



## Planning Proposal

To amend the Randwick LEP 2013 to permit child care centres at 270 Malabar Road, Maroubra

Prepared for Malak Group Pty Ltd

March 2016

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# Executive Summary

## INTRODUCTION

This Planning Proposal has been prepared by Urbis on behalf of Malek Group Pty Ltd (the proponent), and seeks to amend the *Randwick Local Environmental Plan 2012* (RLEP 2012) as it applies to 270 Malabar Road, Maroubra. The Planning Proposal is submitted to Randwick City Council in accordance with Section 55 of the *Environmental Planning and Assessment Act 1979* and the Department of Planning and Infrastructure's 'A guide to preparing planning proposals' dated October 2012.

The objective of the Planning Proposal is to enable the current use of the subject site as a child care centre to be permissible with consent under the RLEP2012.

## ENVISAGED FUTURE DEVELOPMENT

This Planning Proposal has been prepared with regard to concept designs prepared by Fotoulla Lazaridis Architects which has informed the potential future building envelope. Their architectural plans are provided as **Appendix B** of this report. Traffic advice has been prepared by TRAFFIX and is included as **Appendix D** of this report.

## PROPOSED AMENDMENTS TO THE RANDWICK LOCAL ENVIRONMENTAL PLAN 2012

This Planning Proposal seeks to permit a child care centre on the site by way of a Schedule 1 Amendment to the RLEP2012 as it relates to 270 Malabar Road, Maroubra (Lot 3821 DP 752015)

As noted previously a concept plan for the potential future development for a child care centre is included at **Appendix B**.

## PLANNING ASSESSMENT

The Planning Proposal has been assessed against relevant State and local planning considerations and positioned within the context locality.

This planning proposal includes the following:

- Description and analysis of the site and local context with reference to metropolitan strategic planning and infrastructure projects;
- Consideration of previous strategic planning for Maroubra and the existing planning framework;
- Objectives and intended outcomes of the Planning Proposal;
- Explanation of the provisions of the proposed amendment to the RLEP2012;
- Justification of the concept design and Planning Proposal; and
- Consideration of the community consultation likely to be associated with the Planning Proposal.

The Planning Proposal offers significant benefits and opportunities for the development of the site and to the local community including:

- The Planning Proposal will deliver significant community benefits to the Maroubra community by responding to an identified need to provide additional child care places within an easily accessible locality;
- The concept design responds to the site conditions and surrounding built form context of the area
- The concept design does not result in unreasonable impacts to adjoining land uses and residents
- The proponent of the planning proposal is willing to work with Council to ensure the Randwick community is included in the public consultation process and the planning proposal is ultimately considered to be in the public interest.

For these reasons it is recommended that the Planning Proposal is endorsed by Council and the RLEP2012 is amended.

# 1 The Site and Its Context

## 1.1 THE SITE AND EXISTING DEVELOPMENT

This Planning Proposal is made in relation to a single allotment located at 270 Malabar Road, Maroubra which is formally identified as Lot 3821 in DP752015. The site measures 1,006.6sqm in area and is outlined below in **Figure 1 and 2**. The site features are described in **Table 2**.

FIGURE 1 – AERIAL IMAGE OF THE SUBJECT SITE



TABLE 2 – SITE DETAILS

FEATURE	DETAILS
Site Layout and Built Form	The site includes a community hall which has been occupied for the purpose of a child care centre since its approval in 1997. The church previously used by the Maroubra Bay Uniting Church is located in the south western corner of the site.
Landscape	The site is sparsely vegetated with the exception of trees and shrubs located along the perimeter of the site.
Vehicle Access	A small driveway and parking facility is located along Storey Street.
Pedestrian Access	Pedestrian can access the site from both Malabar Road and Storey Street.
Flood Risk	Not flood affected
Utility Services	All services are currently available to the site.

FIGURE 2 – SITE CADASTRE



## 1.2 SURROUNDING LAND USE CONTEXT

The northern and western sides of the site are characterised by single dwelling houses on allotments which vary between 450sqm to 600sqm. The eastern and southern elements of the site are characterised by a combination of dual occupancies and multi-unit housing developments which makes a significant contribution to the overall population density of Maroubra. The site itself has a predominately easterly aspect sloping towards Lurline Bay.

The sites primary interfaces are described below in **Table 3**.

TABLE 3 – SURROUNDING LAND USES

ASPECT	LAND USES
<b>North</b>	The site is bound to the north by Storey Road. Beyond Storey Road is a series of single dwelling houses.
<b>West</b>	Large residential dwellings (272 Malabar Road and 319 Storey Street) are located to the west of the site. Both these dwellings are setback from the boundary with the subject site.
<b>East</b>	The site is bound to the east by Malabar Road. Beyond Malabar Road is a series of multi-dwelling housing units and a small commercial precinct
<b>South</b>	The site is bound to the south by Malabar Road. Beyond Malabar Road is a series of attached dual occupancies.

### 1.3 DEVELOPMENT HISTORY

270 Malabar Road was previously the church and community hall facilities for the Maroubra Bay Uniting Church. In 1997 under D328/96 Randwick City Council approved the conversion of the hall facilities to a Child Care Centre for 29 Children, this use continues to operate on the site. At this time the site was zoned for residential purposes and Child Care Centres were permitted with development consent. The Maroubra Bay Uniting Church has now vacated the church facilities and has sold the site in its entirety.

## 2 Local Planning Controls

This section provides a summary of the existing local planning framework relevant to the subject site.

### 2.1 RANDWICK LOCAL ENVIRONMENTAL PLAN 2012

The *Randwick Local Environmental Plan 2012* (RLEP 2012) is the local Environmental Planning Instrument applying to the site.

#### 2.1.1 Land Use Zoning

The existing zoning of the site is SP2 Infrastructure (Place of Public Worship) as shown in **Figure 3**. Key planning controls for the SP2 zone are summarised in **Table 4**. The lots adjoining the site are zoned R2 Low Density Residential with a small pocket of land zoned B1 Neighbourhood Centre.

FIGURE 3 – RLEP2012 ZONING MAP

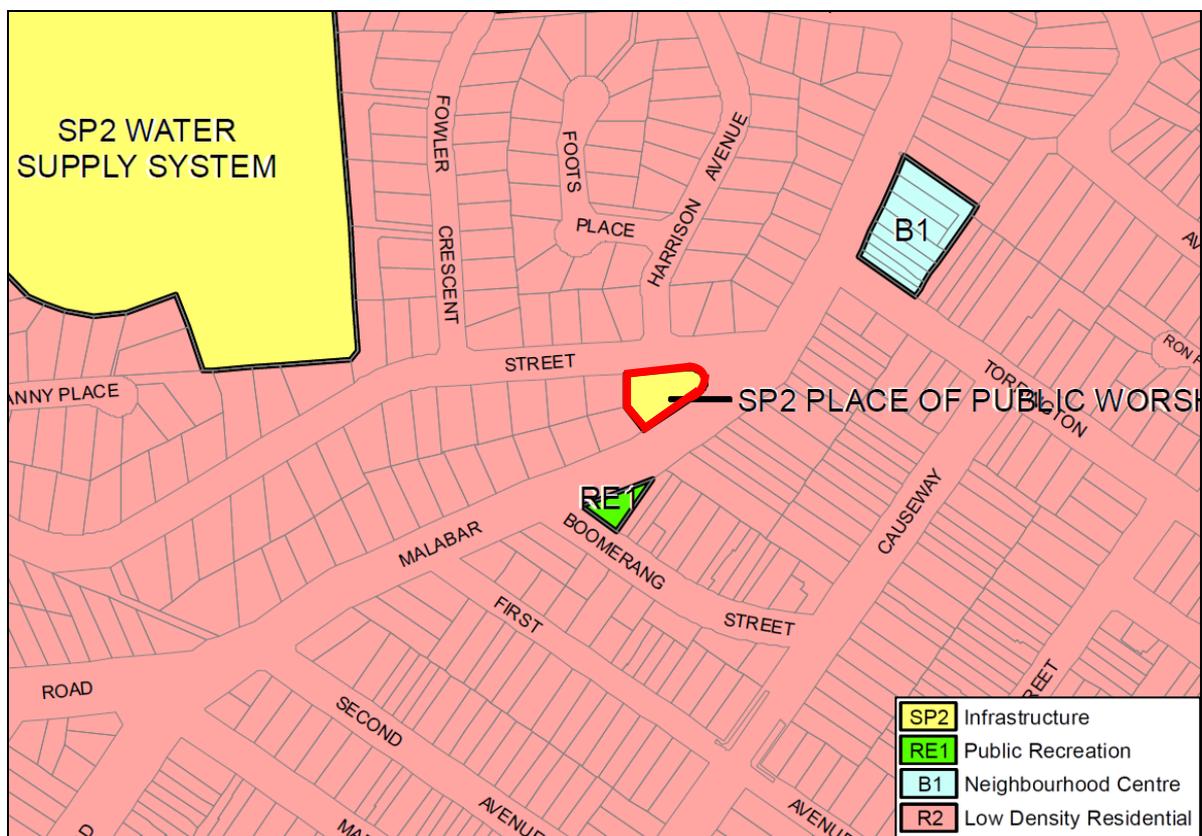


TABLE 4 – SP2 ZONING CONTROLS IN THE RANDWICK LOCAL ENVIRONMENTAL PLAN 2012

CONTROL	SP2 INFRASTRUCTURE
Zone objectives	<p>The objectives of the zone are:</p> <ul style="list-style-type: none"> <li>To provide for infrastructure and related uses.</li> <li>To prevent development that is not compatible with or that may detract from the provision of infrastructure.</li> <li>To facilitate development that will not adversely affect the amenity of nearby and adjoining development.</li> <li>To protect and provide for land used for community purposes.</li> </ul>

Permissible development	The purpose shown on the Land Zoning Map (Place of Public Worship), including any development that is ordinarily incidental or ancillary to development for that purpose
Prohibited development	All other uses not listed above are prohibited within the SP2 Infrastructure zone.

### 2.1.2 Height of Buildings

The RLEP2012 does not apply a building height control to the site, as shown in **Figure 4**. The lots adjoining the site are assigned a height limit of 9.5m.

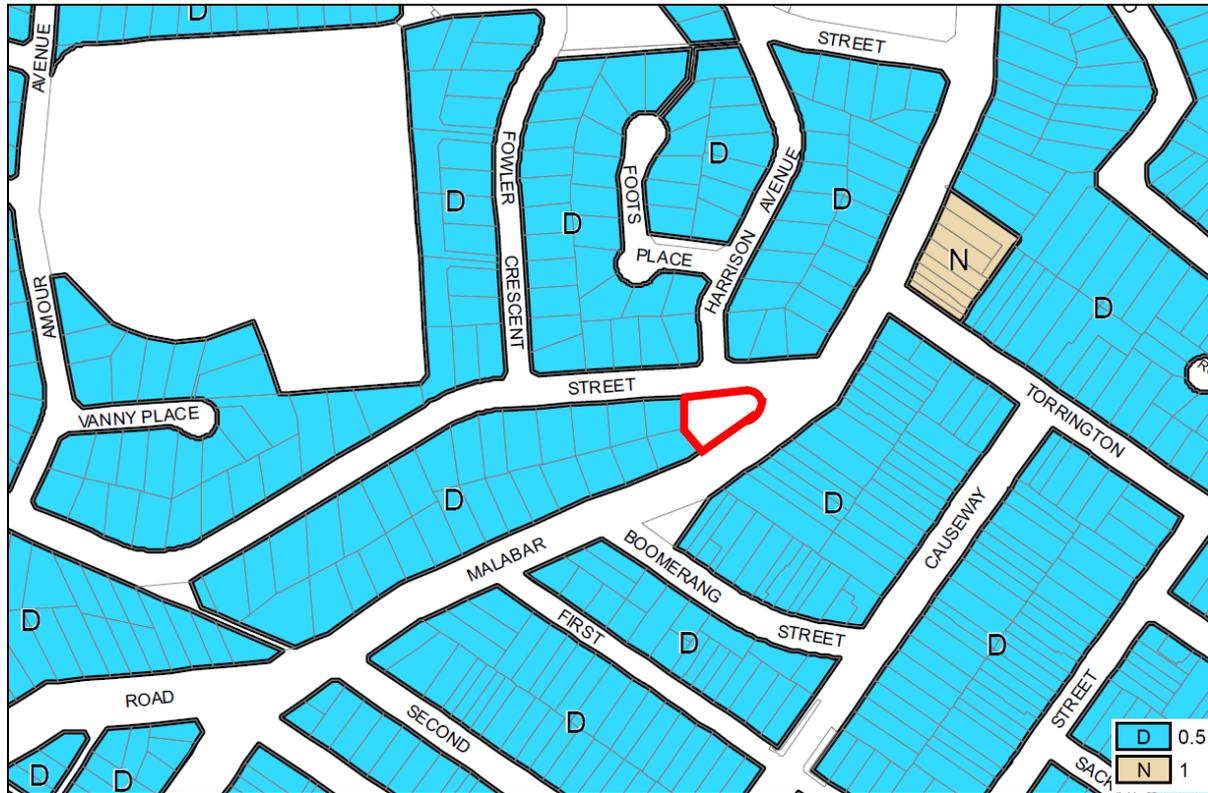
FIGURE 4 – RLEP2012 HEIGHT OF BUILDING MAP



### 2.1.3 Floor Space Ratio

The RLEP2012 does not apply a floor space ratio control to the site, as shown in **Figure 5**. The lots adjoining the site are assigned a floor space ratio of 0.5:1 with a small pocket of land zoned B1 Commercial Core assigned a floor space ratio of 1:1.

FIGURE 5 – RLEP2012 FSR MAP



## 2.2 RANDWICK DEVELOPMENT CONTROL PLAN 2013

The Randwick Development Control Plan 2013 (RCP2013) was adopted by Council on 14 June 2013, and applies to all land in the Randwick Local Government Area. The RDCP2013 details specific controls that govern building form, such as site coverage and landscaping, building materials and finishes, parking requirements, and dwelling mix.

Any development application that results from this proposal will need to consider the DCP 2013 and its relevant sections.

### 3 Gateway Determination

On 18 December 2015, in accordance with Section 55 of the EP&A Act, the Director, Metropolitan (CBD) Planning Services of the NSW Department of Planning and Environment issued a Gateway Determination for the proposal as delegate of the Minister for Planning. A copy of the Gateway Determination is included as **Appendix A** of this report.

**Table 5** provides a detailed summary of the individual matters listed in the Gateway Determination and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

TABLE 5 – SUMMARY OF GATEWAY DETERMINATION

GATEWAY DETERMINATION ITEM	REPORT SECTION/SPECIALIST STUDY
<p>Prior to exhibition, the planning proposal is to be updated to demonstrate consistency with State Environmental Planning Policy No 55 – Remediation of Land with regards to the additional permitted use</p>	<p>A Phase 1 Contamination Assessment has been prepared and is attached as <b>Appendix C</b> of this report. The Contamination Assessment confirms that the site is suitable for use as a Child Care Centre.</p>
<p>Community consultation is required under sections 56(2)(c) and 57 of the Act as follows:</p> <ul style="list-style-type: none"> <li>a) the planning proposal is considered routine as described in A Guide to Preparing LEPs (Department of Planning and Environment 2013) and must be made publically available for a minimum of 28 days; and</li> <li>b) the relevant planning authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 5.5.2 of A Guide to Preparing LEPs (Department of Planning and Environment 2013)</li> </ul>	<p>In accordance with the requirements of the Gateway Determination it is anticipated that following lodgement the application will be placed on public notification for 28 days.</p>

## 4 Objectives and Intended Outcomes

### 4.1 OBJECTIVES

The key objective of this Planning Proposal is to obtain the necessary amendment to the RLEP2012 to facilitate the continued use of 270 Malabar Road, Maroubra as a child care centre, in doing so promoting the orderly and economic use of the land.

This Planning Proposal seeks to amend Schedule 1 of the RLEP2012 to permits development for the purpose of a child care centre at 270 Malabar Road, Maroubra.

A conceptual design for future development of the site for a child care centre has been prepared and accompanies this Planning Proposal in **Appendix B** which has informed the proposed built form control changes. The scheme is indicative of the intended proposed future development changes for the site which would be sought through a DA once the Planning Proposal has been endorsed by the Department of Planning and Environment (DOPE) that supports the preparation of an LEP amendment.

### 4.2 INTENDED OUTCOMES

The primary objective of the proposed is to enable the future expansion of the existing child care centre at 270 Malabar Road, Maroubra by establishing appropriate built form controls for the site. This will be achieved through:

- Amend Schedule 1 of RLEP2012 to permit the development of a child care centre
- Providing appropriate built form development standards that will facilitate additional child care places to meet the areas growing demand for 'child care centres, whilst respecting the amenity of the surrounding community.
- Integrating the existing and proposed child care centres through internal connections between the facilities;
- Avoiding unacceptable impacts on the character and amenity of the adjoining and surrounding residential development and
- Provision of additional employment opportunities to the local and regional community.

The indicative development concept plan prepared by Fatoulla Lazaridis Architects (**Appendix B**) has been prepared based on a comprehensive assessment of the site and its context, as well as the outcomes of a number of specialist consultant inputs.

## 5 Explanation of Provisions

### 5.1 OVERVIEW

It is proposed to permit development for the purpose of a child care centre on the site by way of an amendment to RLEP2012. An explanation of the proposed written provisions is provided within the following sub-sections, including:

- Schedule 1 Amendment to RLEP2012 to permit 'child care centres as it relates to 270 Malabar Road, Maroubra (Lot 2821 DP752015)

### 5.2 SCHEDULE 1 AMENDMENT TO THE RANDWICK LOCAL ENVIRONMENTAL PLAN 2012

The objectives of this Planning Proposal can be achieved through the inclusion of the following amendment to Schedule 1 of the RLEP2012:

#### **Use of Land at 270 Malabar Road, Maroubra**

- 1) This clause applies to land at 270 Malabar Road, Maroubra being Lot 2821 DP752015.
- 2) Development for the purpose of a child care centre is permitted with development consent

The proposed amendment to the Schedule 1 of RLEP 2012 to permit 'child care centres' is considered appropriate, having regard to the following matters:

- The planning proposal is consistent with state and local government strategic planning initiatives, recognising the need for social infrastructure such as child care centres.
- The planning proposal will provide appropriate planning frameworks to allow the site to contribute to the protection of existing employment;
- The planning proposal will provide appropriate planning frameworks to add further vibrancy to the Maroubra local centre and assist in ensuring the ongoing urban renewal of the area.
- The planning proposal will provide appropriate planning frameworks to enhance the liveability of the Maroubra area by increasing the access to essential services for residents of the area
- The planning proposal will allow for the future increase in the provision of child care places within Maroubra;
- The planning proposal will not result in unreasonable impacts to adjoining properties or the public domain and potential traffic have been demonstrated to be reasonable.
- The proponent of the planning proposal is willing to work with Council to ensure the Maroubra community is included in the public consultation process and the planning proposal is ultimately considered to be in the public interest.

### 5.3 BUILT FORM

The proposed amendment to the RLEP 2012 does not propose any changes to the built form provisions of the RLEP 2014, and is related to land use only.

Any future changes to built form on the site will be subject of future separate Development Applications.

## 6 Justification for Rezoning Proposal

### 6.1 SECTION A – THE NEED FOR A PLANNING PROPOSAL

Q1. Is the planning proposal a result of any strategic study or report?

The Planning Proposal is not the direct result of a strategic study or report. The proposed amendment to the RLEP 2012 to seek an additional permitted land use on the site does however align with a number of state and regional strategic studies and reports including NSW 2021 and A Plan For Growing Sydney which are discussed in Section 6.2 of this report.

Q2. Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The site is lawfully operating as a child care centre in accordance with D328/96. The RLEP2012 had the effect of prohibiting the use of the site as a child care centre as the church was functional at that time. Due to the site current zoning development for the purpose of a 'child care centre' is not permissible on any part of the site. Therefore an amendment to the RLEP 2012 which permits child care centres is considered the most appropriate development pathway to achieve the objectives of the proposal. The proposed Schedule 1 amendment is considered the best means of achieving a permissible child care centre on the site and constitutes best planning practise by removing unnecessary existing use rights situations in land use planning.

Overall, it is considered that the proposal will enable the operator to fulfil the sites potential and meet locality needs to expand its present operations. The proposal will also contribute to utilising the established physical and social infrastructure which currently services the site and adjacent urban areas, whilst contributing to additional employment during construction and post construction.

Given these considerations, the planning proposal is the best way of achieving the objectives of the concept design. Alternative approaches are considered inadequate for the following reasons:

- **Existing Use Rights:** whilst a child care centre operates on site both Randwick City Council and the proponent agree that the concept proposal to expand the operation fails the three part test established for existing use rights under part 5 of the *Environmental Planning and Assessment Regulation 2000* and as such existing use rights cannot be utilised for the proposal.
- **Application of Clause 5.3 of the RLEP2012:** Clause 5.3 of the RLEP2012 permits flexibility where the investigation of a site and its surroundings reveals that a use allowed on the other side of a zone boundary would enable a more logical and appropriate development of the site. Whilst Child Care Centres are permissible within the adjacent R2 Low Density Residential Zone the flexibility is limited to a maximum distance of 4m which is inadequate for the proposal.

Without amendments to the existing zoning and development standards of the 2012 LEP, the concept design would not be able to be achieved.

## 6.2 SECTION B – RELATIONSHIP TO STRATEGIC PLANNING FRAMEWORK

Q3. Is the planning proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft strategies)?

The site, while not specifically identified in NSW state planning strategies (explored further below), is within the context of the wider Maroubra and Randwick localities.

The following paragraphs outline how the relevance of the various state strategies that applies to Randwick in a planning sense.

### NSW 2021

The NSW 2021 presents new targets for service improvements across a range of areas including objectives for 'Building Better Cities' and 'Improving education and learning outcomes for all students' which include:

- *Planning policy to encourage job growth in centres close to where people live and to provide access by public transport*
- *All children have access to quality early childhood education*

This proposal will provide the appropriate planning framework to ensure the continued development of the site as a child care centre and is consistent with the strategic policy outlined by NSW2021.

### A PLAN FOR GROWING SYDNEY

A Plan for Growing Sydney was adopted in December 2014. The plan positively encourages well designed, higher density development within walking distance of public transport infrastructure with a key focus on urban renewal in appropriate areas. **Table 6** below provides an assessment of the planning proposal and concept design against the relevant objectives of the Metro Plan.

TABLE 6– ASSESSMENT OF THE PLANNING PROPOSAL AGAINST RELEVANT OBJECTIVES OF A PLAN FOR GROWING SYDNEY

A PLAN FOR GROWING SYDNEY ACTION	PLANNING PROPOSAL
Accelerate Housing Supply and Local Housing Choices	The proposal seeks to amend the existing planning controls to facilitate the future expansion of the existing child care centre as opposed to relocating the centre. This will ensure that residential allotments will not be removed from the market consequently reducing the market supply of dwellings. In doing this the proposal will not adversely impact on the acceleration of housing supply or local housing choices.

Support Urban Renewal by directing local infrastructure to centres where there is growth	The NSW Government has identified that the provision of social infrastructure such as child care centres will make a significant contribution to making vibrant local centres. A potential expansion of the existing child care centre at 270 Malabar Road as a result of a development application lodged subsequent to this planning proposal will add further vibrancy to the Maroubra local centre.
Invest in strategic centres across Sydney to grow jobs and housing and create vibrant hubs of activity	The proposal will pave the way for future local employment opportunities through both the construction and operation further supporting the overall economic viability of Maroubra. The use of the existing child care centre site will ensure that no housing stock is lost as a result of the proposal. By providing an additional permitted land use Council will give confidence to the landowner and operator to continue to invest and improve the operations in the future.
Undertake long term planning for Social Infrastructure to support growing communities	The proposal will enhance the overall provision of social infrastructure within the suburb of Maroubra by providing the appropriate planning framework to allow for the expansion of an existing child care centre. An expansion to the centre is considered necessary to meet the needs of residents of the area.

