



ENVIRONMENTAL INVESTIGATION SERVICES

REPORT

TO

CATYLIS PROPERTIES PTY LTD

ON

**STAGE 1 DESKTOP ENVIRONMENTAL SITE
ASSESSMENT**

FOR

PROPOSED MIXED-USE DEVELOPMENT

AT

**171-189 PARRAMATTA ROAD, GRANVILLE,
NSW 2142**

24 November 2014

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Figure 1: Site Features Plan

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ABBREVIATIONS

Asbestos Containing Material	ACM
Area of Environmental Concern	AEC
Australian Height Datum	AHD
Acid Sulfate Soil	ASS
Above Ground Storage Tank	AST
Below Ground Level	BGL
Bureau of Meteorology	BOM
Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene	BTEXN
Cation Exchange Capacity	CEC
Contaminated Land Management	CLM
Conceptual Site Model	CSM
Environmental Protection Agency	EPA
Environmental Site Assessment	ESA
International Organisation of Standardisation	ISO
Light Non-Aqueous Phase Liquid	LNAPL
Local Government Authority	LGA
Map Grid of Australia	MGA
National Association of Testing Authorities	NATA
National Environmental Protection Measure	NEPM
Organochlorine Pesticides	OCP
Organophosphate Pesticides	OPP
Polycyclic Aromatic Hydrocarbons	PAH
Potential Contaminants of Concern	PCC
Remediation Action Plan	RAP
Sampling, Analysis and Quality Plan	SAQP
Site Audit Statement	SAS
Site Audit Report	SAR
Semi-Volatile Organic Compounds	sVOC
Standard Water Level	SWL
Total Recoverable Hydrocarbons	TRH
United States Environmental Protection Agency	USEPA
Underground Storage Tank	UST
Volatile Organic Compounds	VOC
Volatile Organic Chlorinated Compound	VOCC
Workplace, Health and Safety	WHS

1 INTRODUCTION

Catylis Properties Pty Ltd ('the client') commissioned Environmental Investigation Services (EIS)¹ to undertake a Stage 1 Environmental Site Assessment (Stage 1 ESA) for the proposed mixed-use development at 171-189 Parramatta Road, Granville.

This report supersedes the previous report (E27710KGrpt dated 18 September 2014) issued for the site.

The site location is shown on Figure 1 and the Stage 1 ESA was confined to the site boundaries as shown on Figure 2. The proposed development area is referred to as 'the site' in this report. The site is identified as:

- Lot 1 in DP61514;
- Lot 1 in DP504298;
- Lot 2 in DP89526;
- Lot 1 in DP79102;
- Lot 1 in DP79624;
- Lot 1 in DP89526;
- Lot 1 in DP81084;
- Lot A in DP160406; and
- Lot 58 in DP869379.

1.1 Proposed Development Details

EIS understand that the proposed development includes demolition of all existing structures and construction of mixed-use (commercial and residential) apartments. Details of the proposed development were not available to EIS at the time of the preparation of this report.

1.2 Objectives

The report objectives are:

- Identify the areas of environmental concern (AEC);
- Prepare a preliminary conceptual site model (PCSM);
- Establish whether an intrusive (Stage 2 ESA) investigation is required; and
- Comment on the suitability of the site for the proposed landuse.

1.3 Scope of Work

The Stage 1 ESA was undertaken generally in accordance with an EIS proposal (Ref: EP7852K) of 13 March 2014.

¹ Environmental consulting division of Jeffery & Katauskas Pty Ltd (J&K)

The scope of work included the following:

- Review of site information including background and site history information;
- A site inspection to identify Areas of Environmental Concern (AEC);
- Prepare a Preliminary Conceptual Site Model (PCSM);
- Prepare a report presenting the results of the assessment.

The report was prepared with reference to regulations/guidelines outlined in the table below. Individual guidelines are also referenced within the text of the report.

