and
- Lead.

Based on the investigation results, volatile organic compounds (VOCs) are not considered to be a contaminant of concern for the site, i.e to not pose a vapour intrusion risk .

A summary of the most relevant investigations at the site is outlined below:

In January 2018, DP carried out a detailed site investigation at the school. The investigation included sixteen grid based and two targeted boreholes. The results of the investigation identified and confirmed TRH, PAH and lead impacted fills at the school including the northern section at

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concentrations exceeding adopted HILs and EILs. Asbestos was also identified in one fill sample collected during the DSI from the northern portion of the site (BH10).

In 2020, DP prepared the RAP for the School (DP August 2020, Remediation Action Plan Proposed Upgrade Works 417 Abercrombie Street Darlington NSW Project 92277.01). The remedial strategy specified in the RAP was a "Cap and Contain" method of remediation for the site. Construction of a durable capping layer over the entire site is required to prevent exposure of contaminated soils and long-term maintenance of the capping layer barrier is to be ensured with enforcement of a long-term environmental management plan (long term EMP).

In December 2021, DP carried out further asbestos investigation on the northern section of the school. The report summarised the strata encountered during the investigation as:

- "Fill (subgrade/roadbase) gravely crushed sandstone encountered from beneath the base of the asphalt or the concrete slab to 0.4m BGL; overlying;
- Fill brown gravelly clayey sand from 0.2 to 1.3 m BGL and slag and charcoal gravel material and or coal wash material was observed at three locations ; overlying;
- Silty Clay at depths between 0.3 and 0.9 m BGL; overlying
- Weather sandstone or shale at depths between 0.7 and 1.8 m BGL

In February 2021, Greencap undertook further investigations and a RAP addendum. The assessment identified fill containing demolition waste including asbestos cement fragments (ACM and AF/FA). Benzo(a)Pyrene TEQ exceeded the adopted site criteria in the midsection area. Concentrations of leachate (ASLP) analysis for metals and PAHs were either below detection limit or at low levels indicating leaching from fill is not expected to pose a risk to aquatic ecosystem receptors distant from the site given the low volumes of stormwater infiltration once the majority of the site is sealed and stormwater is diverted to the municipal drainage system.

A second RAP addendum was produced by Greencap in October 2021 following additional sampling which planned for excavation of trenches and installation of underground services. The RAP addendum V2 documented the results and confirmation of capping layer designs and proposed imported materials.

Greencap was engaged to supervise remediation works of Stage 1 between in 2021 and 2022 to enable monitoring of the cap and contain remediation strategy. The supervision ensured that the RAP was implemented and a durable surface layer was placed to prevent exposure of the lead, PAH and asbestos contaminated fill soils on the site. A validation report for Stage 1 was issued in April 2022.

Further investigation for Stage 2 area was undertaken by Greencap in August 2022. The following results were obtained during the investigation:

- Fill depth varied across the area ranging from 0.3 m BGL to 0.7 mBGL;
- Natural material comprising of light grey to orange clay with weathered shale was encounter underlying fill material at a of depth 1-1.3 mBGL;
- Chemical results were either lower than the limit of reporting or lower than the adopted site criteria; and
- > ACM was not noted at the time of investigation.

Greencap was engaged to supervise and validate the remediation works for Stage 2 in 2022. As part of the remediation works a "borrow pit" was proposed to be excavated allowing disposal of less costly VENM and retainment of excess contaminated soil generated onsite. A VENM assessment (Ref: J169905-01 VENM Certificate -Borrow Pit – V1, Greencap August 2022) was undertaken to understand the depth of material onsite that is suitable for use as VENM. On 27 August 2022, Greencap was advised that the depth of fill at the original borrow pit was deeper than expected.

> . The dimensions of the pit were 13m (L), x8m(W) and 2m(D) was backfilled with impacted



material sourced across the site. The pit was capped by placing a geofabric marker layer on top of the backfill followed by a covering of validated VENM material plus concrete flooring to meet a minimum thickness of 300mm. Clean material excavated from the pit was used to level the site and within service trenches across the site.

In 2023 the site was validated in accordance with the RAP for the site. Impacted fill is present across the site below the marker layer followed by clean material. The depth of the marker layer varies from 50-150mm below the timber deck areas at the site to 500mm of clean soil within the garden areas (refer to Figures 8 to 16). Information from previous reports state that the capped fill material across the site ranged between 0.3 to 0.7m bgl. Asbestos containing material, lead TRH >16-34, benzo(a) pyrene and total PAH remains in fill soils along the northern part of the site (Stage 1) while lead and benzo(a)pyrene impacted soil remain on the southwestern part of the site . It is important to note that the existing contaminated material present across the site is capped under the marker layer and clean material and therefore not offsite migration can occur. As discussed in Section 2.4, contaminants of concern on site do not leach and therefore groundwater is not impacted.

3.1 Remediation History

3.1.1 Basketball Court Capping Works

Remediation earthworks commenced in January 2021 in association with construction of the basketball court in the north-eastern part of the Stage 1 site shown on Figures 3 and 4.

Full details including photos of these works and validation of imported materials are documented in the validation report for the basketball court (refer: *J169905 Remediation Validation Report (Basketball Court Area) - Darlington Public School August 2021*), summarised below.

The remediation of the land covered by the basketball court involved excavation and offsite disposal of fill to achieve design ground levels, followed by importing and placement of gravels and asphalt paving across the playing court and access pathways.

The capping layer across the basketball court area placed on the geofabric marker layer that covers the contaminated fill includes:

- Validated imported natural rock gravel aggregate subgrade and surface asphalt placed across the court area;
- Imported validated topsoil placed below the turfed southern area; and
- Imported validated recycled concrete gravel placed along the 1 m wide pathway along the west side of the court and surface asphalt placed across the court area (north-south aligned pathway).

3.1.2 North-eastern Tree Protection Zone Capping

Full details including photos of these works and validation of imported materials are documented in the validation report for Stage 1 works (refer: J169905 Remediation Validation Report V1 (Stage 1 Area) - Darlington Public School April 2022), summarised below.

- Capping layer barriers over contaminated soils in the north-eastern tree protection zone, included decking, concrete benches and garden beds located between the basketball court and the northern and eastern site boundaries (refer to Figures 3 and 4). These were constructed after the basketball court). Decking boards were constructed approximately 300 mm above ground surface level, and a layer of mulch was placed on the marker layer geofabric on the ground surface below the deck. The marker layer fabric was pinned onto the soil surface using 200 mm long steel pegs;
- Access to the area below the deck was incorporated including removable decking boards and access to the void below the deck at the eastern end of the tree protection zone; and





• Concrete benches were constructed on the geofabric between the northern deck area and the basketball court asphalt surface.

3.1.3 New Block D and Library Building Concrete Floor

Full details including photos of these works and validation of imported materials are documented in the validation report for Stage 1 works (refer: J169905 Remediation Validation Report V1 (Stage 1 Area) - Darlington Public School April 2022), summarised below.

- The concrete floor slab of the new building formed the capping layer over the entire western portion of the Stage 1 site as shown on Figures 3 and 4. Concrete floor slab thickness (180 mm) plus minimum 120 mm base course/subgrade layer on the marker layer geofabric comprise the 300 mm capping layer below the new building; and
- In addition, two concrete planter beds were installed above concrete cap within Block D . These planter beds were filled with approximately 300mm of Smartmix 5 (bottom) and 400mm of Smartmix 6 (above) landscaping soils from Benedict Sands at Menangle.

3.1.4 Preschool Area and New Landscaping East of Block D

Full details including photos of these works and validation of imported materials are documented in the validation report for Stage 1 works (refer: J169905 Remediation Validation Report V1 (Stage 1 Area) - Darlington Public School April 2022), summarised below.