The Strategy identifies the Randwick LGA as being within the Central Subregion. Three key priorities have been identified for the Central Subregion. **Table 7** below provides a summary of this priorities and how the proposal satisfies this priorities:

TABLE 7 – ASSESSMENT OF THE PLANNING PROPOSAL AGAINST RELEVANT PRIORITIES OF THE CENTRAL REGION

CENTRAL SUBREGION PRIORITY	PLANNING PROPOSAL
A competitive economy	The proposal will ensure the appropriate planning framework is in place to allow for the logical expansion of the existing child care facility on the site. The proposed controls will facilitate a future expansion to the facility that will allow for additional child care places and employment opportunities following the construction of the site further supporting a competitive economy.
Accelerate housing supply, choice and affordability and build great places to live	<p>The proposal will enhance the liveability of the Maroubra area by increasing the access to essential services for residents of the area. An alternative measure of relocating the child care facility to a nearby residential allotment is not considered feasible and will ultimately adversely impact the housing supply, choice and affordability of Maroubra.</p> <p>The proposed provisions detailed in this planning proposal will give confidence to the landowner and operator to continue to invest and improve the operations in the future. This investment will contribute towards making Maroubra a great place to live.</p>

Protect the natural environment and promote its sustainability and resilience	The reuse of an existing facility will ensure minimal alteration to the natural environment is required to allow for the future provision of additional child care places. The proposal is therefore considered to have no impacts on the natural attributes of the site.
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#### Q4. Is the planning proposal consistent with a council's local strategy or other local strategic plan?

Relevant to this planning proposal are the Randwick City Plan, the Council's overarching strategic plan, and the Randwick Discussion Papers, which informed the preparation of the RLEP2012. These items are discussed below:

##### **Randwick City Plan**

Council has endorsed the Randwick City Plan as the overarching strategy for Council's objectives and operations. Key issues addressed in the City Plan that are relevant to the planning proposal include:

- Enrich our range of community services that meet our community's needs
- New and upgraded community facilities that are multipurpose and in accessible locations
- Vibrant business, commercial and industrial sectors that provide ongoing and diverse employment opportunities

The proposal will allow for the expansion of an existing child care centre in an established and accessible location. An expansion of the existing facility is essential to meet the community's growing needs for child care places and in doing so the proposal will assist in satisfying the need to grow existing community facilities. The proposal will also result in additional employment opportunities both during and post construction and in doing so will assist in ensuring the overall vibrancy of Maroubra.

##### **Randwick Discussion Papers**

Council did not undertake a comprehensive strategic planning process as part of the preparation of the 2012 LEP. Instead, Council prepared a series of 'discussion papers' relating to specific sectors and locations across the local government area which generally supported the retention of existing planning controls and their translation into the Standard Instrument LEP template. The discussion papers did not identify the site as a key area and did not detail the intended future growth of the child care industry within the Randwick LGA.

#### Q5. Is the planning proposal consistent with applicable State Environmental Planning Policies?

The planning proposal is consistent with all relevant State Environmental Planning Policies (SEPPs) as assessed in **Table 8** below.

TABLE 8 – COMPLIANCE OF THE PLANNING PROPOSAL WITH RELEVANT STATE ENVIRONMENTAL PLANNING POLICIES

POLICY	ASSESSMENT
<i>State Environmental Planning Policy No 1—Development Standards</i>	Pursuant to Part 1 Clause 1.9 of the RLEP2012 the provisions of State Environmental Planning Policy No 1—Development Standards do not apply to the site.
<i>State Environmental Planning Policy No 55—Remediation of Land</i>	In accordance with the Gateway Determination a Phase 1 Contamination Assessment has been undertaken for the site which confirms the site is suitable for use of the suite as a Child Care Centre and is attached as <b>Appendix C</b> of this report.
<i>State Environmental Planning Policy No 64—Advertising and Signage</i>	No signage is proposed as part of this planning proposal. Should signage be proposed in the future development consent will be sought from Randwick City Council.
<i>State Environmental Planning Policy No 71—Coastal Protection</i>	The site is not identified as being within the coastal zone as defined by State Environmental Planning Policy No 71—Coastal Protection

#### Q6. Is the planning proposal consistent with applicable Ministerial Directions (s.117 directions)?

The planning proposal is consistent with all relevant ministerial directions as assessed in **Table 9** below.

TABLE 9 – COMPLIANCE OF THE PLANNING PROPOSAL WITH RELEVANT SECTION 117 DIRECTIONS

S.117 DIRECTION	ASSESSMENT
3.1 Residential Zones	The proposal does not relate to a residential zone however the proposal will ensure that appropriate planning framework will be adopted to ensure that a valuable community service can continue to expand on the site.
3.5 Development near Licensed Aerodromes	The RDCP2013 recommends that proposals for buildings with a height of 15.24m AHD or greater is considered by Sydney Airport Corporation Limited (SACL). The planning proposal does not seek to increase the permissible building height to above 15.24AHD. The site is not located within the contours of the Australian Noise Exposure Forecast 2033 map for Sydney Airport prepared by Airservices Australia. Any future development on the site should not require additional design or construction measures for noise attenuation due to aircraft.
6.1 Approval and Referral Requirements	The planning proposal does not include provisions for referrals or concurrences of future development applications. The RLEP2012 already has provisions which may require referral of development applications of a substantial building height to Sydney Airport Corporation Ltd to ensure its airspace is not penetrated or obstructed.
6.3 Site Specific Provisions	The planning proposal is prepared for the amendment to be consistent with the existing provisions of the RLEP2012, and does not propose additional or site-specific provisions to be made.
7.1 Implementation of A Plan For Growing Sydney	The planning proposal is consistent with the objectives of A Plan For Growing Sydney, as assessed in <b>Table 6</b> above.

## 6.3 SECTION C – ENVIRONMENTAL, SOCIAL AND ECONOMIC IMPACT

Q7. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

The site is cleared of natural vegetation and it is unlikely that the planning proposal would have any negative effect on critical habitat or threatened species, populations or communities.

Q8. Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

### **Traffic Management**

The planning proposal seeks to permit a child care centre as a permissible land use on the site which is considered to intensify the land use. A worst case scenario for future development has been tested in the Traffic Impact Statement attached as **Appendix D**. The Traffic Impact Statement confirms that Council's planning controls are expected to be satisfied. The parking and traffic impacts of such a development are considered capable of refinement and/or resolution at development application stage.

### **Acoustic Amenity**

The future design of any expansion to the existing child care centre will be subject to detailed analysis of the potential acoustic impact and required mitigation of any expansion to the existing child care centre will be prepared by a qualified acoustic engineer at the development application stage of the proposal. The existing child care facility has operated on site since 1997 with minimal objections from surrounding land uses in regards to the acoustic impact of the centre.

### **Accessibility**

Accessibility within and around the any expansion to the child care centre will be addressed as part of the development application process in accordance with the Building Code of Australia and relevant Australian Standards.

### **Waste Management**

A comprehensive Waste Management Plan will be prepared as part of the development application process. This plan will aim to minimise waste and will detail measures to address waste disposal through the demolition, construction and on-going operation of the facility.

Q9. Has the planning proposal adequately addressed any social and economic effects?

The proposed development is considered to generate the following positive social and economic effects:

- Creating additional jobs both during and post construction enabling people to live and work within their local area;
- Contribute to the protection of existing employment at the existing child care centre by ensuring it remains economic viable moving forward;
- Enhancing the social infrastructure of the Maroubra area through the provision of additional child care places;

- Improving child care centre competition within the area, which will deliver better economic outcomes to the local community;

## 6.4 SECTION D – STATE AND COMMONWEALTH INTERESTS

### Q10. Is there adequate public infrastructure for the planning proposal?

It is understood that the existing infrastructure has the capacity to accommodate development on the site. Accordingly, it is not anticipated that it will place unnecessary or additional demands on public infrastructure. Any upgrades to infrastructure to support a future development on the site would be investigated and potentially form a condition of consent for the development.

A full audit will be undertaken as part of the future development application reporting with any augmentation and mitigation outlined.

### Q11. What are the views of state and Commonwealth public authorities consulted in accordance with the Gateway determination?

No consultation with State or Commonwealth authorities has been carried out to date on the Planning Proposal. It is acknowledged that Randwick City Council will consult with relevant public authorities following the Gateway determination

## 7 Community Consultation

The project team met with senior Council officers in March 2015 to outline the proposed concept design and to understand Council's preferred pathway forward. The outcomes of this meeting confirmed the need for a Planning Proposal.

Section 57 of the *Environmental Planning and Assessment Act 1979* requires a planning proposal to be publicly exhibited for community consultation. It is anticipated that the planning proposal would be exhibited for a period 28 days. This exhibition is expected to be conducted in accordance with Council's policies for community consultation.

The proponent is willing to engage with Council following the lodgement of this planning proposal. This would include briefing councillors and Council staff to inform the process and to provide for a better understanding of the planning proposal prior to it being considered for gateway determination.

## 8 Conclusion

This planning proposal has been prepared to initiate an amendment to the *Randwick Local Environmental Plan 2012* as it relates to land at 270 Malabar Road, Maroubra. The proposal will ensure the appropriate planning framework is in place to ensure the future expansion of the existing child care centre located on site.

The planning proposal is made in accordance with Section 55 of the *Environmental Planning and Assessment Act 1979* and the Department of Planning and Infrastructure's 'A guide to preparing planning proposals' dated October 2012. Specifically, the planning proposal seeks to insert child care centre as permissible land uses on Lot 3821 DP752015 under Schedule 1 of the *Randwick Local Environmental Plan 2012*.

This planning proposal has thoroughly assessed the proposed development controls and considered the site in the local planning context. The planning proposal offers significant benefits and opportunities for the development of the site and to the local community including:

- The planning proposal is consistent with state and local government strategic planning initiatives, recognising the need for social infrastructure such as child care centres.
- The planning proposal will provide appropriate planning frameworks to allow the site to contribute to the protection of existing employment;
- The planning proposal will provide appropriate planning frameworks to add further vibrancy to the Maroubra local centre and assist in ensuring the ongoing urban renewal of the area.
- The planning proposal will provide appropriate planning frameworks to enhance the liveability of the Maroubra area by increasing the access to essential services for residents of the area
- The planning proposal will allow for the future increase in the provision of child care places within Maroubra;
- The planning proposal will not result in unreasonable impacts to adjoining properties or the public domain and potential traffic have been demonstrated to be reasonable.
- The proponent of the planning proposal is willing to work with Council to ensure the Maroubra community is included in the public consultation process and the planning proposal is ultimately considered to be in the public interest.

Overall, it is considered that the Planning Proposal is satisfactory and that the site is capable and appropriate for development as a Child Care Centre. It is requested that Randwick City Council take the necessary steps to enable an amendment to be made to the *Randwick Local Environmental Plan 2012*.

## Appendix A

## Gateway Determination

## Appendix B

## Concept Architectural Plans

## Appendix C

## Phase 1 Site Contamination Assessment

## Appendix D

## Traffic Impact Statement

## Disclaimer

This report is dated March 2016 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (Urbis) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Malak Group Pty Ltd (Instructing Party) for the purpose of (Purpose) and not for any other purpose or use. Urbis expressly disclaims any liability to the Instructing Party who relies or purports to rely on this report for any purpose other than the Purpose and to any party other than the Instructing Party who relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

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Urbis has made all reasonable inquiries that it believes is necessary in preparing this report but it cannot be certain that all information material to the preparation of this report has been provided to it as there may be information that is not publicly available at the time of its inquiry.

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21 DEC 2015

Records Received  
Contact: Charlene Nelson  
Phone: (02) 9228 6570  
Email: [charlene.nelson@planning.nsw.gov.au](mailto:charlene.nelson@planning.nsw.gov.au)  
Postal: GPO Box 39 Sydney NSW 2001

Our ref: PP\_2015\_RANDW\_001\_00 (15/17491)

Mr Ray Brownlee  
General Manager  
Randwick City Council  
30 Frances Street  
Randwick NSW 2031

Dear Mr Brownlee,

### Planning proposal to amend Randwick Local Environmental Plan 2012

I am writing in response to Council's letter, received 20 November 2015, requesting a Gateway Determination under section 56 of the *Environmental Planning and Assessment Act 1979* (the Act) for a planning proposal to amend Schedule 1 of the *Randwick Local Environmental Plan 2012*, to include a Child care centre as an additional permitted use at 270 Malabar Road, Maroubra.

As delegate of the Minister for Planning, I have now determined the planning proposal should proceed, subject to the conditions outlined in the attached Gateway Determination.

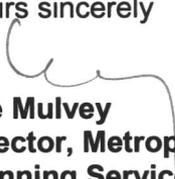
Plan making powers were delegated to councils by the Minister in October 2012. It is noted that Council has requested to be issued with delegation for this planning proposal. I have considered the nature of Council's planning proposal and have decided to issue an authorisation for Council to exercise delegation to make this plan.

The amended Local Environmental Plan is to be finalised within **9 months** of the week following the date of the Gateway Determination. Council should aim to commence the exhibition of the planning proposal as soon as possible. Council's request to draft and finalise the Local Environmental Plan should be made directly to Parliamentary Counsel's Office six weeks prior to the projected publication date. A copy of the request should be forwarded to the Department of Planning and Environment's regional team for administrative purposes.

The State Government is committed to reducing the time taken to complete Local Environmental Plans by tailoring the steps in the process to the complexity of the proposal, and by providing clear and publicly available justification for each plan at an early stage. In order to meet these commitments, the Minister may take action under section 54(2)(d) of the Act if the time frames outlined in this determination are not met.

Should you have any queries in regard to this matter, please contact Ms Charlene Nelson of the Department of Planning and Environment's Metropolitan (CBD) Branch on (02) 9228 6570.

Yours sincerely

  
Lee Mulvey  
Director, Metropolitan (CBD)  
Planning Services

Delegate of the Minister for Planning

Enc: Gateway Determination; Written Authorisation to Exercise Delegation; Attachment 4



## Gateway Determination

**Planning proposal (Department Ref: PP\_2015\_RANDW\_001\_00):** to amend Schedule 1 of Randwick Local Environmental Plan 2012 to include Child care centre as an additional permitted use at 270 Malabar Road, Maroubra (Lot 3821, DP752015).

I, the Director, Metropolitan (CBD), Planning Services, at the Department of Planning and Environment as delegate of the Minister for Planning, have determined under section 56(2) of the *Environmental Planning and Assessment Act 1979* (the Act) that an amendment to Schedule 1 of the Randwick Local Environmental Plan 2012 to add a Child care centre as an additional permitted use at 270 Malabar Road, Maroubra (Lot 3821 DP752015), should proceed subject to the following conditions:

1. Prior to public exhibition, the planning proposal is to be updated to demonstrate consistency with State Environmental Planning Policy No 55 – Remediation of Land, with regards to the additional permitted use.
2. Community consultation is required under sections 56(2)(c) and 57 of the Act as follows:
  - (a) the planning proposal is considered routine as described in *A Guide to Preparing LEPs* (Department of Planning and Environment 2013) and must be made publicly available for a minimum of **28 days**; and
  - (b) the relevant planning authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 5.5.2 of *A Guide to Preparing LEPs* (Department of Planning and Environment 2013).
3. A public hearing is not required to be held into the matter by any person or body under section 56(2)(e) of the Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).
4. The timeframe for completing the Local Environmental Plan is to be **9 months** from the week following the date of the Gateway determination.

Dated 18<sup>th</sup> day of December 2015.

  
Lee Mulvey  
Director, Metropolitan (CBD)  
Planning Services

Delegate of the Minister for Planning



**WRITTEN AUTHORISATION TO EXERCISE DELEGATION**

Randwick City Council is authorised to exercise the functions of the Minister for Planning under section 59 of the *Environmental Planning and Assessment Act 1979* that are delegated to it by instrument of delegation dated 14 October 2012, in relation to the following planning proposal:

<b>Number</b>	<b>Name</b>
PP_2015_RANDW_001_00	Planning proposal to permit a Child care centre as an additional permitted use on Lot 3821, DP752015 at 270 Malabar Road, Maroubra.

In exercising the Minister's functions under section 59, the Council must comply with the Department of Planning and Environment's "*A guide to preparing local environmental plans*" and "*A guide to preparing planning proposals*".

Dated 18 December 2015



**Lee Mulvey**  
Director, Metropolitan (CBD)  
Planning Services

**As Delegate for the Minister of Planning**

**AREA CALCULATIONS**

**TOTAL SITE AREA = 1006.6M2**

**ZONE SP2**

**TOTAL GROSS FLOOR AREA = 359.4M2**

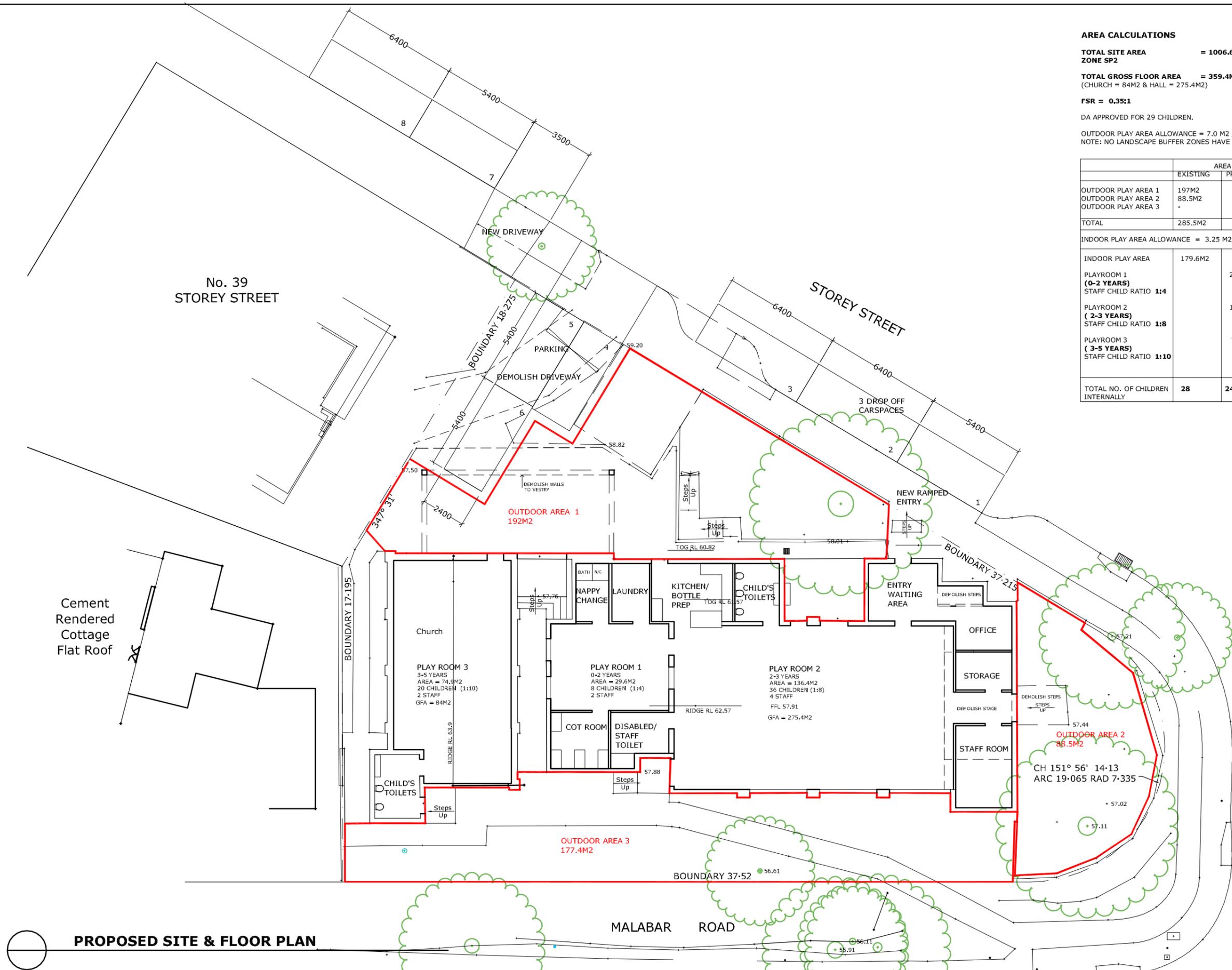
(CHURCH = 84M2 & HALL = 275.4M2)

**FSR = 0.35:1**

DA APPROVED FOR 29 CHILDREN.

OUTDOOR PLAY AREA ALLOWANCE = 7.0 M2 / CHILD UNENCUMBERED SPACE  
NOTE: NO LANDSCAPE BUFFER ZONES HAVE BEEN INCLUDED ALONG PERIMETER.

	AREA		NO. OF CHILDREN	STAFF REQUIRED
	EXISTING	PROPOSED		
OUTDOOR PLAY AREA 1	197M2	192M2	27	
OUTDOOR PLAY AREA 2	88.5M2	88.5M2	12	
OUTDOOR PLAY AREA 3	-	177.4M2	25	
<b>TOTAL</b>	<b>285.5M2</b>	<b>451M2</b>	<b>64</b>	
INDOOR PLAY AREA ALLOWANCE = 3.25 M2 / CHILD UNENCUMBERED SPACE				
INDOOR PLAY AREA	179.6M2			
PLAYROOM 1 (0-2 YEARS) STAFF CHILD RATIO 1:4	29.6M2	<b>8 CHILDREN</b>	<b>2</b>	
PLAYROOM 2 (2-3 YEARS) STAFF CHILD RATIO 1:8	136.5M2	<b>36 CHILDREN</b>	<b>5</b>	
PLAYROOM 3 (3-5 YEARS) STAFF CHILD RATIO 1:10	74.9M2	<b>20 CHILDREN</b>	<b>2</b>	
<b>TOTAL NO. OF CHILDREN INTERNALLY</b>	<b>28</b>	<b>241M2</b>	<b>64 CHILDREN</b>	<b>9 STAFF</b>



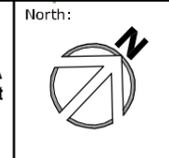
**PROPOSED SITE & FLOOR PLAN**

**Notes:**  
Do not scale off drawings. All dimensions & RL levels to be checked on site prior to construction. Builder to confirm on site levels by survey & advise the owner of any variations which may affect the design & compliance with BCA & all relevant Australian Standards. Any discrepancies to be reported to Architect for clarification.

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Added Gross floor area & FSR	03.06.2015
PRE DA Submission	13.02.2015
Rev	Amendments
	Date

**FJA**  
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**NOT FOR CONSTRUCTION**

Project:  
**PROPOSED ALTERATIONS & ADDITIONS TO EXISTING CHILDCARE CENTRE AT 270 MALABAR ROAD, MAROUBRA, NSW 2035. LOT 3821/ DP 752015**

Client:  
**PHILLIP MALEK**

Drawing No:	PRE DA01
Scale:	1:150 @ A3
Date:	13.02.2015
Rev:	03.06.2015

# PHASE 1 SITE CONTAMINATION ASSESSMENT

**CHILD CARE CENTRE**  
**270 Malabar Road Maroubra NSW**



Report To:

**Mr Phillip Malek**

childcare  
concepts

Report By:

*N.G Child & Associates*

2 March 2016

## DOCUMENT CONTROL REGISTER

<b>Project Reference</b>	CA16/11/3001
<b>Project Name</b>	Phase 1 Site Contamination Assessment for an existing Child Care Centre at 270 Malabar Road Maroubra NSW
<b>Document Title</b>	Phase 1 Site Contamination Assessment: Child Care Centre 270 Malabar Road Maroubra NSW (2 March 2016 2016)
<b>Document Reference</b>	Child Care Concepts – Malabar Road Phase 1 Contamination Assessment Report- 020316 - Word
<b>Issue Type</b>	Electronic
<b>Attention</b>	Mr Phillip Malek

<b>Version</b>	<b>Date</b>	<b>Document Reference</b>	<b>Prepared By</b>	<b>Checked By</b>	<b>Approved By</b>
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## EXECUTIVE SUMMARY

### INTRODUCTION

Child Care Concepts is involved in the prospective re-development and on-going operation of an existing child care centre at 270 Malabar Road Maroubra NSW.

