Prepared for
International Chinese School
Prepared by
Ramboll Australia Pty Ltd
Date
29 August 2019
Project Number
318000788
Audit Number
LW-001

SITE AUDIT REPORT
211 PACIFIC HIGHWAY, ST LEONARDS, NSW 2065

RAMBOLL

29 August 2019

International Chinese School
C/o Stanton Dahl Architects
Attn.: Trevor Fowler
18-20 Oxford Street
Epping NSW 2121

By email: Trevor.Fowler@stantondahl.com.au

Dear Trevor,

SITE AUDIT REPORT - 211 PACIFIC HIGHWAY, ST LEONARDS, NSW 2065

I have pleasure in submitting the Site Audit Report for the subject site. The Site Audit Statement, produced in accordance with the NSW *Contaminated Land Management Act 1997*, is included as Appendix B of the Site Audit Report. The Audit was commissioned by International Chinese School to assess the suitability of the site for its intended use as a school.

This Site Audit Report is not currently required by regulation or legislation and is therefore a non-statutory audit.

Thank you for giving me the opportunity to conduct this Audit. Please call me on 9954 8100 if you have any questions.

Yours faithfully,
Ramboll Australia Pty Ltd

Louise Walkden
EPA Accredited Site Auditor 1903

Ramboll Australia
Level 3, 100 Pacific Highway
PO Box 560
North Sydney NSW 2060

T +61 2 9954 8100
www.ramboll.com

Ref 318000788

Ramboll Australia Pty Ltd
ACN 095 437 442
ABN 49 095 437 442

CONTENTS

LIST OF TABLES

APPENDICES

LIST OF ABBREVIATIONS

Measures

%	per cent
µg/L	Micrograms per Litre
µg/m^3	Micrograms per Cubic Metre
ha	Hectare
km	Kilometres
m	Metre
mAHD	Metres Australian Height Datum
m bgl	Metres below ground level
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Litre
mm	Millimetre
ppm	Parts Per Million

General

ACM	Asbestos Containing Material
AF	Asbestos Fines
AHD	Australian Height Datum
Airsafe	Airsafe OHC Pty Ltd
BaP	Benzo(a)pyrene
bgl	Below Ground Level
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes & Naphthalene
CCME	Canadian Council of Ministers of the Environment
CLM Act	NSW Contaminated Land Management Act 1997
COC	Chain of Custody
Council	Willoughby City Council
CSM	Conceptual Site Model
CT	Certificate of Title
DA	Development Application
DP	Deposited Plan
DQI	Data Quality Indicator
DQO	Data Quality Objective
EIL	Ecological Investigation Level
EIS	Environmental Impact Statemen
SEARs	Planning Secretary's Environmental Assessment Requirements
EPA	Environment Protection Authority (NSW)
ESL	Ecological Screening Level
FA	Fibrous Asbestos
GIL	Groundwater Investigation Level
GME	Groundwater Monitoring Event
HIL	Health Investigation Level
HSL	Health Screening Level
LEP	Local Environment Plan
LOR	Limit of Reporting
Mercury	Inorganic mercury unless noted otherwise
Metals	As: Arsenic, Cd: Cadmium, Cr: Chromium, Cu: Copper, Ni: Nickel, Pb: Lead, Zn: Zinc, Hg: Mercury
ML	Management Limits
MS	Matrix Spike
NATA	National Association of Testing Authorities
NC	Not Calculated
ND	Not Detected
NEPM	National Environment Protection Measure
NL	Non-Limiting
n	Number of Samples
OCPs	Organochlorine Pesticides
OEH	Office of Environment and Heritage
OPPs	Organophosphorus Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
pH	A measure of acidity, hydrogen ion activity

PID	Photoionisation Detector
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RPD	Relative Percent Difference
SAR	Site Audit Report
SAS	Site Audit Statement
SSD	State Significant Development
SEPP	State Environmental Planning Policy
TRHs	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds
-	On tables is "not calculated", "no criteria" or "not applicable"

1. INTRODUCTION

1.1 Audit Details

A site contamination audit has been conducted in relation to the site at 211 Pacific Highway, St Leonards, NSW 2065 identified as Lot 101 in Deposited Plan (DP) 791327.

The Audit was conducted to provide an independent review by an EPA Accredited Auditor of whether the land is suitable for any specified use or range of uses i.e. a "Site Audit" as defined in Section 4 (1) (b) (iii) of the NSW *Contaminated Land Management Act 1997* (the CLM Act).

International Chinese School propose to repurpose the existing office building on the site for use as a school. New educational facilities are designated as State Significant Development (SSD) and require development of an environmental impact statement (EIS). Requirement 12 of the Planning Secretary's Environmental Assessment Requirements (SEARs) for the development, dated 18 April 2019, requires the EIS to include an assessment of the potential for soil and groundwater contamination to be present at the site and demonstration that the site is suitable for the proposed use in accordance with the State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55). The Audit is not currently required by regulation or legislation and is therefore a non-statutory audit.

Details of the Audit are:

Requested by:	Trevor Fowler of Stanton Dahl Architects on behalf of International Chinese School
Request/Commencement Date:	29 July 2019
Auditor:	Louise Walkden
Accreditation No.:	1903

1.2 Scope of the Audit

The scope of the Audit included:

- Review of the following reports:
  - Stage 1 Preliminary Site Investigation, *Proposed Development International Chinese School, 211 Pacific Highway, St Leonards NSW 2065* Ref.02760.06.19.Stage1PSI) 5 July 2019, Airsafe OHC Pty Ltd (Airsafe) (the PSI).
  - *Stage 2 Detailed Site Investigation, Proposed Development International Chinese School, 211 Pacific Highway, St Leonards NSW 2065* Ref.02787.08.19.Stage2DSI.REV.1) 22 August 2019, Airsafe (the DSI).
- A site visit by the Auditor on 1 August 2019.
- Discussions with Airsafe who undertook the investigations.

2. SITE DETAILS

2.1 Location

The site locality is shown on Attachment 1, Appendix A.

The site details are as follows:

Street address:	211 Pacific Highway, St Leonards, NSW 2065
Identifier:	Lot 101 DP 791327 (Attachment 2, Appendix A)
Local Government:	Willoughby City Council
Owner:	Gore Hill Memorial Cemetery Trust (leased to International Chinese School)
Site Area:	Approximately 1,600 m^2

The site is triangular, and the boundaries of the site are well defined by the Pacific Highway, The Avenue roadway and the Gore Hill Cemetery. Site boundaries are shown on Attachment 2, Appendix A.

2.2 Zoning

The current zoning of the site is **SP1 – Special Activities – Cemetery** under the Willoughby Local Environment Plan (LEP) 2012.

2.3 Adjacent Uses

The site is located within an area of mixed commercial and public recreational use. The surrounding site use includes:

North: Gore Hill Park

East: Gore Hill Oval

South: Pacific Highway with commercial properties beyond

West: Gore Hill Cemetery

The nearest surface water receptors are Berrys Creek, located approximately 500 m south-east of the site and Gore Creek located approximately 750 m to the south-west of the site. Both of which flow south into Sydney Harbour.

2.4 Site Condition

The current site layout is shown on Attachment 3. Airsafe undertook an initial site inspection on 7 June 2019 and noted the following:

- The site was occupied by a commercial building that was in the process of being partially demolished and redeveloped.
- The building and the concrete slab on which it was placed occupied approximately 50% of the site footprint.
- The areas around the building slab were paved, concreted or grassed with surrounding trees and shrubs. The vegetation appeared to be in good condition with no areas of stress.
- No odours or hydrocarbon staining was observed.
- There was no evidence of underground tanks onsite and no waste storage tanks were observed.
- There were no surface signs that the site had been used for illegal tipping.
- It was noted that the surface level of the site was not consistent with the natural levels of the surrounding area and that the site may have been subject to filling to achieve current site levels.

During the DSI on 1 August 2019, Airsafe noted four small stockpiles of material onsite created from excavation of soils from the site. Stockpiles 1-3 were described as topsoil, while stockpile 4 also included tan clays from a foundation excavation to 1.5 metres below ground level (mbgl).

The following was noted by the Auditor during the site visit on 1 August 2019:

- Site access was via The Avenue which runs parallel with the north-eastern site boundary. There were two access points on this boundary, one to the north and one to the south.
- The site is generally flat with the local topography sloping from south to north. The site was set approximately 1 m below the level of the Pacific Highway to the south and land sloped from the north-western site boundary towards the cemetery.
- The majority of the site was occupied by a concrete slab at ground level. A basement slab was in place beneath the north-eastern portion of the site, with an access ramp from The Avenue in the north-eastern corner of the site. The shell of a single storey building on the southern site boundary remained, comprising a brick façade and metal roof.
- Open ground was present in the south-eastern corner of the site comprising a grassed area with well-established trees on the perimeter, including a large fig tree on the boundary. At the time of the inspection the area was being used for storage of construction beams.
- Landscaped garden beds with well-established shrubs and trees were present along the southern site boundary as well as paved areas along the side of the retained building. Vegetated areas were also present along the north-western boundary, bordering the cemetery, and the north-eastern boundary, bordering The Avenue.
- Areas of bare soil were present in the south-eastern portion of the site as a result of construction vehicle movements. This soil comprised red-brown clay with red brick and paver fragments.
- A piled hole had been excavated to a depth of approximately 1.8 m midway along the north-eastern site boundary. A stockpile of arisings was located adjacent to the hole and comprised red brown clay, clayey sand and topsoil with some gravel and red brick fragments.
- Anecdotal evidence from the site foreman indicated the soil profile at the piling location comprised 0.3 to 0.4 m of clayey fill underlain by stiff clay.
- The soil profile in the north-eastern portion of the site was visible near the access ramp to the basement and comprised brown black silty topsoil to 0.1 mbgl underlain by red-brown clay with tree roots to approximately 0.5m with some grey mottling visible in the clay at a depth of approximately 1.0 mbgl.
- No fragments of asbestos containing material (ACM) were visible of the ground surface during the site inspection. Conversation with the construction workers indicated that no ACM had been observed during the current construction works.
- The site was fenced with temporary fencing with shade cloth.