Table 1-1: Guidelines

Guidelines/Regulations/Documents
Contaminated Land Management Amendment Act (2008 ²)
State Environmental Planning Policy No.55 – Remediation of Land (1998 ³)
Guidelines for Consultants Reporting on Contaminated Sites (2011 ⁴)
Guidelines for the NSW Site Auditor Scheme, 2nd Edition (2006 ⁵)
National Environmental Protection (Assessment of Site Contamination) Amendment Measure (2013 ⁶)

² NSW Government Legislation, (2008), *Contaminated Land Management Amendment Act*. (referred to as CLM Amendment Act 2008)

³ NSW Government, (1998), *State Environmental Planning Policy No. 55 – Remediation of Land*. (referred to as SEPP55)

⁴ NSW Office of Environment and Heritage (OEH), (2011), *Guidelines for Consultants Reporting on Contaminated Sites*. (referred to as Reporting Guidelines 2011)

⁵ NSW DEC, (2006), *Guidelines for the NSW Site Auditor Scheme, 2nd ed.* (referred to as Site Auditor Guidelines 2006)

⁶ National Environment Protection Council (NEPC), (2013), *National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)*. (referred to as NEPM 2013)

2 SITE INFORMATION

2.1 Site Identification

Table 2-1: Site Identification

Current Site Owner:	Beraci Pty Ltd
Site Address:	171-189 Parramatta Road, Granville
Lot & Deposited Plan:	• Lot 1 in DP615141; • Lot 1 in DP504298; • Lot 2 in DP89526; • Lot 1 in DP 79102; • Lot 1 in DP79624; • Lot 1 in DP89526; • Lot 1 in DP81084; • Lot A in DP160406; and • Lot 58 in DP863379
Current Land Use:	Commercial (except the Lot A in DP160406 which is residential)
Proposed Land Use:	Mixed use (Commercial & Residential)
Local Government Authority (LGA):	Parramatta City Council
Current Zoning:	Zone B6 (Enterprise Corridor) and Zone R3 (Medium Density Residential)
Site Area(m ²) (approx.):	8,350
RL (AHD in m) (approx.):	11
Geographical Location (MGA) (approx.):	N: 33° 49' 43 E: 151° 00' 31
Site Location Plan:	Figure 1
Site Features Plan:	Figure 2

2.2 Site Location and Regional Setting

The site is located on the northern side of Parramatta Road and southern side of Victoria Street, Granville. The western Rail line that runs through Granville and Parramatta stations is located along the western boundary of the site. The site is located in a predominantly commercial area of Granville.

2.3 Topography

The regional topography is generally flat. The natural site topography may have been altered to accommodate the existing building.

2.4 Site Inspection

A walkover inspection of the site was undertaken by EIS on 12 September 2014. At the time of the field investigation the west section of the site consisted of an open yard for the storage of scaffolding, formwork and builders' equipment. This area also was used for parking of earth moving equipment including trucks and an excavator. A number of abandoned vehicles and pieces of scrap metal were scattered in this area. Stockpiles of

rubble, timber and soil were observed in this section of the site. The surface of this section of the site was covered with gravel and isolated pieces of fibre-cement also were observed on the surface.

The majority of the rest of the site was occupied by a two storey furniture showroom. An asphalt paved car park was located to the east of the furniture showroom. A single storey fibro cottage was located in the north section of the site, facing Victoria Street. A concrete paved car park area was located in the central north section of the site adjacent to the fibro cottage and with access from Victoria Street.

2.5 Surrounding Land Use

The immediate surrounds included the following landuses:

- North – Residential properties;
- South – Commercial properties beyond the Parramatta Road;
- East – Commercial properties; and
- West – Western rail corridor.

2.6 Underground Services

The 'Dial Before You Dig' (DBYD) plans were reviewed for the assessment. The Sydney Water plan indicates that a sewer main runs from the middle of the western section of the site to the east. The backfill around the sewer could act as a potential migratory pathway. The approximate location of the sewer is shown in Appendix A. Any other major services which could pose a potential migratory pathway were not identified at the site.