NG Child & Associates has been engaged to undertake a Preliminary or Phase 1 (also known as Stage 1) Contamination Assessment of the site, in a manner and form appropriate for submission to Randwick City Council, the local government consent authority at interest.

Noel Child of NG Child & Associates is a suitably qualified and experienced person to undertake the site contamination and assessment required. His CV is attached for reference at Appendix I.

This document presents the findings and recommendations of the Phase 1 Site Contamination Assessment undertaken at the 270 Malabar Road Maroubra site.

### APPROACH

The site investigation and assessment was completed in accordance with all relevant guidelines and protocols, including those provided by in the NSW EPA document *Guidelines for Consultants Reporting on Contaminated Sites (1997, reprinted 2000 & 2011)*, and included in particular:

- ❑ A detailed review and consideration of the history and past uses of the site, based on a search of available title and ownership records;
- ❑ A thorough physical inspection of the site and surrounding properties; and
- ❑ Sampling, physical examination and laboratory analysis of soil samples from varying depths at soil bores at four representative locations throughout the site area.

### SITE HISTORY

The history and past uses of the site were carefully considered. From the viewpoint of the suitability of the 270 Malabar Road site for ongoing use as a child care centre, it appears unlikely that the past uses of the site are likely to have resulted in any significant environmental or contamination impacts that would be prejudicial to that land use.

### SITE INSPECTION

A thorough and detailed inspection of the site was undertaken. This inspection did not indicate any environmental or contamination issues prejudicial to the child care centre use proposed for the site.

### SOIL SAMPLING, EXAMINATION & ANALYSIS

Twenty four soil samples were collected from various depths at four soil bores installed at representative locations throughout the site.

These samples were carefully examined for any indications of contamination.

A total of thirteen of these samples, including one duplicate sample, were forwarded to the NATA registered laboratory Envirolab Services Pty Ltd for detailed chemical analysis for a wide range of potential contaminants.

The key findings of this assessment of soil quality were as follows.

- ❑ None of the 24 soil samples collected from the site provided any physical indication of contamination, either by discoloration, staining, odour or response to examination by a photoionisation detector;
- ❑ No indication of the introduction to or presence of contaminated fill was identified at the site;
- ❑ None of the 13 representative soil samples from the site sent to the NATA accredited laboratory of Envirolab Services for analysis indicated the presence of heavy metals at levels of concern, or of petroleum hydrocarbons, volatile organic compounds, phenolic compounds pesticide residues, polyaromatic hydrocarbon species or polychlorinated biphenyl compounds at detectable concentrations;
- ❑ Asbestos was not detected in any of the soil samples from four representative surface locations at the site;
- ❑ On this basis, the soils at the site are assessed as being free of contamination, and soil quality at the site is considered to comply with the requirements of State Environmental Planning Policy (SEPP) 55, and other relevant site assessment criteria, as being appropriate from a soil quality and contamination viewpoint for the child care land use proposed; and
- ❑ The complete absence of volatile contaminants in the sub surface at the site indicates that vapour intrusion from sub surface soil strata into any future basement areas that might be considered at the site will not present an environmental, air quality or contamination problem.

## OVERALL FINDINGS

This report presents the results of a Preliminary or Stage 1 Environmental and Contamination Assessment undertaken in relation to a child care centre development at 270 Malabar Road Maroubra NSW.

The findings of this assessment indicate that the underlying soils at the site are not contaminated, and that soil quality at the 270 Malabar Road Maroubra NSW site is appropriate for the child care centre land use proposed.

On the basis of the very clear findings of this Phase 1 (or Stage 1) Site Contamination Investigation and Assessment, it is our professional opinion that no further or more detailed site assessment is considered necessary to establish the suitability of soil quality at the site, in environmental and contamination terms, for the child care centre use proposed.



**Noel Child BSc (Hons), PhD, MIEA, MRACI**  
**Visiting Fellow, Engineering**  
**University of Technology, Sydney**  
**Principal, NG Child & Associates**  
**2 March 2016**

# 1 INTRODUCTION

Child Care Concepts is involved in the prospective re-development and on-going operation of an existing child care centre at 270 Malabar Road Maroubra NSW.

Randwick Council is the consent authority at interest, and as the proposed development involves a change in land use and zoning, and in accordance with its Contaminated Land Policy (1999), Council requires that a Phase 1 site contamination investigation undertaken in accordance with relevant policies, protocols and guidelines accompanies any development application involving a child care centre.

Mr Phillip Malek of Child Care Concepts has engaged NG Child & Associates to undertake a Phase 1 Contamination Assessment of the 270 Malabar Road site, in accordance with Council's requirements.

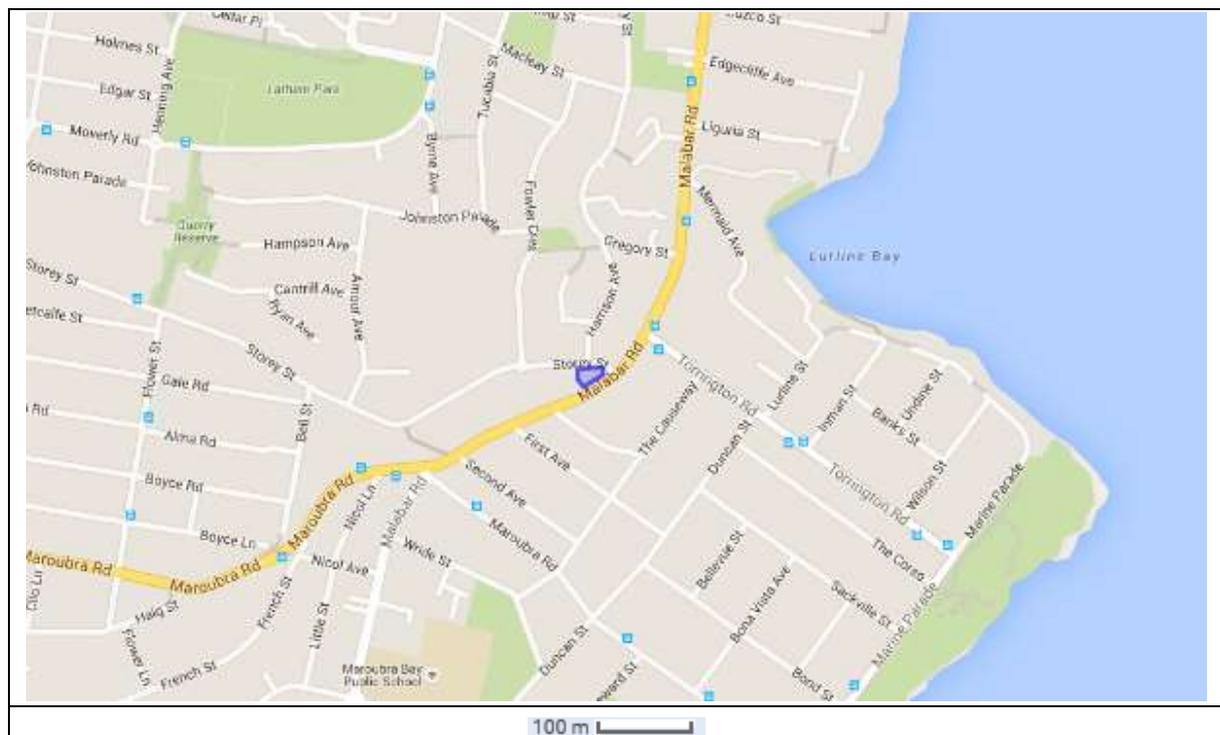
Noel Child is a suitably qualified and experienced person to undertake the contamination assessment required. His CV has been attached for reference at Appendix I.

This document presents the findings and recommendations of the Phase 1 Site Contamination Assessment undertaken at the 270 Malabar Road Maroubra site.

## 2 SITE DESCRIPTION

### 2.1 LOCATION

The location of the prospective residential development is shown in the road map provided in Figure 2.1 below. The direction of north is towards the top of the diagram.



**Figure 2.1 – Road Map Showing the Site Location**

The development site is shown highlighted in blue, at the centre of the diagram.

A recent (December 18<sup>th</sup> 2015) satellite view of the site area is shown in Figure 2.2, on the following page.



Figure 2.2 – Recent Satellite View of the Site (December 18<sup>th</sup> 2015)

A view of the site area from the roundabout at the corner of Storey Street and Malabar Road is provided in Figure 2.3, below.



Figure 2.3 – View of the Site from the Intersection of Storey Street & Malabar Road

The dimensions and approximate area of the site are shown in Figure 2.4, below.



Figure 2.4 – Approximate Dimensions of the Site

## 2.2 LOCAL FEATURES

The site, which includes existing structures including a former church and associated buildings, is currently operated as a child care centre.

The site is situated at the corner of Malabar Road and Storey Street.

Surrounding land uses to the west; to the north (on the opposite side of Storey Street); to the east (beyond the intersection of Storey Street and Malabar Road) and to the south (on the opposite side of Malabar Road), are all low density residential.

Water supply infrastructure is located some 150 metres to the north-west of the site.

Local features are illustrated by the photographs on subsequent pages, as follows:

- Figure 2.5 View of the existing child care centre at the site from Storey Street;
- Figure 2.6 Existing residential properties to the south of the site on Malabar Road; and
- Figure 2.7 Typical existing residential properties to the north of the site on Storey Street.

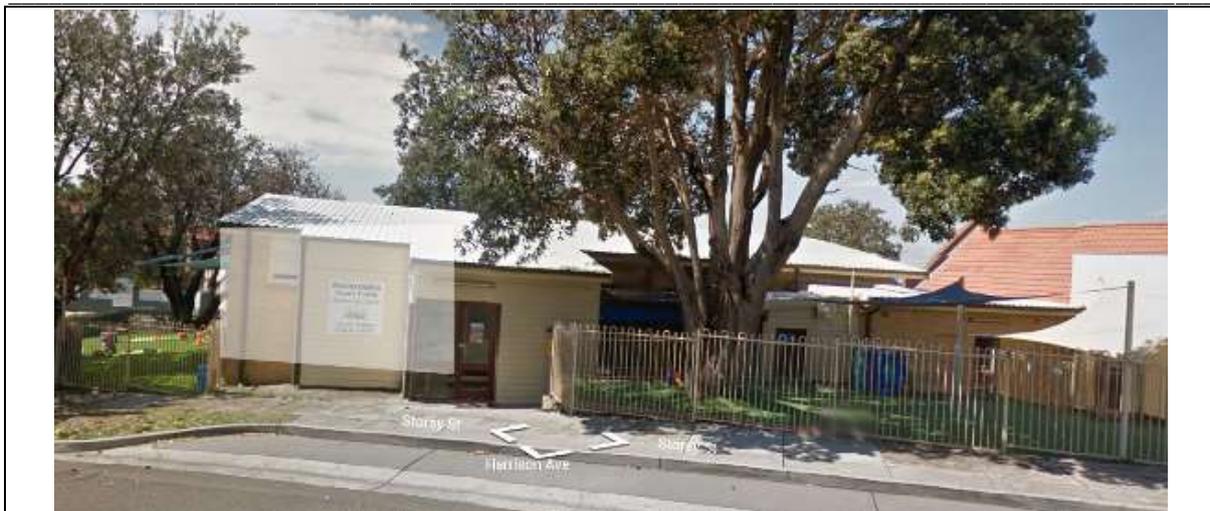


Figure 2.5 – View of the Existing Child Care Centre at the Site from Storey Street



Figure 2.6 – Existing Residential Properties to the South of the Site on Malabar Road



Figure 2.7 – Typical Existing Residential Properties to the North of the Site on Storey Street

## 2.3 LOCAL GOVERNMENT CONSENT AUTHORITY & ZONING

The site falls within the local government area of Randwick City Council, and relevant local government consents and approvals regarding the site and the proposed development reside with that Council.

The site area is currently zoned “SP2 – Infrastructure” (Place of Public Worship), as shown at the approximate centre of Figure 2.8 below.

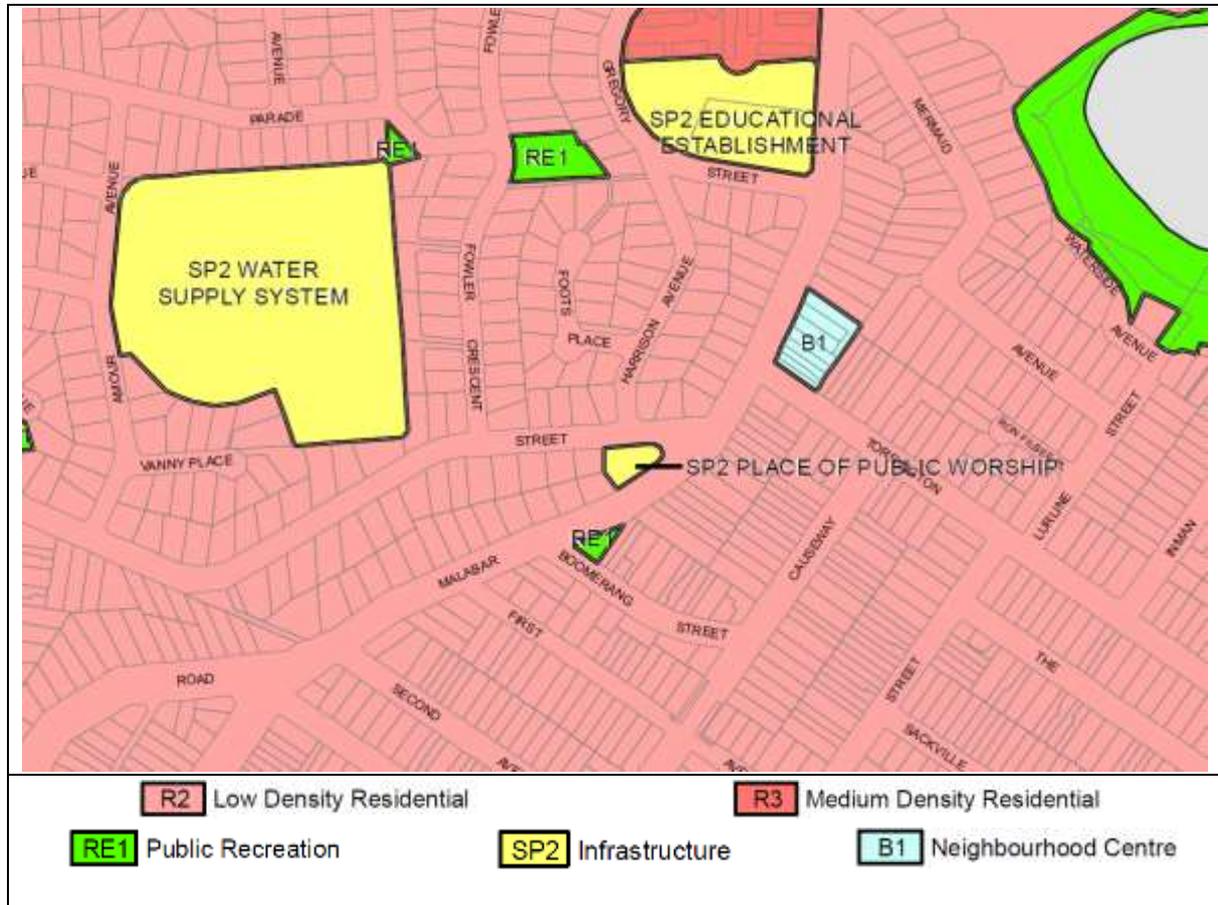


Figure 2.8 – Zoning Details

Surrounding land uses are predominantly “R2 – Low Density Residential”.

Other land uses in the general vicinity of the site include a row of shops and businesses further to the north east on Malabar Road, zoned “B1 – Neighbourhood Centre”; a water supply system and educational establishment (St Mary & St Joseph Catholic Primary School) both zoned “SP2 – Infrastructure” to the west and north of the site respectively; an area of medium density residential development zoned “R3 –Medium Density Residential” between Gregory Street and Malabar Road to the north, and four areas of public park and ocean foreshore zoned “RE1 – Public Recreation”.

## 2.4 PROPOSED DEVELOPMENT

The proposed development involves the ongoing use of the site as a child care centre

## **3 ASSESSMENT CONSIDERATIONS & GUIDELINES**

### **3.1 INTRODUCTION**

Guidelines for the environmental and contamination assessment of land have been established by relevant NSW Government agencies and departments, and these guidelines inform the assessment requirements of local government.

The requirements of these guidelines have been taken into account, along with other relevant guidelines, in the assessment proposal presented in this document.

### **3.2 NSW GOVERNMENT REQUIREMENTS**

#### **3.2.1 NSW Environment Protection Authority**

The NSW Environment Protection Authority (now a division of the NSW Department of Planning) provide guidelines and protocols for the environmental assessment of land on both a preliminary and detailed assessment basis.

These guidelines and protocols are summarised in the guideline NSW EPA document *Guidelines for Consultants Reporting on Contaminated Sites (first published 1997; reprinted September 2000, reprinted with updated agency details and references August 2011)*, and provide the appropriate basis for environmental site assessment undertaken in support of a Development Application to a local government authority in NSW.

This assessment has been completed in strict accordance with those guidelines.

A summary of NSW EPA site assessment guidelines have been included for reference at Appendix A.

#### **3.2.2 Planning NSW**

Planning NSW's State Environmental Planning Policy 55 requires that an assessment of soil quality is required in cases where land previously used for non-residential purposes is proposed for residential development.

While the provisions of SEPP 55 typically apply to the use of former commercial or industrial land for residential purposes, it is appropriate that the requirements of the policy are taken into account in this case, as the proposed development includes a child care centre application. Child care centres are generally considered to be a sensitive land use, with assessment guidelines at least equal to residential guidelines applicable.

### **3.3 TYPICAL INVESTIGATION & ASSESSMENT REQUIREMENTS**

The following considerations typically apply to the approach of local government in NSW to environmental and contamination site investigations and assessments, and are considered relevant to the proposal presented in this document, and to the level of investigation and assessment detail required.

Pursuant to the provisions of the Environmental Planning and Assessment Act 1979 (as amended), Councils have a duty of care, when considering Rezoning, Development and Complying Development Certificate Applications, to consider fully the possibility of land contamination and the implications it has for any proposed future use of land.

In recognition of this duty of care, Councils typically (and not unreasonably) adopt a precautionary approach to the consideration of applications involving contaminated or potentially contaminated land. The object of this approach is to enable any land contamination issues to be identified and dealt with at an early stage in the planning process.

This approach can, as in this case, involve the requirement for a detailed environmental site investigation.

Council will typically have regard for the sensitivity of a proposed land use in addition to any technical standards or requirements published by:

- (a) The NSW Environment Protection Authority (EPA) (incorporated into the NSW Department of Environment and Conservation);
- (b) The Australian and New Zealand Environment Conservation Council (ANZECC);
- (c) The National Health and Medical Research Council (NH&MRC);
- (d) The National Environment Protection Council (NEPC); and
- (e) Any other relevant authority.

The processes of identifying, evaluating and remediating contaminated land are documented in the ANZECC and NH&MRC publication entitled "Guidelines for the Assessment and Management of Contaminated Sites" (January, 1992). Councils typically consider these guidelines to be a mandatory reference for consultants assessing contamination levels and undertaking remediation works. Councils also generally require that consultants preparing contamination reports should also have a practical working knowledge of the various Environment Protection Authority and NEPC publications on contaminated land including:

- (1) Environment Protection Authority (EPA), 1994, Contaminated Sites: Guidelines for Assessing Service Station Sites;
- (2) EPA, 1995, Contaminated Sites: Sampling Design Guidelines;
- (3) EPA, 1995, Contaminated Sites: Guidelines for the Vertical Mixing of Soil on Former Broad-Acre Agricultural Land;
- (4) EPA, 1997, Guidelines for Consultants Reporting on Contaminated Sites;
- (5) EPA, 1998, Guidelines for the NSW Auditor Scheme; and
- (6) NEPC, 1999, Draft National Environmental Protection Measure - Assessment of Contaminated Sites.

Contaminated land is generally defined as land in, on or under which any substance is present at a concentration above that naturally present in, on or under the land and that poses, or is likely to pose, an immediate or long term risk to human health or the environment (Environmental Planning & Assessment Act 1979, as amended). Contamination can result from a number of past and/or present occurrences, such as:

- (a) The controlled or uncontrolled disposal of wastes, including sewage;
- (b) Accidental leakage;
- (c) Leakage during plant operation, storage or transportation of raw materials, finished products or wastes;
- (d) The corrosion of underground tanks;
- (e) The emission of particulate matter into the atmosphere;
- (f) The migration of contaminants into a site from neighbouring land, either as vapour, leachate or movement of liquids through the soil; and
- (g) The use of agricultural chemicals.

In accordance with the NSW EPA guidelines included at Appendix A, four stages or levels of environmental or contamination assessment are identified, as follows:

- Stage 1 – Preliminary Investigation
- Stage 2 – Detailed Investigation
- Stage 3 – Site Remedial Action Plan

□ Stage 4 – Validation and Monitoring

In this case, a Stage 2 or Detailed Site Investigation has been undertaken.

### 3.4 RANDWICK CITY COUNCIL

Child care centre developments with the Randwick City Council area are subject to the provisions of the Randwick City Council Development Control Plan (DCP) 2013.

Guidelines in relation to child care centre developments are provided in Section D – Commercial/Industrial Uses, Sub Section D 11 – Child Care Centres.

Sub Section D 11 provides guidelines in relation to general site selection and environmental issues, but does not refer specifically to contaminated site issues.

Specific guidelines detailing the need for contaminated site assessments are provided in Randwick City Councils Contaminated Land Policy (July 1999), Section 2.3 Council Procedures for Subdivision and Development Applications.

The relevant wording has been included below for reference:

***Randwick City Council  
Contaminated Land Policy  
July 1999***

**2.3 Council Procedures for Subdivision and Development Applications**

*From 1 July 1998 s. 79C (1) of the Environmental Planning and Assessment Act 1979 requires Council to consider the suitability of the site for the development when assessing development applications. The risk from contamination to health and the environment is included in this assessment.*

*In accordance with clause 7 of SEPP 55, Council will not consent to the carrying out of any development on land unless:*

- (a) it has considered whether the land is contaminated, and*
- (b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
- (c) if the land requires remediation to be made suitable for any purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.”*

*The following subsections outline when Council will require information relating to site contamination issues to be submitted with subdivision and development applications.*

*The objectives of a preliminary investigation are to identify any past or present potentially contaminating activities and to provide a preliminary assessment of site contamination. The preliminary investigation typically contains a detailed appraisal of the site history and a report based on visual site inspection and assessment. Where information on site contamination is limited, some soil sampling may be warranted.*

*SEPP 55 requires Council to consider contamination issues in determining development and subdivision applications. In accordance with clause 7(4) of SEPP 55, **Council will require a preliminary investigation to be submitted with a subdivision or development application where the land concerned is:***

- (a) land that is within an investigation area,*
- (b) land on which development for a purpose referred to in Table 1\* to the contaminated land planning guidelines is being, or is known to have been, carried out,*
- (c) to the extent to which it is **proposed to carry out development on it** for residential, educational, recreational or **child care purposes**, or for the purposes of a hospital-land:*

- (i) *in relation to which there is no knowledge(or incomplete knowledge) as to whether development for a purpose referred to in Table 1\* to the contaminated land planning guidelines has been carried out, and*
- (ii) *on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge)."*

*(NOTE: Table 1\* in the Managing Land Contamination Planning Guidelines 1998, Department of Urban Affairs and Planning & NSW Environment Protection Authority which is reproduced in Appendix 1 of Randwick City Council Contaminated Land Policy 1999)*

The requirement regarding the conduct of a Phase 1 Contamination Assessment is included in Section 2.3. Key wording has been highlighted in bold.