2.5 Proposed Development

It is understood that the commercial office building on the site currently being remodelled is to be repurposed for use as a school by International Chinese School. Development of a school is categorised as SSD under the State Environmental Planning Policy (State and Regional Development) 2011 (the State and Regional Development SEPP).

The current building footprint will be retained including the basement carpark and storage area. The shell and façade of the single storey building present in the southern portion of the site is to be retained and an additional level and new roof is to be added to the adjoining building that occupies the centre of the site. Surrounding land use is to comprise a grassed play area in the south-eastern corner of the site, a decked area to the east and landscaped areas along the southern and western site boundaries.

The current site layout and the basement footprint are shown in Attachments 3 and 4 in Appendix A. The layout of the school development is shown in Attachment 5 in Appendix A.

The proposed development is considered to fall within a 'residential with access to soils' land use exposure scenario which includes childcare centres, preschools and primary schools.

3. SITE HISTORY

In the PSI, Airsafe provided a summary of the site history based on historical aerial photographs, site photographs, NSW EPA records and historical Certificates of Title. The site is owned by Gore Hill Memorial Cemetery Trust and Lot 101 DP791327 is currently leased. Prior to 1986 the site was Crown Land. The Auditor has summarised the site history in Table 3.1.

Table 3.1: Site History

Date	Activity
1868	Dedication of first part of the Gore Hill Cemetery
1886-1948	Construction of the cemetery caretaker's residence, the original Sexton's Cottage. Based on the 1943 aerial photograph, the cottage occupied the central portion of the site with sheds/ outbuildings to the north.
1949	A new building is constructed onsite replacing the former residence. The new Sexton's Cottage is visible on the 1951 aerial photograph as an L-shaped building in the northern portion of the site. The south-eastern portion of the site appears to be an open grassed area.
1984 to 2019	Lot 101 is sub-divided from main cemetery. A new office building is constructed in 1984 on the site of the former Sexton's Cottage for use as an architectural design studio and offices, including the existing basement level. The lease is held by Edwards, Madigan, Torzillo, Biggs International Pty architects.
2019	The existing office building is in the process of being renovated, and an additional level constructed under Development Consent DA-2014/301 C issued by Willoughby City Council on 20 July 2015. Building works were in progress at the time of this audit.

The summary indicates that the site has historically been used as a caretaker's residence and commercial office building. Airsafe obtained a copy of the Planning Certificate issued under Section 10.7 (2&5) of the Environmental Planning and Assessment Act 1979 (Certificate No: 43514) on 4 June 2019. The Planning Certificate indicates that the property is identified as a heritage item.

Airsafe also reviewed information available on the NSW EPA contaminated land database. The site was not identified on the database as being significantly contaminated land or subject to any management orders in relation to contamination.

Based on the site visit and review of the site history, Airsafe identified potential sources of contamination at the site were fill material and former building materials (potential for asbestos, lead paint), also activities associated with maintenance of the cemetery.

3.1 Auditor's Opinion

In the Auditor's opinion, the site history provides an adequate indication of past activities. There were no indicators of significant industrial use on the site. Previous site activities with the most potential to cause contamination include importation of fill material, demolition of former buildings and potential historical storage of chemicals associated with maintenance of the cemetery (e.g. pesticides and herbicides, small volumes of fuel).

A search of the Stored Chemical Information Database (SCID) maintained by SafeWork NSW has not been completed for the site, however, historical bulk storage of fuel or chemicals at the site is unlikely based on the site history. The eastern portion of the site has been excavated to develop the basement level (see Attachment 4 in Appendix A) and hence the potential for unidentified underground storage tanks to be present at the site is low. The Auditor considers the uncertainties relating to potential historical storage of chemicals at the site have been compensated for by the soil sampling and analysis completed during the DSI.

4. CONTAMINANTS OF CONCERN

In the DSI, Airsafe identified the following contaminants of concern based on the site history:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, mercury, lead and zinc)
- Petroleum hydrocarbons (analysed as total recoverable hydrocarbons (TRH) and benzene, toluene, ethyl-benzene, xylenes and naphthalene (BTEXN))
- Polycyclic aromatic hydrocarbons (PAHs)
- Organochlorine pesticides (OCPs)
- Organophosphate pesticides (OPPs)
- Polychlorinated biphenyls (PCBs)
- Asbestos

In addition, analysis of selected soil samples for pH and cation exchange capacity (CEC) were completed to allow development of site-specific ecological investigation levels (refer Section 7).

4.1 Auditor's Opinion

The Auditor considers that the analyte list used by Airsafe adequately reflects the site history and condition and provides an appropriate suite of analysis for assessing site suitability.

There has been no assessment by the consultants for the presence of per- and poly-fluoroalkyl substances (PFAS) but in the Auditor's opinion there are no indications in the site history that they would be potential contaminants of concern.

5. STRATIGRAPHY AND HYDROGEOLOGY

Following a review of the reports listed in Section 1, a summary of the site stratigraphy and hydrogeology was compiled by the Auditor as follows.

5.1 Stratigraphy

Airsafe reviewed geological maps and reported that the site is underlain by Ashfield Shale of the Wianamatta Group. The formation is described as comprising black to dark grey shale and laminate of Triassic age overlying Hawkesbury Sandstone.

Airsafe also reviewed available soil landscapes maps and reported that the site is characterised by the 'Glenorie' soil landscape which comprises a landscape of undulating to rolling low hills on Wianamatta Group shales with local relief 50-80 m and slopes of 5-20%. Soils are described as shallow to moderately deep (<100 cm) Red Podzolic Soils on crests, moderately deep (70-150 cm) Red and Brown Podzolic Soils on upper slopes and deep (>200 cm) Yellow Podzolic Soils on lower slopes.

During the DSI, Airsafe completed 11 hand auger bores to a maximum depth of 1.1 mbgl as shown on Attachment 6 in Appendix A. The majority (nine) of hand auger locations were completed within the top 0.3 metre of the soil profile. The sub-surface profile described by Airsafe in the DSI is summarised in Table 5.1.

Table 5.1: Stratigraphy

Depth (mbgl)	Subsurface Profile
0.0 – 0.3	Fill - Topsoil brown with small gravel pebbles and some anthropogenic debris consisting of small fragments of concrete, red brick and glass.
0.3 – >1.1	Fill – brown-tan silty clay (reworked natural soils)

mbgl – metres below ground level

The subsurface material encountered during the DSI was consistent between locations and comprised topsoil and reworked silty clay fill. Airsafe report that no fragments of fibre cement or potential ACM were observed.

In addition to the augered bores, fours stockpiles of material were observed on the site. The locations of the stockpiles are shown in Attachment 6 in Appendix A. The stockpiles were small (<2 m^3) and comprised topsoil and clay from shallow excavations around the foundation footings and from one piling location that was extended to a depth of approximately 1.5 mbgl.

During the site visit, the Auditor observed the soil profile present adjacent to the basement ramp in the north-eastern portion of the site from ground level to approximately 1.2 mbgl. The profile comprised brown-black silty topsoil overlying brown silty clay with tree roots to approximately 0.4 mbgl, overlying red-brown high plasticity clay with some grey shale fragments visible from approximately 1.0 mbgl.

5.2 Topography and Hydrogeology

The site is located at approximately 88.0 metres above Australian Height Datum (mAHD). The local topography slopes to the north-east and surface water flow is anticipated to be to the north-east.

The Auditor undertook a search for registered bores on 22 August 2019. No registered bores were identified within a 500 m radius of the site.

Groundwater investigations have not been undertaken at the site. Depth to groundwater over the site is not known. Groundwater was not encountered during the intrusive investigation.

5.3 Auditor's Opinion

The Auditor considers that the near surface stratigraphy at the site, in the areas not currently covered by the building footprint, has been adequately characterised. While characterisation of

the deeper soil profile has not been completed, the historical sources of contamination are considered to have been at or near surface level, and hence assessment of the near surface soil profile is considered more relevant for assessing site suitability.

The soil profile at the site has been characterised as comprising silty brown topsoil with anthropogenic inclusions (small fragments of gravel, concrete, red brick and glass) to depths of approximately 0.3 mbgl, overlying reworked silty clay. The anthropogenic inclusions are considered to have been sourced from the site, from the demolition of historical site structures, rather than through importation of materials, and are confined to the near surface material.

There is an unknown in relation to the soil conditions below the existing concrete slabs, however, the consistent soil conditions encountered in sample locations surrounding the slab suggest a similar soil profile is likely to be present in these uncharacterised areas. In addition, the excavation of a basement level in the eastern portion of the site has removed fill and natural soils from the site to a depth of up to 2.5 mbgl in this area.

The Auditor notes that the shallow silty clay formation underlying the site is of low permeability and therefore the potential for significant groundwater contamination from near surface sources of contamination is considered low. Given the low potential for underground tanks to have been present on the site and that significant soil contamination has not been identified at the site (see Section 8), the Auditor is satisfied that intrusive assessment of groundwater is not required at the site.

The Auditor considers that the site stratigraphy and hydrogeology are sufficiently well known for the purpose of assessing the suitability of the site for use as a school.

6. EVALUATION OF QUALITY ASSURANCE AND QUALITY CONTROL

The Auditor has assessed the overall quality of the data by review of the information presented in the referenced reports, supplemented by field observations. The Auditor's assessment follows in Tables 6.1 and 6.2.