- Figures 2 to 4 and the attached diagrams ("Preschool Capping Markup" and "External Works Capping Sections" by FJM Studio Pty Ltd) show the capping layer variations for the preschool and new landscaping areas;
- Pre-capping excavations were conducted in the outdoor area between Block D and the basketball court (includes preschool) in July/August 2021. This included construction of a retaining wall along the eastern boundary of the preschool area. Concrete was placed on marker layer fabric in the foundation trench for the retaining wall;
- Ground level for the preschool was raised west of the retaining wall, using imported materials for the capping layer. Marker layer fabric was laid on the ground surface. Imported VENM classified clay and sandstone from the source sites at Zetland and Willoughby was placed on the marker layer and formed the first lift of the capping layer. Subsequent capping layer materials added included VENM classified gravel from the Dunmore quarry and Smartmix 6 (sandstone/compost mix) landscaping soil from Benedict Sands at Menangle;
- Concrete pathways between the new building and the basketball court shown on Figure 4 were completed in January 2022; and
- Various capping materials were used above the marker layer and included VENM classified clay and sandstone from the source sites at Zetland and Willoughby, VENM classified gravel from the Dunmore quarry, VENM classified metal dust from the Lynwood quarry and Smartmix 6 (sandstone/compost mix) landscaping soil from Benedict Sands at Menangle.

In addition, a sandpit was built above the first lift of Willoughby sandstone as follows:

- 150 mm VENM classified gravel from Dunmore quarry;
- 5 mm Black plastic protection board;
- 30 mm Drainage cell; and
- 550 mm Washed Newcastle Sand VENM from Redisand Salt Ash Quarry.

3.1.5 VENM Borrow Pit

A borrow pit area of approximately 104 m², as depicted in markup figure *(ref: sheet no A-12001 Rev B)* was located within the south -western corner of the site underneath the Block D building. Full details including photos of these works and validation of imported materials are documented in the validation report for Stage 2 works (refer: J169905 Stage 2 Validation Report Darlington PS).

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3.1.6 New Block D and Covered Outdoor learning area

The block D building footprint covers the entire western portion of Stage 2 and includes a concrete floor slab providing a capping layer function as shown on Figure 5 Concrete floor slab plus a base course/subgrade layer on the marker layer geofabric comprise the 300 mm capping layer below the new building as per the RAP (DP. 2020).

3.1.7 Landscaping area

East of block D, there are landscaping areas comprising of various surfaces (see figures 6 and 7) garden beds, rubber soft fall and astro turf areas and a timber composite deck, all connected via paved concrete walkways. To the northeast, adjacent the basketball court area there is outdoor landscaping, including garden beds, concrete paved walkways and rubber soft fall which connects to astroturf and a kick-about concrete seating area.

4 Management Activities: General Management Roles, Contingency Measures, and Responsibilities

Implementation of this Long-Term EMP is the responsibility of the site owner, currently the Department of Education. The subsequent sections of this report outlines proposed Site Management Procedures. These procedures are provided to prevent potential adverse impacts to human health, site amenity or the environment from any residual contamination at the site. The procedures have been designed to minimise the potential for exposures to contamination, including asbestos in soils.

In addition to the requirements of this EMP, all works with potential to disturb all the capping area (refer to Figure 2 to 7) should comply with requirements of the DoE Asbestos Management Plan (currently October 2020 edition). This includes engagement of a Class A licensed contractor, and Licensed Asbestos Assessor, Safework NSW permit, restricted work hours if excavations disturb asbestos and could possibly cause dust emission.

4.1 Delegation of Roles and Responsibilities

Management should include implementing a system that delegates roles to various stakeholders. An example is included in **Table 2**. The school is to be made aware of this EMP and its implementation is managed by the School Principal / Deputies.

Table 2: Responsible Persons/Roles: Management of Capping Area		
Party Responsible	Key Roles / Actions	
Department of Education (Asset Management Unit)	Responsible for approving any proposed works which may cause disturbance to the capping layer or any disturbance of the contaminated soils (particularly works which do not require development consent from an external Consent Authority). Ensure that the contents of this EMP are applied throughout the duration of future Site construction works / civil activities, should they occur. A copy of this EMP is to be provided with the development application submission documents to	
	any consent authority, for approval of proposed works. Update and or review the EMP in case that the contamination status at the site changes, including removal of contamination	
Darlington Public School	The school is to be made aware of this EMP and its implementation is to be managed by the school Principal / Deputies, including reporting to DoE on commencement and progress of any excavation works at the capping footprint area.	

The DoE's Asset Management Unit (AMU) is to provide a copy of this EMP to any contractors and subcontractors undertaking works in the capped area.

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Table 2: Responsible	Persons/Roles: Management of Capping Area
Party Responsible	Key Roles / Actions
	Ensuring that the contents of this EMP are applied throughout the duration of future Site construction / civil activities, should they occur.
	Ensure that adequate ground markers and fencing are provided for the duration of any site works to prevent users of the school entering the work area, and to prevent contractors from inadvertently excavating into the contaminated soils area.
Other Consent Authorities (eg	Responsible for approving any works (requiring Development Consent), which may cause disturbance to the capping layer or any disturbance to contaminated soils.
City of Sydney Council or NSW Department of Planning)	Ensure that requirements of this EMP have been considered at the design stage of any works which may cause disturbance to the capping layer or any disturbance to contaminated soils.
	Supervising Contractors are required to undertake the following, as a minimum, to comply with the requirements and recommendations of this EMP and the DOE Asbestos Management Plan:
	Ensure that adequate ground markers are provided and maintained for the duration of any site works to prevent contractors from inadvertently excavating into the capping area.
	Any subsurface works beneath the cap that penetrate the geotextile marker layer must be carried out by an appropriately licensed asbestos removal contractor. In such situations, an asbestos removal control plan must also be prepared and works completed in accordance with the NSW Work Health and Safety Regulation, 2017. Hold a Class A Friable asbestos works license.
	Through site inductions and daily toolbox talks, ensure that all contractor and sub-contractor workers have been made aware of the presence of contaminated soils including asbestos at the site and the requirements of this EMP.
	Oversee and monitor daily work activities of staff to ensure that no unauthorised breaching of the capping layer.
Contractors	Ensure all staff are using appropriate PPE as indicated in the AMP and following the procedures as set out in the site-specific safe work method statements (SWMS) and in compliance with current WHS requirements.
(earthworks)	Provide dust suppression and ensure air monitoring is in place during any activities that have a potential to disturb fill within the capping area.
	Ensure authorisation and a permit is provided by the DoE/appointed authorising body prior to any works which may cause disturbance to the capping layer. Sufficient notice must be provided to facilitate planning of works.
	Provide a spotter during any activities with a potential to encounter asbestos, i.e. excavation of service trenches and swales, cut and fill activities.
	Undertake daily inspections of their workers and work practices to ensure that the integrity of the capping layer has not been compromised.
	If authorisation has been provided to excavate into the capping layer, ensure that all necessary controls are strictly adhered to.
	Ensure certification and testing data is provided for all volumes of soil / fill imported to site. Copies of the testing certificates are to be provided to the DoE either on or prior to arrival to site.
	Ensure that the hygienist / environmental consultant is notified prior to backfilling to confirm that the backfill material has been validated for use.
Hygienist /	
Licensed Asbestos	Preparation of a project specific Asbestos Management Plan (AMP), in compliance with the DOE AMP.
Assessor / Contaminated land	Air monitoring stations should be established at locations surrounding the works area to monitor for free asbestos fibres. If any asbestos fibres are recorded above reporting or background limits, then works shall cease at the site until further management requirements are developed and
consultants	implemented to control the work area.