### **3.5 PHASE 1 SITE CONTAMINATION ASSESSMENT**

A Phase 1 (or Preliminary) Site Contamination Assessment is required.

This type of assessment forms an important part the environmental assessment process, and the guidelines and protocols for environmental assessment defined by the NSW Office of Environment and Heritage (OEH), and the NSW Environmental Protection Authority that resides within the NSW OEH.

A site inspection and general assessment, describing the site and the location, and providing a review and consideration of all potential environmental risk and exposure issues, including relevant site history and consideration of nearby properties and activities, identifying any potential environmental impacts, including any potential hazardous risk issues will be included. The site inspection will take into account any issues in relation to potentially hazardous material or structural issues.

This general assessment is required to be supported by a consideration of soil quality or potential site contamination, including appropriate sampling and analysis.

The assessment proposed involves limited soil sampling at representative points throughout the site, and associated analysis by a NATA certified laboratory, as required by relevant assessment protocols and guidelines.

### **3.6 ANY OTHER RELEVANT ENVIRONMENTAL ISSUES**

In addition to the specific assessment tasks discussed in 3.2 to 3.4 above, and in accordance with sound professional practice, any other matters of potential environmental or contamination relevance and significance emerging during the site assessment and investigation process have been taken into account as part of the detailed environmental and contamination assessment of the site.

## **4 PURPOSE & SCOPE OF THE ASSESSMENT**

### **4.1 OVERALL OBJECTIVE**

The overall objective of this assessment has been to thoroughly investigate and assess all relevant general environmental, soil quality and potential contamination issues at the 270 Malabar Road Maroubra site, and prepare an appropriate Site Contamination Assessment Report.

### **4.2 GENERAL APPROACH TO THE ASSESSMENT**

The general approach to this investigation and assessment has involved a careful review of the issues that, in our professional opinion, and in terms of all relevant assessment guidelines and protocols as summarised in Section 3 of this report, require observation, consideration, testing and assessment in order to determine whether the general environmental condition of the site, including in particular soil quality, is appropriate for the child care centre use proposed; whether it complies with relevant guidelines and criteria, and whether any remedial actions may be required to achieve these outcomes. The assessment has taken into account regulatory approval, due diligence and any known or potential environmental and environmental health related issues, and has involved the following:

- ❑ Use of the best available data regarding the background environment at and in the vicinity of the proposed development site;
- ❑ Consideration of all other known and relevant information in relation to the various environmental issues involved in the assessment;
- ❑ Consideration of all known and identifiable sources of actual or potential environmental impact, and the effects of any such potential impacts;
- ❑ Detailed inspection of the site and its immediate environs;
- ❑ Review and consideration of site history; and
- ❑ Soil sampling and analysis in accordance with the requirements of the NSW EPA document *Guidelines for Consultants Reporting on Contaminated Sites*.

### **4.3 SCOPE OF THIS ASSESSMENT**

The three key areas of the assessment presented in this report are summarised in 4.3.1, 4.3.2 and 4.3.3 below.

#### **4.3.1 Review of Site History**

Past activities and land uses can influence the environmental condition of land, and can result in the contamination of soils. To ensure that past uses of and activities at and near the 270 Malabar Road Maroubra site are fully investigated and assessed, a detailed search of property, title and ownership records has been undertaken.

The results of this aspect of the site assessment are summarised in Section 5. More detailed references are provided in Appendices C, D & E.

#### **4.3.2 General Site Inspection & Assessment**

To ensure that all relevant environmental and contamination issues are dealt with in the assessment, a thorough physical inspection of the site and surrounding areas has been undertaken. This type of site inspection forms an important part the environmental assessment process, and the guidelines and protocols for environmental assessment provided by the NSW EPA in its guideline document *Guidelines for Consultants Reporting on Contaminated Sites*.

The site inspection and general environmental assessment undertaken, describing the site and the location; providing a review and consideration of all potential environmental risk and exposure issues; including consideration of nearby properties and activities, identifying any potential environmental impacts, including any potential hazardous risk issues is described in Section 6 of this report.

### 4.3.3 Soil Quality and Contamination Assessment

Soil contamination is a potential area of environmental risk and concern, particularly in cases involving a change in land use to a more sensitive application, including child care.

NSW State Environmental Planning Policy 55 (SEPP 55) requires the sampling, analysis and assessment of soil in relevant instances when land previously used for less sensitive purposes is proposed for more sensitive land uses, including child care centres.

The soil quality assessment undertaken in this case has involved soil sampling; physical inspection and basic testing in the field and the laboratory analysis of soil samples from varying depths at representative locations throughout the site area. The assessment has included the following considerations:

- ❑ **Physical Inspection:** A thorough physical inspection of the soils at the site, including the visual examination of all soil samples to identify an obvious physical indications of soil contamination or associated issues, including consideration of physical appearance, odour, and any indications of the use of imported or in any way potentially hazardous fill materials at the site;
- ❑ **Soil Sampling:** Collection and physical examination of soil samples from four representative locations, and at various depths; and
- ❑ **Laboratory Analysis:** Testing and analysis of representative soil samples from the four sampling locations at the site to assess and quantify soil quality as follows:
  - **Asbestos:** Inspection and microscopic laboratory examination for the presence of asbestos;
  - **Metals & Metalloids:** Laboratory analysis of nine representative samples (including a duplicate sample) to determine the concentrations of heavy metals and metalloids that can be associated with soil contamination and potential health risks, including arsenic, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel and zinc;
  - **Hydrocarbons:** Laboratory analysis of representative samples to determine the possible presence of hydrocarbon (fuel and oil) residues including total petroleum hydrocarbons (TPH C6 – C36) and benzene, toluene, ethyl benzene, xylene and naphthalene (BTEXN);
  - **Volatile Organic Compounds:** Laboratory analysis of four selected samples to determine the possible presence of a an extensive range of 65 volatile organic compounds (VOC's);
  - **Polyaromatic Hydrocarbons (PAH):** Laboratory analysis of four representative soil samples for a range of potential polyaromatic hydrocarbon contaminants, including benzo(a)pyrene;
  - **Polychlorinated Biphenyls (PCB):** Laboratory analysis of three samples for the possible presence of polychlorinated biphenyl contaminants.
  - **Phenolics:** Laboratory analysis of three selected samples to determine the possible presence of any residual phenolic contaminants; and
  - **Pesticide Residues:** Laboratory analysis of three representative samples to determine the possible presence of both organochlorine pesticide (OCP) and organophosphorous pesticide (OPP) residues.
- ❑ **Reporting:** The preparation of this report, in accordance with relevant guidelines, setting out the findings of the assessment, and any relevant conclusions and recommendations.

The results of this soil quality and contamination assessment are presented in Section 7 of the report.

### 4.3.4 Any Other Relevant Environmental Issues

In addition to the specific assessment tasks discussed in 4.3.1, 4.3.2 and 4.3.3 above, and in accordance with sound professional practice, any other matters of potential environmental relevance and significance noted during the assessment process have also been taken fully into account in the assessment and reporting process.

## 5 SITE HISTORY & PAST USE

A detailed property and title search of the 270 Malabar Road Maroubra site was commissioned as part of this assessment.

Detailed results of this property and title search have been provided for reference in Appendices C, D and E to this document.

Summaries are provided below, together with any environmental or contamination implications arising from the history and past use of the properties.

### 5.1 270 MALABAR ROAD MAROUBRA

The property search provided details of ownership (and indications of use) dating back to 1935. From an environmental and contamination viewpoint, this is considered to be a more than adequate review period.

Prior to 1940 the land was crown land. A total of nine grantees are recorded as proprietors of the land during this period, with the following occupations noted:

- dental mechanic
- accountant
- salesman
- carpenter
- bootmaker
- manufacturer
- civil servant
- printer
- cartage contractor

During this period, it is understood that the use of the property was for residential purposes, and that the various occupations referenced were practiced elsewhere.

In 1940, ownership of the property transferred from the crown to the Methodist Church, and the use of the property became that of a place of worship.

The Methodist Church, and subsequently the Uniting Church, continued as proprietors of the property until 2015, when it was sold to its current owners, the Malek Group Pty Ltd.

The use of the site since its transition from Crown Land in 1940 has been as a place of worship (primarily), and more recently as a child care centre.

### 5.2 IMPLICATIONS OF SITE HISTORY & PAST USE

From the viewpoint of the suitability of the 270 Malabar Road Maroubra site for use as a child care centre, it appears extremely unlikely that the past uses of the site are likely to have resulted in any significant environmental or contamination impacts.

That implication is further tested by the site inspection and soil sampling, examination and analysis undertaken as part of this assessment, and described in Sections 6 and 7 of this report.

## 6 SITE INSPECTION & ASSOCIATED ISSUES

### 6.1 INTRODUCTION

The first aspect of this assessment involved a general consideration of any identifiable environmental issues, risks and exposures associated with the proposed development site, or associated with properties and activities in the immediate vicinity of the site.

This section of the assessment report deals with a number of important general environmental issues, and takes into account those issues generally considered in what are frequently referred to as "Preliminary Environmental Site Assessments" or "Stage 1 Contamination Assessments". This aspect of the assessment is based on inspections of the site and surrounding areas undertaken by Noel Child of NG Child & Associates during February 2016.

More specific consideration of soil quality and potential soil contamination issues has been provided in Section 7 of this report, based on soil inspection, sampling and analysis undertaken as part of the inspection and assessment process.

### 6.2 PRELIMINARY (STAGE 1) ENVIRONMENTAL SITE ASSESSMENT

The preliminary environmental assessment undertaken has involved a detailed inspection of the proposed site and its immediate surroundings, taking into account the general environmental condition of the site, and including a review and assessment of past and current activities at the site; structural and engineering elements that may be relevant to the proposed development; nearby activities and operations, and any associated environmental risks, impacts or implications, and in accordance with relevant assessment guidelines including:

- ❑ **General Definition of the Site Boundaries:** A description of the proposed site, including the preparation of appropriate diagrams showing the location of the site in relation to existing streets and other relevant references (refer Section 2).
- ❑ **Site Photographs:** Representative photographs of the site, and nearby properties and civilities, illustrating relevant features (Refer Section 2).
- ❑ **Site Activities:** A description of present activities and operations at and in the immediate vicinity of the site, noting any existing or potential environmental risks associated with these activities and operations.
- ❑ **Adjacent Activities:** A consideration and description of the general nature of nearby property activities, including relevant comment on existing or potential environmental risks or exposures associated with these activities and operations.
- ❑ **Site History:** A summary, to the extent that it can reasonably be obtained from local government and other sources, of the history of the past use of the proposed site, including appropriate consideration of any past operations or activities that may involve environmental risks or impacts.
- ❑ **Hazardous Goods & Materials.** An assessment of risks and potential risks associated with any hazardous goods or materials identified at or in the immediate vicinity the site, including residual construction fragments from demolition activities previously undertaken at the site.
- ❑ **Possible Hazards Associated with Building and Construction Materials or Structural Elements.** Provision of general comments and relevant advice regarding any obvious or apparent issues in relation to building or construction materials, or structural elements, at or in the immediate vicinity of the proposed residential development. It is noted that this consideration is not significant in this case, as the site has been cleared and is currently vacant, awaiting development.
- ❑ **Soil Contamination.** Physical inspection and assessment of soils for indications of contamination, including staining and odour. (Assessment supported by the more detailed soil quality assessment provided in Section 7).
- ❑ **Road Traffic Impacts.** A general assessment of the potential environmental impacts of road traffic activities in the immediate vicinity of the site (excluding acoustic impacts), taking into account any impacts that these activities might have on the site
- ❑ **Equipment and Infrastructure.** A review of any plant, equipment and infrastructure items at or in the immediate vicinity of the proposed site, and a review of any potential environmental risks or impacts.

- ❑ **Telephony, Power Distribution Infrastructure & other Potential EMF Sources.** A review of any significant items of mobile telephone, electrical power distribution infrastructure, or any other potential electromagnetic field sources at or in the immediate vicinity of the site, with a view to identifying any potential environmental impacts or possible health risk exposures.
- ❑ **Acoustic & Air Quality Issues:** General and preliminary consideration of acoustic and air quality issues, based on a physical inspection of the site and surrounding areas; and
- ❑ **Any Other Matters of Environmental Relevance:** Comment and advice on any other matters of an environmental nature considered relevant in terms of providing a thorough and complete environmental assessment of the proposed development.

This preliminary environmental assessment is intended to provide a concise but thorough review of all general environmental issues, impacts and risks associated with the site.

### 6.3 SITE HISTORY

Refer specific review provided in Section 5 and associated appendices.

### 6.4 SITE & IMMEDIATE SURROUNDINGS

The site is located in an essentially low density residential area. This is clearly illustrated by the recent (December 18<sup>th</sup> 2015) satellite image in Figure 6.1, below, where the site area (shaded in blue) is shown surrounded by low density residential properties.



Figure 6.1 – Residential Properties near the 270 Malabar Road Maroubra Site

### 6.5 BUILDINGS & STRUCTURES

There are existing buildings at the site, as illustrated in Figures 6.2 to 6.5 on subsequent pages, as follows:

- Figure 6.2 Child Care Centre at the Site Viewed from the Opposite Side of Storey Street
- Figure 6.3 Site Viewed from the Corner of Malabar Road and Storey Street
- Figure 6.4 Existing Outdoor Play Area along the Malabar Road Site Boundary
- Figure 6.5 Site Viewed from the South on Malabar Road



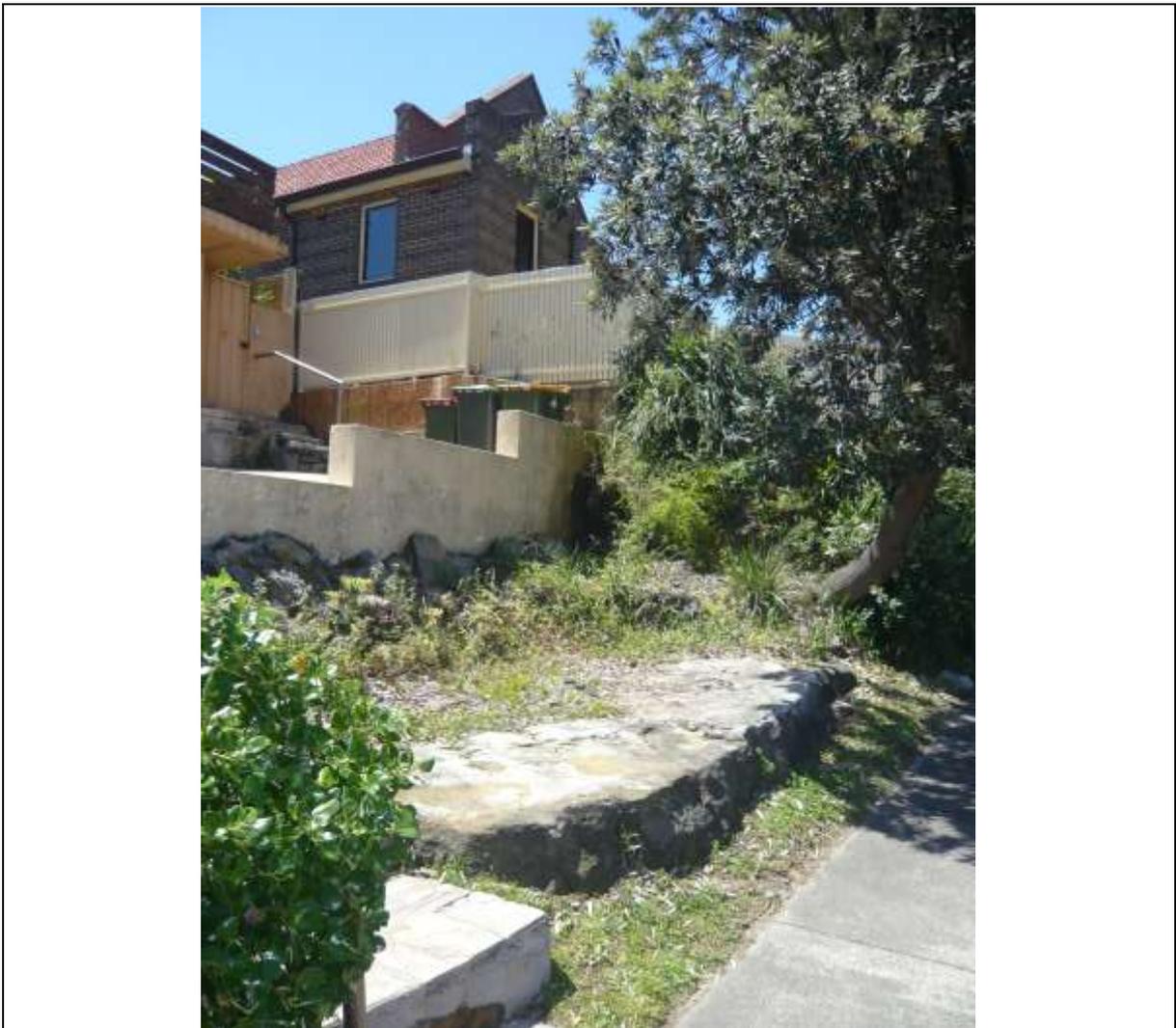
**Figure 6.2 – Child Care Centre at the Site Viewed from the Opposite Side of Storey Street**



**Figure 6.3 – Site Viewed from the Corner of Malabar Road and Storey Street**



**Figure 6.4 – Existing Outdoor Play Area along the Malabar Road Site Boundary**



**Figure 6.5 – Site Viewed from the South on Malabar Road**

## 6.6 PHYSICAL INDICATIONS OF CONTAMINATION OR POLLUTION

The 270 Malabar Road Maroubra site comprises an essentially triangular parcel of land with an area of approximately 1,000 square metres.

A general inspection of the site was undertaken to identify any visible evidence of pollution or contamination.

The results of the site inspection are summarised below:

### **Site condition and general standards of housekeeping**

The property was found to be in a generally clean and well maintained condition.

### **Presence of fuel, lubricant or chemical storage**

No significant fuel, lubricant or chemical storage facilities were noted at or in the immediate vicinity of the site. No bulk chemical, fuel or lubricant storage facilities were noted.

### **Visible staining on the ground, or in the vicinity of drainage systems**

No staining of structural or surface areas was noted throughout the site.

### **Evidence of waste disposal on or from the site**

There was no indication of waste or waste disposal issues at or in the immediate vicinity of any of the three properties.

### **Odours**

No unusual odours were noted at or in the immediate vicinity of the site, or near any drains in the vicinity of the site.

### **Likelihood of spillages associated with site practices**

No practices or activities were noted at any of the three properties, or in their immediate vicinity, that could be considered likely to give rise to the possibility of significant spillages of fuels, chemicals or other potentially hazardous goods.

### **Summary**

No physical indications of contamination or pollution were noted at, or in the immediate vicinity, of the three properties.

## 6.7 SURFACE WATER & DRAINAGE

There were no indications of any problems or issues regarding surface water or surface water drainage at and in the immediate vicinity of site.

The site comprises an elevated portion of land, with general surface and sub-surface drainage appearing to follow the natural contour of the area, which involves a relatively steep slope from north to south; that is from Storey Street towards Malabar Road.

The site is underlain by a natural sandstone shelf, as shown in Figures 6.6 and 6.7 on the following page, and both surface and sub-surface drainage were noted along this boundary.

No indication of odour, discoloration was noted in the surface and sub-surface drainage and seepage noted at this property boundary.



**Figure 6.6 – Underlying Sandstone along the Eastern Malabar Road Property Boundary**



**Figure 6.7 – Underlying Sandstone along the Western Malabar Road Property Boundary**

## **6.8 HAZARDOUS GOODS**

No significant quantities of hazardous or potentially hazardous goods were noted at or in the vicinity of the property.

## **6.9 ACTIVITIES POSING POTENTIAL ENVIRONMENTAL RISK**

### **General**

No practices or activities representing potential environmental or contamination risks or hazards were noted at, or in the vicinity of the site.

### **Plant, Equipment and Store Rooms**

No plant, equipment or other potentially hazardous store rooms or storage facilities were noted at or in the immediate vicinity of any of the site.

### **Operating Plant**

Plant and equipment was noted in operation in the general area of the site.

## **6.10 NSW EPA CONTAMINATED SITE RECORDS**

A search of the NSW EPA Register of Contaminated Sites did not indicate the presence of any known currently or previously contaminated sites in the immediate vicinity of the subject site.

The 270 Malabar Road Maroubra site was not listed as a contaminated or potentially contaminated site, and no notices in this regard were noted.

## **6.11 WORKCOVER NSW RECORDS OF UNDERGROUND STORAGE TANKS**

A search of WorkCover records of underground storage tanks did not indicate the presence of any underground fuel or chemical storage tanks at or in the immediate vicinity of the site. While these WorkCover records are known to be incomplete, a detailed inspection indicated that no such items were present at the site.

## **6.12 BUILDING & CONSTRUCTION MATERIALS**

No existing significant environmental risks or exposures were noted in relation to building and construction materials at or in the immediate vicinity of the site.

In relation to asbestos and lead, the following observations apply:

### **Asbestos and Respirable Fibres**

The scope of this preliminary assessment did not include a detailed hazardous goods or asbestos assessment, and no sampling and/or analysis in this regard was undertaken. However, the preliminary assessment undertaken did not indicate any significant asbestos presence at the site.

### **Lead**

Surface coatings used on the exterior and interior surfaces at the dwelling identified at the site may contain lead. This is not considered to represent a significant environmental risk or exposure, however appropriate care should be taken and appropriate procedures followed during any future, renovation, demolition or construction activities at the site.

### 6.13 ASBESTOS

As indicated in 6.11 above, the scope of this preliminary assessment does not include the conduct of a detailed hazardous materials survey or assessment.

However, as part of the soil sampling and analysis undertaken as part of this assessment, ground surface samples of soils from four representative locations at the site were collected and subjected to laboratory examination for the presence of asbestos fibres.

The results of these examinations are presented in Section 8 of this report.

### 6.14 SEPP 55 & SOIL CONTAMINATION CONSIDERATIONS

Soil quality and potential soil contamination/SEPP 55 issues have been considered in detail in the Soil Quality & Contamination Assessment presented in Section 8.

### 6.15 ACID SULPHATE SOILS

A review of Randwick City Council records indicates that the site is not subject to the impacts of acid sulphate soil.

The site is shown slightly to the right of the top centre of Figure 6.8, below, at the intersection of Storey Street and Malabar Road. The closest identified acid sulphate soil zones (Class 5 and Class 4) are shown further to the south.

The diagram is sourced from the Randwick City Council LEP 2012.