Table 6.1: QA/QC – Sampling and Analysis Methodology Assessment

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Data Quality Objectives (DQO) Airsafe defined specific DQOs for the DSI in accordance with the seven step process outlined in Schedule B2 of NEPM 2013.	Some of the DQOs outlined in the DSI are generic and include some inappropriate references. However, on the basis that Airsafe have clearly stated appropriate decision rules, have adopted appropriate data quality indicators (DQIs) and have designed effective sampling strategies to achieve them, overall the Auditor considers that the minor errors in the stated DQOs do not affect the outcome of the audit.
Sampling pattern and locations Soil investigation locations were spaced to gain coverage of the accessible area of the site (i.e. the area not covered by the building footprint). Further samples targeted small stockpiles of material generated from shallow excavations associated with the construction work at the site.	The sample locations are considered appropriate for assessing the suitability of accessible soils under the proposed school layout. In the Auditor's opinion, the lack of investigation locations in the area of the building footprint is not considered to prevent the assessment of site suitability as the current site layout is to be retained, and exposure pathways to soil impacts under the slab are not considered to be complete.
Sampling density Completion of soil sampling from 11 soil locations over approximately 1,600 m^2 exceeds the minimum recommended by EPA (1995) *Sampling Design Guidelines*. In addition, soil sampling was completed from 4 stockpiles generated from 4 onsite excavation areas. Soil samples from nine sample locations were analysed for all contaminants of concern (refer Section 4), while samples from the other six locations were sampled for metals, PAH and asbestos. Analysis targeted topsoil and near surface fill material (reworked clay). No samples of natural clay were analysed.	In the Auditor's opinion, the sampling density was appropriate to assess the potential for contamination in accessible areas of the site and to reduce uncertainty in relation to the likely contamination status of soils under the building footprint that were not characterised.
Sample depths Samples were collected and analysed from the surface and near surface to target topsoils and shallow fill. The deepest sample was collected from a depth of 1.0 mbgl in fill material. The depth from which stockpile samples were obtained is not reported.	In the Auditor's opinion, the sampling strategy was appropriate and adequate to characterise the accessible surface soils and near surface fill material on site. The lack of analysis of samples of the natural clay is not considered to affect the outcome of the audit as potential contamination sources are considered to be confined to the surface and in shallow fill material.
Sample collection method Soil sample collection from bore locations was via hand auger or by hand as a surface grab sample. Stockpile samples were collected by hand	Overall the sample collection method was found to be acceptable based on the primary contaminants of concern being non-volatile.
Decontamination procedures	Acceptable

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
The hand auger was reportedly cleaned with detergent, tap water and then de-ionised water between each sampling event to prevent cross contamination. Samples were reported to have been collected using a new clean nitrile glove for each sample.	
Sample handling and containers Samples were placed directly into prepared and preserved sampling containers provided by the laboratory and chilled during storage and subsequent transport to the labs. 500 ml samples of soil were collected for asbestos analysis.	Acceptable
Chain of Custody (COC) Completed chain of custody forms were provided in the report.	Acceptable
Detailed description of field screening protocols Field screening for volatiles was undertaken using a photoionisation detector (PID). Soil sub-samples were placed in a glass jar and covered with aluminium foil and the headspace measured for VOCs after allowing time for equilibration.	Acceptable
Calibration of field equipment The calibration certificate for the PID from the equipment supplier is included in the DSI.	Acceptable
Sampling logs Soil logs are provided within the report for soil bores that extended beyond 0.3 mbgl. The bore logs indicate sample depth, PID readings and lithology. The logs report no indications of contamination were found. For soil sample locations that extended less than 0.3 mbgl, a description of the soil profile encountered, sample depths, maximum bore depth, sample ID and analysis was included in a table format within the report.	Acceptable

Table 6.2: QA/QC – Field and Lab Quality Assurance and Quality Control

Field and Lab QA/QC	Auditor's Opinion
Field quality control samples Field quality control samples including a trip blank, rinsate blank, field intra-laboratory duplicate and inter-laboratory duplicate were undertaken. All the field quality control samples were analysed for metals only.	While the required frequency of field control samples was met, ideally, the field duplicate samples and the rinsate sample should have been analysed for all contaminants of concern and the trip blank sample should have been analysed for volatile contaminants. Based on the low concentrations of all contaminants detected in soil samples during the investigation, the omission of the full analysis is not considered to affect the conclusions of the audit.
Field quality control results The results of field quality control samples were generally within appropriate limits. The following exceptions were noted:	Overall, in the context of the dataset reported, the elevated RPD result is not considered significant since the higher reported concentrations was an order of magnitude below the investigation level. The field quality control results are considered acceptable.

Field and Lab QA/QC	Auditor's Opinion
• The relative percent difference calculation (RPD) for the inter-laboratory soil duplicate sample for nickel was 141%. • Nickel was detected in the trip blank at a concentration of 0.7 mg/kg.	
NATA registered laboratory and NATA endorsed methods The primary laboratory was SGS in Sydney. The secondary laboratory was SGS Cairns. Asbestos analysis was completed by Airsafe. All laboratories were NATA accredited and laboratory certificates were NATA stamped. It was noted by Airsafe that the NEPM Asbestos ID (asbestos fines/ fibrous asbestos) results were not covered by the scope of NATA accreditation.	Acceptable although it is noted that ACM % w/w reported was from 500 mL samples, not 10 L samples as required for asbestos quantification under NEPM (2013).
Analytical methods Analytical methods were included in the laboratory test certificates. SGS provided brief method summaries of in-house NATA accredited methods used based on USEPA and/or APHA methods for extraction and analysis in accordance with NEPM 2013. Asbestos identification was conducted by Airsafe using polarised light microscopy with dispersion staining by method AS4964-2004 *Method for the Qualitative Identification of Asbestos Bulk Samples*.	Acceptable
Holding times Review of the COCs and laboratory certificates indicate that the holding times had been met.	Acceptable
Practical Quantitation Limits (PQLs) PQLs for contaminants other than asbestos were less than the threshold criteria for the contaminants of concern. *Asbestos:* The limit of detection for asbestos in soil was 0.001% w/w (AF/FA) for the NEPM 2013 reporting but 0.01%w/w for the NATA accredited method.	The soil PQLs are acceptable.
Laboratory quality control samples Laboratory quality control samples including laboratory control samples, matrix spikes, surrogate spikes, blanks, internal standards and duplicates were undertaken by the laboratory.	Acceptable
Laboratory quality control results The results of laboratory quality control samples were generally within appropriate limits, with the following exceptions: • Surrogate recoveries for dichloroethane -D4 surrogate were above SGS DQIs for two samples. At least two of three surrogates were within acceptance criteria. • Matrix spike recoveries for TRH C>16-C34 (F3) and C29-C36 were below the acceptance criteria.	The over-recovery of VOC in the surrogates is not considered significant as two out of three surrogates were within the acceptable criteria. The slightly low spike recoveries are not considered to affect the usability of the data as TRH were not detected above guidelines in any of the samples analysed. The laboratory quality control results are acceptable.
Data Quality Indicators (DQI) and Data Evaluation (completeness, comparability, representativeness, precision, accuracy) Predetermined data quality indicators (DQIs) were set for laboratory analyses including blanks, replicates, duplicates,	An assessment of the data quality with respect to the five category areas has been undertaken by the Auditor and is summarised below.

Field and Lab QA/QC	Auditor's Opinion
laboratory control samples, matrix spikes and internal standards. These were discussed with regard to the five category areas.	

6.1 Auditor's Opinion

In considering the data as a whole the Auditor concludes that:

- The data is likely to be representative of the near surface soils conditions in external areas of the site based on sample locations, sample descriptions and PID results.
- The data is adequately complete.
- There is a high degree of confidence that data is comparable for each analytical event.
- The primary laboratory provided sufficient information to conclude that data is of sufficient precision.
- The data is likely to be accurate, based on the field and laboratory quality control procedures and quality assurance results.

7. ASSESSMENT CRITERIA

Soil screening criteria have been adopted from Schedule B(1) 'Guideline on the Investigation Levels for Soil and Groundwater' of the National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended in 2013 (NEPM 2013) based on the future use of the site as a school (NEPM A – residential with garden/accessible soil). The Tier 1 (screening) criteria from NEPM 2013 referred to by the Auditor were:

- Human Health Assessment
  - Health Based Investigation Levels (HILs).
  - Soil Health Screening Levels (HSLs) for Vapour Intrusion. Criteria were adopted for the corresponding depth range 0 to <1.0 m bgl. Sand geology was assumed as a conservative measure.
  - HSLs for asbestos contamination in soils
- Ecological Assessment
  - Ecological Screening Levels (ESLs) for 'Urban Residential and Public Open Space' land use, assuming coarse soil.
  - Ecological Investigation Levels (EILs) for 'Urban Residential and Public Open Space' land use. Site specific EILs have been derived using the Interactive (Excel) Calculation Spreadsheet provided in the ASC NEPM Toolbox assuming the contamination is "aged", no lead background concentrations, high traffic volume, 10% clay content and using site specific pH and CEC values. The pH and CEC values adopted for the upper soil layers were an average pH of 6.8 (range 5.8 to 7.6) and CEC of 10 $_{c}$molc/kg.
- Management Limits (ML residential, parkland and public open space) assuming fine soil.
- Aesthetics
  - The Auditor has considered the need for remediation based on 'aesthetic' contamination as outlined in NEPM 2013.

7.1 Auditor's Opinion

The environmental quality criteria referenced by the Auditor for soil are consistent with those adopted by Airsafe in the DSI. The criteria referenced are listed in Table 8.1.

8. EVALUATION OF SOIL ANALYTICAL RESULTS

Soil samples were analysed for a variety of contaminants including petroleum hydrocarbons, PAHs, PCBs, OCPs, OPPs, asbestos and heavy metals. The results have been assessed against the assessment criteria and are summarised in Table 8.1. Soil sampling locations are shown as Attachment 6, Appendix A.