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Table 2: Responsible Persons/Roles: Management of Capping Area		
Party Responsible	Key Roles / Actions	
	As a minimum it is recommended that background air monitoring be conducted at designated boundaries of the work zone and/or boundaries of the site in proximity to populations of concern, as determined by the scope of works and specific site conditions assessed at the start of each day (e.g. weather conditions / wind direction).	
	Visual assessment of air quality will be undertaken. If it is considered that dust is being generated unnecessarily, then works will be halted until dust preventative measures can be implemented.	
	Air Monitoring should be undertaken by a competent person with sampling and analysis conducted by a NATA accredited laboratory in accordance with the method as prescribed in Safe Work Australia Guidance Note: Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC:3003(2005)].	

4.2 Site Inspections and Capping Layer maintenance

The site owner (DoE) should ensure maintenance of the capping layer to prevent exposure of the underlying contaminated materials including asbestos. Routine inspections are to be scheduled annually, with additional inspections to be undertaken following heavy rainfall events or following the completion of any intrusive works to be carried out by DoE's Asset Management Unit (AMU). For landscaping areas covered with mulch across the site (considered as areas of higher risk areas due to capping degradation), routine inspections should be carried out at least every six months or after a significant rain event. During these inspections, the checklist provided in **Appendix A** – **Environmental Checklist** will be filled by the suitably qualified personnel undertaking the inspection. Further requirements for the different types of covers across the site is outlined below.

4.2.1 Decking/tree protection areas

During the routine inspection, the ground surface within the north-eastern Tree Protection Zone, over garden bed capping layer soils, on the east and south-east section of the site must also be visually assessed. Any signs of erosion or degradation of the ground surface within the tree protection zones must be immediately reported to the site owner (or the site manager appointed by the site owner). Rectification works must be commissioned as soon as possible following the identification of any negative impacts to the tree protection zones.

4.2.2 Unsealed Area Maintenance:

The unsealed areas present across the site (Refer to Figures 2 to 7) must be maintained to ensure the integrity of the cap and to prevent contact with potentially contaminated soils.

- In-case of erosion or damage to surface layer soils, turf, surface layer mulch areas or exposure of the capped materials are identified during an inspection, the consultant doing the inspection will notify the site owner, schools principal, NSW EPA Accredited Site Auditor (if required by the site owner), and site manager within 24 hrs. The survey for the site showing the final capping levels is attached in Appendix B;
- The site manager will organise appropriate fencing for the area until the rectification works are undertaken and validated;
- The site owner will engage (within 1 month following the receipt of notification) a suitably qualified and experienced remediation/ earthworks contractor to undertake necessary rectifications, if required;
- A qualified consultant will be engaged by the site owner:
 - To undertake validation sampling of any imported soils required for rectification works/capping layer maintenance and test the soils for the following analytical suite: asbestos fines/ friable asbestos (AF/FA), total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene xylene, and naphthalene (BTEXN), polycyclic-aromatic hydrocarbons (PAH), and heavy



metals (As, Cd, Cr, Cu, Ni, Zn, Hg, Pb);

- > To supervise the importation of soils; and
- Issue a validation report advising whether the capping area has been successfully re-instated and the area can be accessed by site users (if not consultant to provide advice regarding further work).

4.2.3 Hardstand Maintenance:

- The integrity hardstand surfaces on the site (comprised primarily of concrete or covered by building footprints) must be maintained to prevent contact with potentially contaminated soils. Hardstand pavements are present across the site in both indoor (in an enclosed space that comprises walls and roofing, such as a building or similar) and outdoor (open outdoor areas) areas.
- Annual inspections must be undertaken by DoE's Asset Management Unit (AMU) owner to ensure that the hardstand pavements are not showing signs of deterioration.
- Should a pothole or cracking be observed in the hardstand pavement, such that users of this area could be practicably exposed to the underlying sub-surface materials present beneath the pavement and its associated sub-grade, then repairs are required to be undertaken following the protocol set out below (Sections 4.4 & 4.5) for minor or major works as appropriate.
- Guidance on determining the period of time in which repairs must be made is as follows:
 - Indoor Areas which are regularly used and occupied by workers or users of the site Repairs to hardstands must be made within a 2-week period from observing damage;
 - Indoor Areas which are not regularly used or occupied by workers or users of the site Repairs to hardstands must be made within a 4-week period from observing damage;
 - Outdoor Areas which are regularly used and occupied by workers or users of the site (such as footpaths, access walkways, entrances to buildings) Repairs to hardstands must be made within a 2-week period from observing damage; and
 - Outdoor Areas which are not regularly used or occupied by workers or users of the site Repairs to hardstands to be made within a timeframe considered to be reasonable by the Operator but no longer than a 4-week period.

The site owner will engage suitably qualified consultants and specialists to undertake the works recommended following each inspection (if required) within 1 month following the receipt of inspection checklist. In-case a genuine health or environmental risk is identified during the required inspections (or any other non-routine inspection or a reported incident), the site manager will be notified immediately (within 24 hrs) who will then organise fencing and access to these areas will be blocked as soon as possible. The area is required to be reinstated in accordance with the procedures outlined in Section 4 of this EMP.

4.3 Environmental/Awareness Training

All contractors undertaking intrusive works at the site should undergo general environmental awareness training regarding their responsibilities under the EMP. The training should ensure that all employees understand their obligation to exercise due diligence for environmental matters. It should be noted that "employees" in this instance means all people working on-site including contractors and sub-contractors.

It is the responsibility of the site owner (DoE) to prepare their site specific training; however any environmental training programme should incorporate the following:



- A general site induction for all site staff, contractor and subcontractors to be conducted prior to the commencement of site works with all site inductions kept on record;
- Familiarisation with the requirements of the Long-Term EMP (summary of the EMP and all associated management plans);
- Environmental emergency response training (outlining potential environmental emergencies and relevant contacts and response procedures);
- Familiarisation with site environmental i.e. location and composition of the capping layer; and
- Targeted environmental training for specific personnel. For example, the specified personal responsible for maintenance of the capping layer may require specific training in compliance monitoring.

The need for additional or revised training shall be identified and implemented from outputs of:

- Changes to the on-site and surrounding receptors (change of on-site receptors may occur in the scope of potential future land-use changes, in such instances a review of the conceptual site model of the site would be required); and
- Alterations to regulatory frameworks and future reviews of the Long-Term EMP as required.

Training records are to be prepared and retained by Darlington Public School/ DoE / Project Manager.

4.4 Excavation Approvals and Permitting

The following information in **Table 3** is a summary of the compliances and approvals required for any proposed civil works with potential to disturb the capping area (excluding Generalised Landscaping Works & Minor Works as indicated in Section 4.5).

All "minor landscaping activities" are to be restricted to the areas above the marker layer (less than 0.2 m below ground level (BGL)) in the capped areas (refer to Section 4.5 for details).

An asbestos management Plan (AMP) should be prepared by a licensed asbestos assessor (LAA) for any excavation works below the capping layer, for each proposed episode of work into the future.

The following documentation is required for submission to DOE to obtain works approval:

- Copy of licences of workers/contractors undertaking the works in accordance with the requirements of the AMP and relevant OH&S regulations and NSW Workcover;
- Description of Works Plan/Methodology by workers/contractors including any control measures required as per the AMP, scope (minor or major works) and duration of works;
- Safety documentation for the works;
- Statement indicating the appointed suitably qualified consultant/hygienist for supervision and validation of works;
- Evidence of reinstatement of the capping layer as applicable (e.g. photographical records, surveys, etc) after completion of the works;
- Clearance(s)/ Validation Report by the appointed suitably qualified consultant/hygienist after completion of works; and
- Any analytical results including chemical analysis and Asbestos (AF/FA) analysis obtained during supervision of works or for validation purposes after completion of the works

The following protocols are to be adopted when carrying out any works below the capping layer. The capping layer is to be reinstated at the completion on of any subsurface works, as per the capping layer specifications as detailed in *Table 3* below.