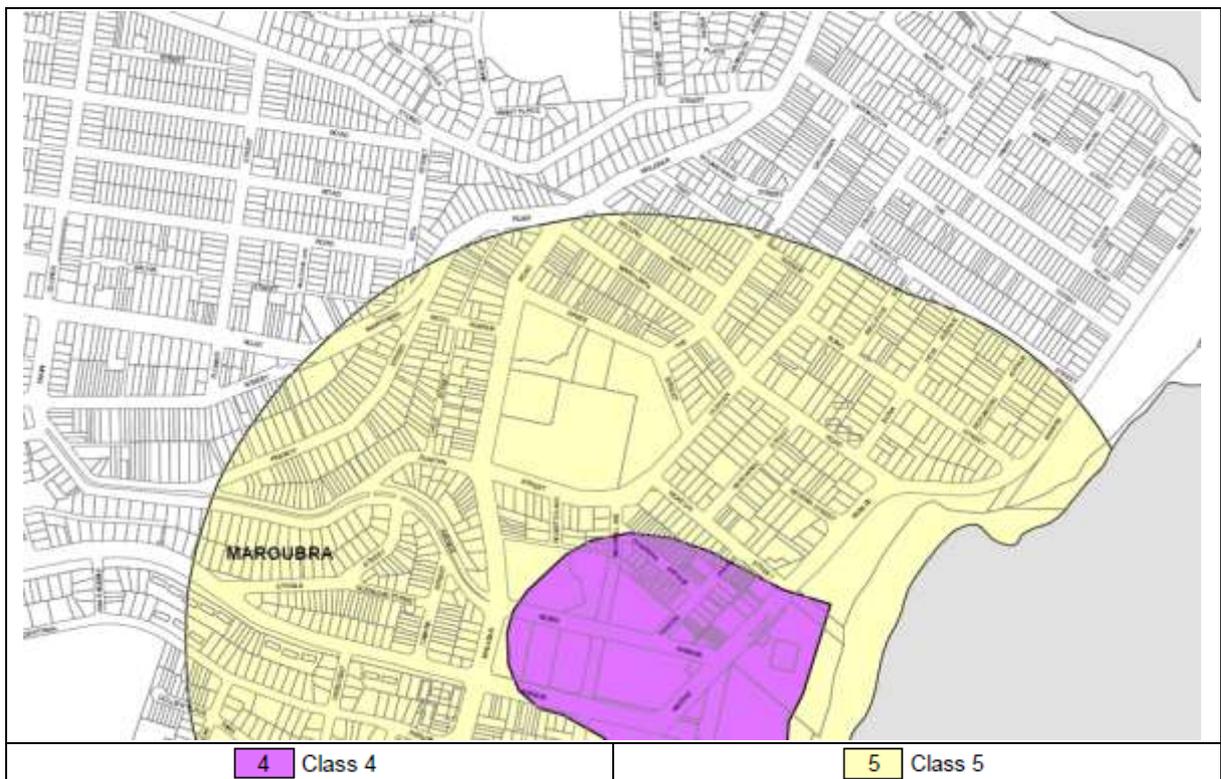


Figure 6.8 – Acid Sulphate Soil Map (Randwick City Council LEP 2012)

### 6.16 NEARBY BUILDINGS AND ACTIVITIES

No significant environmental or contamination issues, exposures or risks of a general nature were noted in relation to any nearby buildings and activities.

## **6.17 AIR QUALITY**

No obvious issues in relation to air quality were noted during the site inspections undertaken during February 2016, and on the basis of this preliminary assessment and associated observations, air quality at and in the vicinity of 270 Malabar Road Maroubra site is assessed as complying with relevant NSW EPA air quality standards and goals, and as not presenting any environmental or contamination risk.

## **6.18 ELECTROMAGNETIC FIELD**

No obvious or potentially hazardous sources of electromagnetic radiation, such as electrical sub stations; high voltage overhead power distribution lines, or major items of telephony infrastructure, were noted at or in the immediate vicinity of the site.

On the basis of observations during the conduct of this preliminary assessment, no indication was noted of any significant electromagnetic field issues at or near the site, and in our professional opinion it is extremely unlikely that electromagnetic field issues present any impediment or constraint to the child care use proposed for the site.

## **6.19 OTHER**

No other significant environmental issues, exposures or impacts of a general nature were noted during the site inspection and assessment process.

## **6.20 KEY FINDINGS**

The general environmental condition of the 270 Malabar Road Maroubra site is considered to be sound, and a detailed physical inspection of the site has not indicated any environmental or contamination issues prejudicial to the child care centre use understood to be proposed for the site.

## 7 SOIL QUALITY & CONTAMINATION ASSESSMENT

### 7.1 INTRODUCTION

This section of the report presents the results of a targeted assessment of soil quality and contamination at the 270 Malabar Road Maroubra NSW site.

### 7.2 TYPICAL GEOLOGY & SOIL PROFILE IN THE AREA

The Sydney 1:100,000 geological sheet indicates that the geology in the general area of the Malabar Road site is influenced by the Botany Basin, a structural depression lying within the wider Sydney Basin.

Bedrock in this area is dominantly Triassic-aged Hawkesbury Sandstone, which typically comprises medium to coarse grained quartz sandstone with minor shale and laminite beds.

Basaltic dykes intruding bedrock are common in the area north of Botany Bay. The eroded bedrock surface is overlain in most areas by Quaternary sediment deposits.

On land, the Quaternary deposits are dominantly aeolian (win-blown) sediments composed of fine to medium grained quartzose sand with occasional cemented layers associated with former soil horizons.

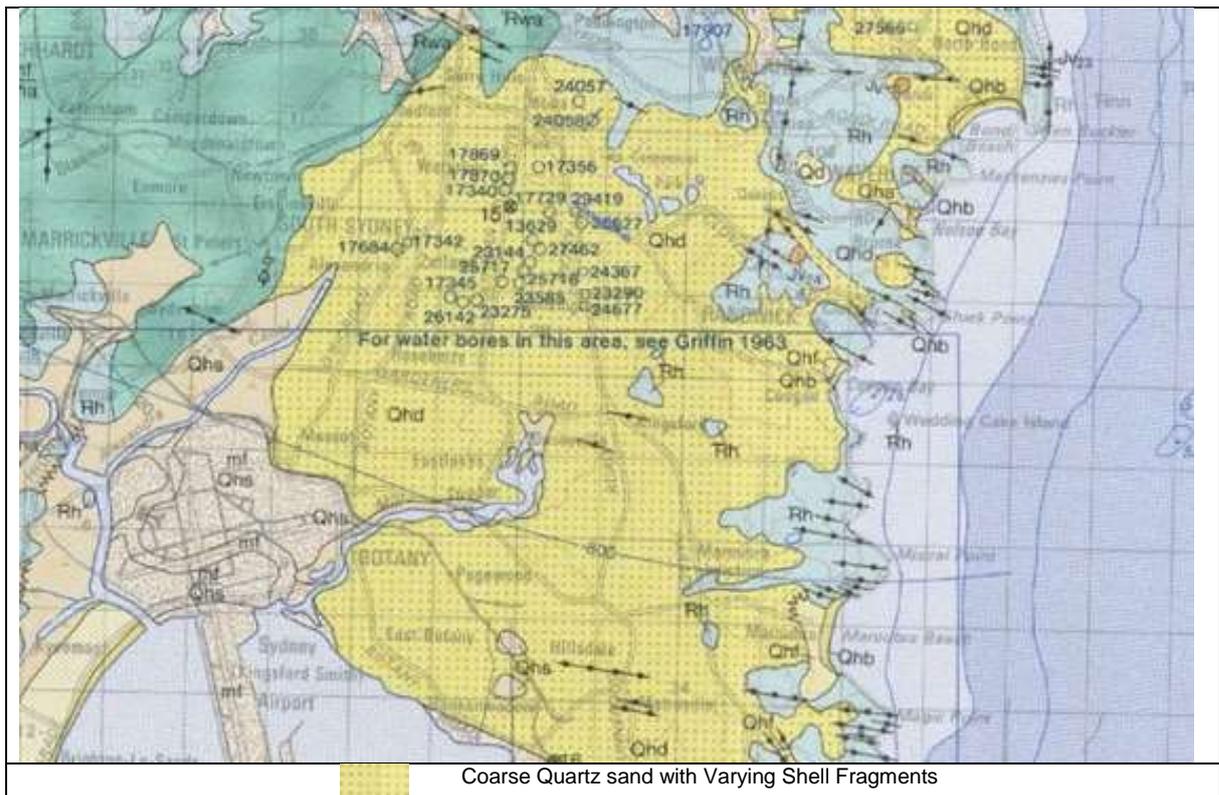


Figure 7.1 – Site Area on Sydney 1:100,000 Geological Map

### 7.3 SOIL CONTAMINATION CONSIDERATIONS

The presence of contaminated soils or land, typically as a consequence of prior industrial uses, and/or the past importation and use of contaminated fill materials to sites, presents a significant cause for potential concern when such sites are proposed for redevelopment for more sensitive uses.

State Environmental Planning Policy 55 specifically addresses the redevelopment of contaminated or potentially contaminated sites. SEPP 55 requires that planning authorities consider, at the development approval and/or rezoning stages as applicable, the potential for contamination to adversely affect the suitability of a site for its proposed use.

The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated.

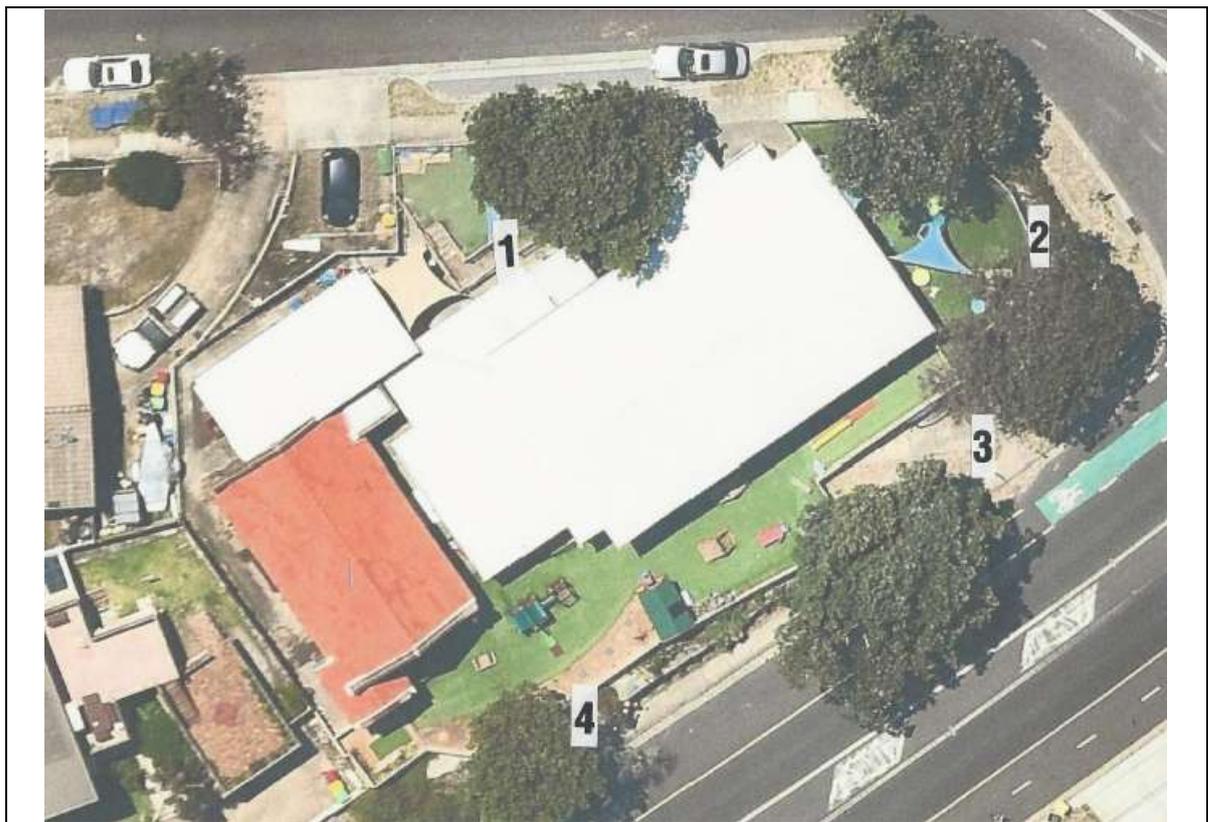
If the land is unsuitable, remediation must take place before the land is developed.

## 7.4 SOIL SAMPLING & ANALYSIS

Soil sampling, inspection and analysis was undertaken at varying depths at four representative locations throughout the site area. The sampling locations, which are described in 7.5 below, were selected to represent sub-surface conditions at the site, including the effect of any sub-surface migration from north to south following the anticipated sub-surface gradient at the site.

## 7.5 SAMPLING LOCATIONS

Soil bores were installed at four representative locations throughout the site area by hand augur, and soil samples were examined and collected from various depths at each of these four locations. The four locations are identified in Figure 7.2, below.



**Figure 7.2 – Soil Sampling Locations**

The four locations selected provide a sampling distribution consistent with relevant assessment guidelines, including the requirements of the NSW EPA Guidelines for Reporting on Contaminated Sites, and the May 2013 update of the National Environment Protection Measure (NEPM) relating to environmental site assessment. The four soil sampling locations are described in Table 7.1, on the following page.

**Table 7.1 – Soil Sample Location Details**

<b>Sample Location</b>	<b>Description</b>	<b>Type</b>
1	Inside the mid-point of the northern or Storey Street property boundary	2.5 metre soil bore
2	Towards the eastern extremity of the property, inside the Story Street and Malabar Road intersection.	2.0 metre soil bore
3	In the south-eastern area of the site, inside the eastern end of southern or Malabar Road property boundary.	1.5 metre soil bore
4	In the south-western area of the site, inside the western end of southern or Malabar Road property boundary.	1.0 metre soil bore

Soil samples were collected and inspected from the surface, and at depths of 300mm, 500mm and subsequent 500mm depths to the termination of each bore due to refusal of the hand augur caused by rock conditions, at each of the four sampling locations. Soil samples were physically examined for indication of possible contamination, including odour, staining and any other discoloration, and were field tested using a portable photo-ionisation detector for the possible presence of hydrocarbon vapours. Representative samples were retained for laboratory analysis.

Duplicate samples were collected from Locations 2 (2000mm depth) and 4 (500mm depth) for QA/QC purposes.

## **7.6 SOIL BORE LOGS**

Soil samples were obtained by collection from the hand augur, in accordance with relevant sampling procedures and protocols. Borehole logs have been included at Appendix A for reference.

## **7.7 SAMPLING PROCEDURES**

### **7.7.1 General**

Sampling was undertaken in accordance with all relevant and applicable procedures and protocols, including:

- laboratory prepared and approved sample jars and containers were used to collect samples;
- samples were collected as quickly as possible;
- once collected, the samples were immediately sealed and labelled with the following:
  - the name of the person who collected the sample
  - the date, time and place the sample was collected
  - the weather conditions at the time of collection
  - clear identification of the sample.
- sample containers were immediately placed in an insulated in a cooler below 4°C;
- sampling equipment was decontaminated before and between sampling events, using a phosphate free detergent solution, followed by a tap water rinse and a final rinse with distilled water;
- appropriate care was taken to ensure no cross contamination between sampling events; and
- appropriate care was taken to ensure that the decontamination process did not itself cause contamination of soils and groundwater systems, including those at the site.

### 7.7.2 Soil Sampling

Soil samples were collected on Tuesday September 22<sup>nd</sup> 2015 in accordance with all relevant and applicable procedures and protocols, including:

- digging and sampling equipment used was thoroughly cleaned before use, and again between each sampling event;
- appropriate care was taken to ensure no cross contamination between sampling events;
- appropriate care was taken to ensure that the decontamination process did not itself cause contamination of soils and groundwater systems, including those at the site; and
- safe work practices were followed.

### 7.7.3 Soil Samples

Soil samples were collected in accordance with the general procedures outlined in 8.7.1 and 8.7.2 above. In addition:

- Any indications of staining, unusual colours or odours were noted;
- Soil samples were collected from the surface, 300mm, 500mm, and subsequent 500mm depths to the termination of each bore on refusal due to soil conditions.

Samples were transferred to glass storage containers, labelled, placed in a cooler box. All samples, including the duplicate sample, were delivered on an urgent basis to the NATA accredited laboratory Envirolab Services Pty Ltd for analysis. A copy of the relevant Chain of Custody documentation has been included for reference at Appendix G.

Sample identification is summarised in Table 7.2, below.

**Table 7.2 – Soil Sample Identification**

Sample Depth	Sample Location			
	1	2	3	4
Surface	MRD-1-SUR	MRD-2-SUR	MRD-3-SUR	MRD-4-SUR
300mm	MRD-1-0300	MRD-2-0300	MRD-3-0300	MRD-4-0300
500mm	MRD-1-0500	MRD-2-0500	MRD-3-0500	MRD-4-0500
1000mm	MRD-1-1000	MRD-2-1000	MRD-3-1000	MRD-4-1000 (+D)
1500mm	MRD-1-1500	MRD-2-1500	MRD-3-1500	n/a
2000mm	MRD-1-2000	MRD-2-2000	n/a	n/a
2500mm	MRD-1-2500	n/a	n/a	n/a

All samples were subjected to careful physical inspection. Representative samples, highlighted in blue in Table 7.2, were subjected to further, confirmatory laboratory analysis.

A total of 24 samples, including 2 duplicate samples were examined.

A total of 13 samples, including 1 duplicate sample, were delivered for analysis.

Samples from all depths were dominated by granular, sandy quartzite material as anticipated from the geological profile of the area provided in 7.2 above.

Typical samples are illustrated in Figures 7.3 to 7.6 on the following pages.



**Figure 7.3 – Soil Sample MRD-1-0300**



**Figure 7.4 – Soil Sample MRD-2-0500**



**Figure 7.5 – Soil Sample MRD-3-1500**



**Figure 7.6 – Soil Sample MRD-4-1000**

## 7.8 LABORATORY ANALYSIS

Analysis of soil samples was performed by the NATA certified and accredited laboratory Envirolab Services Pty Ltd, using analytical methods in accordance with relevant NSW OEH and NSW EPA guidelines. Analysis was performed for a wide range of chemicals known to be associated with site contamination issues, in accordance with relevant site investigation guidelines and protocols. The following analytes were included:

- The twelve heavy metals and metalloids arsenic, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel and zinc;
- Volatile total recoverable hydrocarbons (vTRH) in the range C6 – C9;
- Benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN);
- Semi volatile total recoverable hydrocarbons (sTRH) in the range C10 – C36;
- Organochlorine pesticide (OCP) residues;
- Organophosphorus pesticide (OPP) residues;
- Polyaromatic hydrocarbons (PAH's);
- Poly chlorinated biphenyls (PCB's);
- Phenols (total phenolics); and
- Asbestos

## 7.9 QUALITY ASSURANCE & QUALITY CONTROL (QAQC)

### 7.9.1 QA/QC Documentation

All reports have been checked for conformance (and appropriate documentation provided) with the following:

- Quality Assurance and Quality Control (QA/QC) Procedures (as set out in Appendix V of the guidelines for the NSW Site Auditor Scheme (2<sup>nd</sup> Edition) (Dec, 2006).

### 7.9.2 Field

A QA/QC plan was developed and implemented to ensure a high standard of work when undertaking the site assessment. This plan included:

- Ensuring quality and reproducibility of all sampling methods used at the site;
- Ensuring samples collected to be of the highest possible quality and integrity, to allow subsequent analysis to be completed to the highest possible degree of accuracy;
- Ensuring compliance with all relevant standards, including AS 4482.1-1997 and AS/NZS 5667-1-1998;
- 10% duplicate sampling of field samples - one blind replicate or field duplicate sample for every ten investigative samples;
- A trip blank was obtained and used prepared to detect any cross contamination during transport; and
- A laboratory prepared spiked sample was provided, and were stored, handled and transported in exactly the same way as the field samples.

### 7.9.3 Laboratory

Appropriate QA/QC procedures in accordance with relevant professional standards and protocols were applied and followed in the laboratory. Refer to the laboratory report included at Appendix H for details.

## **7.10 CHAIN OF CUSTODY**

An appropriate chain of custody process was used to detail the transfer of samples between the time of collection, and the time of arrival at the laboratory.

Refer Appendix G for details.

## **7.11 ASSESSMENT CRITERIA**

Full details of assessment criteria soils have been provided for reference at Appendix F.

A summary of assessment guidelines in relation to the assessment of soil, including the site assessment criteria adopted for this investigation, is provided in Table 7.3 on the following page.

For the purposes of this assessment, soil quality guidelines applicable to Residential A (the most demanding category) have been considered.

Residential A guidelines apply to residential land uses involving the potential for garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), and also apply to childcare centres, preschools and primary schools.

In any case where the 2013 NEPM guidelines do not provide a guideline for a particular contaminant of interest, other available soil quality guidelines, including the Service Station Guidelines, have been taken into account.

In cases where available soil quality guidelines vary, the most demanding criterion has been adopted.

**Table 7.3 – Guideline Levels: Soil Contamination**

Substance	Health Based Investigation Levels (HBILs) <sup>1</sup>	Background Range <sup>2</sup>	NSW EPA Service Station Guidelines	Adopted Site Assessment Criteria
	NEPM (May 2013 Update)			
	Residential A			
	mg/kg	mg/kg	mg/kg	mg/kg
<b>Metals/Metalloids</b>				
Arsenic, As	100	1 - 50	n/a	<b>100</b>
Beryllium, Be	60		n/a	<b>60</b>
Boron, B	4,500		n/a	<b>4,500</b>
Cadmium, Cd	20	1	n/a	<b>20</b>
Chromium (III), Cr <sup>3</sup>	48%		n/a	<b>n/a</b>
Chromium (VI), Cr	100	1	n/a	<b>100</b>
Chromium (total), Cr <sup>3</sup>	n/a	5 - 1000		<b>n/a</b>
Cobalt, Co	100		n/a	<b>100</b>
Copper, Cu	6,000	2 – 100	n/a	<b>6,000</b>
Lead, Pb	300	2 - 200	300	<b>300</b>
Manganese, Mn	3,800		n/a	<b>3,800</b>
Mercury, Hg <sup>4</sup>	10	0.03	n/a	<b>10</b>
Nickel, Ni	400	5 - 500	n/a	<b>400</b>
Zinc, Zn	7,400	10 - 300	n/a	<b>7,400</b>
<b>Volatile Petroleum Hydrocarbons (vTPH) &amp; BTEX <sup>5</sup></b>				
C6 – C10	180	Nil	65	<b>65</b>
Benzene	50	Nil	1	<b>1</b>
Toluene	85	Nil	1.4 - 130	<b>1.4 - 130</b>
Ethylbenzene	70	Nil	3.1 - 50	<b>3.1 - 50</b>
Total xylene	45	Nil	14 - 25	<b>14 - 25</b>
Naphthalene	10	Nil	n/a	<b>10</b>
<b>Semi Volatile Petroleum Hydrocarbons (sTPH)</b>				
C10 – C16	120 <sup>6</sup>	Nil	n/a	<b>120 <sup>6</sup></b>
C16 – C34	300 <sup>6</sup>	Nil	n/a	<b>300 <sup>6</sup></b>
C34 – C40	2800 <sup>6</sup>	Nil	n/a	<b>2800 <sup>6</sup></b>
C10 – C36	ID <sup>7</sup>	Nil	1000	<b>1000 <sup>5</sup></b>
<b>Other Analytes</b>				
VOC's	(consider individually)			<b>n/a</b>
OCP	(refer Appendix F; Table F2)			<b>n/a</b>
OPP	(refer Appendix F; Table F2)			<b>n/a</b>
PAH's (non-carcinogenic)	300	n/a	n/a	<b>300</b>
PAH's (carcinogenic)	3	n/a	n/a	<b>3</b>
Benzo(a)pyrene	3	n/a	n/a	<b>3</b>
PCB's	1			<b>1</b>
Phenolics <sup>9</sup>	100	Nil	n/a	<b>100</b>
Asbestos	None	n/a	None	<b>None</b>

**Notes**

- The limitations of health-based soil investigation levels are discussed in Schedule B(1) Guidelines on the Investigation Levels for Soil and Groundwater and Schedule B(7a) Guidelines on Health-based Investigation Levels, *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPC 1999), updated May 2013
- Background ranges, where HILs or EILs are set, are taken from the Field Geologist's Manual, compiled by DA Berkman, Third Edition 1989. Publisher - The Australasian Institute of Mining & Metallurgy. This publication contains information on a more extensive list of soil elements than is included in this Table. Another source of information is Contaminated Sites Monograph No. 4: Trace Element Concentrations in Soils from Rural & Urban Areas of Australia, 1995. South Australian Health Commission.
- Valence state not distinguished - expected as Cr (III).
- Methyl mercury
- Service Stations guidelines adopted as site criteria (precautionary)
- May 2013 NEPM Update Table 1(B)6 – Appendix F table F-9
- Insufficient data available to establish a guideline level
- as BaP TEQ
- As pentachlorophenol (precautionary)

## 7.12 PHYSICAL INSPECTION RESULTS

All 24 soil samples identified in Table 7.2, including the 13 samples selected for further laboratory analysis and the two duplicate samples, were physically inspected at the time of soil boring and sampling.