2.7 Regional Geology

A review of the regional geological map of Sydney (1983⁷) indicates that the site is underlain by Ashfield Shale of the Wianamatta Group, which typically consists of black to dark grey shale and laminite.

A geotechnical investigation of a section of the site undertaken by JK Geotechnics in 2004 indicated that the sub-surface conditions generally comprised of shallow fill over high plasticity clay. Shale bedrock was encountered at approximately 7m to 9m below ground level. Groundwater was measured at approximately 5m below ground level.

⁷ Department of Mineral Resources, (1983), *1:100,000 Geological Map of Sydney (Series 9130)*.

2.8 Acid Sulfate Soil (ASS) Risk

A review of the ASS risk maps prepared by Department of Land and Water Conservation (1997⁸) and Parramatta Local Environmental Plan indicates that the site is located in an area classed as 'disturbed terrain' or having 'low risk'.

2.9 Salinity

The site is located within the area of Western Sydney included in the Salinity Potential Map 2002. Based upon interpretation from the geological formations and soil groups presented on the map, the site is located in a region of moderate salinity potential.

The moderate classification is attributed to scattered areas of scalding and indicator vegetation, in areas where concentrations have not been mapped. Saline areas may occur in this zone, which have not been identified or may occur if risk factors change adversely.

2.10 Hydrogeology

A review of groundwater bore records available on the NSW Office of Water⁹ (NOW) online database was undertaken on 16 September 2014. The search was limited to registered bores located within a radius of approximately 1km of the site.

The search indicated approximately 15 registered bores within the search area. Copies of the records are attached in the appendices. A brief summary of relevant information is presented below:

Table 2-2: Summary of Groundwater Bores

Reference	Distance from Site (m/Km) (approx.)	Direction from Site	Final Depth (m)	Standing Water Level (SWL) (m)	Registered Purpose
GW110396	450	West	7	Unknown	Monitoring
GW110397	460	West	5	Unknown	Monitoring
GW110398	500	West	6	Unknown	Monitoring
GW110399	450	West	5.3	Unknown	Monitoring
GW110400	475	West	5.4	Unknown	Monitoring
GW110401	490	West	7	Unknown	Monitoring
GW110402	500	West	8	Unknown	Monitoring
GW110403	480	West	9	Unknown	Monitoring
GW110404	500	West	9	Unknown	Monitoring
GW111322	300	Southeast	3.6	Unknown	Monitoring
GW111323	300	Southeast	4.1	Unknown	Monitoring
GW111324	300	Southeast	8.1	Unknown	Monitoring
GW114345	800	South	6	Unknown	Monitoring

⁸ Department of Land and Water Conservation, (1997), *1:25,000 Acid Sulfate Soil Risk Map (Series 9130N3, Ed 2)*.

⁹ <http://www.waterinfo.nsw.gov.au/gw/>

Reference	Distance from Site (m/Km) (approx.)	Direction from Site	Final Depth (m)	Standing Water Level (SWL) (m)	Registered Purpose
GW114346	800	South	6	Unknown	Monitoring
GW114347	800	South	5.9	Unknown	Monitoring
GW114348	800	South	6.8	Unknown	Monitoring

A review of the regional geology and groundwater bore information indicates that the subsurface condition at the site is expected to consist of residual soils overlying relatively shallow shale bedrock. Groundwater in shale formations is often quite saline and yields are typically very low. The occurrence of groundwater that could be utilised as a resource for beneficial use is considered to be relatively low under such conditions.

2.11 Receiving Water Bodies

Surface water bodies were not identified in the immediate vicinity of the site. The closest surface water body is Duck River located approximately 1.2km to the south-east of the site. This water body could be a potential receptor.