In accordance with Clause 458 of the *Work Health and Safety Regulation 2017* (NSW), Class B asbestos removal license holders are permitted to conduct asbestos removal work or asbestos-related work that involves non-friable asbestos. However, as a requirement of the Department of Education Asbestos Management Plan, asbestos-related works are to be supervised by a Licensed Asbestos Removal Contractor (LARC) who holds a Class A removal license (Asbestos Management Plan of NSW Government Schools, NSW Department of Education. October 2020).

Table 3: Planning and	Table 3: Planning and Management of Intrusive Works in Capping Areas		
Activity	Standards / Compliance	Hold Point	Approval Issue
Site Inductions	The school is to be made aware of this EMP and is to be managed by the school Principal Deputies. The DoE's Asset Management Unit (AMU) is to provide a copy of the EMP and a copy of the asbestos management plan (AMP) prepared for the site, to any contractors and subcontractors undertaking works in the capping area. Contractors and sub-contractors to be inducted to the site and made aware of this EMP and subsurface conditions expected.	All contractors and sub- contractors to provide appropriate documentation, insurances and Safe Work Method Statements (SWMS) to the Site Owner (DoE).	Record of Inductions
Planning subsurface works	No excavation works are to commence without approval from the DoE. Contractors working within potentially contaminated areas must either hold a WorkCover NSW asbestos removal licence (Class A minimum- as per the DoE AMP guidelines) or subcontract an asbestos licenced contractor. Contractors not holding asbestos removal license are to be supervised at all times by the asbestos licenced contractor, suitably qualified consultant and undertake asbestos awareness training. Earthworks contractors and project managers to undertake the works to provide evidence of their Safework NSW asbestos removal licence (Class A minimum) and notification of intent to disturb remove non friable asbestos.	An approvals process to include review and approval of contractors proposed excavation works plan by the consent authority and/or their appointed suitably qualified consultant. Approval of an excavation works plan requires ensuring that all controls are included in the contractor's excavation works plan.	Approval to commence works from site manager, occupier and/or owner (DoE) to contractors performing civil works.
Monitoring and Supervision	DoE to engage a qualified occupational hygienist or Licenced Asbestos Assessor (LAA) or suitably qualified contaminated land consultant to manage progress and completion of any excavation works. Includes ensuring that all controls are implemented and	Suitably qualified consultant/Hygienist to prepare asbestos clearance reports on completion of each stage of civil works or maintenance and/or reinstatement works. Site manager (DoE) to approve and	Site owner (DoE) approvals and works as executed reports and validation reports to be provided to the site owner (DoE) and/or regulating authority.

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Table 3: Planning and Management of Intrusive Works in Capping Areas			
Activity	Standards / Compliance	Hold Point	Approval Issue
	inspection of marker layer, capping layer, topsoil layer and vegetation/mulch reinstatement.	document all completed rectification works. The consultant should provide validation reports including details of excavation works, sample analysis results, waste classification and materials used in backfilling/reinstatement.	
Notifications / Approvals for Major Construction works or site redevelopment works	Should works, more than minor in nature (for example installing new underground services), or where excavation to a depth greater than 0.5 mbgl is required, the works are to be reviewed and approved by Site owner (DoE) prior commencement and preparation of Asbestos Management Plan (AMP) is required (refer to Section 7.7). Any works in the capping area is to be approved by the DoE and a copy of the EMP provided Works are to be approved by Site owner (DoE) and Other Consent Authority (City of Sydney/ Department of Planning) and submitted to City of Sydney for development consent. If possible, exclude any penetration of capping layer at design stage.	Review of concept design, detailed design and site works management plan by a qualified engineer and suitably qualified consultant. Monitoring of civil works and capping layer reinstatement upon completion by a suitably qualified consultant.	Site manager (DoE) approvals and works as executed reports to be provided to the site owner (DoE) and/or regulating authority.

4.5 Generalised Landscaping Works & Minor Works

Minor works comprise activities that only require disturbance at surface to depths of 0.2 metres below ground surface. Examples include:

- Pavement surface maintenance.
 - Filling in of cracks;
 - $\circ \quad \text{Patching of holes; and} \quad$
 - Small scale replacement of sections of pavement where sub-surface at depths greater than
 0.2 m are not required to be disturbed.
- Minor landscaping works.
 - Mowing of grassed areas -Raking or placing of additional growing medium on top of existing growing mediums;
 - o removal of surface weeds or similar Internal or External Building façade works;
 - Mulch replenishment;
 - Painting, pointing, plastering; and
 - Internal fit outs aboveground only.

Minor landscaping works does not include:

- Planting or any similar landscaping activity that requires excavation into the growing medium or sub-surface at depths greater than 0.2 m;
- Maintenance of the groundwater/seepage collection system; and

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• Maintenance of underground utilities.

All casual landscaping activities are to be restricted to the areas above the marker layer less than 0.2 m below ground level (BGL) in the outdoor landscaped capped areas (*Figures 2 to 7*) Landscaping activities below the marker layer are prohibited. Plants with short roots should be planted within the landscaping areas to avoid any potential damage to the existing marker layer. This Long-Term EMP must be read, understood and followed by any person prior to undertaking landscaping works.

The following control measures for minor works are required:

- No eating, drinking, smoking; avoid contact with soil (wear gloves);
- Wash hands and clothes after work and before eating or smoking;
- A half-face respirator (fitted with organic cartridges) or dust-masks must be available for use at the Site in the event that significant odours or dust is generated during the works;
- Dust generation should be controlled by dampening the materials; and
- Where the integrity of surface coverings has been compromised such that the required repairs are considered to be Minor Works, an exclusion zone must be established around the impacted area to preclude exposure to the subsurface by users of the site until such time that repairs can be completed. The exclusion zone is to establish by using physical barriers such as bollards, cones, tape or mesh. Timeframes in which the repairs that are classified as Minor Works are required to be completed are provided in Section 4.2 of this EMP.

4.6 Management of Subsurface/Excavation Works

In addition to *Section 5.3* (Regulations/Guidelines) and *Table 3* above, all works with potential to disturb the contaminated soil below the marker layer are to be carried out in accordance with:

- The NSW Work Health & Safety Regulation 2017;
- Code of Practice How to Safely Remove Asbestos (NSW Government, 2019); and
- Code of Practice: How to Manage and Control Asbestos in the Workplace (NSW Government, 2019).

An asbestos management Plan (AMP) should be prepared by a licensed asbestos assessor (LAA)/consultant for any excavation works below the capping layer. Additional details are provided in Section 4.7.

The following protocols are to be adopted when carrying out any works below the engineered capping layer. The capping layer is to be reinstated at the completion on of any subsurface works, as per the capping layer specifications as detailed in Table 5 below.

Prior to the commencement of subsurface works, personnel being employed to undertake any intrusive works above the marker layer must develop a specific Safe Work Method Statement (SWMS) which adequately manages the potential for exposure to asbestos contaminated soils. In accordance with Clause 458 of the *Work Health and Safety Regulation 2017*(NSW), Class B asbestos removal licence holders are permitted to conduct asbestos removal work or asbestos-related work that involves non-friable asbestos. However, as a requirement of the Department of Education Asbestos Management Plan, Asbestos related works are to be supervised by a Licenced Asbestos Removal Contractor (LARC) whom holds a Class A removal license.

Table 4 summarises Capping Layer Methods implemented during remediation. Refer to Figures 8 to 16 showing the section for the various types of surface cover across the site.