There was nothing in the physical appearance or odour of any of the soil samples to indicate the presence of chemical or other contamination.

All samples were tested at the time of sampling with a portable photoionisation detector for the presence of hydrocarbon vapours.

No samples indicated a positive response for hydrocarbon vapours.

## 7.13 LABORATORY RESULTS

### 7.13.1 Laboratory Analysis

A total of 13 samples as indicated by those highlighted in blue in Table 7.2, including 1 duplicate sample, were delivered to the NATA (National Association of Testing Authorities) certified laboratory Envirolab Services Pty Ltd for analysis.

Chain of custody documentation in relation to the handling and delivery of these soil samples has been included for reference at Appendix G.

In accordance with the scope of this investigation, the samples were subjected to laboratory analysis for the following analytes:

- The twelve heavy metals and metalloids arsenic, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel and zinc;
- Volatile total recoverable hydrocarbons (vTRH) in the range C6 – C9;
- Semi volatile total recoverable hydrocarbons (sTRH) in the range C10 – C36;
- Benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN); and
- Semi-volatile total recoverable hydrocarbons in the ranges:
  - C10 – C14;
  - C15 – C28; and
  - C29 – C36
- Volatile Organic Compounds (VOC's);
- Organochlorine pesticide (OCP) residues;
- Organophosphorus pesticide (OPP) residues;
- Polyaromatic hydrocarbons (PAH's);
- Poly chlorinated biphenyls (PCB's);
- Phenols; and
- Asbestos

In our professional opinion, this range of laboratory analyses provides an adequate and complete basis for the assessment of soil quality and potential soil contamination at the site. The range of analysis involved satisfies, or exceeds, the requirements of relevant assessment guidelines and protocols. Summaries of the results of the laboratory analyses undertaken are presented in Tables 7.4 and 7.5 on the following pages of this report. The detailed laboratory report from which these summaries have been prepared is included for reference at Appendix H.

PHASE 1 SITE CONTAMINATION ASSESSMENT  
Child Care Concepts - Child Care Centre - 270 Malabar Road Maroubra NSW

**Table 7.4 – Results of Analyses of Soil Samples**

	Soil Quality Guideline (mg/kg)			Sample Description							
	NEPM 2013 Residential A	NSW Service Stations Guideline	Adopted Site Criterion	Location	1	1	1	2	2	2	2
				Depth mm	surface	500mm	2500mm	surface	300mm	1000mm	2000mm
Sample #	MRD-1-SUR	MRD-1-0500	MRD-1-2500	MRD-2-SUR	MRD-2-0300	MR-2-1000	MRD-2-2000				
<b>METALS</b>											
Arsenic	100	n/a	100		<4			<4			<4
Beryllium	60	n/a	60		<1			<1			<1
Boron	4,500	n/a	4,500		<2			<2			<2
Cadmium	20	n/a	20		<0.4			<0.4			<0.4
Chromium VI	100	n/a	100		7			11			9
Cobalt	100	n/a	100		<1			2			3
Copper	6,000	n/a	6,000		9			7			6
Lead	300	300	300		33			22			5
Manganese	3,800	n/a	3,800		11			16			12
Mercury	10	n/a	10		<0.1			<0.1			<0.1
Nickel	400	n/a	400		3			2			4
Zinc	7,400	n/a	7,400		9			8			12
<b>HYDROCARBONS C6-C9 &amp; BTEX</b>											
TRH (C6 – C9)	180	65	65				<25	<25			<25
Benzene	50	1	1				<0.2	<0.2			<0.2
Toluene	85	1.4 - 130	1.4 - 130				<0.5	<0.5			<0.5
Ethylbenzene	70	3.1 - 50	3.1 - 50				<1	<1			<1
m+p-xylene	n/a	n/a	n/a				<2	<2			<2
o-xylene	n/a	n/a	n/a				<1	<1			<1
Total xylene	45	14 - 25	14 - 25				<3	<3			<3
Naphthalene	10	n/a	10				<1	<1			<1
<b>HYDROCARBONS C10-C36</b>											
TPH C10 – C14	100	n/a	100			<50			<50	<50	
TPH C15 – C28	300	n/a	300			<100			<100	<100	
TPH C29 – C36	2,800	n/a	2,800			<100			<100	<100	
TOTAL C10 – C36	n/a	1,000	1,000			<250			<250	<250	
<b>OTHER ANALYTES</b>											
VOC's	(consider on an individual basis)						n/d			n/d	
PAH (non-carcinogenic)	(consider on an individual basis)					n/d			n/d		
PAH (carcinogenic)	3	n/a	3			n/d			n/d		
PCB	1	n/a	1				n/d				n/d
OCP	(consider on an individual basis)										
OPP	(consider on an individual basis)										
Phenolics	100	n/a	100				<5				<5
Asbestos	None Present				n/d			n/d			

Concentration within adopted site assessment criterion		Concentration exceeds adopted site criterion level by less than 2.5 times		Concentration exceeds adopted site criterion level by more than 2.5 times	
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ID = Insufficient data to develop a guideline    n/d = not detected    n/a = not available

**Table 7.5 – Results of Analyses of Soil Samples (continued)**

	Soil Quality Guideline (mg/kg)			Sample Description						
	NEPM 2013 Res A	NSW Service Stations Guideline	Adopted Site Criterion	Location	3	3	3	4	4	4
				Depth mm	surface	500mm	1500mm	surface	1000mm	1000mm (D)
Sample #	MRD3SUR	MRD3300	MRD31500	MRD4SUR	MRD41000	MRD41000D				
<b>METALS</b>										
Arsenic	100	n/a	100			<4		<4	<4	<4
Beryllium	60	n/a	60			<1		<1	<1	<1
Boron	4,500	n/a	4,500			<2		<2	<2	<2
Cadmium	20	n/a	20			<0.4		<0.4	<0.4	<0.4
Chromium VI	100	n/a	100			13		8	6	6
Cobalt	100	n/a	100			<1		<1	<1	<1
Copper	6,000	n/a	6,000			2		2	4	3
Lead	300	300	300			12		17	11	10
Manganese	3,800	n/a	3,800			12		12	12	12
Mercury	10	n/a	10			<0.1		<0.1	<0.1	<0.1
Nickel	400	n/a	400			1		1	3	3
Zinc	7,400	n/a	7,400			14		11	7	8
<b>HYDROCARBONS C6-C9 &amp; BTEX</b>										
TRH (C6 – C9)	180	65	65			<25		<25	<25	<25
Benzene	50	1	1			<0.2		<0.2	<0.2	<0.2
Toluene	85	1.4 - 130	1.4 - 130			<0.5		<0.5	<0.5	<0.5
Ethylbenzene	70	3.1 - 50	3.1 - 50			<1		<1	<1	<1
m+p-xylene	n/a	n/a	n/a			<2		<2	<2	<2
o-xylene	n/a	n/a	n/a			<1		<1	<1	<1
Total xylene	45	14 - 25	14 - 25			<3		<3	<3	<3
Naphthalene	10	n/a	10			<1		<1	<1	<1
<b>HYDROCARBONS C10-C36</b>										
TPH C10 – C14	100	n/a	100			<50		<50	<50	
TPH C15 – C28	300	n/a	300			<100		<100	<100	
TPH C29 – C36	2,800	n/a	2,800			<100		<100	<100	
TOTAL C10 – C36	n/a	1,000	1,000			<250		<250	<250	
<b>OTHER ANALYTES</b>										
VOC's	(consider on an individual basis)								n/d	n/d
PAH (non-carcinogenic)	(consider on an individual basis)					n/d				
PAH (carcinogenic)	3	n/a	3			n/d				
PCB	1	n/a	1			n/d				
OCP	(consider on an individual basis)					n/d		n/d		
OPP	(consider on an individual basis)					n/d		n/d		
Phenolics	100	n/a	100					<5		
Asbestos	None Present					n/d		n/d		

Concentration within adopted site assessment criterion		Concentration exceeds adopted site criterion level by less than 2.5 times		Concentration exceeds adopted site criterion level by more than 2.5 times	
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ID = Insufficient data to develop a guideline      n/d = not detected      n/a = not available

### 7.13.2 Summary of Results

The results of the laboratory analyses undertaken are summarised below.

#### **Metals & Metalloids:**

Representative samples were analysed for the presence of a suite of twelve metal and metalloid species typically associated with site and soil contamination.

None of the twelve metals or metalloids was identified in representative soil samples from the site at concentrations in excess of relevant guideline levels.

Slight elevations in lead concentrations noted near the street boundaries of the site (although very substantially within relevant guideline assessment limits) are considered to be due to the past use of lead as a fuel additive, and to the associated deposition of lead near roadways. The lead concentrations encountered in surface samples near the property's street boundaries are considered to be typical of levels encountered near street boundaries throughout the Sydney area associated with properties that were subject to traffic impacts prior to the mid 1990's, when lead was phased out as a fuel additive.

Metal and metalloid concentrations were in all cases either below laboratory detection limits, or at the very low end of naturally occurring background concentrations.

#### **Volatile Hydrocarbons (C6 – C9) & BTEX:**

Volatile hydrocarbons (vTRH) in the range C6 – C9 and the BTEXN chemicals benzene, toluene, ethyl benzene, xylene and naphthalene, which are typically indicative of contamination from light petroleum sources such as petrol, were not detected at levels above relevant laboratory detection limits in representative soil samples from the site.

#### **Semi Volatile Hydrocarbons (C10 – C36):**

Semi volatile hydrocarbons (sTRH) in the range C10 – C36, which are typically indicative of contamination from light petroleum sources such as diesel, fuel oils and lubricants, were not detected at levels above relevant laboratory detection limits in representative soil samples from the site.

#### **Volatile Organic Compounds:**

An extensive range of sixty five different volatile organic compounds (VOCs), typically known to be associated with site and soil contamination from a wide range of industrial sources and processes, were not detected at levels above relevant laboratory detection limits in representative soil samples from the site.

#### **Organo Chlorine Pesticide Residues:**

A range of twenty different organochlorine based pesticides (OCPs), which are known to be associated with site contamination caused by past soil and building treatments, were not detected at levels above relevant laboratory detection limits in representative soil samples from the site.

#### **Organo Phosphorus Pesticide Residues:**

A range of eight different organophosphorus based pesticides (OPPs), which are known to be associated with site contamination caused by past soil and building treatments, were not detected at levels above relevant laboratory detection limits in representative soil samples from the site.

#### **Phenolic Compounds:**

Phenolic compounds, which can be associated with industrially sourced contamination, were not detected at levels above relevant laboratory detection limits in representative soil samples from the site.

#### **Polyaromatic Hydrocarbons (PAH's):**

Polyaromatic hydrocarbon compounds, which can also be associated with industrially sourced contamination, were not detected at levels above relevant laboratory detection limits in representative soil samples from the site.

#### **Polychlorinated Biphenyls (PCB's):**

Polychlorinated biphenyl compounds, which are associated with specific and harmful industrially sourced contamination, were not detected at levels above relevant laboratory detection limits in representative soil samples from the site.

**Asbestos:**

Asbestos materials and asbestos fibres were not detected in representative surface soil samples from the site.

**7.13.3 Implications of Results**

- ❑ **No contaminants from a wide and representative range were detected at levels at or even approaching concentrations of potential concern in any of the soil samples from the site.**

**7.14 SUMMARY OF OVERALL FINDINGS**

The key findings of this assessment of soil quality at the proposed development site are as follows.

- ❑ None of the 24 soil samples collected from the site provided any physical indication of contamination, either by discoloration, staining, odour or response to examination by a photoionisation detector;
- ❑ No indication of the introduction to or presence of contaminated fill was identified at the site;
- ❑ None of the 13 representative soil samples from the site sent to the NATA accredited laboratory of Envirolab Services for analysis indicated the presence of heavy metals, petroleum hydrocarbons, volatile organic compounds, phenolic compounds pesticide residues, polyaromatic hydrocarbon species or polychlorinated biphenyl compounds;
- ❑ Asbestos was not detected in any of the representative surface soil samples from the site;
- ❑ On this basis, the soils at the site are assessed as being free of contamination, and soil quality at the site is considered to comply with the requirements of State Environmental Planning Policy (SEPP) 55, and other relevant site assessment criteria, as being appropriate from a soil quality and contamination viewpoint for the child care land use proposed; and
- ❑ The complete absence of volatile contaminants in the sub surface at the site indicates that vapour intrusion from sub surface soil strata into any future basement areas that might be considered at the site will not present an environmental, air quality or contamination problem.

## 9 OVERALL FINDINGS

This report presents the results of a Phase 1 (also known as Stage 1) Environmental and Contamination Assessment undertaken in relation to a child care centre development at 270 Malabar Road Maroubra NSW.

The findings of this assessment indicate that the underlying soils at the site are not contaminated, and that soil quality at the 270 Malabar Road Maroubra NSW site is appropriate for the child care centre land use proposed.

## 10 FURTHER ASSESSMENT NOT REQUIRED

On the basis of the very clear findings of this Phase1 (or Stage 1) Site Contamination Investigation and Assessment, it is our professional opinion that no further or more detailed site assessment is considered necessary to establish the suitability of soil quality at the site, in environmental and contamination terms, for the child care centre use proposed.

## 11 AUTHORISATION & LIMITATIONS

NG Child & Associates has based this report on the data, methods and sources described herein.

Subject to the limitations described within the report, it is the view of NG Child & Associates that this report presents a detailed, accurate and reliable environmental and contamination assessment of the 270 Malabar Road Maroubra NSW site, as described in this report.



**Noel Child BSc (Hons), PhD, MIEA, MRACI  
Visiting Fellow, Engineering  
University of Technology, Sydney  
Principal, NG Child & Associates**

**2 March 2016**

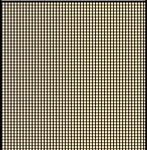
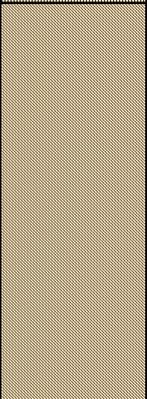
# **APPENDIX A**

## **Soil Bore Logs**

**Drilling Log**

**Borehole Reference: 1**

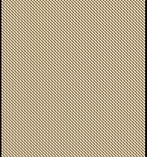
<b>Project:</b>	Phase 1 Site Contamination Assessment			<b>Client:</b>	Child Care Concepts	
<b>Location:</b>	270 Malabar Road Maroubra			<b>Project Ref:</b>	CA16/11/3001	
<b>Surface Elev:</b>		<b>Hole Depth:</b>	2.5 m	<b>Diameter:</b>	40 mm	
<b>Casing Type:</b>	n/a	<b>Water Level:</b>		<b>Initial:</b>	n/a	<b>Static:</b> n/a
<b>Screen:</b>	<b>Diameter:</b> n/a	<b>Length:</b>	n/a	<b>Type/Size:</b>	n/a	
<b>Casing:</b>	<b>Diameter:</b> n/a	<b>Length:</b>	n/a	<b>Type/Size:</b>	n/a	
<b>Fill Material:</b>	n/a			<b>Rig/Core:</b>		
<b>Drill Co:</b>	NG Child & Associates			<b>Method:</b>	hand augur	
<b>Driller:</b>	Noel Child	<b>Logger:</b>	Noel Child	<b>Date:</b>	18/2/2016	
<b>Comment:</b>	Near northern or Storey Street boundary					
Bore reference "1". Location refer Tables 7.1 & 7.2						

Depth (m)	Sample ID	Graphic Log	USCS Class	Description (Colour; Texture; Structure)
				Trace <10%; Little 10%-20%; Some 20%-35%; And 35%-50%
0	MRD-1-SUR		S	Grass at surface
	MRD-1-0300			
0.5	MRD-1-0500		S/L	Dry yellow/grey crystalline quartzite sand plus some organic matter to approximately 300mm
1.0	MRD-1-1000			
1.5	MRD-1-1500		S/L	Dry grey/brown crystalline quartzite sand plus some organic matter. Indications of darker soil elements increasing depth to approximately 1400mm
2.0	MRD-1-2000			
2.5	MRD-1-2500		S/L	Moist dark grey/brown crystalline quartzite sand plus darker soil elements and sandstone rock fragments increasing depth to refusal at sandstone rock at approximately 2500mm.
3.0				(hand bore terminated at 2.5 m due to refusal at sandstone)

**Drilling Log**

**Borehole Reference: 2**

<b>Project:</b>	Phase 1 Site Contamination Assessment			<b>Client:</b>	Child Care Concepts	
<b>Location:</b>	270 Malabar Road Maroubra			<b>Project Ref:</b>	CA16/11/3001	
<b>Surface Elev:</b>		<b>Hole Depth:</b>	2.0 m	<b>Diameter:</b>	40 mm	
<b>Casing Type:</b>	n/a	<b>Water Level:</b>		<b>Initial:</b>	n/a	<b>Static:</b> n/a
<b>Screen:</b>	<b>Diameter:</b> n/a	<b>Length:</b>	n/a	<b>Type/Size:</b>	n/a	
<b>Casing:</b>	<b>Diameter:</b> n/a	<b>Length:</b>	n/a	<b>Type/Size:</b>	n/a	
<b>Fill Material:</b>	n/a			<b>Rig/Core:</b>		
<b>Drill Co:</b>	NG Child & Associates			<b>Method:</b>	hand augur	
<b>Driller:</b>	Noel Child	<b>Logger:</b>	Noel Child	<b>Date:</b>	18/2/2016	
<b>Comment:</b>	Near boundary inside intersection of Storey Street and Malabar Road					
Bore reference "2". Location refer Tables 7.1 & 7.2.						

Depth (m)	Sample ID	Graphic Log	USCS Class	Description (Colour; Texture; Structure)
				Trace <10%; Little 10%-20%; Some 20%-35%; And 35%-50%
0	MRD-2-SUR		S/L	Sandy soil at surface
0.5	MRD-2-3000 MRD-2-0500		CL/L CL/L	Dry grey/brown crystalline quartzite sand plus some organic matter. Indications of darker soil elements increasing depth to approximately 1000mm
1.0	MRD-2-1000		CL	Moist dark grey/brown crystalline quartzite sand plus darker soil elements and sandstone rock fragments increasing depth to refusal at sandstone rock at approximately 2000mm.
1.5	MRD-2-1500		CL/R	
2.0	MRD-2-2000			(hand bore terminated at 2.0 m due to refusal at sandstone))
2.5				
3.0				

Appendix A  
Soil Bore Logs

**Drilling Log**

**Borehole Reference: 3**

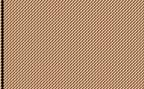
<b>Project:</b>	Phase 1 Site Contamination Assessment			<b>Client:</b>	Child Care Concepts	
<b>Location:</b>	270 Malabar Road Maroubra			<b>Project Ref:</b>	CA16/11/3001	
<b>Surface Elev:</b>		<b>Hole Depth:</b>	1.5 m	<b>Diameter:</b>	40 mm	
<b>Casing Type:</b>	n/a	<b>Water Level:</b>		<b>Initial:</b>	n/a	<b>Static:</b> n/a
<b>Screen:</b>	<b>Diameter:</b> n/a	<b>Length:</b> n/a		<b>Type/Size:</b> n/a		
<b>Casing:</b>	<b>Diameter:</b> n/a	<b>Length:</b> n/a		<b>Type/Size:</b> n/a		
<b>Fill Material:</b>	n/a			<b>Rig/Core:</b>		
<b>Drill Co:</b>	NG Child & Associates			<b>Method:</b>	hand augur	
<b>Driller:</b>	Noel Child	<b>Logger:</b>	Noel Child	<b>Date:</b>	18/2/2016	
<b>Comment:</b>	Inside eastern end of Malabar Road boundary					
Bore reference "3". Location refer Tables 7.1 & 7.2						

Depth (m)	Sample ID	Graphic Log	USCS Class	Description (Colour; Texture; Structure)
				Trace <10%; Little 10%-20%; Some 20%-35%; And 35%-50%
0	MRD-3-SUR		S	Grass/sandy soil at surface
	MRD-3-0300			Dry crystalline quartzite sand plus some organic matter to approximately 200mm
0.5	MRD-3-0500		S/L	Dry grey/brown crystalline quartzite sand plus some organic matter. Indications of darker soil elements increasing depth to approximately 1000mm
1.0	MRD-3-1000		S/L	Moist dark grey/brown crystalline quartzite sand plus darker soil elements and sandstone rock fragments increasing depth to refusal at sandstone rock at approximately 1500mm.
1.5	MRD-3-1500			(hand bore terminated at 1.5 m due to refusal at sandstone)
2.0				
2.5				
3.0				

Appendix A  
Soil Bore Logs

<b>Drilling Log</b>	<b>Borehole Reference: 4</b>
---------------------	------------------------------

<b>Project:</b>	Phase 1 Site Contamination Assessment	<b>Client:</b>	Child Care Concepts
<b>Location:</b>	270 Malabar Road Maroubra	<b>Project Ref:</b>	CA16/11/3001
<b>Surface Elev:</b>		<b>Hole Depth:</b>	1.0 m
		<b>Diameter:</b>	40 mm
<b>Casing Type:</b>	n/a	<b>Water Level:</b>	
		<b>Initial:</b>	n/a
		<b>Static:</b>	n/a
<b>Screen:</b>	<b>Diameter:</b> n/a	<b>Length:</b>	n/a
		<b>Type/Size:</b>	n/a
<b>Casing:</b>	<b>Diameter:</b> n/a	<b>Length:</b>	n/a
		<b>Type/Size:</b>	n/a
<b>Fill Material:</b>	n/a	<b>Rig/Core:</b>	
<b>Drill Co:</b>	NG Child & Associates	<b>Method:</b>	hand augur
<b>Driller:</b>	Noel Child	<b>Logger:</b>	Noel Child
		<b>Date:</b>	18/2/2016
<b>Comment:</b>	Inside western end of Malabar Road boundary		
Bore reference "4". Location refer Tables 7.1 & 7.2			

Depth (m)	Sample ID	Graphic Log	USCS Class	Description (Colour; Texture; Structure)
				Trace <10%; Little 10%-20%; Some 20%-35%; And 35%-50%
0	MRD-4-SUR		S	Grass/sandy soil at surface
	MRD-4-0300		S/L	Dry crystalline quartzite sand plus some organic matter to approximately 200mm
0.5	MRD-4-0500		S/L	Dry grey/brown crystalline quartzite sand plus some organic matter. Indications of darker soil elements increasing depth to approximately 500mm
			S/L	Moist dark grey/brown crystalline quartzite sand plus darker soil elements and sandstone rock fragments increasing depth to refusal at sandstone rock at approximately 1000mm.
1.0	MRD-4-1000			(hand bore terminated at 1.0 m due to refusal at sandstone)
1.5				
2.0				
2.5				
3.0				

## **APPENDIX B**

# **NSW EPA Stage 1 Environmental & Site Contamination Assessment Guidelines**

Report sections and information to be included	Preliminary site investigation	Detailed site investigation	Remedial action plan	Validation & ongoing site monitoring
<b>Site history (continued)</b>	✓	✓(S)	✓(S)	✓(S)
<ul style="list-style-type: none"> <li>- Inventory of chemicals and wastes associated with site use and their on-site storage location</li> <li>- Possible contaminant sources and potential off-site effects</li> <li>- Site layout plans showing present and past industrial processes</li> <li>- Sewer and service plans</li> <li>- Description of manufacturing processes</li> <li>- Details and locations of current and former underground and above ground storage tanks</li> <li>- Product spill and loss history</li> <li>- Discharges to land, water and air</li> <li>- Disposal locations</li> <li>- Relevant complaint history</li> <li>- Local site knowledge of residents and staff – both present and former</li> <li>- Summary of local literature about the site, including newspaper articles</li> <li>- Details of building and related permits, licences, approvals and trade waste agreements</li> <li>- Historical use of adjacent land</li> <li>- Local usage of ground/surface waters, and location of bores/pumps</li> <li>- Integrity assessment (assessment of the accuracy of information).</li> </ul>				
<b>Site condition and surrounding environment</b>	✓	✓(S)	✓(S)	✓(S)
<ul style="list-style-type: none"> <li>- Topography</li> <li>- Conditions at site boundary such as type and condition of fencing, soil stability and erosion</li> <li>- Visible signs of contamination such as discolouration or staining of soil, bare soil patches – both on-site and off-site adjacent to site boundary</li> <li>- Visible signs of plant stress</li> <li>- Presence of drums, wastes and fill material</li> <li>- Odours</li> <li>- Condition of buildings and roads</li> </ul>	✓	✓(S)		
	(S)			<i>Include this section</i>
	(N)			<i>A summary is adequate if detailed information was included in an available referenced previous report</i>
	N/A			<i>Include only if there is to be no further site investigation</i>
				<i>Not applicable</i>