Table 8.1: Evaluation of Soil Analytical Results – Summary Table (mg/kg)

Analyte	n	Detections	Maximum	n > Human Health Screening Criteria	n > Terrestrial Ecological Screening Criteria
ACM >7 mm (500 mL sample)	15	0	nd	0 above HSL A 0.01%	-
AF/FA	15	1	0.000165%	0 above HSL 0.001%	-
Asbestos trace analysis	15	0	nd	-	-
Benzene	9	0	<0.1	0 above HSL A&B 0-1 m, sand 0.5 mg/kg	0 above ESL (urban residential) (coarse) 50 mg/kg
Toluene	9	0	<0.1	0 above HSL A&B 0-1 m, sand 160 mg/kg	0 above ESL (urban residential) (coarse) 85 mg/kg
Ethylbenzene	9	0	<0.2	0 above HSL A&B 0-1 m, sand 55 mg/kg	0 above ESL (urban residential) (coarse) 70 mg/kg
Total Xylenes	9	0	<0.2	0 above HSL A&B 0-1 m, sand 40 mg/kg	0 above ESL (urban residential) (coarse) 105 mg/kg
F1 (TRH C_6–C_{10} minus BTEX)	9	0	<25	0 above HSL A&B 0-1 m, sand 45 mg/kg	-
F2 (TRH >C_{10}–C_{16} minus naphthalene)	9	0	<25	0 above HSL A&B 0-1 m, sand 110 mg/kg	-
TRH C_6–C_{10}	9	0	<25	0 above ML (urban residential) 800 mg/kg	0 above ESL (urban residential) 180 mg/kg
TRH >C_{10}–C_{16}	9	0	<25	0 above ML (urban residential) 1,000 mg/kg	0 above ESL (urban residential) 120 mg/kg
TRH >C_{16}-C_{34}	9	3	220	0 above ML (urban residential) 3,500 mg/kg	0 above ESL (urban residential) (coarse) 300 mg/kg
TRH >C_{34}-C_{40}	9	0	<120	0 above ML (urban residential) 10,000 mg/kg	0 above ESL (urban residential) (coarse) 2,800 mg/kg
Naphthalene	9	0	<0.1	0 above HSL A&B 0-1 m, sand 4 mg/kg	0 above EIL (urban residential) 170 mg/kg
Benzo(a)pyrene	18	10	1.4	-	2 above ESL (urban residential) 0.7 mg/kg
Benzo(a)pyrene TEQ	18	10	1.9	0 above HIL A 3 mg/kg	-
Total PAHs	18	13	13	0 above HIL A 300 mg/kg	-

Analyte	n	Detections	Maximum	n > Human Health Screening Criteria	n > Terrestrial Ecological Screening Criteria
Arsenic	18	18	9	0 above HIL A 100 mg/kg	0 above EIL (urban residential) 100 mg/kg
Cadmium	18	1	0.5	0 above HIL A 20 mg/kg	-
Chromium	18	18	51	0 above HIL A 100 mg/kg	0 above EIL (urban residential) 410 mg/kg
Copper	18	18	62	0 above HIL A 6,000 mg/kg	0 above EIL (urban residential) 220 mg/kg
Lead	18	18	200	0 above HIL A 300 mg/kg	0 above EIL (urban residential) 1,100 mg/kg
Mercury	18	15	0.26	0 above HIL A 40 mg/kg	-
Nickel	18	18	4.3	0 above HIL A 400 mg/kg	0 above EIL (urban residential) 170 mg/kg
Zinc	18	18	170	0 above HIL A 7,400 mg/kg	0 above EIL (urban residential) 520 mg/kg
Total PCBs	9	0	<1	0 above HIL A 1 mg/kg	-
Aldrin + Dieldrin	9	0	<0.3	0 above HIL A 6 mg/kg	-
DDT + DDE + DDD	9	0	<0.3	0 above HIL A 240 mg/kg	0 above EIL (urban residential) 180 mg/kg
Other OCPs	9	0	<1	-	-
OPP	9	0	<1.7	-	-

n number of samples
nd not detected
- No criteria available/used
<PQL Less than the practical quantitation limit

8.1 Auditor's Opinion

In the Auditor's opinion, the soil analytical results are consistent with the site history and field observations. Concentrations of all contaminants in all samples were below the adopted human health criteria for residential land use with access to soils. Contaminant concentrations were also below the ecological criteria, with the exception of the concentrations of benzo(a)pyrene at two locations (BH5 and BH9) where concentrations exceeded the ESL. The Auditor completed statistical analysis based on 18 soil samples and determined the mean concentration of benzo(a)pyrene to be 0.35 mg/kg and the 95% upper confidence limit (UCL) on the mean to be 0.73 mg/kg, which is equivalent to the ESL of 0.7 mg/kg. Given that the site currently contains areas of vegetation that are not stressed and the 95% UCL is equivalent to the ESL, the exceedance of the ESL in two soil samples is not considered to have a detrimental impact on terrestrial ecosystem at the site.

A small bundle of asbestos fibres was detected in one of the 15 soils samples analysed for asbestos (sample BH1 from 0.1 mbgl). The measured weight of the bundle was 0.0012g and the estimated FA and AF (w/w) was below the NEPM health screening criteria. Asbestos was not detected in the other 14 samples and ACM was not observed at the site. Soil analysis for asbestos has been completed at double the recommended sampling density and in accordance with AS4964 – 2004 *Method for qualitative identification of asbestos in bulk samples* and AF/FA analysis was in accordance with the analytical procedures and reporting recommendations in

Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater (NEPM 2013). A 10 L soil sample was not screened for detection of ACM>7 mm, however, no ACM fragments were observed by Airsafe during the site inspection or the field investigation and the no ACM >7 mm was detected in the fifteen 500 ml soil samples. The field observations and soil analytical results indicate that the potential for significant asbestos contamination in soil is low.

10. EVALUATION OF CONCEPTUAL SITE MODEL

A conceptual site model (CSM) is a representation of the source, pathway and receptor (S-P-R) linkages at a site. Airsafe developed a CSM during the PSI and used it to inform the design of the DSI. The CSM was updated as new information became available and used iteratively in informing conclusions on site suitability. Table 9.1 provides the Auditors review of the CSM used by Airsafe to inform the investigation and draw conclusions on site suitability.

Table 9.1: Review of the Conceptual Site Model

Element of CSM	Consultant	Auditor Opinion
Contaminant source and mechanism	Airsafe identified the following sources: – Fill material – Demolition of historical buildings (including potential for asbestos) – Uses associated with maintenance of the cemetery	The Auditor considers that the identified potential sources of contamination and contaminants of concern (refer Section 4) are appropriate for the site. Mechanisms of contamination include potential surface spills, demolition debris (including asbestos) at near surface as a result of demolition or weathering of historical structures, and placement of contaminated fill to achieve site levels.
Affected media	Soil. Airsafe did not consider it likely that contamination of groundwater beneath the site would have occurred.	Based on a site history that does not include significant industrial land use and the near surface nature of the identified potential contaminant sources, the Auditor agrees that contamination of groundwater at the site is unlikely. This is further supported by the soil analytical results which do not indicate concentrations of contaminants of concern above assessment criteria (refer to Section 8).
Receptor identification	Airsafe identified the following human receptors: – Current and future site users (school users) – Construction and maintenance workers involved in excavation works – Users of adjoining parkland and commercial properties They identified the following ecological receptors – Berrys Creek – Adjacent gardens, trees and shrubs	The receptors identified at the PSI stage are appropriate.
Exposure pathways	During the PSI Airsafe considered exposure from airborne contaminant particles (dust), dermal contact and vapour inhalation. Dermal contact was identified as the only likely exposure pathway for human receptors. Exposure pathways for ecological receptors were not identified. Following the DSI, there were no identified complete exposure pathways.	The Auditor considered ingestion of contaminants in soil as a potential exposure pathway in addition to dermal contact and inhalation. Following the DSI, no complete exposure pathways were identified.

Element of CSM	Consultant	Auditor Opinion
Presence of preferential pathways for contaminant movement	Not discussed	Based on the contaminant sources and the nature of the site, the Auditor considers that preferential pathways are unlikely.
Evaluation of data gaps	Airsafe identified the lack of site access (e.g. soil status under concrete slabs) as a data gap. The significance of the data gap was not discussed.	The Auditor considers that lack of analytical data under inaccessible areas of the site (under the building footprint) is a data gap. The significance of the data gap is discussed in Section 10.

10.1 Auditor's Opinion

The Auditor is of the opinion that the CSM was a reasonable representation of the contamination at the site. Risks to users of the site as a school and to ecological receptors have been addressed through the application of appropriate site assessment criteria during the DSI. Following the results of the DSI, no complete S-P-R linkages were identified.

The lack of soil analytical data for areas below the existing slab is identified as a data gap. The implication of this data gap on the assessment of site suitability as a school is discussed below in Section 10.

11. ASSESSMENT OF RISK AND POTENTIAL CONTAMINANT MIGRATION

11.1 Auditor's Opinion

Based on assessment of soil results against relevant guidelines and consideration of the overall investigation results, it is the Auditor's opinion that the risks to human health and the environment from potential contamination at the site under the current site layout are low. A data gap is present in relation to soil conditions below the existing concrete slab. When considering the uncertainty in relation to potential contamination in the unsampled areas of the site, the Auditor considers the following factors:

- The site history does not include significant industrial site usage and underground storage infrastructure is unlikely to have been used at the site
- Site observations by the consultant and the Auditor did not identify any signs of significant contamination or ongoing sources of contamination
- The shallow subsurface soil profile encountered during the DSI was consistent across the sampled areas of the site surrounding the concrete slab (top soil and reworked clay fill) and the potential for a different soil profile to be present in unsampled areas of the site is considered to be low.
- ACM was not identified at the site surface or in sampled fill material.
- Concentrations of contaminants of concern in sampled soils were below assessment criteria for residential land use with access to soils
- Subsurface soils beneath the eastern building slab (an area of approximately 400 m^2) have been excavated previously to a depth of over 2 mbgl during the construction of the basement and removed from the site. Hence, the likelihood of contaminated soils being present in this portion of the site is low.