Table 4: Remediation Capping Layer Methods		
Management Area	Remediation Solution	
Basketball Court	Orange geotextile fabric marker layer placed over the contaminated fill;	


Table 4: Remediation	Capping Layer Methods
Management Area	Remediation Solution
	 300mm of aggregates placed on the marker layer; and 50-100 mm of asphalt surface paving.
Garden Bed and Synthetic grass areas on the East side of the Basketball Court	 Garden Bed: Comprised of the following layers: a. Orange geotextile fabric Marker Layer b. 50-100 mm Road base, c. 300 -400 mm of VENM soil d. 50 mm mulch e. Plants AstroTurf: Comprised of the following layers: a. Orange geotextile fabric Marker layer b. 300 mm Road base c. 40 mm AstroTurf
Tree Protection Zone (TPZ)	50-150 mm of mulch or loose rock used on top of the marker layer (orange geofabric), below a wood decking. The wood decking to incorporate sufficient access points and/or use of removable boards to allow top up of mulch layer when required
Service/Utility Trenches	 Trenches Outside Buildings Footprint Capping Orange geotextile fabric Marker Layer to cover the base and walls of the trench excavation and across the ground surface between trenches VENM/validated sand and gravel aggregates for trenches backfill and depth varies pending on type of service Orange geotextile fabric marker layer above backfilled service trenches Final Caping Layer
Structures and New Block D Building Concrete Floor	 Orange geotextile fabric marker layer 50 mm base course/subgrade layer 180 mm concrete floor slab
Landscaping Areas	 Orange geotextile fabric marker layer Final Caping Layer Gardens: 500 mm approved/certified VENM soil Soft-fall or concrete pathways: 300 mm approved/certified VENM soil
Handball court area	 Orange geotextile fabric marker layer; 180 mm concrete floor slab; and 120 mm base course/subgrade layer.

4.7 Asbestos Management Plans (AMP) & Excavation Management Controls

Preparation of a project specific Asbestos Management Plan (AMP) is required for each episode of works in the future, in compliance with Safework NSW 2019 and the DoE AMP (2020). The following controls are required to be covered by each works project specific AMP in the future, to reduce the risk of direct exposure to, and prevent cross contamination of contaminated residual soils during



proposed future excavation works. The requirements of the DoE AMP are also to be recognised, including permissible work hours.

- Given the nature of the site use (Public School), works should be conducted outside of general business hours (Monday to Friday: 8am to 5 pm) in order to reduce potential exposure to encapsulated Asbestos Containing Material;
- Exclusion zone fencing will be applied between work areas and publicly accessible or operational school areas prior to undertaking any excavation on-site. Exclusion zone should be established with minimum 5 m buffer distance to publicly accessible areas and operational sections of school (where practical);
- Appropriate personal protective equipment (respirators, gloves, overalls) is to be worn by excavation workers as defined by the AMP;
- Dust suppression mechanisms and air monitoring undertaken by a Licensed Asbestos Assessor (LAA) are to be implemented during excavation works ensure air monitoring is in place during any activities that have a potential to disturb fill below the marker layer; air monitoring thresholds and monitoring locations to be covered in the AMP;
- Establishment of exclusion zones: The boundaries of the asbestos remediation areas are to be established with barriers, to identify the ACM areas and caution access by unauthorised / unprotected persons. Sufficient warning signs (e.g. asbestos removal in progress) erected at regular intervals around the boundary of these exclusion zones. All works are to be monitored and supervised by a suitably qualified environmental consultant;
- Segregation of excavated materials (mulch, topsoil and contaminated soil), placement on plastic sheeting until use as backfill or off-site disposal as classified waste - All excavated materials/ stockpiles are to be placed on plastic sheeting (200µm builders polythene or other synthetic barrier membrane material), with erosion and perimeter sediment controls to prevent contamination of ground surface layer soils (topsoil). Stockpiles are to be securely covered with plastic sheeting during inclement weather or if they remain in place for more than 1 day prior to off-site disposal (as Special Waste);
- Footprint of temporary stockpiles and their surroundings will be validated by a suitably qualified environmental consultant; and
- Off-site Disposal: Waste disposal documentation should be provided to the site owner (DoE) / consent authority for all excavated material removed from the site. Waste tracking and disposal documentation should demonstrate that disposal of all soil from the site is carried out in accordance with the NSW *Waste Classification Guidelines* 2014 and that materials were transported to an appropriately licensed landfill.

4.8 Instructions to Avoid Cross Contamination During Excavation

Prior to undertaking any earthworks at the capping area (See **Figures 2 to 7**); the following steps, which are necessary to avoid cross-contamination of clean soils used in capping, and must be (together with items detailed under **Section 4.7** and **4.8**) communicated with and understood by the **excavator operators and earthworks contractors** (who will be undertaking any works at the capping area):

- Excavate the clean soils (first 300-500 mm of the cap) first until the geofabric marker layer can be seen;
- Place plastic sheeting near the excavation area to cover an area large enough where all contaminated soils to be excavated can be placed;
- Remove the exposed marker layer and neatly excavate contaminated soils (without allowing it to mix with clean soils) and place on top of the above-mentioned plastic sheet;



- Contaminated soils must not be mixed with clean capping material;
- Contaminated soil stockpiles to be placed on and be covered with plastic sheeting to avoid cross contamination; and
- It is contractor's responsibility to ensure, after their work is finished, no contaminated soils remain on the top 300 mm for soft-fall capped areas and 500 mm for garden capped areas or anywhere around their work area.

4.9 Unexpected Finds on Site

Any potential ACMs encountered on the ground should be managed as follows:

- Stop work, inform the site manager (site manager will inform school's principal and DoE within 24 hrs after they are aware of an unexpected finds situation);
- Barricade the area from the remaining work site and attach warning signs;
- Keep the area moist with water sprays (if Asbestos Containing Materials);
- Engage a suitably qualified consultant to carry out an assessment of the area to determine the nature and extent of contamination (e.g. if friable asbestos is present, including in soils near observed asbestos material);
- A remediation and validation plan is to be developed by the suitably qualified consultant;
- Asbestos materials, if identified, must be managed in accordance with the Code of Practice How to Manage and Control Asbestos in the Workplace (NSW Government 2019) and Code of Practice How to Safely Remove Asbestos (NSW Government 2019) and requirements;
- Should visual or olfactory indicators of contamination (e.g. staining of soils, hydrocarbon odours, buried drums or buried waste material), the consultant will collect chemical samples to be tested for the relevant contaminants of concern;
 - Suitably qualified consultant to adopt a sampling density & methodology by using professional judgment with reference to relevant guidelines (inc. NEPM 2013) (a minimum of 3 samples will be collected per unexpected find) and decide on an appropriate chemical suite (minimum chemical suite will be: Total recoverable hydrocarbons (TRH), benzene, toluene, ethyl-benzene xylene, and naphthalene (BTEXN), polycyclic-aromatic hydrocarbons (PAH), and heavy metals (As, Cd, Cr, Cu, Ni, Zn, Hg, Pb)); and
 - Other contamination (e.g. lead, petroleum hydrocarbons, PAH, heavy metals), if identified requires assessment of results against relevant threshold criteria. Should exceedances identified suitably qualified consultant to advise if further investigation or remediation is required. Remediation of material that exceeds the site criteria will include either its off-site disposal as appropriately classified waste or onsite containment.
- Management and remediation of "unexpected finds" will be performed under the supervision of the environmental consultant, (and the asbestos removal contractor and in accordance with SafeWork NSW requirements, for ACM, FA and AF). Monitoring for asbestos fibres in accordance with the Guidance Note on the Membrane;
- Filter Method for Estimating Airborne Asbestos Fibres (NOHSC 2005) will be required during any disturbance of asbestos contaminated materials;
- Asbestos and asbestos contaminated material removed from site must be disposed as a Special Waste to an appropriately licensed landfill;
- A validation report is to be prepared by a suitably qualified consultant and issued for the site upon completion of the remedial works; and
- A suitably qualified consultant is to issue clearance certificates for ACM remediated areas.