Report sections and information to be included	Preliminary site investigation	Detailed site investigation	Remedial action plan	Validation & ongoing site monitoring
<b>Site condition and surrounding environment (continued)</b>	✓	✓(S)	✓(S)	✓(S)
<ul style="list-style-type: none"> <li>- Quality of surface water</li> <li>- Flood potential</li> <li>- Details of any relevant local sensitive environment – e.g. rivers, lakes, creeks, wetlands, local habitat areas, endangered flora and fauna.</li> </ul>				
<b>Geology and hydrogeology</b>	Include readily available information	✓	✓(S)	✓(S)
<ul style="list-style-type: none"> <li>- Soil stratigraphy using recognised classification methods, e.g. Australian Standard 1726, Unified Soil Classification Table</li> <li>- Location and extent of imported and locally derived fill</li> <li>- Site borehole logs or test pit logs showing stratigraphy</li> <li>- Detailed description of the location, design and construction of on-site wells</li> <li>- Description and location of springs and wells in the vicinity</li> <li>- Depth to groundwater table</li> <li>- Direction and rate of groundwater flow</li> <li>- Direction of surface water run-off</li> <li>- Background water quality</li> <li>- Preferential water courses</li> <li>- Summary of local meteorology</li> </ul>				
<b>Sampling and analysis plan and sampling methodology</b>	Include readily available information	✓	N/A	✓
<ul style="list-style-type: none"> <li>- Sampling, analysis and data quality objectives (DQOs)</li> <li>- Rationale for the selection of:               <ul style="list-style-type: none"> <li>o Sampling pattern</li> <li>o Sampling density including an estimated size of the residual hot spots that may remain undetected</li> <li>o Sampling locations including locations shown on a site map</li> <li>o Sampling depths</li> <li>o Samples for analysis and samples not analysed</li> <li>o Analytical methods</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li style="text-align: center;">✓</li> <li style="text-align: center;">(S)</li> <li style="text-align: center;">(N)</li> <li style="text-align: center;">N/A</li> </ul>	<ul style="list-style-type: none"> <li><i>Include this section</i></li> <li><i>A summary is adequate if detailed information was included in an available referenced previous report</i></li> <li><i>Include only if there is to be no further site investigation</i></li> <li><i>Not applicable</i></li> </ul>		

Report sections and information to be included	Preliminary site investigation	Detailed site investigation	Remedial action plan	Validation & ongoing site monitoring
<b>Sampling and analysis plan and sampling methodology (continued)</b> <ul style="list-style-type: none"> <li>○ Analytes for samples</li> <li>- Detailed description of the sampling methods including:               <ul style="list-style-type: none"> <li>○ Sample containers and type of seal used</li> <li>○ Sampling devices and equipment e.g. auger type</li> <li>○ Equipment contamination procedures</li> <li>○ Sample handling procedures</li> <li>○ Sample preservation methods and reference to recognised protocols, e.g. APHA or US EPA SW 846</li> </ul> </li> <li>- Detailed description of field screening protocols.</li> </ul>	Include readily available information	✓	N/A	✓
<b>Field quality assurance and quality control (QA/QC)</b> <ul style="list-style-type: none"> <li>- Details of sampling team</li> <li>- Decontamination procedures carried out between sampling events</li> <li>- Logs for each sample collected – including time, location, initials of sampler, duplicate locations, duplicate type, chemical analyses to be performed, site observations and weather conditions</li> <li>- Chain of custody fully identifying – for each sample – the sampler, nature of the sample, collection date, analyses to be performed, sample preservation method, departure time from the site and dispatch courier(s)</li> <li>- Sample splitting techniques</li> <li>- Statement of duplicate frequency</li> <li>- Field blank results</li> <li>- Background sample results</li> <li>- Rinsate sample results</li> <li>- Laboratory-prepared trip spike results for volatile analytes</li> <li>- Trip blank results</li> <li>- Field instrument calibrations (when used).</li> </ul>	✓(N)	✓	N/A	✓
	✓	<i>Include this section</i>		
	(S)	<i>A summary is adequate if detailed information was included in an available referenced previous report</i>		
	(N)	<i>Include only if there is to be no further site investigation</i>		
	N/A	<i>Not applicable</i>		

Report sections and information to be included	Preliminary site investigation	Detailed site investigation	Remedial action plan	Validation & ongoing site monitoring
<b>Laboratory QA/QC</b>	✓(N)	✓	N/A	✓
<ul style="list-style-type: none"> <li>- A copy of signed chain-of-custody forms acknowledging receipt date and time, and identity of samples included in shipments</li> <li>- Record of holding times and a comparison with method specifications</li> <li>- Analytical methods used</li> <li>- Laboratory accreditation for analytical methods used</li> <li>- Laboratory performance in inter-laboratory trials for the analytical methods used, where available</li> <li>- Description of surrogates and spikes used</li> <li>- Per cent recoveries of spikes and surrogates</li> <li>- Instrument detection limit</li> <li>- Method detection limit</li> <li>- Matrix or practical quantification limits</li> <li>- Standard solution results</li> <li>- Reference sample results</li> <li>- Reference check sample results</li> <li>- Daily check sample results</li> <li>- Laboratory duplicate results</li> <li>- Laboratory blank results</li> <li>- Laboratory standard charts.</li> </ul>				
<b>QA/QC data evaluation</b>	✓(N)	✓	N/A	✓
<ul style="list-style-type: none"> <li>- Evaluation of all QA/QC information listed above against the stated DQOs, including a discussion of:               <ul style="list-style-type: none"> <li>o Documentation completeness</li> <li>o Data completeness</li> <li>o Data comparability (see next point)</li> <li>o Data representativeness</li> <li>o Precision and accuracy for both sampling and analysis for each analyte in each environmental matrix informing data users of the reliability, unreliability, or qualitative value of the data</li> </ul> </li> </ul>	✓ (S) (N) N/A	✓    	N/A    	✓    
		<hr/> ✓ <i>Include this section</i>		
		(S) <i>A summary is adequate if detailed information was included in an available referenced previous report</i>		
		(N) <i>Include only if there is to be no further site investigation</i>		
		N/A <i>Not applicable</i>		

Report sections and information to be included	Preliminary site investigation	Detailed site investigation	Remedial action plan	Validation & ongoing site monitoring
--	--------------------------------	-----------------------------	----------------------	--------------------------------------

<b>QA/QC data evaluation (continued)</b>	✓(N)	✓	N/A	✓
--	------	---	-----	---

- Data comparability checks, which should include e.g. bias assessment – which may arise from various sources, including:
  - o Collection and analysis of samples by different personnel
  - o Use of different methodologies
  - o Collection and analysis by the same personnel using the same methods but at different times
  - o Spatial and temporal changes (because of the environmental dynamics)
- Relative per cent differences for intra- and inter-laboratory duplicates.

<b>Basis for assessment criteria</b>	✓	✓	✓	✓
--------------------------------------	---	---	---	---

- Table listing all selected assessment criteria and references
- Rationale for and appropriateness of the selection of criteria
- Assumptions and limitations of criteria

<b>Results</b>	✓	✓	✓	✓
----------------	---	---	---	---

- Summary of previous results, if appropriate
- Summary of all results, in a table that:
  - o Shows all essential details such as sample numbers and sampling depth
  - o Shows assessment criteria
  - o Highlights all results exceeding the assessment criteria
- Site plan showing all sample locations, sample identification numbers and sampling depths
- Site plan showing the extent of soil and groundwater contamination exceeding selected assessment criteria for each sampling depth.

✓	<i>Include this section</i>
(S)	<i>A summary is adequate if detailed information was included in an available referenced previous report</i>
(N)	<i>Include only if there is to be no further site investigation</i>
N/A	<i>Not applicable</i>



Report sections and information to be included	Preliminary site investigation	Detailed site investigation	Remedial action plan	Validation & ongoing site monitoring
<b>Remedial action plan (continued)</b>	N/A	N/A	✓	✓(S)
<ul style="list-style-type: none"> <li>- Community relations plans, where applicable</li> <li>- Staged progress reporting, where appropriate</li> <li>- Long-term site management plan.</li> </ul>				
<b>Validation</b>	N/A	N/A	N/A	✓
<ul style="list-style-type: none"> <li>- Rationale and justification for the validation strategy including:               <ul style="list-style-type: none"> <li>o Clean-up criteria and statistically based decision-making methodology</li> <li>o Validation sampling and analysis plan</li> </ul> </li> <li>- Details of a statistical analysis of validation results and evaluation against the clean-up criteria</li> <li>- Verification of compliance with regulatory requirements set by the EPA, WorkCover and local government.</li> </ul>				
<b>Ongoing site monitoring</b>	N/A	N/A	N/A	✓
<ul style="list-style-type: none"> <li>- Ongoing site monitoring requirements (if any), including monitoring parameters and frequency</li> <li>- Results of monitoring analyses including all relevant QA/QC reporting requirements stated above</li> <li>- Ongoing site/equipment maintenance, e.g. containment cap integrity</li> <li>- Details of party(ies) responsible for maintenance and monitoring program.</li> </ul>				
<b>Conclusions and recommendations</b>	✓	✓	✓	✓
<ul style="list-style-type: none"> <li>- Brief summary of all findings</li> <li>- Assumptions used in reaching the conclusions</li> <li>- Extent of uncertainties in the results</li> </ul>				
- Where remedial action has been taken, a list summarising the activities and physical changes to the site	✓	<i>Include this section</i>		
- A clear statement that the consultant considers the subject site to be suitable for the proposed use (where applicable)	(S)	<i>A summary is adequate if detailed information was included in an available referenced previous report</i>		
- A statement detailing all limitations and constraints on the use of the site (where applicable)	(N)	<i>Include only if there is to be no further site investigation</i>		
- Recommendation for further work, if appropriate.	N/A	<i>Not applicable</i>		

# **APPENDIX C**

## **Title Details**

## TITLE TREE

<b>270 Malabar Road, Maroubra</b>
<b>Lot 3821 DP 752015</b>
Folio Identifier 3821/752015 (title attached)
Crown Plan 5570-2030 (plan attached)
Dated 17th February, 2016
<b>Registered Proprietor:</b>
MALEK GROUP PTY LTD
<b>Title Tree</b>
Lot 3821 DP 752015
Folio Identifier 3821/752015
Certificate of Title Volume 5155 Folio33
Crown Land

# **APPENDIX D**

## **Summary of Proprietors**

## SUMMARY OF PROPRIETORS

### 270 Malabar Road, Maroubra

YEAR	PROPRIETOR
<b>(Lot 3821 DP 752015)</b>	
2015 – to date	Malek Group Pty Ltd
2007 – 2015	The Uniting Church in Australia Property Trust (NSW)
1989 – 2007	Methodist Church (NSW) Property Trust
<b>(Lot 3821 Parish of Botany – Area 1 Rood – CTVol 5155 Fol 33 )</b>	
1974 – 1989	Methodist Church (NSW) Property Trust
1940 – 1974	The Methodist Model Deed of New South Wales
1940 – 1940	John Delvis, dental mechanic Gilbert Price, accountant Sidney Cheadle Dover, salesman Osborne Reddall Webster. carpenter John Mathis, bootmaker Josiah Mason, manufacturer George Alexander Buettel, a civil servant William Homer, printer Claude Malcolm Gripper, cartage contractor (grantees)
<b>(Lot 3821 Parish of Botany – Area 1 Rood)</b>	
Prior – 1940	Crown Land
(1939 – 1940)	(Special Purchase 39/43 metropolitan)
(1935 – 1940)	(within Reserve 1986 from occupation under Mining Reserve or Business Lease)

# **APPENDIX E**

## **Deposited Plans**

APPENDIX E  
Plan & Title Records



**Cadastral Records Enquiry Report**

Ref : nc maroubra

**Requested Parcel :** Lot 3821 DP 752015

**Identified Parcel :** Lot 3821 DP 752015

Locality : MAROUBRA

LGA : RANDWICK

Parish : BOTANY

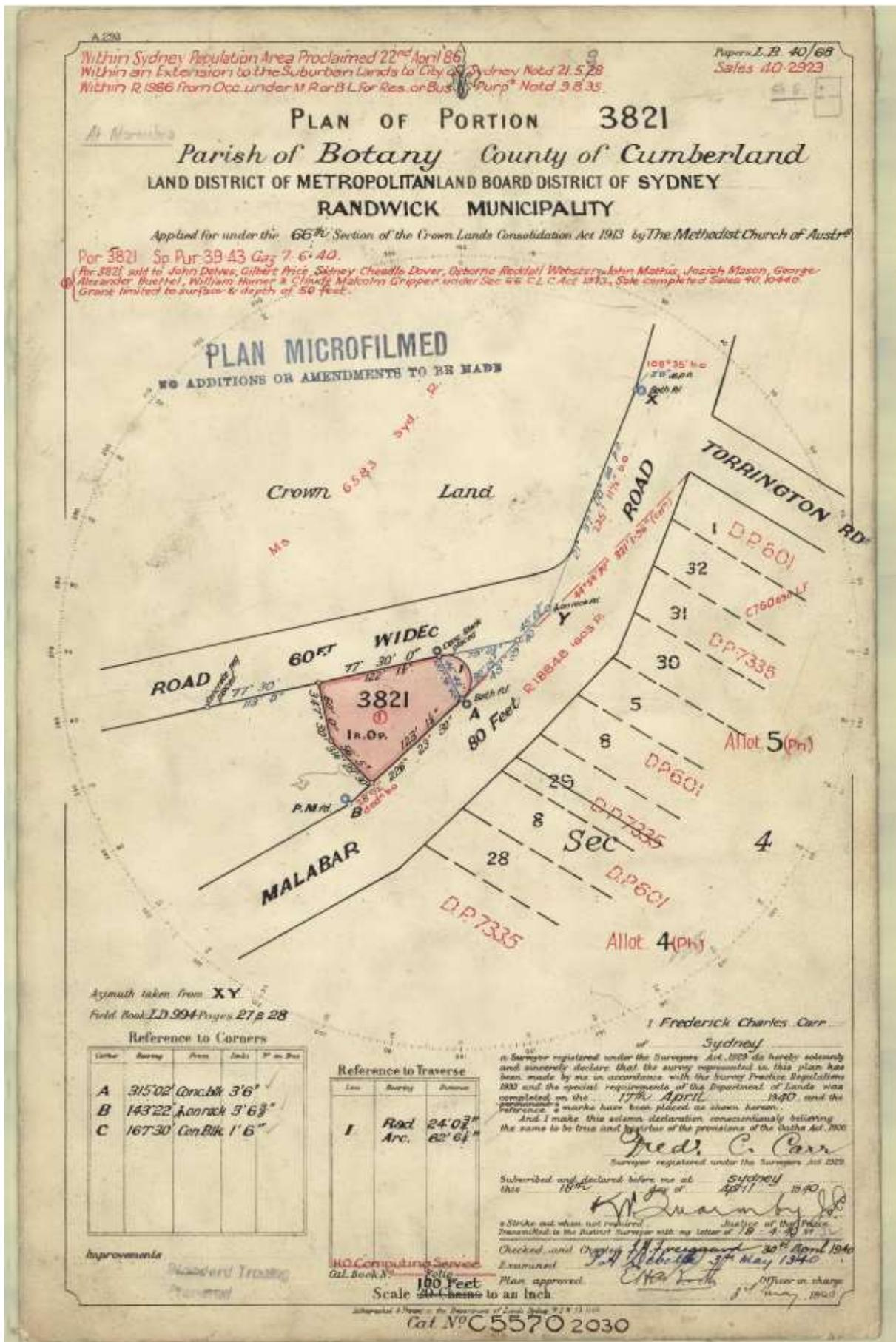
County : CUMBERLAND



Report Generated 9:47:01 AM, 17 February, 2016  
Copyright © Land and Property Information ABN 84 104 377 806

This information is provided as a searching aid only. While every endeavour is made to ensure the current cadastral pattern is accurately reflected, the Registrar General cannot guarantee the information provided. For all ACTIVITY PRIOR to SEPT 2002 you must refer to the RGs Charting and Reference Maps.

Page 1 of 3



**Advance Legal Searchers  
Pty Ltd** Phone: 02 9644 1679

Advance Legal Searchers Pty Ltd hereby certifies that the information contained in this document has been provided electronically by the Registrar General.

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

17/2/2016 9:50AM

FOLIO: 3821/752015

First Title(s): SEE PRIOR TITLE(S)  
Prior Title(s): VOL 5155 FOL 33

Recorded	Number	Type of Instrument	C.T. Issue
21/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
27/6/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
20/3/1991		AMENDMENT: TITLE DIAGRAM	
2/9/1997		AMENDMENT: LOCAL GOVT AREA	
19/7/1999	5998493	DEPARTMENTAL DEALING	
15/3/2007	AC995891	APPLICATION	EDITION 1
7/1/2015	AJ148485	TRANSFER	EDITION 2

\*\*\* END OF SEARCH \*\*\*

**Advance Legal Searchers  
Pty Ltd** Phone: 02 9644 1679

Advance Legal Searchers Pty Ltd hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act.

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH  
-----

FOLIO: 3821/752015  
-----

SEARCH DATE	TIME	EDITION NO	DATE
17/2/2016	9:47 AM	2	7/1/2015

LAND  
-----

LOT 3821 IN DEPOSITED PLAN 752015  
AT MAROUBRA  
LOCAL GOVERNMENT AREA RANDWICK  
PARISH OF BOTANY COUNTY OF CUMBERLAND  
(FORMERLY KNOWN AS PORTION 3821)  
TITLE DIAGRAM CROWN PLAN 5570.2030

FIRST SCHEDULE  
-----

MALEK GROUP PTY LTD (T AJ148485)

SECOND SCHEDULE (2 NOTIFICATIONS)  
-----

- 1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)
- 2 EXCEPTING LAND BELOW A DEPTH FROM THE SURFACE OF 15.24 METRES BY THE CROWN GRANT

NOTATIONS  
-----

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

Req:R184569 /Doc:DL AJ148485 /Rev:09-Jan-2015 /Sts:NO.OK /Pgs:ALL /Prt:17-Feb-2016 09:55 /Seq:1 of 1  
Ref:nc maroubra /Src:T

Form: 01T  
Release: 6-1

**TRANSFER**  
New South Wales  
Real Property Act 1900



**AJ148485S**

**PRIVACY NOTE:** Section 31B of the Real Property Act 1900 (RP Act) authorises the keyholder to use this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

**STAMP DUTY**

Office of State Revenue use only	<p>Office of State Revenue NSW Treasury Class No: 1390004 Day: 10-02 Trans No: 792276-001 Act duty:</p>
(A) <b>TORRENS TITLE</b>	3821/752015

(B) <b>LODGED BY</b>	<table border="1"> <tr> <td>Document Collection Box 927N</td> <td>Name, Address or DX, Telephone, and Customer Account Number if any Wood Marshall Williams Ph: 9938 2444 HPN:123670N</td> <td>CODES <b>T</b> <b>TW</b></td> </tr> <tr> <td colspan="2">Reference: H: AMB: 340577</td> <td></td> </tr> </table>	Document Collection Box 927N	Name, Address or DX, Telephone, and Customer Account Number if any Wood Marshall Williams Ph: 9938 2444 HPN:123670N	CODES <b>T</b> <b>TW</b>	Reference: H: AMB: 340577		
Document Collection Box 927N	Name, Address or DX, Telephone, and Customer Account Number if any Wood Marshall Williams Ph: 9938 2444 HPN:123670N	CODES <b>T</b> <b>TW</b>					
Reference: H: AMB: 340577							

(C) <b>TRANSFEROR</b>	THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.)
-----------------------	---

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of \$ 2,600,000.00 and as regards  
(E) **ESTATE** the abovementioned land transfers to the transferee an estate in fee simple

(F) <b>SHARE TRANSFERRED</b>	
------------------------------	--

(G) **Encumbrances (if applicable):**

(H) <b>TRANSFEEE</b>	MALEK GROUP PTY LTD ACN 095 408 227
(I) <b>TENANCY:</b>	

**DATE** 18.12.2014

(J) Certified correct for the purposes of the Real Property Act 1900 by the company named below the common seal of which was affixed pursuant to the authority specified and in the presence of the authorised person(s) whose signature(s) appear(s) below.

Company: THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.)  
Authority: pursuant to Section 12 of The Uniting Church in Australia Act 1977 NSW

Signature of authorised person:  
Name of authorised person:  
Office held:

Signature of authorised person:  
Name of authorised person:  
Office held:

THE COMMON SEAL of THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.) was hereunto affixed on the 16<sup>th</sup> day of December 2014 pursuant to a resolution of the Trust at a duly convened meeting in the presence of:

Member  
Rev Myung Hwa Park  
Member  
John Kitcha

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:   
Signatory's name: AMBER BERNAUER  
Signatory's capacity: solicitor

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 736734 Full name: AMBER BERNAUER Signature:

\* s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identification documentation  
ALL HANDWRITING MUST BE IN BLOCK CAPITALS  
Page 1 of 1  
1303

# **APPENDIX F**

## **Soil Quality Guidelines**

**Table F-1  
NEPM (1999) Guideline Investigation Levels for Soil**

**Table 5-A - Soil Investigation Levels (mg/kg)**

Substances	Health Investigation Levels (HILs)						Ecological Investigation Levels (EILs)		Background Ranges <sup>6</sup>
	A <sup>1</sup>	B <sup>2</sup>	C <sup>3</sup>	D	E	F	REIL <sup>4</sup>	Interim Urban <sup>5</sup>	
<b>METALS/METALLOIDS</b>									
Arsenic (total)	100			400	200	500		20	1 - 50
Barium								300	100 - 3000
Beryllium	20			80	40	100			
Cadmium	20			80	40	100		3	1
Chromium (III)	12%			48%	24%	60%		400	
Chromium (VI)	100			400	200	500		1	
Chromium (Total) <sup>7*</sup>									5 - 1000
Cobalt	100			400	200	500			1 - 40
Copper	1000			4000	2000	5000		100	2 - 100
Lead	300			1200	600	1500		600	2 - 200
Manganese	1500			6000	3000	7500		500	850
Methyl mercury	10			40	20	50			
Mercury (inorganic)	15			60	30	75		1	0.03
Nickel	600			2400	600	3000		60	5 - 500
Vanadium								50	20 - 500
Zinc	7000			28000	14000	35000		200	10 - 300
<b>ORGANICS</b>									
Aldrin + Dieldrin	10			40	20	50			
Chlordane	50			200	100	250			
DDT + DDD + DDE	200			800	400	1000			
Heptachlor	10			40	20	50			
Polycyclic aromatic hydrocarbons (PAHs)	20			80	40	100			
Benzo(a)pyrene	1			4	2	5			
Phenol	8500			34000	17000	42500			
PCBs (Total)	10			40	20	50			
Petroleum Hydrocarbon Components (constituents):									
• >C16 - C35 Aromatics <sup>8</sup>	90			360	180	450			
• >C16 - C35 Aliphatics	5600			22400	11200	28000			
• >C35 Aliphatics	56000			224000	112000	280000			
<b>OTHER</b>									
Boron	3000			12000	6000	15000			
Cyanides (Complexed)	500			2000	1000	2500			
Cyanides (free)	250			1000	500	1250			
Phosphorus								2000	
Sulfur								600	
Sulfate <sup>9</sup>								2000	

- Human exposure settings based on land use have been established for HILs (see Taylor and Langley 1998). These are:
  - 'Standard' residential with garden/accessible soil (home-grown produce contributing less than 10% of vegetable and fruit intake; no poultry): this category includes children's day-care centres, kindergartens, preschools and primary schools.
  - Residential with substantial vegetable garden (contributing 10% or more of vegetable and fruit intake) and/or poultry providing any egg or poultry meat dietary intake.
  - Residential with substantial vegetable garden (contributing 10% or more of vegetable and fruit intake); poultry excluded.
  - Residential with minimal opportunities for soil access: includes dwellings with fully and permanently paved yard space such as high-rise apartments and flats.
  - Parks, recreational open space and playing fields: includes secondary schools.
  - Commercial/Industrial: includes premises such as shops and offices as well as factories and industrial sites.  
(For details on derivation of HILs for human exposure settings based on land use see Schedule B(7A).)
- Site and contaminant specific: on site sampling is the preferred approach for estimating poultry and plant uptake. Exposure estimates may then be compared to the relevant ADIs, PTWIs and GDs.
- Site and contaminant specific: on site sampling is the preferred approach for estimating plant uptake. Exposure estimates may then be compared to the relevant ADIs, PTWIs and GDs.
- These will be developed for regional areas by jurisdictions as required.
- Interim EILs for the urban setting are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian capital cities.
- Background ranges, where HILs or EILs are set, are taken from the Field Geologist's Manual, compiled by D A Berkman, Third Edition 1989. Publisher - The Australasian Institute of Mining & Metallurgy. This publication contains information on a more extensive list of soil elements than is included in this Table. Another source of information is Contaminated Sites Monograph No. 4: Trace Element Concentrations in Soils from Rural & Urban Areas of Australia, 1995. South Australian Health Commission.
- Valence state not distinguished - expected as Cr (III).
- The carbon number is an 'equivalent carbon number' based on a method that standardises according to boiling point. It is a method used by some analytical laboratories to report carbon numbers for chemicals evaluated on a boiling point GC column.
- For protection of built structures.