Based on the factors above, the potential for areas of significantly contaminated soil to remain on the site at levels that pose an unacceptable risk to future site users is low. The current layout of the site is to remain during its use as a school and, hence, the potential for construction or maintenance works to be required in uncharacterised portions of the site is low. The south-eastern portion of the site is to be developed as a play area with turf and mulch covering. Under the proposed site layout, the areas of accessible soil are limited.

There is the potential that small volumes of unidentified contaminated fill material may remain below the footprint of the single storey building in the western portion of the site, which does not have a basement level. The most likely contaminants are ACM and PAH in fill material. Should future redevelopment of the site result in changes in the site layout, the potential for contaminated fill material to be present in this portion of the site should be considered.

As no significant levels of contaminants were detected over the site, there is little or no potential for migration of contamination from the site or vertically to groundwater. As such, groundwater characterisation is not considered necessary. In the Auditor's opinion, there is no evidence of significant migration of contamination and little potential for future migration.

12. COMPLIANCE WITH REGULATORY GUIDELINES AND DIRECTIONS

12.1 General

The Auditor has used guidelines currently made and approved by the EPA under section 105 of the NSW *Contaminated Land Management Act 1997*.

The investigation was generally conducted in accordance with SEPP 55 Planning Guidelines and reported in accordance with the OEH (2011) *Guidelines for Consultants Reporting on Contaminated Sites*. The checklist included in that document has been referred to.

12.2 Development Approvals

A Notice of Determination for Development Consent DA-2014/301 (C) dated 20 July 2015 was issued by Willoughby City Council for "*Alterations and additions to existing office building to include first floor addition to replace existing mezzanine and associated works*". This DA does not specify any conditions in relation to contamination.

International Chinese School propose to re-purpose the remodelled office building for use as a school. Requirement 12 of the Planning Secretary's Environmental Assessment Requirements (SEARs) for the development, dated 18 April 2019, required the EIS to *"assess and quantify any soil and groundwater and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55"*

This Site Audit Report and accompanying Site Audit Statement has been completed in order to comply with this requirement and comment on site suitability for use as a school.

12.3 Waste Management

No waste management was completed as part of the works reviewed in this audit. While it is assumed building materials were disposed of offsite as part of the current remodelling of the building, this activity was outside the scope of the audit.

No material had been imported to site at the time of the audit. Any materials imported for landscaping purposes should be assessed as being suitable for use and meet the soil criteria for residential site use with accessible soils outlined in NEPM 2013.

12.4 Conflict of Interest

The Auditor has considered the potential for a conflict of interest in accordance with the requirements of section 3.2.3 of the NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme*.

The Auditor considers that there are no conflicts of interest, given that:

1. The Auditor is not related to a person by whom any part of the land is owned or occupied.
2. The Auditor does not have a pecuniary interest in any part of the land or any activity carried out on any part of the land.
3. The Auditor has not reviewed any aspect of work carried out by, or a report written by, the site auditor or a person to whom the site auditor is related.

13. CONCLUSIONS AND RECOMMENDATIONS

The DSI investigation completed by Airsafe concludes that *"a health risk was not identified with respect to the proposed landuse (Residential HIL A: Residential with garden/accessible soil also includes childcare centres, preschool and primary schools)".* Airsafe notes that *"The conclusions above are presented on the understanding that site conditions remain static, and the current concrete slab for the building (including the semi subsurface basement), remain intact. If conditions change or the integrity of the concrete slab is compromised a further assessment of the (exposed) soil with respect to historical contamination, shall need to be undertaken".*

Based on the information presented in the Airsafe PSI and DSI reports, observations made on site, and following the Decision-making process for assessing urban redevelopment sites in NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme (3rd Edition)*, the Auditor concludes that the site is suitable for the purposes of 'residential with gardens and accessible soil', which also includes childcare centres, preschools and primary schools, under the site layout as shown in Attachment 5 in Appendix A.

Any materials imported for landscaping purposes should be assessed as being suitable for use and meet the soil criteria for residential site use with accessible soils outlined in NEPM 2013.

Groundwater at the site has not been assessed for any beneficial re-use. Any future use of groundwater would require appropriate assessment and regulatory approvals from the NSW Office of Water.

14. OTHER RELEVANT INFORMATION

This Audit was conducted on the behalf of International Chinese School for the purpose of assessing whether the land is suitable for the proposed use i.e. a "Site Audit" as defined in Section 4 (definition of a 'site audit' (b)(iii)) of the CLM Act.

This summary report may not be suitable for other uses. Airsafe included limitations in their reports. The Audit must also be subject to those limitations. The Auditor has prepared this document in good faith, but is unable to provide certification outside of areas over which the Auditor had some control or is reasonably able to check.

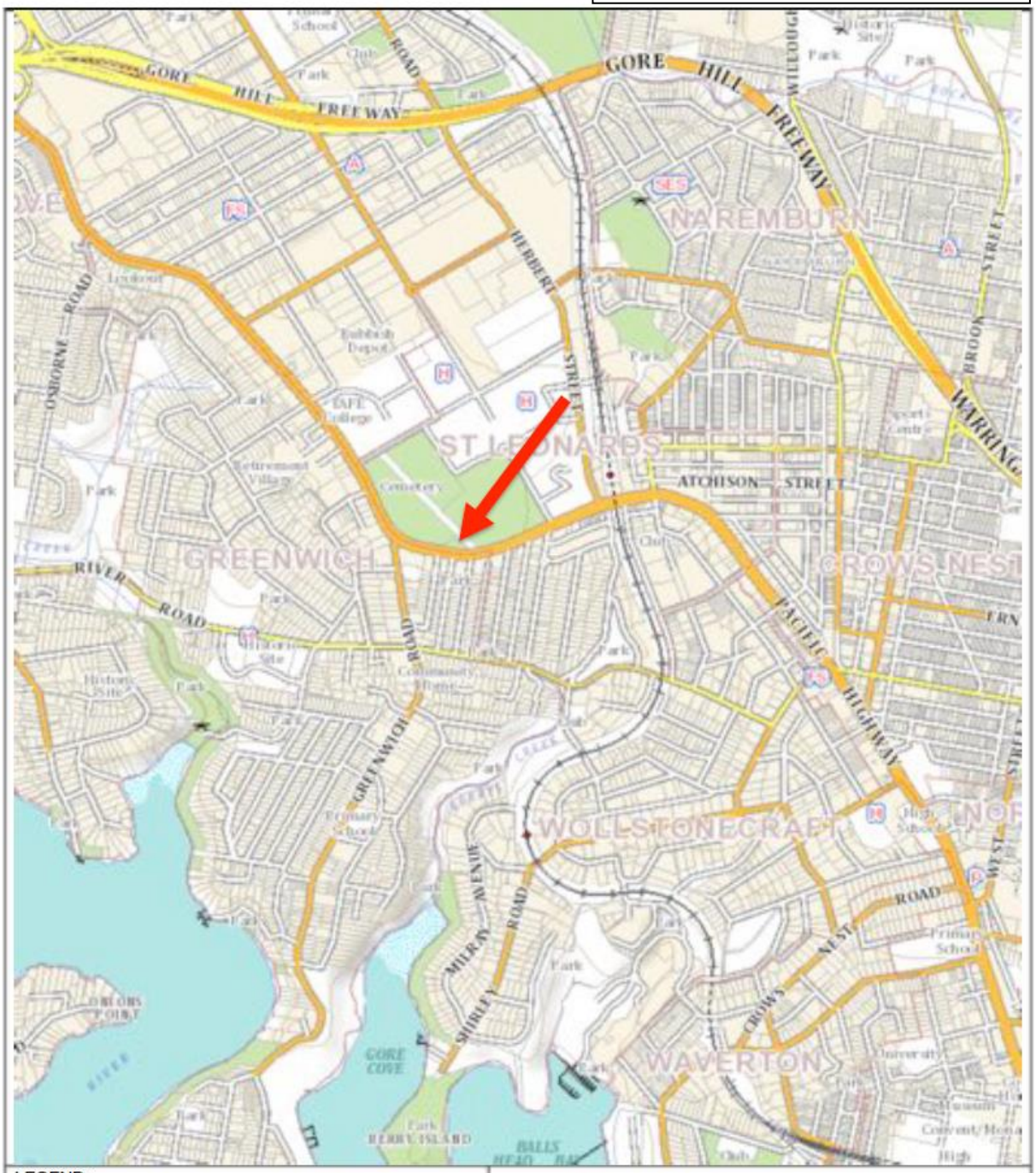
The Auditor has relied on the documents referenced in Section 1 of the Site Audit Report in preparing the Auditors' opinion. If the Auditor is unable to rely on any of those documents, the conclusions of the audit could change.

It is not possible in a Site Audit Report to present all data which could be of interest to all readers of this report. Readers are referred to the referenced reports for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect to, their situation.