3 SITE HISTORY INFORMATION

3.1 Review of Historical Aerial Photographs

Historical aerial photographs available at the NSW Department of Lands were reviewed for the assessment. A summary of the relevant information is presented in the following table:

Table 3-1: Summary of Historical Aerial Photos

Year	Details
1928	The photograph was of poor quality, however the west section of the site appeared to be unpaved and vacant. Residences were located in the north-east and central south sections of the site whilst the east most section of the site appeared to be vacant. Surrounding land uses were generally residential.
1943 (SIX Maps)	The site appeared to be located in a mixed commercial industrial area. The west section of the site (adjacent to the railway) appeared to be vacant. What appeared to be a storage yard (and associated buildings) was located to the east of this area. The area of the site currently occupied by the furniture showroom was predominantly vacant with some commercial type properties located to the east of the storage yard. A building similar to the current fibro cottage located in the north section of the site was visible in the north section of the site. The properties to the north of the site (facing Victoria Street) appeared to be residential.
1951	The site appeared to be located within an area of mixed commercial/industrial and residential land use to the north of Parramatta Road and to the east of the railway. The north-west section of the site appeared to be a fenced builders/manufacturers storage yard. A large factory/warehouse building occupied the south-west section of the site. Five houses with associated yard/garden areas and one vacant lot were located in the south-east and south central sections of the site. Residences were located to the north of Victoria Street, to the east of the site and to the south of Parramatta Road.
1961	The factory building at the south-west section of the site appeared similar to the 1951 photograph. A warehouse/factory building had been constructed at the north-west section of the site and the surrounding sections had been paved, possibly as a carpark or loading area. The north-east section of the site appeared similar to the 1951 photograph. The residences in the south-central section of the site facing Parramatta Road had been demolished and a warehouse constructed in the east section of the site. An unpaved yard was located between the two warehouses facing Parramatta Road. One residence was located at the east most extent of the site. Land uses to the north and east of the site appeared similar to the 1951 photograph. Several houses to the south of Parramatta Road had been demolished and the site appeared to be a builders yard.
1970	The two warehouses facing Parramatta Road at the south-east and south-west of the site appeared similar to the 1961 photograph. A multistorey commercial building appeared to have been constructed between the two warehouses in the central south section of the site. The front of the building line was consistent with the building currently occupying this section of the site. The east most section of the site appeared to be the asphalt paved car park area. An additional commercial/industrial building had been constructed at the west most section of the site adjacent to the railway and to the north-west of the warehouse/factory building. The north-east section of the site appeared similar to the 1961 photograph. The site to the south of Parramatta Road appeared to have been redeveloped as a vehicle sales yard or similar operation. Land uses to the north of Victoria Street and to the east of the site appeared to be residential.

Year	Details
1986	The two factory/warehouse buildings at the north-west of the site had been demolished and the site appeared to be a vacant yard surfaced with asphalt or gravel. The remainder of the site buildings appeared similar to the 1970 photograph. The residence with the paved rear yard appeared to be used as part of the two storey commercial building to the south facing Parramatta Road. The surrounding land uses appeared similar to the 1970 photograph.
1994	The large warehouse in the south-west section of the site had been demolished and the site appeared to be vacant apart from one concrete slab adjacent to the Parramatta Road site boundary. The remaining buildings at the south-central and south-east sections of the site appeared similar to the 1986 photograph. The residence to the north of the commercial building had been demolished and the area appeared to be a concrete paved car park area. A commercial building had been constructed to the south-east of the site facing Parramatta Road.
2002	Scattered stockpiled materials were apparent in the north-west section of the site. Apart from this area the site and surrounding land uses appeared similar to the 1994 photograph.
2011 (SIX Maps)	The site and the surrounding areas appeared similar to the 2002 photograph.

3.2 Review of Land Title Records

Land title records were reviewed for the assessment. Copies of the title records are attached in the appendices.

The land title records did not identify any particular land uses which could have resulted in significant contamination. The professions of the individuals listed on the title records are not considered to be associated with site related activities.

A large section of the site appeared to have been acquired by Beraci Pty Ltd in the late 1990s or early 2000. Beraci Pty Ltd are a construction company and acquisition of the site was most likely undertaken with a view to re-development.

3.3 Review of Parramatta Council Information

3.3.1 Publicly Accessible Information

A search of council records is currently underway. The results will be summarised in a separate letter when received.