4.10 General Ongoing Management Roles and Responsibilities

As a minimum requirement, bi-annual visual inspections of the area of capping should be conducted and are the responsibility of the site owner (DoE). Inspections are to focus on the assessment of potential issues that may hinder the structural integrity of the cap with examples provided in *Chart 1*: Schematic Summary.



5 Communications and Notifications of Contamination Contained Onsite

5.1 Stake Holders, Roles and Responsibilities

The roles and responsibilities of the following stakeholders are included in this Long-Term EMP:

- Darlington Public School (site manager);
- NSW Department of Education (Site Owner: DoE Schools Infrastructure/Asset Management Unit);
- The Consent Authority (City of Sydney and/or NSW Department of Planning); and
- Contractors and Consultants (including architects/designers) involved in site development works.



Full details concerning stakeholder responsibilities are included in Section 4.1 above.

Contaminated soils pose a risk to construction and maintenance workers and other site occupants if exposed. Control measures will be appropriately planned and implemented by all stakeholders involved in future works that disturb or have potential to disturb the contaminated soil contained onsite.

A decision process flow chart including stakeholder decision steps can be developed for inclusion in this EMP. The decision process and hierarchy of stakeholders involved will depend on DoE preferences and requires input from the DoE.

5.2 Notifications of Contamination Contained Onsite

The on-site contamination containment system and existence of this Long-Term EMP site management document requires a notification system to be carried out by the site owner including:

- A covenant on the land title; and
- Registration on the Councils Planning System (Section 10.7 certificate documents) issued by Council.

Asbestos and additional contamination poses a risk to construction and maintenance workers and other site occupants if exposed. Control measures will be appropriately implemented for future works that disturb or have potential to disturb the contamination contained onsite.

This Long-Term EMP is to be made available to site owners, managers, school's principal, contractors and site workers and any other relevant persons. All relevant personnel at the site should be made aware of the presence of the contaminated soil and the need to ensure it remains undisturbed.

Diagrams showing the location of the capped areas are included in the *Figures* section of this report (See Figure 2 to 7).

5.3 NSW Legislation and Regulations

This section lists laws and regulations indicating responsibilities and options for enforcement of this Environmental Management Plan.

5.3.1 NSW Legislation and Regulations POEO Act, 1997/POEO Act (Waste) Regulation, 2005

The Protection of the Environment Operations Act 1997 (POEO Act) is a key piece of environment protection legislation administered by NSW EPA. The POEO Act provides a single integrated system of licensing to control the air, noise, water and waste impacts of an activity, with the purpose of protecting the environment. The NSW EPA is the regulatory authority for the licensing of activities specified under Schedule 1 of the POEO Act (scheduled activities) and in most cases councils are the regulatory authority for non-scheduled activities. General requirements under the POEO Act, relating to the ACM containment area are incorporated into the appropriate sections of this EMP.

5.3.2 Contaminated Land Management Act 1997

In NSW, the management of contaminated land is shared by the EPA, the Department of Planning (DoP) and planning consent authorities (usually local councils). The Contaminated Land Management Act 1997 (CLM Act) is the primary Act under which contaminated land is regulated in NSW. Under the CLM Act, EPA regulates contaminated sites where the contamination is determined to be Significant Enough to Warrant Regulation (SEWR). Contaminated sites that are not regulated by the EPA are managed by local councils through land use planning processes.

This Long-Term EMP is prepared in general accordance with guidance documents endorsed by NSW EPA under Section 105 of the CLM Act. The primary references under the Act include:

• NSW EPA (January 2022), Preparing environmental management plans for contaminated land: Practice Note;



- NSW EPA Guidelines for the NSW Site Auditor Scheme (3rd Edition), 2017;
- NEPC NEPM 1999 National Environment Protection (Assessment of Site Contamination) Amendment Measure (2013 amendment);
- Consultants Reporting on Contaminated Land Contaminated Land Guidelines (NSW EPA 2020);
- WA Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2021; and
- Guidelines for the Assessment of On-site Containment of Contaminated Soil (ANZECC 1999).

5.3.3 Work Health and Safety Act 2011 and Work Health and Safety Regulation 2017

The WHS Act 2011 and WHS Regulation 2017 expand the duty of care for work health and safety to all persons who conduct a business or undertaking.

 Requirements relevant to the capped area under the WHS regulation are to be implemented by the Site owner (Department of Education). In accordance with the Regulation, an asbestos register that addresses the encapsulated contamination must be developed and maintained for the site. This EMP is considered to form an appropriate asbestos management plan under the register in accordance with Chapter 8 Clause 429 WHS Regulation 2017.

5.3.4 Other NSW Policies and Guidelines

Other policies and guidelines applicable to environmental management of the site include:

- SEPP (Resilience and Hazards) 2021: Remediation of Land (notification of consent authority regarding proposed intrusive works requiring reinstatement of capping layer(s));
- NSW WorkCover (2014), Managing Asbestos in or on Soil;
- Code of Practice: How to manage and control asbestos in the Workplace (NSW Government 2019);
- Code of Practice: How to Safely Remove Asbestos (NSW Government 2019); and
- NSW EPA Waste Classification Guidelines 2014.

5.4 Communications Protocol

Communication protocols should be established to inform all stakeholders of any proposed works in the capping area.

Contact details for all stakeholders should be readily available and are provided below in Table 6.

The specific AMP and SWMS for proposed civil works will include communications and emergency response procedures.

5.5 Emergency Procedures and Response

The responsibility for emergency procedures lies with the Principal Contractor during civil works however, the following section is an example of the type of information which can be included in the SWMS or other general emergency procedure document.

In the event that an emergency arises, a potentially dangerous situation is encountered or suspect/unknown material is identified, site work is to cease immediately and the matter reported to the Principal Contractor for immediate assessment and action.

The following procedures should be followed if site personnel are injured, suffer exposure or a condition is uncovered that has not been covered by this RAP is identified:

• Visual contact to be maintained by personnel on site;



- In the event that any site personnel experiences any adverse symptoms of exposure whilst onsite, work will be halted and instruction or assistance sought from the Principal Contractor;
- In the event of an accident, the Site Supervisor and the injured person will compile an incident report, which will be submitted to the Principal Contractor within 24 hours of the incident. Follow-up actions will be carried out to correct the situation;
- In the event that an emergency situation arises, the Site Supervisor must address the problem and notify the ambulance, fire brigade and police if necessary. In addition, the Project Manager must be notified immediately;
- To minimise the impact of an emergency situation, at least one of the Principal Contractor's site personnel working full time on site will be trained in basic first aid procedures and all field personnel will have immediate access to a first aid kit; and
- Emergency phone numbers will be made available at the commencement of the project including ambulance, fire brigade, police and the nearest hospital. Emergency services can be called on 000 in a life-threatening emergency (or 112 via mobile phone). In addition, the mobile phone numbers of the Principal Contractor, Site Supervisor and the Project Manager will be made available.

Table 5: Contact Detai	5: Contact Details				
Organisation	Current Role	Responsible Person / Position	Phone no. / email		
Darlington Public School	Site Occupant	School Principal	(02) 9516 2300		
NSW Department of Education (Asset Management Unit)	Site Owner	To be advised	1300 42 651		
City of Sydney	Regulatory Authority	To be advised	02 9265 9333		
NSW EPA	Statutory Advice	To be advised	9995 5000		
SafeWork NSW	Asbestos Management Advice	To be advised	131050		
Consultants and Contractors	Consulting Hygienist, LAA, Licensed asbestos removal contractor	To be advised	To be advised		
State Emergency Service	Emergency Management	Not applicable	(02) 4226 2444		
Fire Brigade Ambulance Police	Emergency Management	Not Applicable	000 or 112 (mobile)		

Table 5. below summarises the details of contacts relevant to this EMP.