APPENDIX A
ATTACHMENTS

Attachment 1: Site Locality Plan
Attachment 2: Site Boundaries
Attachment 3: Current Site Layout
Attachment 4: Existing Basement Level
Attachment 5: School Development Layout
Attachment 6: Soil Sample Investigation Locations

Attachment 1: Site Locality Plan



LEGEND:

- SITE LOCATION

AIRSAFE

FIG NO.	FIGURE NO. 1 : 02760-F01	LOCATION	211 PACIFIC HIGHWAY ST LEONARDS NSW 2065
SOURCE	NEARMAP - IMAGERY 2016 CNES / ASTRIUM, DIGITALGLOBE	CLIENT	STANTON DAHL ARCHITECTS
DRAWN	M.E	PROJECT	STAGE 1 PRELIMINARY SITE INVESTIGATION
APPROVED	M.E	TITLE	SITE LOCATION

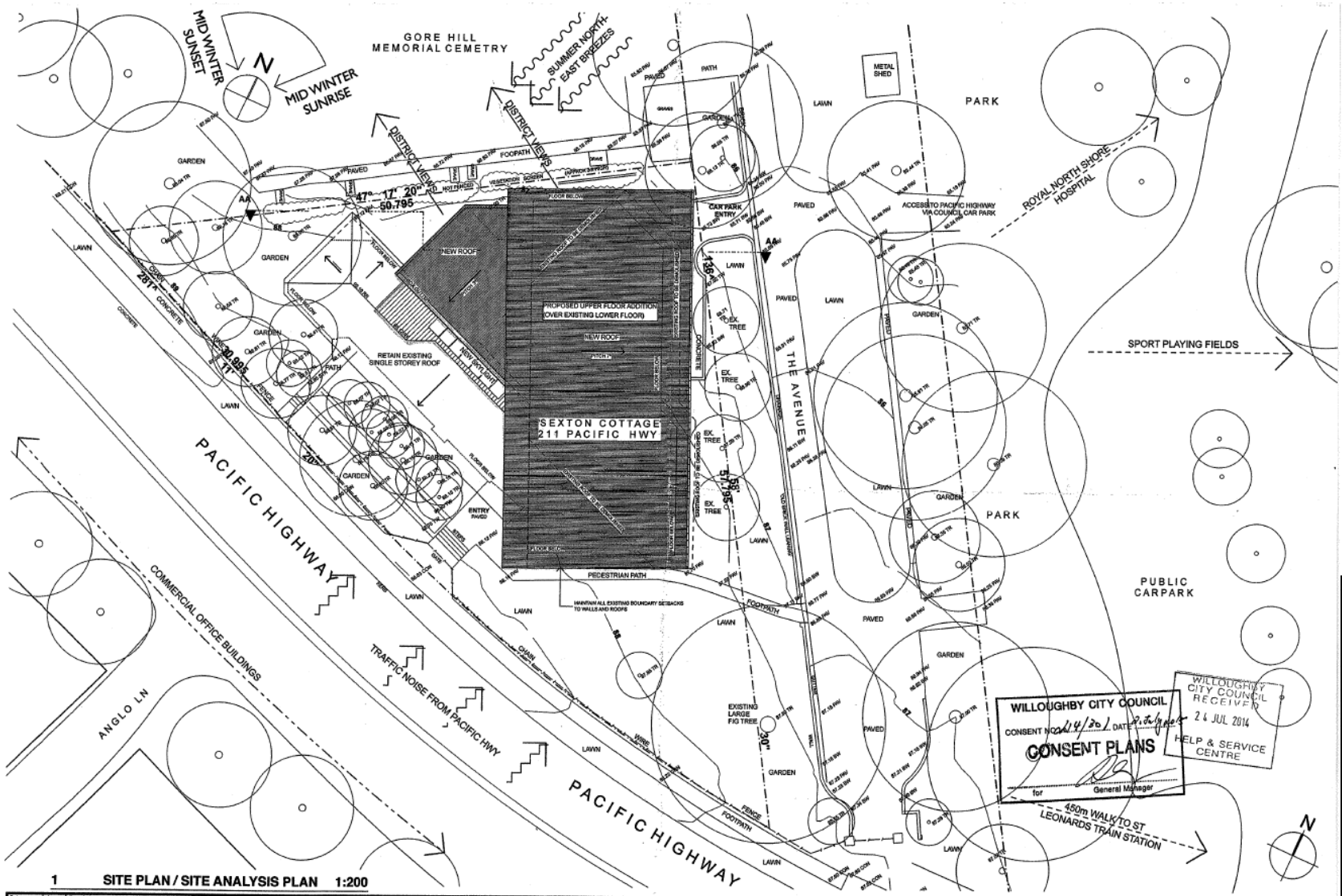
Attachment 2: Site Boundaries

LEGEND:

- SITE BOUNDARIES

AIRSAFE

FIG NO.	FIGURE NO. 2 : 02760-F02	LOCATION	211 PACIFIC HIGHWAY ST LEONARDS NSW 2065
SOURCE	NEARMAP - IMAGERY 2016 CNES / ASTRIUM, DIGITALGLOBE	CLIENT	STANTON DAHL ARCHITECTS
DRAWN	M.E	PROJECT	STAGE 1 PRELIMINARY SITE INVESTIGATION
APPROVED	M.E	TITLE	SITE BOUNDARIES



1 SITE PLAN / SITE ANALYSIS PLAN 1:200

Date :	Issue :	Description :	Date :	Issue :	Description :
03.06.2013	A	DEPARTMENT OF LANDS SUBMISSION			
09.06.2013	B	OWNERS CONSENT FOR DEVELOPMENT APPLICATION			

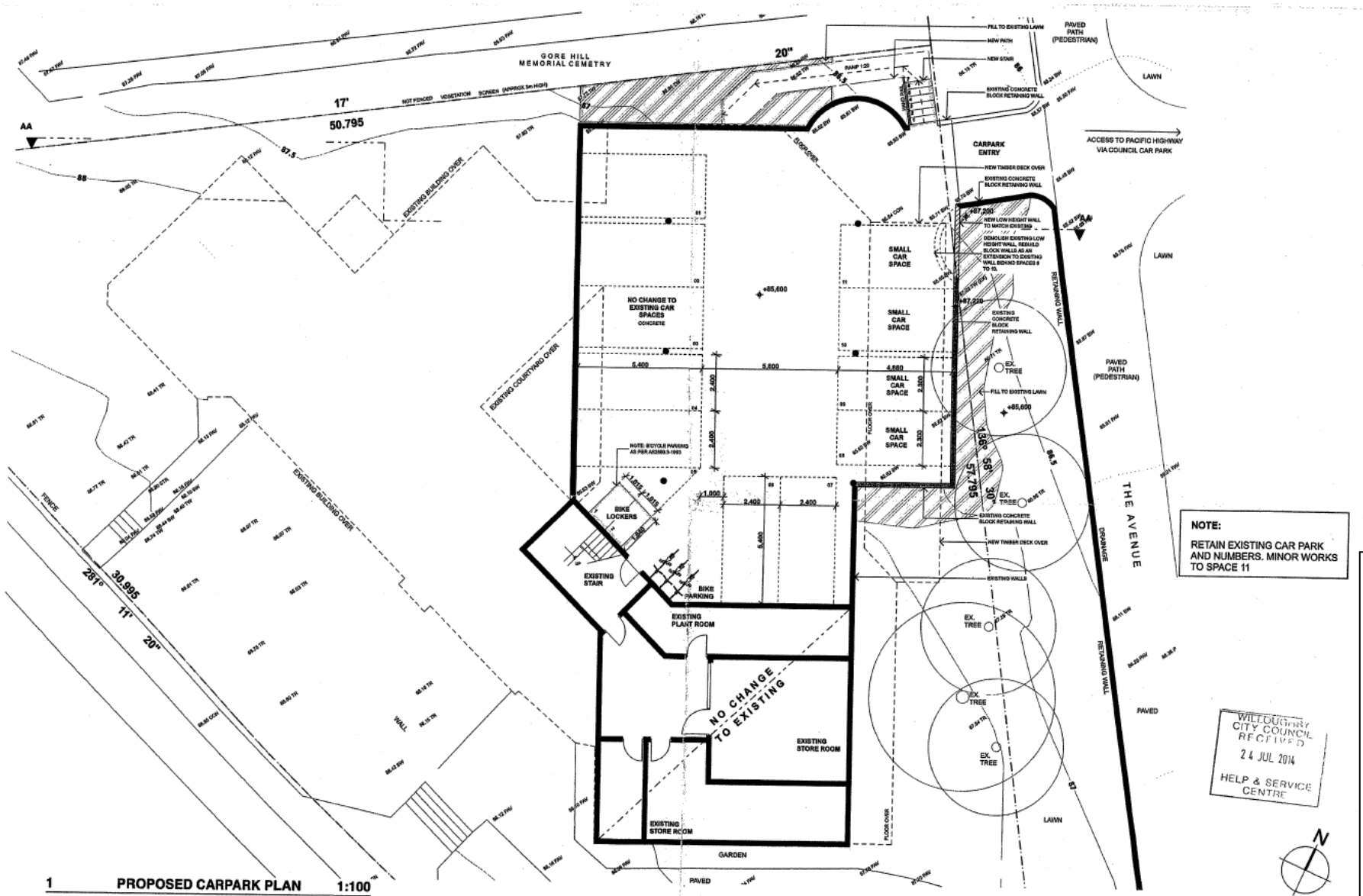
The builder shall check and verify all dimensions and verify all errors and omissions to the Architect. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Architect for construction.

GARTNERTROVATO ARCHITECTS

Project :	ALTERATIONS & ADDITIONS 211 PACIFIC HIGHWAY, ST LEONARDS	Drawn/Designed : SG/NS	Date : OCT 2013
Client :	211 Pacific Highway Trust Pty Ltd	Project Number : 1313	Scale : AS SHOWN @ (A2)
Drawing :	PRELIMINARY DEVELOPMENT APPLICATION	Drawing No. : 02	Issue : B

Plot Date: 15/07/14

Attachment 3: Current Site Layout



1 **PROPOSED CARPARK PLAN** 1:100

Date :	Issue :	Description :	Date :	Issue :	Description :
06.05.2013	A	DEPARTMENT OF LANDS SUBMISSION			
09.08.2013	B	OWNERS CONSENT FOR DEVELOPMENT APPLICATION			

The builder shall check and verify all dimensions and verify all errors and omissions to the Architect. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Architect for construction.