3.3.2 Section 149 Planning Certificate

The s149 (2 and 5) planning certificates were reviewed for the assessment. Copies of the certificates are attached in the appendices.

A summary of the relevant information is outlined below:

- a) The site is not deemed to be:
- significantly contaminated;
 - subject to a management order;
 - subject of an approved voluntary management proposal; or
 - subject to an on-going management order under the provisions of the CLM Act 1997;
- b) The site is not subject to a Site Audit Statement (SAS);
- c) The site is not located within a Class 1 or 2 ASS risk area; and
- d) The site is not located in a heritage conservation area.

3.4 WorkCover Records

WorkCover records were reviewed for the assessment. Copies of relevant documents are attached in the appendices.

The search did not identify any licences to store dangerous goods including underground fuel storage tanks (USTs) or above ground storage tanks (ASTs) at the site.

3.5 NSW EPA Records

The NSW EPA records available online were reviewed for the assessment. Copies of relevant documents are attached in the appendices. A summary of the relevant information is provided in the following table:

Table 3-2: Summary of NSW EPA Online Records

Source	Details
CLM Act 1997 ¹⁰	There were no notices for the site under Section 58 of the Act.
NSW EPA List of Contaminated Sites ¹¹	The site is not listed on the NSW EPA register.
POEO Register ¹²	There were no notices for the site on the POEO register.

3.6 Summary of Site History Information

A review of the site history information has indicated the following:

- The aerial photographs indicate that the part of the site may have been used for commercial/industrial since at least 1943. In particular the west section of the site, that is currently used as a storage yard, appears to have been used as a yard since at least 1943;

¹⁰ <http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx>, visited on 16 Sept 2014

¹¹ <http://www.epa.nsw.gov.au/clm/publiclist.htm>, visited on 16 Sept 2014

¹² <http://www.epa.nsw.gov.au/prpoeoapp/>, visited on 16 Sept 2014

- The land title data did not suggest any particular land use that may have resulted in contamination of land or groundwater; and
- NSW EPA records did not indicate any notices for the site.

Some search results were still pending (i.e. the Council Records, Section 149 Planning Certificates and WorkCover records) at the time of the preparation of this report. We will forward the findings of the searches to the client when received.

4 PRELIMINARY CONCEPTUAL SITE MODEL (PCSM)

The Area of Environmental Concern (AEC) identified below are based on a review of the site and site history information outlined previously in this report. The AEC can either be a point source or widespread areas impacted by current or historical activities.

Table 4-1: PCSM

Extent	PCC	Potential Exposure Pathway (and Medium)	Potential Receptors
<u>Fill Material</u> – The site appears to have been historically filled to achieve existing levels. The fill may have been imported from various sources and can contain elevated concentrations of contaminants. The fill also can be seen on the surface of some sections of the site.	Heavy metals, TRH, BTEXN, PAHs, OCPs, OPPs, PCB, and asbestos	<u>Direct Contact</u> – dermal contact; ingestion; and inhalation of dust, vapours and fibres. <u>Medium</u> - soil, groundwater and vapour.	<u>Human Receptors (HR)</u> – Site occupants; visitors; development and maintenance workers; and off-site occupants. <u>Environmental Receptors (ER)</u> – Flora and fauna at the site and immediate surrounds;
<u>Hazardous Building Material</u> – The buildings on the site have been constructed prior to 1990's. In addition the west section of the site appears to have been used as a storage yard since at least 1943. Hazardous building materials were used for construction purposes during this period. The material can pose a potential contamination source during demolition/development.	Asbestos, lead and PCBs	<u>Direct Contact</u> – dermal contact; ingestion; and inhalation of dust and fibres. <u>Medium</u> – soil and air.	<u>Human Receptors (HR)</u> – As Above <u>Environmental Receptors (ER)</u> – As Above

5 CONCLUSION

EIS consider that the report objectives outlined in **Section 1.2** have been addressed.