6 Review and Closure

The Long-Term EMP should be updated/reviewed in the following circumstances (if necessary):



- Subsequent to significant environmental incidents, such as a major breach in the capping layer; In the event of an unprecedented environmental incident, the site owner (DoE) will be required to commission an appropriate environmental professional agency to review and amend the Long-Term EMP and ensure its conformance with statutory or regulatory instruments;
- Where maintenance of the Long-Term EMP has indicated a need to improve performance in an identified area of environmental impact;
- At the release of any major updates to local or national pertinent legislation and/or guidance documentation;
- At the completion of internal and/or external environmental audits;
- At the completion of Site Inspection Reports; and
- At the completion of works which could have disturbed the capping layer.

Note: The EMP must remain in force until it can be demonstrated to no longer be required to the satisfaction of a NSW EPA accredited site auditor.

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:	C107251		Project Number	: J169905	
otion:		Da	rlington PS LT-EN	IP	
	Darlington Public School - 417 Abercrombie Street, Darlington NSW 2000				
Л	Reviewed:	AG	Date:	28/06/2023	
Reme	diation Area -	Garden	Bed Area on the e	east side BB Court	

Minimum 300 mm



	A.W. Edwards Pty Ltd					
	C107251 Project Number: J169905					
ion:	Darlintgon PS LT-EMP					
	Darlington Public School - 417 Abercrombie Street, Darlington NSW 2000					
	Reviewed: AG Date: 28/06/2023					
emediation Area - Astroturf on the east side BB Court						



150	mm			
150				
	A.W. Edwa	ards Pty L	_td	
	C107251		Project Number	: J169905
tion:		Da	rlington PS LT-EN	1P
	Darlington Darlington	Public Sc NSW 200	chool - 417 Abercro	ombie Street,
	Reviewed:	AG	Date:	28/06/2023
eme	diation Area	- Tree Pro	otection Zone (TP	Z)

Minimum 500mm

Deeper utility trench excavations to be covered with geofabric and filled with VENM

Trenches must <u>not</u> be installed in contaminated fill



Disclaimer: Greencap-NAA Pty Ltd has produced this map for the purpose of presenting a summary of relevant spatial information and gives no warranty in relation to the data (including accuracy, reliability, completeness or suitability) and accepts no liability (including without limitation liability for negligence) for any loss, damage or costs (including consequential damage) relating to any use of or reliance upon the data. Data must not be used for direct marketing or be used in breach of privacy laws. Service Layer Credits: © 2019 NSW Land and Property Information (Six Maps) and © 2019 NearMap Pty Ltd.

Minimum 500mm

	A.W. Edwards Pty Ltd					
	C107251 Project Number: J169905					
on:	Darlington PS LT-EMP					
	Darlington Public School - 417 Abercrombie Street, Darlington NSW 2000					
	Reviewed:	AG	Date:	28/06/2023		
eme	mediation Area - Trenches outside buildings footprint					

Minimum 300mm



Deeper utility trench excavations to be backfilled with onsite fill from cleaner areas



Minimum 300mm

	A.W. Edwards Pty Ltd						
	C107251 Project Number: J169905						
on:	Darlington PS LT-EMP						
	Darlington Public School - 417 Abercrombie Street, Darlington NSW 2000						
	Reviewed: AG Date: 28/06/2023						
me	mediation Area - Trenches below buildings foofprint						

	180mm		
	50mm		
Legend: Concrete slab Depth Compacted Base Course Non-Woven Geofabric Marker Layer Contaminated Fill		Geing Further in Managing Risk GF, North Building,22 Giffnock Av Mcquarie Park, NSW 2113 Ph: 02-9889-1800	Client Name: Client Number: Project Description Address: Prepared: TM Figure 14 Ref

Disclaimer: Greencap-NAA Pty Ltd has produced this map for the purpose of presenting a summary of relevant spatial information and gives no warranty in relation to the data (including accuracy, reliability, completeness or suitability) and acce		any loss,
damage or costs (including consequential damage) relating to any use of or reliance upon the data. Data must not be used for direct marketing or be used in breach of privacy laws. Service Layer Credits: © 2019 NSW Land and Property Info	rmation (Six Maps) and © 2019 NearMap Pty Ltd.	

_						
	A.W. Edwa	ards Pty L	td			
	C107251	7251 Project Number: J169905				
ion:	Darlington PS LT-EMP					
	Darlington Public School - 417 Abercrombie Street, Darlington NSW 2000					
	Reviewed:	AG	Date:	28/06/2023		
emediation Area - Structures						

Minimum 500mm



	A.W. Edwa	ards Pty L	td		
	C107251 Project Number: J169905				
ion:	Darlington PS LT-EMP				
	Darlington Public School - 417 Abercrombie Street, Darlington NSW 2000				
	Reviewed:	AG	Date:	28/06/2023	
eme	emediation Area - Landscaped Area (Soft Landscaping)				

Minimum 300mm



		nda Dt. I			
	A.W. Edwa	ards Pty L	ta		
	C107251 Project Number: J169905				
ion:	Darlington PS LT-EMP				
	Darlington Public School - 417 Abercrombie Street, Darlington NSW 2000				
	Reviewed:	AG	Date:	28/06/2023	
emediation Area - Landscaped Area (Softfall)					



	В	23/7/21	For Construction Certificate Issue	MJ
	А	22/6/21	IFC for Sign-off Issue	JRS
-	07	26/4/21	Final SINSW Review Issue	JRS
-	06	1/4/21	SINSW Preliminary Review 95%	JRS
	05	2/2/21	For Coordination	MMG
-	04	19/8/20	Tender Addendum Rev 02	CD
	03	7/8/20	Tender Addendum	CD
-	rev	date	name	by chk

Site Plan	Scale
Site Plan	1:250 @ A1
Project Code	First Issued
DTPS	15/6/20
Sheet No. A-12001	Rev





Environmental Management Plan A.W. Edwards Pty Ltd Darlington Public School

Appendix A – Site Inspection Checklist

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APPENDIX A – Environmental Checklist

Date and Time of the Inspection:	Weather (rainfall in the last 24 hrs):
Site owner's (DoE) representative:	Note: This checklist must be forwarded to the Site owner's representative after each round of inspection within 2 weeks following the inspection.
Outcome = Complying/Not Complying	
Environmental Consultant Comments & Recommendations i	for Further Investigation, Rectification or Remediation (if required):

ltem No.	Description	Yes	No	Comments & Description Notes
1.	Has there been any excavation on-site within the capping area or through site boundaries shown on Figure 2 of the Long Term EMP?			



ltem No.	Description	Yes	No	Comments & Description Notes
	If Yes go to Item 2 below.			
	If No go to Item 3.			
2.	Visually inspect the surface of the excavation footprint and note down the indicators of potential contamination.			
	Were asbestos containing materials (ACM) identified on the surface?			
	Was there any soils carried to the site from excavations at the site borders? If yes indicate the location on a figure.			
	If foreign materials or potentially contaminated soils (e.g. material carried to site through excavations at site borders) are identified at the excavation areas. Collect 1 soil sample per 10 m x 10 m grid within the excavation footprint (collect 1 sample per 10 m for linear trenches) and submit to a NATA Accredited Laboratory for AF/FA testing (and lead for any excavations near northern boundary). Were the samples collected and submitted to the laboratory as per above?			
	Was contamination identified during visual inspection or in above samples? If, yes notify site owner (DoE) and provide advice regarding further investigations and remediation (where required).			
3.	Was the entire site surface has been inspected in 25 m x 25 m grids searching for ACM & potential other indicators of contamination? Take at least 4 photographs showing the capping area and 4 photographs showing the soil condition at the rest of the site.			
4.	Were there any areas within the capping are where marker layer is coming off?			



ltem No.	Description	Yes	No	Comments & Description Notes
5.	Were there any areas where cap integrity has been compromised? If yes please provide details for required rectification works.			
6.	Was the northern boundary retaining wall intact? Note down any maintenance requirements.			
7.	Has there been any material importation to the site? If yes request source site reports from site manager and plan undertaking necessary due-diligence validation sampling.			
8.	Were there any areas where vegetation distress was apparent?			
9.	Was there any evidence of subsiding (e.g. cracks, depressions, slumping)?			
10.	Was there any indicators of erosion or sediment run-off?			
11.	Was there any evidence of dust generation?			
12.	Has there been any environmental incidents reported to School's principal during the past 6 months?			
13.	Has there been any other visual or olfactory evidence of contamination noted during the inspection? Please describe if any.			
14.	Has there been any genuine health and environmental risk identified during the inspection? If yes provide a written notification to the site owner within 24 hours.			



ltem No.	Description	Yes	No	Comments & Description Notes
15.	Were there any areas identified requiring further investigation, remediation, or cap rectification? If yes provide a written notification to the site owner within 24 hours.			