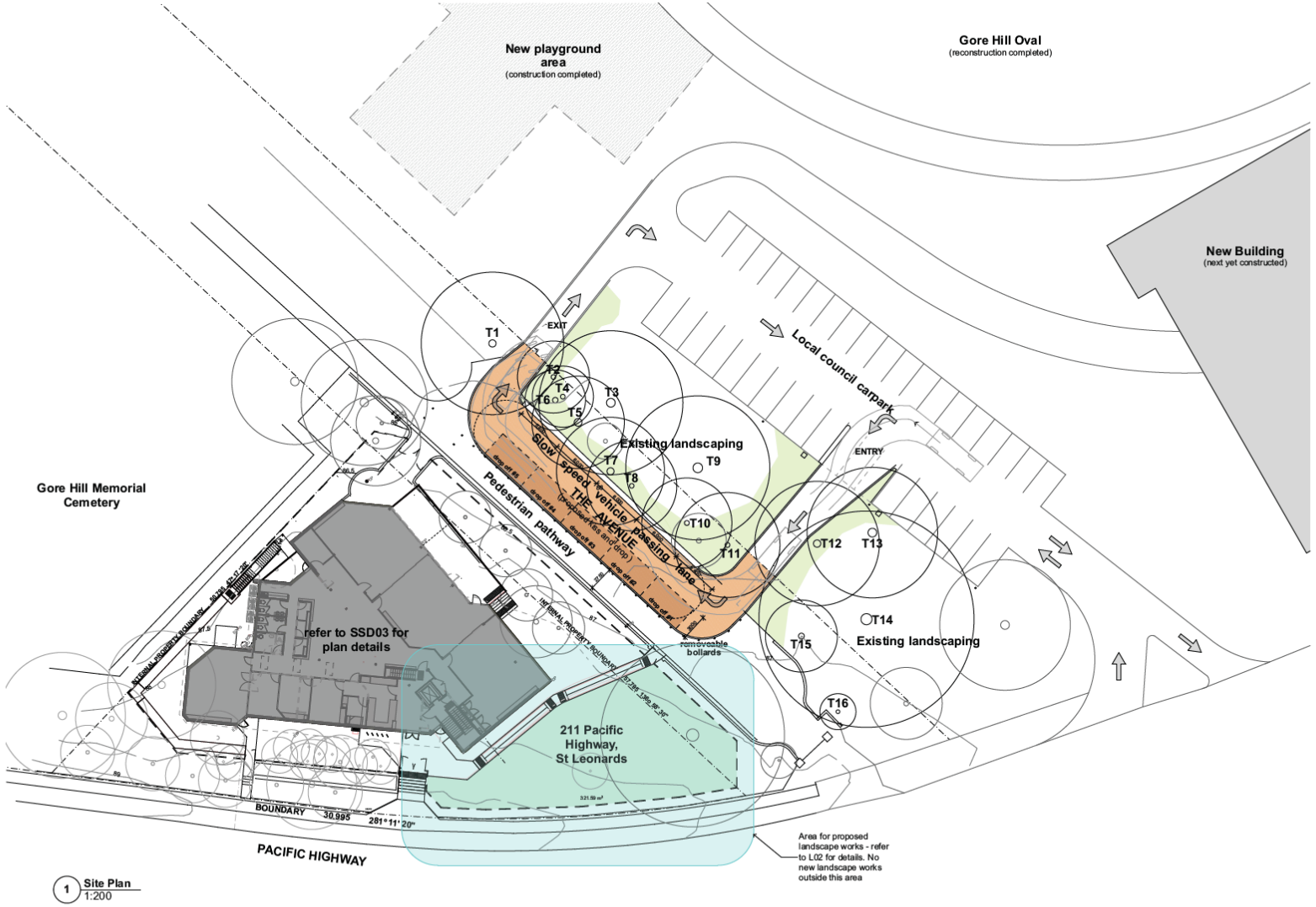
GARTNERTROVATO ARCHITECTS

A 4/388 MONA VALE ROAD PO BOX 3135 MONA VALE NSW 2103
T 9979 4411 F 9979 4422 M 0412 248 488
E GTA@GT.COM.AU

Project :	ALTERATIONS & ADDITIONS 211 PACIFIC HIGHWAY, ST LEONARDS
Client :	211 Pacific Highway Trust Pty Ltd
Drawing :	PRELIMINARY DEVELOPMENT APPLICATION CAR PARK LEVEL
Drawn/Designed :	SG/NS
Date :	OCT 2013
Project Number :	1313
Scale :	AS SHOWN @ (A2)
Drawing No. :	03
Issue :	B

Plot Date: 14/10/13

Attachment 4: Existing Basement Level



inviewdesign
www.inviewdesign.com.au

client: International Chinese School
site address: 211 Pacific Highway St Leonards NSW
sheet title: Overall Site Plan

INVIEW DESIGN PTY LTD
abn: 74 165 872 872
po box 2422 Lidcombe, nsw, 2141
p. 0414 647 820
e. mailto:all@inviewdesign.com.au

North:

AUNmember 676

rev #	issue	medium	delivery	date
1	DA Issue	PDF	E	12.06.19
p1	Preliminary DA Issue	PDF	E	06.06.19

revisions

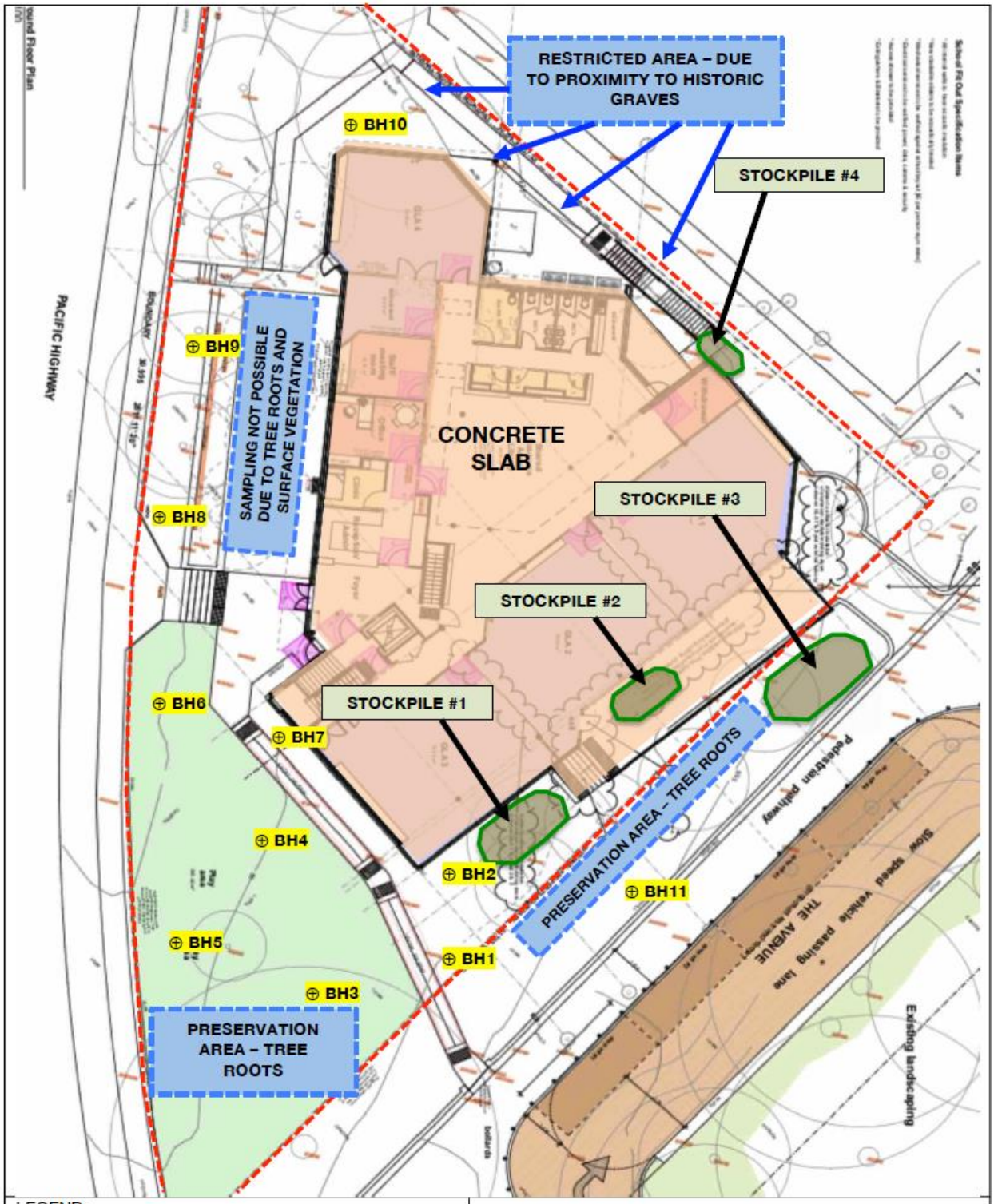
Legend: Medium: P - Print, PDF - Image format, D - CAD; Delivery: E - Email, H - Hand, M - Mail/Courier, F - Fax

scale: 1:200 @ a1

drawing number: L01

Attachment 5: School Development Layout

Attachment 6: Soil Sample Investigation Locations



LEGEND:

- SITE BOUNDARIES

⊕ BH# - BOREHOLE LOCATIONS

AIRSAFE

FIG NO.	FIGURE NO. 2 : 02787-F02	LOCATION	211 PACIFIC HIGHWAY ST LEONARDS NSW 2065
SOURCE	NEARMAP - IMAGERY 2016 CNES / ASTRIUM, DIGITALGLOBE	CLIENT	STANTON DAHL ARCHITECTS
DRAWN	M.E	PROJECT	STAGE 2 DETAILED SITE INVESTIGATION
APPROVED	M.E	TITLE	SAMPLING LOCATIONS

APPENDIX B
SITE AUDIT STATEMENT

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. LW-001

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	Louise Walkden
Company	Ramboll Australia Pty Ltd
Address	Level 3, 100 Pacific Highway, North Sydney
	Postcode 2060
Phone	02 9954 8100
Email	lwalkden@ramboll.com

Site details

Address: 211 Pacific Highway, St Leonards, NSW

Postcode: 2065

Property description

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

Lot 101 DP791327

Local government area: Willoughby City Council

Area of site (include units, e.g. hectares): approximately 1,600 m^2

Current zoning: SP1 – Special Activities – Cemetery

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.
- ☐ Order no.
- ☐ Proposal no.
- ☐ Notice no.