5.1 Potential for Site Contamination

Based on the scope of work undertaken, EIS provide the following conclusions:

- EIS consider that the AEC identified at the site (see **Section 4**) pose a potential contamination risk. Based on the limited information, EIS assess the risk to be relatively moderate to high; and
- The potential risk to the site receptors cannot be ruled out without undertaking an intrusive (Stage 2) investigation.

5.2 Recommendations

EIS consider the site can be made suitable for the proposed mixed-use development provided the following additional work is undertaken to better assess the risks:

1. Undertake a Stage 2 ESA to meet the sampling density outlined in the NSW EPA Contaminated Sites Sampling Design Guidelines (1995¹³);
2. Undertake a waste classification assessment for the off-site disposal of material excavated for the proposed development;
3. Undertake an ASS assessment to establish if an ASS management plan (ASSMP) is required for the proposed development; and
4. The site is in an area considered to be at moderate risk of salinity. Salinity can potentially effect concrete and steel structures in (and just above) the ground. A screening of soil and groundwater samples for potential salinity issues is recommended.

¹³ NSW EPA, (1995), *Contaminated Sites Sampling Design Guidelines*. (Referred to as EPA Sampling Design Guidelines 1995)

6 LIMITATIONS

Table 6-1: Report Limitations

-
- EIS accepts no responsibility for any unidentified contamination issues at the site. Any unexpected problems/subsurface features that may be encountered during development works should be inspected by an environmental consultant as soon as possible;
 - Previous use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during construction work;
 - This report has been prepared based on site conditions which existed at the time of the investigation; scope of work and limitation outlined in the EIS proposal; and terms of contract between EIS and the client (as applicable);
 - The conclusions presented in this report are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, visual observations of the site and immediate surrounds and documents reviewed as described in the report;
 - The preparation of this report have been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
 - Where information has been provided by third parties, EIS has not undertaken any verification process, except where specifically stated in the report;
 - EIS has not undertaken any assessment of off-site areas that may be potential contamination sources or may have been impacted by site contamination, except where specifically stated in the report;
 - EIS accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1990 constructed buildings or fill material at the site;
 - EIS have not and will not make any determination regarding finances associated with the site;
 - Additional investigation work may be required in the event of changes to the proposed development or landuse. EIS should be contacted immediately in such circumstances;
 - Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa; and
 - This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.
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IMPORTANT INFORMATION ABOUT THIS REPORT

These notes have been prepared by EIS to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors:

This report has been prepared in response to specific project requirements as stated in the EIS proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The proposed land use is altered;
- The defined subject site is increased or sub-divided;
- The proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- The proposed development levels are altered, eg addition of basement levels; or
- Ownership of the site changes.

EIS/J&K will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the assessment. If the subject site is sold, ownership of the assessment report should be transferred by EIS to the new site owners who will be informed of the conditions and limitations under which the assessment was undertaken. No person should apply an assessment for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions:

Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an assessment report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is based on Professional Interpretations of Factual Data:

Site assessments identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Assessment Limitations:

Although information provided by a site assessment can reduce exposure to the risk of the presence of contamination, no environmental site assessment can eliminate the risk. Even a rigorous professional assessment may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Site Assessments by Design Professionals:

Costly problems can occur when other design professionals develop plans based on misinterpretation of an assessment report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Assessment Report:

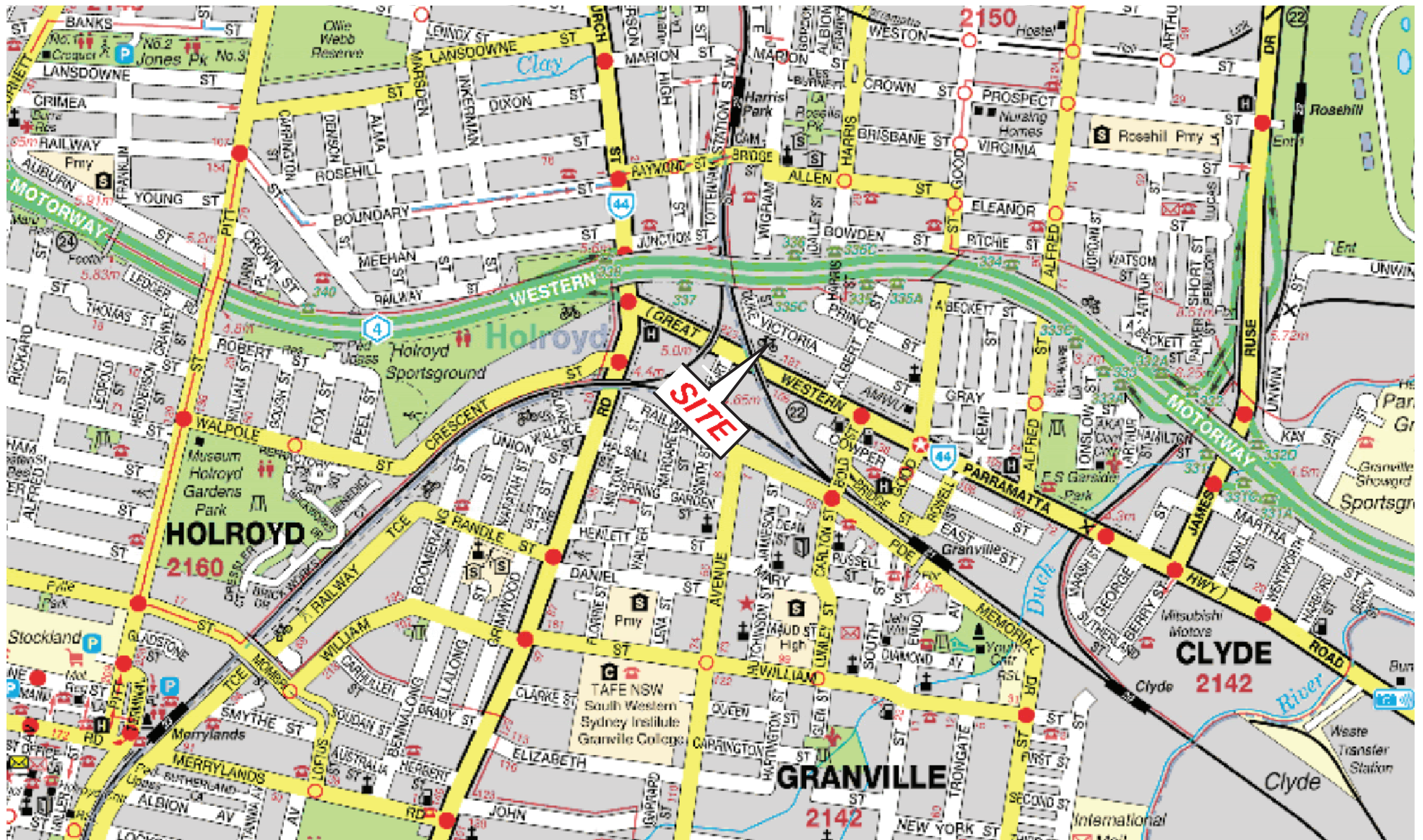
Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the assessment. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the assessment. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete assessment should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely:

Because an environmental site assessment is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site assessment, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

REPORT FIGURES



NOTES:
Figure 1 has been recreated from UBD on disc (version 5.0). Figure is not to scale.

Reference should be made to the report text for a full understanding of this plan.



LEGEND:

- - - Approximate site boundary

NOTES:
Figure 2 has been recreated from SixMaps

The borehole locations presented on this plan have been established from site measurements only and should not be construed as survey points.

Reference should be made to the report text for a full understanding of this plan.