Environmental Management Plan A.W. Edwards Pty Ltd Darlington Public School

Appendix B – Final Site Survey Plans



<i>00 (</i> AI)	PLAN: PLAY AREA
datum A.H.D	MARKER LAYER
ARLINGT <i>O</i> N	DEPTH FROM FINISHED SURFACE
-062B.PR0	SHEET 1 OF 3

DENOTES DEPTH FROM FINISHED SURFACE TO MARKER LAYER





3		
TEN	NIS/BASKETBALL COURT	
	4	
23.45		
		5
60 (AI)	PLAN: PLAY AREA	
DATUM A.H.D	MARKER LAYER DEPTH FROM FINISHED SL	
ARLINGTON -062B.PRO	SHEET 3 OF 3	

DENOTES DEPTH FROM FINISHED SURFACE TO MARKER LAYER


- 33.93 : FINISHED SURFACE LEVEL

- -0.52 : DEPTH TO MARKER LAYER

- : RL MARKER LAYER

PLAN:

MARKER LAYER DEPTH TO

FINAL FINISHED SURFACE

OVER LANDSCAPE AREAS

SHEET 1 OF 4









	PLAN:					
00 (AI)						
datum A.H.D	MARKER LAYER DEPTH TO FINAL FINISHED SURFACE					
ARLINGTON	OVER LANDSCAPE AREAS					
103R2.PRO						



90 (AI)	PLAN:					
datum A.H.D	MARKER LAYER DEPTH TO FINAL FINISHED SURFACE					
ARLINGTON	OVER LANDSCAPE AREAS					
-103R2.PR0						



90 (AI)	PLAN:					
datum A.H.D	MARKER LAYER DEPTH TO FINAL FINISHED SURFACE					
ARLINGTON	OVER LANDSCAPE AREAS					
-103R2.PR0						













100mm AT FULL SIZE Plot Date: 19/02/21 - 17:49 Cad File: T:/122739 Darlington Public School - Mainland\Drawings\Out\WAE\122739-SU-WAE-003 [B] (Basketball Court Surfac











Req:R050016 /Doc:DP 1290656 P /Rev:17-Jan-2023 /NSW LRS /Prt:02-Feb-2
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DEPOSITED PLAN AI	DMINISTRATION SHEETSheet 1 of 2 sheet(s)
Office Use Only Registered: 17/01/2023	Office Use Only DP1290656
Title System: TORRENS	
PLAN OF CONSOLIDATION OF LOT 100 DP623500 AND LOT 592 DP752049	LGA: SYDNEY Locality: DARLINGTON Parish: PETERSHAM County: CUMBERLAND
Survey Certificate I, Andrew Philip Mason of Frank M Mason & Co Pty Ltd, Suite 402, 156 Pacific highway, Greenwich NSW 2065, a surveyor registered under the <i>Surveying and Spatial Information Act 2002</i> , certify that: *(a) The land shown in the plan was surveyed in accordance with the Surveying and Spatial Information Regulation 2017, is accurate and the survey was completed on 28 September 2022, or *(b) The part of the land shown in the plan ("being!"excludingas surveyed in accordance with the Surveying and Spatial Information Regulation 2017, the part surveyed is accurate and the survey was completed on	Crown Lands NSW/Western Lands Office Approval I. (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given. Signature: Date: File Number: Office: Office: Subdivision Certificate I. "Authorised Person/"General Manager/"Accredited Certifier, certify that the provisions of s.6.15 of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed subdivision, new road or reserve set out herein. Signature: Accreditation number: Consent Authority: Date of endorsement: Subdivision Certificate number: File number: "Strike through if inapplicable. Statements of intention to dedicate public roads create public reserves and drainage reserves, acquire/resume land.
Surveyor's Reference: 33585DP	Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

Req:R050016 /Doc:DP 1290656 P /Rev:17-Jan-2023 /NSW LRS /Prt:02-Feb-2
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PLAN FORM 6A (20	()17) DEPOSITE		NISTR	ATION SHEET S	heat 2 of 2 shoot(s)	
		ce Use Only			heet 2 of 2 sheet(s) Office Use Only	
Registered:	17/01/2023	CC OBC Only				
PLAN OF CONSOLIE DP623500 AND LOT		0		DP1290	656	
			is sheet is juired:	for the provision of the follo	wing information as	
Subdivision Certificate number:			A schedule of lots and addresses - See 60(c) SSI Regulation 2017			
Date of Endorsement:			 Statements of intention to create and release affecting interests in accordance with section 88B <i>Conveyancing Act</i> 1919 Signatures and seals- see 195D <i>Conveyancing Act</i> 1919 Any information which cannot fit in the appropriate panel of 			
	STR	EET ADDRESS	SCHEI	DULE		
LOT NUMBER	STREET NO.	STREET NA	ME	STREET TYPE	LOCALITY	
	417-445	ABERCROM	IBLE	STREET	DARLINGTON	
	Name of V Eav, Signature	ers ence of: nu Eav Vitness in full Yu Duate: 2022 -11100 of Witness Peter CI, Hinch	an by Eav Yu 2.06 00:38:79 Ninbroo	delegate of the and Early Lear Sections 119 Education Act certify that I ha revocation of s Paul Towe Signature of I Executive Dire School Infrast	ector, ructure NSW 'S	
Surveyor's Reference: 3	· · · · ·	sufficient use addi	ional anr	exure sheet		

Polyfabrics Reliability you can build on





mastaTEX[®] Hi Vis Layer

The mastaTEX® HVL is a Orange geotextile, extremely well manufactured for separating contaminated and non-contaminated soils with its high visibility layer needled punched Nonwoven Polyester Geotextile. These geotextiles provide the same performance and functions as our mastaTEX Range with an additional added benefit; they become a warning and marker layer for years to come. This enables the user to leave contaminated soils in place. Place the geotextile over the top before filling the area with the clean fill. The mastaTEX HVL will separate the mediums ensuring they do not intermix, while providing confidence that if future excavations are done, they are warned about hazardous materials below.

HVL, which include a vivid colour that warns any of any potential danger at the point for future excavations - preventing the upward movement of contaminated solid particles, and allows the free flow of water.

mastaTEX [®] Hi Vis Layer Specifications					
Mechanical Properties	Standard	Units	HVL Light	HVL Medium	
Wide Width Tensile Strength MD/CD	AS 3706.2 ASTM D4595	kN/m	4.0/4.0	8.0	
Grab Tensile Strength MD/CD	AS 2001.2.3.2 ASTM D4632	Ν	300/250	560	
Hydraulic Properties					
Pore Size Distribution	AS 3706.7 ASTM D4751	microns	<200 (Typical)	120	
Flow Rate (100mm Constant Head)	AS 3706.9 ISO 11058	l/m²/sec	>200 (Typical)	240	

HEAD OFFICE: 29 Penelope Crescent Arndell Park NSW 2148 PHONE: 1300 287 484 WEBSITE:

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