☒ **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: Trevor Fowler of Stanton Dahl Architects on behalf of International Chinese School

Company: International Chinese School

Address: 1 View Street, Chatswood NSW

Postcode: 2067

Phone: 02 8440 8450

Email: trevor.fowler@stantondahl.com.au

Contact details for contact person (if different from above)

Name:

Phone:

Email:

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)

☐ 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: International school (including primary)

OR

☐ **A2** To determine land use suitability subject to compliance with either an active or passive environmental management plan

Intended uses of the land:

OR

(Tick all that apply)

☐ **B1** To determine the nature and extent of contamination

☐ **B2** To determine the appropriateness of:

- ☐ an investigation plan
- ☐ 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 *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

☐ **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:

Information sources for site audit

Consultancies which conducted the site investigations and/or remediation:

Airsafe OHC Pty Ltd (Airsafe)

Titles of reports reviewed:

Stage 1 Preliminary Site Investigation, Proposed Development International Chinese School, 211 Pacific Highway, St Leonards NSW 2065 Ref.02760.06.19.Stage1PSI) 5 July 2019, Airsafe

Stage 2 Detailed Site Investigation, Proposed Development International Chinese School, 211 Pacific Highway, St Leonards NSW 2065 Ref.02787.08.19.Stage2DSI) 22 August 2019, Airsafe

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

Site audit report details

Title	Site Audit Report - 211 Pacific Highway, St Leonards, NSW 2065		
Report no.	LW-001 (Ramboll Ref: 318000788)	Date	29 August 2019

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:
    - (B1) the nature and extent of contamination, and/or
    - (B2) the appropriateness of an investigation, remediation or management plan[1], 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, preschool, primary school~~

☐ ~~Residential with minimal opportunity for soil access, including units~~

☐ ~~Secondary school~~

☐ ~~Park, recreational open space, playing field~~

☐ ~~Commercial/industrial~~

☒ Other (please specify):

International School (including primary) occupying existing building with layout as shown on the attached drawing.

OR

☐ I certify that, in my opinion, the **site is not suitable** for any use due to the risk of harm from contamination.

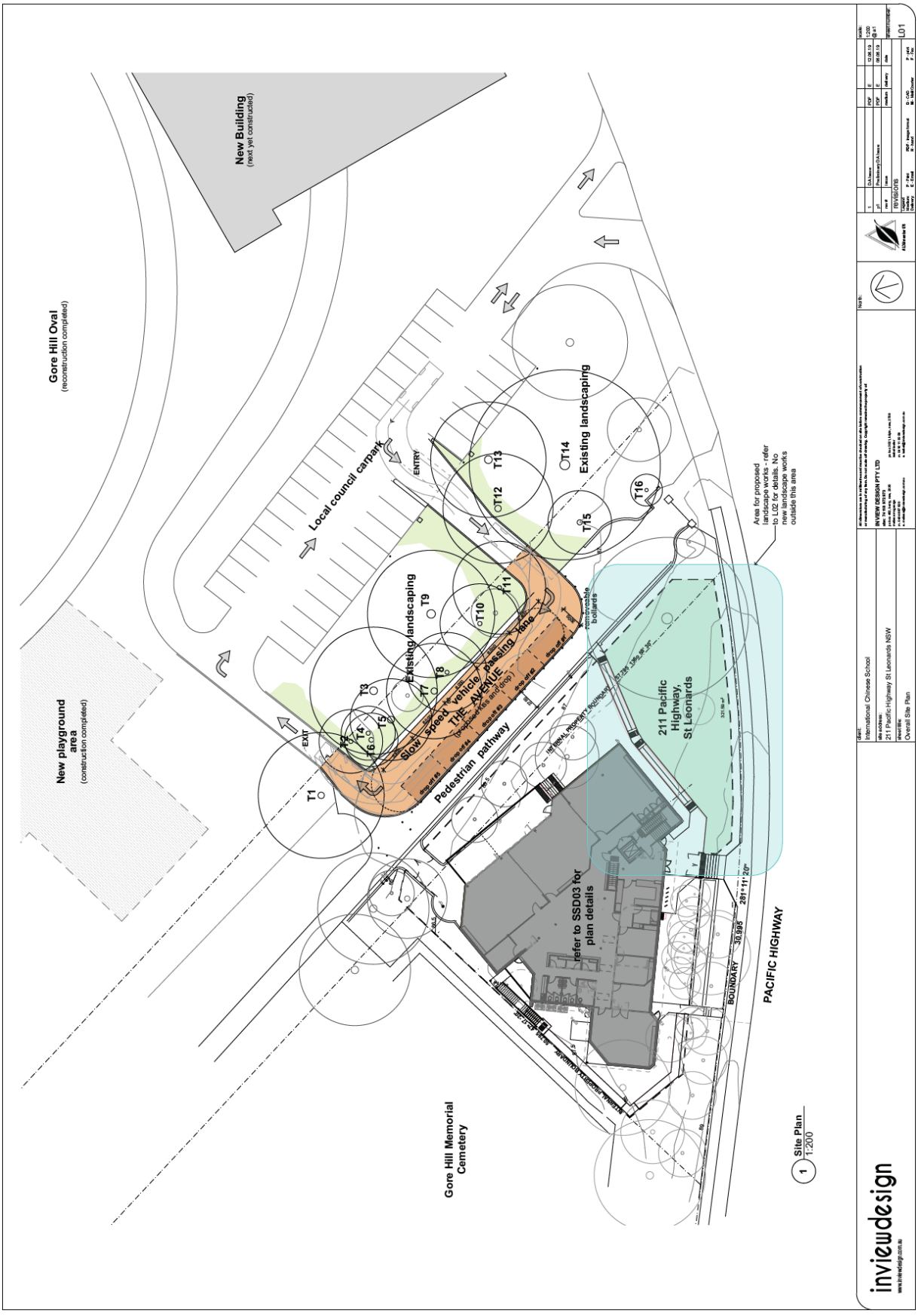
Overall comments:

International Chinese School propose to repurpose the existing office building on the site for use as a school. The Audit has considered the proposed layout of the site as shown in the attachment.

No material had been imported to site at the time of the Audit. The south-eastern portion of the site is to be developed as a play area with turf and mulch covering. Any materials imported for landscaping purposes should be assessed as being suitable for use and meet the soil criteria for residential site use with accessible soils.

There is the potential that small volumes of unidentified contaminated fill material may remain below the footprint of the single storey building in the western portion of the site, which does not have a basement level. The most likely contaminants are asbestos containing material (ACM) and polycyclic aromatic hydrocarbons (PAH) in fill material. Should future redevelopment of the site result in changes in the site layout, the potential for contaminated fill material to be present in this portion of the site should be considered.

Groundwater at the site has not been assessed for any beneficial re-use. Any future use of groundwater would require appropriate assessment and regulatory approvals from the NSW Office of Water.


New Building
(next yet constructed)
Gore Hill Oval
(reconstruction completed)
New playground area
(construction completed)
Local council carpark
ENTRY
EXIT
Existing landscaping
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
T13
T14
T15
T16
Slow speed vehicle passing lane
THE AVENUE
(pedestrian access and drop)
Pedestrian pathway
removable bollards
Area for proposed landscape works - refer to L02 for details. No new landscape works outside this area
211 Pacific Highway, St Leonards
refer to SSD03 for plan details
BOUNDARY
PACIFIC HIGHWAY
Gore Hill Memorial Cemetery
1 Site Plan
1:200
inviewdesign
International Chinese School
211 Pacific Highway St Leonards NSW
Overall Site Plan
INVIEW DESIGN PTY LTD
revisions
L01

Section A2

I certify that, in my opinion:

Subject to compliance with the **attached** environmental management plan[2] (EMP), 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, preschool, primary school

☐ Residential with minimal opportunity for soil access, including units

☐ Secondary school

☐ Park, recreational open space, playing field

☐ Commercial/industrial

☐ Other (please specify):

_____

EMP details

Title: _____

Author: _____

Date: _____ No. of pages: _____

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 systems[3]

☐ requires maintenance of **passive** control systems only[3].

[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:

Description of the nature of the residual contamination:

Summary of the actions required by the EMP:

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

How there will be appropriate public notification:

Overall comments:

Section B

Purpose of the plan[4] which is the subject of this audit:

I certify that, in my 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** appropriate to determine
- ☐ **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* or management order** (strike out as appropriate):

- ☐ **have** been complied with
- ☐ **have not** been complied with.

*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.)

- ☐ Residential, including substantial vegetable garden and poultry
- ☐ Residential, including substantial vegetable garden, excluding poultry

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

- ☐ 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
- ☐ Secondary school
- ☐ Park, recreational open space, playing field
- ☐ Commercial/industrial
- ☐ Other (please specify):

IF the site is remediated/managed* in accordance with the following plan (**attached**):

*Strike out as appropriate

Plan title:

Plan author:

Plan date: No. of pages:

SUBJECT to compliance with the following condition(s):

Overall 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. 1903

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: 

Date: 29 August 2019

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**:
  nswauditors@epa.nsw.gov.au or as specified by the EPA

  AND
- the **local council** for the land which is the subject of the audit.

Ramboll Australia Pty Ltd
Level 3, 100 Pacific Highway
PO Box 560
North Sydney NSW 2060

T +61 2 9954 8100

www.ramboll.com