Approximate Scale (m):



Project Number:
E27710KG

Figure:
2

Title:
Site Features Plan

Address:
**171-189 Parramatta Rd
Granville, NSW 2142**

REPORT APPENDICES

Parramatta Local Environmental Plan 2011

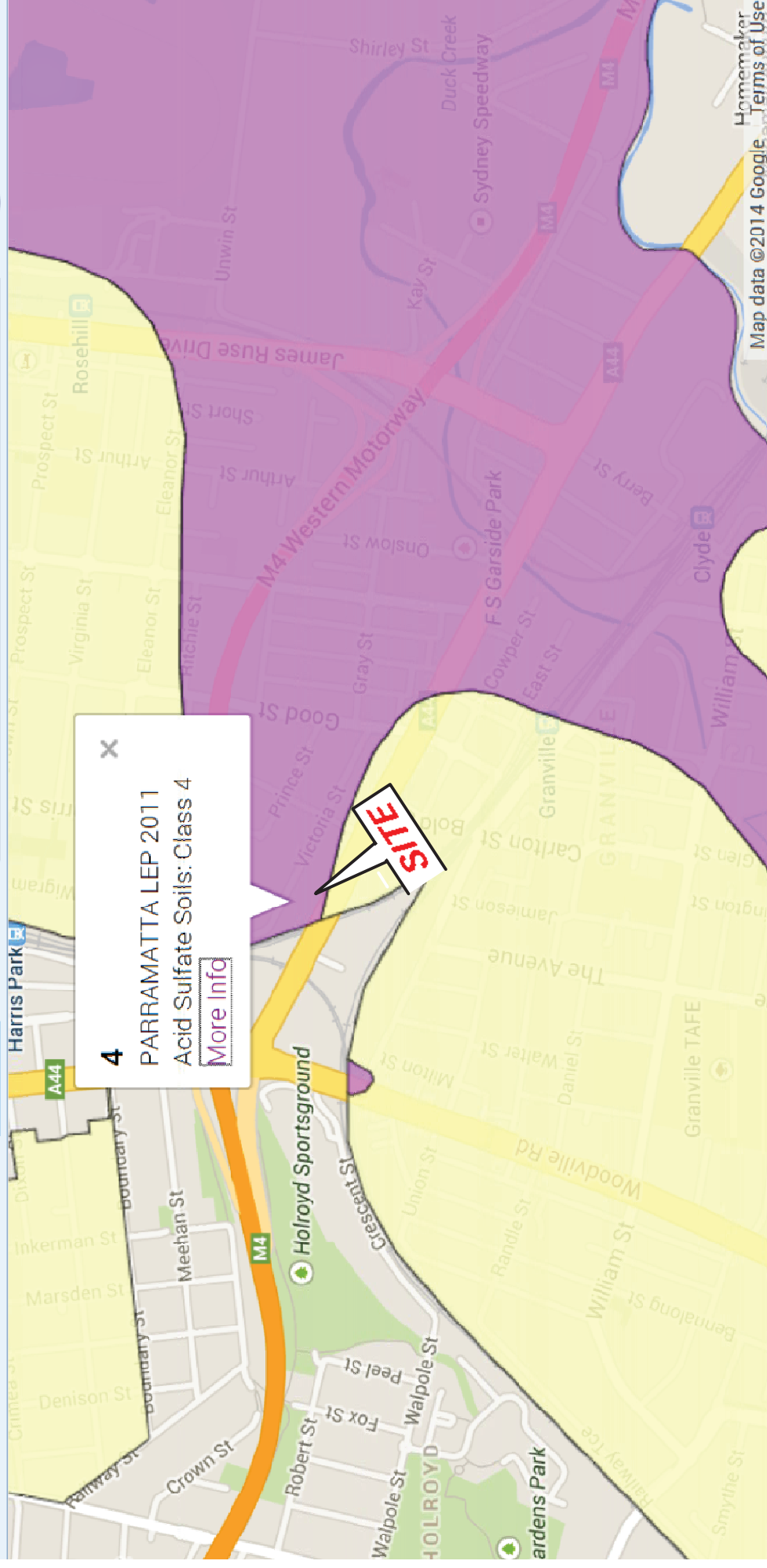
Address, including suburb...

FIND

(ASS) Acid Sulfate Soils



Instructions



Map data ©2014 Google, Homemaker, Terms of Use