**Table F-2  
NEPM (1999) Guideline Investigation Levels for Soil (May 2013 Update)**

Chemical	Health-based investigation levels (mg/kg)			
	Residential <sup>1</sup> A	Residential <sup>1</sup> B	Recreational <sup>1</sup> C	Commercial/ industrial <sup>1</sup> D
<b>Metals and Inorganics</b>				
Arsenic <sup>2</sup>	100	500	300	3 000
Beryllium	60	90	90	500
Boron	4500	40 000	20 000	300 000
Cadmium	20	150	90	900
Chromium (VI)	100	500	300	3600
Cobalt	100	600	300	4000
Copper	6000	30 000	17 000	240 000
Lead <sup>3</sup>	300	1200	600	1 500
Manganese	3800	14 000	19 000	60 000
Mercury (inorganic) <sup>5</sup>	40	120	80	730
Methyl mercury <sup>4</sup>	10	30	13	180
Nickel	400	1200	1200	6 000
Selenium	200	1400	700	10 000
Zinc	7400	60 000	30 000	400 000
Cyanide (free)	250	300	240	1 500
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>				
Carcinogenic PAHs (as BaP TEQ) <sup>6</sup>	3	4	3	40
Total PAHs <sup>7</sup>	300	400	300	4000
<b>Phenols</b>				
Phenol	3000	45 000	40 000	240 000
Pentachlorophenol	100	130	120	660
Cresols	400	4 700	4 000	25 000
<b>Organochlorine Pesticides</b>				
DDT+DDE+DDD	240	600	400	3600
Aldrin and dieldrin	6	10	10	45
Chlordane	50	90	70	530
Endosulfan	270	400	340	2000
Endrin	10	20	20	100
Heptachlor	6	10	10	50
HCB	10	15	10	80
Methoxychlor	300	500	400	2500
Mirex	10	20	20	100
Toxaphene	20	30	30	160
<b>Herbicides</b>				
2,4,5-T	600	900	800	5000
2,4-D	900	1600	1300	9000
MCPA	600	900	800	5000
MCPB	600	900	800	5000
Mecoprop	600	900	800	5000
Picloram	4500	6600	5700	35000
<b>Other Pesticides</b>				
Atrazine	320	470	400	2500
Chlorpyrifos	160	340	250	2000
Bifenthrin	600	840	730	4500
<b>Other Organics</b>				
PCBs <sup>8</sup>	1	1	1	7
PBDE Flame Retardants (Br1-Br9)	1	2	2	10

## NOTES TO TABLE F-2

### Notes:

- (1) Generic land uses are described in detail in Schedule B7 Section 3
  - HIL A - Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.
  - HIL B - Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.
  - HIL C - Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate.
  - HIL D - Commercial/industrial, includes premises such as shops, offices, factories and industrial sites.
- (2) Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7).
- (3) Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.
- (4) Methyl mercury: assessment of methyl mercury should only occur where there is evidence of its potential source. It may be associated with inorganic mercury and anaerobic microorganism activity in aquatic environments. In addition the reliability and quality of sampling/analysis should be considered.
- (5) Elemental mercury: HIL does not address elemental mercury. A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
- (6) Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7). The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF, given below, and summing these products.

**Table F-3**  
**Interim Soil Vapour Health Investigation Levels for Volatile Organic Chlorinated Compounds**  
(May 2013 NEPM Update - Table 1A(2))

Interim soil vapour HIL (mg/m <sup>3</sup> )			
Residential <sup>1</sup> A	Residential <sup>1</sup> B	Recreational <sup>1</sup> C	Commercial / Industrial <sup>1</sup> D
0.02	0.02	0.4	0.08
60	60	1200	230
2	2	40	8
0.08	0.08	2	0.3
0.03	0.03	0.5	0.1

**Notes:**

1. Land use settings are equivalent to those described in Table 1A(1) Footnote 1 and Schedule B7, though secondary school buildings should be assessed using residential 'A/B' for vapour intrusion purposes.
2. Interim HILs for VOCs are conservative soil vapour concentrations that can be adopted for the purpose of screening sites where further investigation is required on a site-specific basis. They are based on the potential for vapour intrusion using an indoor air-to-soil vapour attenuation factor of 0.1 and an outdoor air-to-soil vapour attenuation factor of 0.05.
3. Application of the interim HILs is based on a measurement of shallow (to 1 m depth) soil vapour (or deeper where the values are to be applied to a future building with a basement) or sub-slab soil vapour.
4. The applicability of the interim HILs needs to be further considered when used for other building types such as homes with a crawl-space and no slab, which may require site-specific assessment.
5. Use of the interim HILs requires comparison with data that has been collected using appropriate methods and meets appropriate data quality requirements.
6. Oral and dermal exposure should be considered on a site-specific basis where direct contact exposure is likely to occur.

**Table F-4**  
**Soil HSLs for Vapour Intrusion (mg/kg)**  
(May 2013 NEPM Update - Table 1A(3))

CHEMICAL	HSL A & HSL B Low – high density residential			
	0 m to <1 m	1 m to <2 m	2 m to <4m	4 m+
Toluene	160	220	310	540
Ethylbenzene	55	NL	NL	NL
Xylenes	40	60	95	170
Naphthalene	3	NL	NL	NL
Benzene	0.5	0.5	0.5	0.5
F1 <sup>(9)</sup>	45	70	110	200
F2 <sup>(10)</sup>	110	240	440	NL
Toluene	390	NL	NL	NL
Ethylbenzene	NL	NL	NL	NL
Xylenes	95	210	NL	NL
Naphthalene	4	NL	NL	NL
Benzene	0.6	0.7	1	2
F1 <sup>(9)</sup>	40	65	100	190
F2 <sup>(10)</sup>	230	NL	NL	NL
Toluene	480	NL	NL	NL
Ethylbenzene	NL	NL	NL	NL
Xylenes	110	310	NL	NL
Naphthalene	5	NL	NL	NL
Benzene	0.7	1	2	3
F1 <sup>(9)</sup>	50	90	150	290
F2 <sup>(10)</sup>	280	NL	NL	NL

**Notes:**

1. Land use settings are equivalent to those described in Table 1A(1) Footnote 1 and Schedule B7. HSLs for vapour intrusion for high density residential assume residential occupation of the ground floor. If communal car parks or commercial properties occupy the ground floor, HSL D should be used,
2. The key limitations of the HSLs should be referred to prior to application and are presented in Friebel and Nadebaum (2011b and 2011d).
3. Detailed assumptions in the derivation of the HSLs and information on how to apply the HSLs are presented in Friebel and Nadebaum (2011a and 2011b).
4. Soil HSLs for vapour inhalation incorporate an adjustment factor of 10 applied to the vapour phase partitioning to reflect the differences observed between theoretical estimates of soil vapour partitioning and field measurements. Refer Friebel & Nadebaum (2011a) for further information.
5. The soil saturation concentration (C<sub>sat</sub>) is defined as the soil concentration at which the porewater phase cannot dissolve any more of an individual chemical. The soil vapour that is in equilibrium with the porewater will be at its maximum. If the derived soil HSL exceeds C<sub>sat</sub>, a soil vapour source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'.
6. The HSLs for TPH C<sub>6</sub>-C<sub>10</sub> in sandy soil are based on a finite source that depletes in less than seven years, and therefore consideration has been given to use of sub-chronic toxicity values. The >C<sub>8</sub>-C<sub>10</sub> aliphatic toxicity has been adjusted to represent sub-chronic exposure, resulting in higher HSLs than if based on chronic toxicity. For further information refer to Section 8.2 and Appendix J in Friebel and Nadebaum (2011a).
7. The figures in the above table may be multiplied by a factor to account for biodegradation of vapour. A factor of 10 may apply for source depths from 2 m to <4 m or a factor of 100 for source depths of 4 m and deeper. To apply the attenuation factor for vapour degradation, a number of conditions must be satisfied. Firstly the maximum length of the shorter side of the concrete slab and surrounding pavement cannot exceed 15 m, as this would prevent oxygen penetrating to the centre of the slab. Secondly, measurement of oxygen in the subsurface is required to determine the potential for biodegradation. Oxygen must be confirmed to be present at >5% to use these factors.
8. For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit>50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out.
9. To obtain F1 subtract the sum of BTEX concentrations from the C<sub>6</sub>-C<sub>10</sub> fraction.
10. To obtain F2 subtract naphthalene from the >C<sub>10</sub>-C<sub>16</sub> fraction.

**Table F-5**  
**Soil Vapour HSLs for Vapour Intrusion (mg/kg)**  
(May 2013 NEPM Update - Table 1A(5))

CHEMICAL	HSL A & HSL B Low – high density residential				
	0 m to <1 m	1 m to <2 m	2 m to <4 m	4 m to <8 m	8 m+
Toluene	1300	3800	7300	15 000	29 000
Ethylbenzene	330	1100	2200	4300	8700
Xylenes	220	750	1500	3000	6100
Naphthalene	0.8	3	6	10	25
Benzene	1	3	6	10	20
F1 <sup>(8)</sup>	180	640	1,300	2600	5300
F2 <sup>(9)</sup>	130	560	1200	2400	4800
Toluene	1400	14 000	32 000	69 000	140 000
Ethylbenzene	380	4200	9700	21 000	43 000
Xylenes	260	2900	6800	15 000	30 000
Naphthalene	0.9	10	25	60	120
Benzene	1	10	25	55	110
F1 <sup>(8)</sup>	210	2600	6000	13 000	26 000
F2 <sup>(9)</sup>	160	2300	5400	NL	NL
Toluene	1600	23 000	53 000	110 000	NL
Ethylbenzene	420	6800	16 000	35 000	NL
Xylenes	280	4800	11 000	24 000	50 000
Naphthalene	1	20	45	95	200
Benzene	1	15	40	90	180
F1 <sup>(8)</sup>	230	4200	9900	21 000	44 000
F2 <sup>(9)</sup>	180	3,800	NL	NL	NL

**Notes:**

1. Land use settings are equivalent to those described in Table 1A(1) Footnote 1 and Schedule B7. HSLs for vapour intrusion for high density residential assume residential occupation of the ground floor. If communal car parks or commercial properties occupy the ground floor, HSL D should be used,
2. The key limitations of the HSLs should be referred to prior to application and are presented in Friebel and Nadebaum (2011b and 2011d).
3. Detailed assumptions in the derivation of the HSLs and information on how to apply the HSLs are presented in Friebel and Nadebaum (2011a and 2011b).
4. The maximum possible soil vapour concentrations have been calculated based on vapour pressures of the pure chemicals. Where soil vapour HSLs exceed these values a soil-specific source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'.
5. Soil vapour HSLs should be compared with measurements taken as laterally close as possible to the soil or groundwater sources of vapour (i.e. within or above vapour sources). Consideration is required of where the sample is taken, the current condition of the site and the likely future condition of the site. Shallow gas measurements in open space (less than 1 m below ground surface) may be subject to influences of weather conditions and moisture.
6. The figures in the above table may be multiplied by a factor to account for biodegradation of vapour. A factor of 10 may apply for source depths from 2 m to <4 m or a factor of 100 for source depths of 4 m and deeper. To apply the attenuation factor for vapour degradation, a number of conditions must be satisfied. Firstly, the maximum length of the shorter side of the concrete slab and surrounding pavement cannot exceed 15 m, as this would prevent oxygen penetrating to the centre of the slab. Secondly, measurement of oxygen in the subsurface is required to determine the potential for biodegradation. Oxygen must be confirmed to be present at >5% to use these factors.
7. For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out.
8. To obtain F1 subtract the sum of BTEX concentrations from the C<sub>6</sub>-C<sub>10</sub> fraction.
9. To obtain F2 subtract naphthalene from the >C<sub>10</sub>-C<sub>16</sub> fraction

**Table F-6**  
**Soil-specific Added Contaminant Limits for Aged Chromium III and Nickel in Soil**  
(May 2013 NEPM Update - Table 1B(3))

CHEMICAL	Clay content (% clay)	Added contaminant limits (mg added contaminant/kg) for various land uses		
		Areas of ecological significance	Urban residential and public open space	Commercial and industrial
Chromium III	1	60	190	310
	2.5	80	250	420
	5	100	320	530
	≥10	130	400	660
Nickel	CEC <sup>a</sup> (cmol/kg)	Areas of ecological significance	Urban residential and public open space <sup>1</sup>	Commercial and industrial
	5	5	30	55
	10	30	170	290
	20	45	270	460
	30	60	350	600
	40	70	420	730
	60	95	560	960

**Notes:**

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values apply to contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. The EIL is calculated from summing the ACL and the ABC.  
a = CEC measured using the silver thiourea method (Chabra et al. 1972).

**Table F-7**  
**Generic Added Contaminant Limits for Lead in Soils Irrespective of their Physicochemical Properties**  
(May 2013 NEPM Update - Table 1B(4))

	Pb added contaminant limit (ACL, mg added contaminant/kg) for various land uses		
CHEMICAL	Areas of ecological significance	Urban residential and public open space <sup>1</sup>	Commercial and industrial
<b>Lead</b>	470	1100	1800

**Notes:**

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values are applicable to lead contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. The EIL is calculated from summing the ACL and the ABC.

**Table F-8**  
**Generic EILs for Aged As, Fresh DDT and Fresh Naphthalene in Soils**  
**Irrespective of their Physicochemical Properties**  
(May 2013 NEPM Update - Table 1B(5))

CHEMICAL	Ecological Investigation Levels (mg total contaminant/kg)		
	Areas of ecological significance	Urban residential and public open space <sup>1</sup>	Commercial and industrial
Arsenic <sup>2</sup>	40	100	160
DDT <sup>3</sup>	3	180	640
Naphthalene <sup>3</sup>	10	170	370

**Notes:**

1. Urban residential/public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used.
4. Insufficient data was available to calculate ACLs for As, DDT and naphthalene. The EIL should be taken directly from Table 1B(5).

**Table F-9**  
**ESLs for TPH Fractions F1 – F4, BTEX and Benzo(a)pyrene in Soil**  
(May 2013 NEPM Update - Table 1B(6))

CHEMICAL	Soil texture	ESLs (mg/kg dry soil)		
		Areas of ecological significance	Urban residential and public open space	Commercial and industrial
<b>F1</b> C <sub>6</sub> -C <sub>10</sub>	<i>Coarse/ Fine</i>	125*	180*	215*
<b>F2</b> >C <sub>10</sub> -C <sub>16</sub>		25*	120*	170*
<b>F3</b> >C <sub>16</sub> -C <sub>34</sub>	<i>Coarse</i>	-	300	1700
	<i>Fine</i>	-	1300	2500
<b>F4</b> >C <sub>34</sub> -C <sub>40</sub>	<i>Coarse</i>	-	2800	3300
	<i>Fine</i>	-	5600	6600
<b>Benzene</b>	<i>Coarse</i>	10	50	75
	<i>Fine</i>	10	65	95
<b>Toluene</b>	<i>Coarse</i>	10	85	135
	<i>Fine</i>	65	105	135
<b>Ethylbenzene</b>	<i>Coarse</i>	1.5	70	165
	<i>Fine</i>	40	125	185
<b>Xylenes</b>	<i>Coarse</i>	10	105	180
	<i>Fine</i>	1.6	45	95
<b>Benzo(a)pyrene</b>	<i>Coarse</i>	0.7	0.7	0.7
	<i>Fine</i>	0.7	0.7	0.7

**Notes:**

1. ESLs are of low reliability except where indicated by \* which indicates that the ESL is of moderate reliability.
2. '-' indicates that insufficient data was available to derive a value.
3. To obtain F1, subtract the sum of BTEX concentrations from C<sub>6</sub>-C<sub>10</sub> fraction and subtract naphthalene from >C<sub>10</sub>-C<sub>16</sub> to obtain F2.

**Table F-10**  
**Management Limits for TPH fractions F1-F4 in Soil**  
(May 2013 NEPM Update - Table 1B(7))

TPH fraction	Soil texture	Management Limits <sup>1</sup> (mg/kg dry soil)	
		Residential, parkland and public open space	Commercial and industrial
<b>F1<sup>2</sup></b> C <sub>6</sub> - C <sub>10</sub>	<i>Coarse</i>	700	700
	<i>Fine</i>	800	800
<b>F2<sup>2</sup></b> >C <sub>10</sub> -C <sub>16</sub>	<i>Coarse</i>	1000	1000
	<i>Fine</i>	1000	1000
<b>F3</b> >C <sub>16</sub> -C <sub>34</sub>	<i>Coarse</i>	2500	3500
	<i>Fine</i>	3500	5000
<b>F4</b> >C <sub>34</sub> -C <sub>40</sub>	<i>Coarse</i>	10 000	10 000
	<i>Fine</i>	10 000	10 000

**Notes:**

1. Management limits are applied after consideration of relevant ESLs and HSLs
2. Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.

**Table F-11 – NSW EPA Service Stations Guidelines**

Table 3 Threshold concentrations for sensitive land use — soils		
Analytes	Threshold concentrations <sup>a</sup> (mg/kg dry wt)	Sources
TPH <sup>b, c</sup> : C6–C9	65	see note <sup>d</sup>
TPH: C10–C40 (C10–C14, C15–C28, C29–C40)	1,000	see note <sup>e</sup>
Benzene	1 <sup>f</sup>	ANZECC /NHMRC 1992
Toluene	1.4 <sup>g</sup> / 130 <sup>h</sup>	Netherlands 1994
Ethyl benzene	3.1 <sup>i</sup> / 50 <sup>j</sup>	Netherlands 1994
Total Xylenes	14 <sup>k</sup> / 25 <sup>l</sup>	Netherlands 1994
Phenol	— <sup>l</sup>	— <sup>l</sup>
Total Lead	300	ANZECC /NHMRC 1992
Benzo(a)pyrene	1	ANZECC /NHMRC 1992
Total PAHs <sup>m</sup>	20	ANZECC /NHMRC 1992
<b>NB.</b> Scientifically justified alternative threshold concentrations may be acceptable. Thresholds may be reviewed as new scientific information becomes available.		

**Explanatory notes for Table 3**

- (a) Refer to relevant source documents for details.

Definitions of terms used in discussion of Netherlands criteria (Denneman 1993) are:

- The maximum permissible concentration (MPC) is the 'concentration of a toxic substance that fully protects 95% of the species in an ecosystem'.
- The intervention level represents 'a level where action is needed because impermissible risks may occur. It depends on other than chemical characteristics if action should take place immediately or not'. In the case of ecological risk, the intervention level 'fully protects 50% of the species in an ecosystem'.

Further information regarding MPCs and intervention levels may be found in Denneman & van den Berg 1993.

The Netherlands sourced values in Table 2 refer to soil with 10% natural organic matter content. These threshold concentrations must be adjusted for the particular natural organic matter content of the specific site. The natural organic matter content in soil may be determined using the Walkley and Black Method, AS 1289.D1.1–1977, Determination of the Organic Matter Content of a Soil (Standard Method).

The threshold concentrations for ethyl benzene and xylenes to protect terrestrial organisms have been derived from aquatic toxicological data using equilibrium partitioning. Investigations have shown (Van Gestal & Ma 1993) that in the case of earthworms, toxicity is related to the pore water contaminant concentration. The LC50 pore water concentrations for several compounds have been favorably compared with LC50 aquatic toxicological data for fish.

The derivations of criteria adopted as threshold concentrations have not explicitly taken account of chemical mixtures.

The potential impact of mixtures of chemicals should be assessed on a site-specific basis.

The potential for the generation of odours may mean that lower thresholds than those listed in Table 2 are required for volatile compounds.

- (b) Total petroleum hydrocarbons
- (c) Approximate range of petroleum hydrocarbon fractions: petrol C6–C9, kerosene C10–C18, diesel C12–C18 and lubricating oils above C18.

- (d) The TPH C6–C9 threshold concentration, i.e. 65 mg/kg, applies to soil containing 10% natural organic matter. This concentration has been calculated assuming the following:
- that there has been a fresh spill of petrol
  - that the aromatic content of the petrol is 30%
  - that the resultant BTEX soils concentrations are at their lower thresholds.
- TPH C6–C9 concentrations above the relevant threshold may indicate that BTEX concentrations are above their thresholds. This threshold concentration should be interpreted as only an approximate potential indicator of contamination.
- (e) The TPH C10–C40 threshold concentration is based on a consideration both of the Netherlands Intervention Level for the TPH C10–C40 range and on commonly reported analytical detection limits. The Netherlands intervention value is 5,000 mg/kg dry weight.
- (f) A lower benzene threshold concentration may be needed to protect groundwater.
- (g) The toluene threshold concentration is the Netherlands MPC to protect terrestrial organisms in soil. This value was obtained by applying a US EPA assessment factor to terrestrial chronic No Observed Effect Concentration (NOEC) data. The MPC is an 'indicative' value (Van de Plassche et al. 1993; Van de Plassche & Bockting 1993).
- (h) Human health and ecologically based protection level for toluene. The threshold concentration presented here is the Netherlands intervention value for the protection of terrestrial organisms. Other considerations such as odours and the protection of groundwater may require a lower remediation criterion.
- (i) The ethyl benzene threshold concentration is the Netherlands MPC for the protection of terrestrial organisms in soil. No terrestrial ecotoxicological data could be found for use in the Netherlands criteria derivation. Therefore, equilibrium partitioning has been applied to the MPC for water to obtain estimates of the MPC for soil. The MPC for water has been derived from aquatic ecotoxicological data (Van de Plassche et al. 1993; Van de Plassche & Bockting 1993).
- (j) Human health based protection level for ethyl benzene or total xylenes as shown. The threshold concentration presented here is the Netherlands intervention value. Other considerations such as odours and the protection of groundwater may require a lower remediation criterion.
- (k) The xylene threshold concentration is the Netherlands MPC for the protection of terrestrial organisms in soil. No terrestrial ecotoxicological data could be found for use in the Netherlands criteria derivation. Therefore, equilibrium partitioning has been applied to the MPC for water to obtain an estimate of the MPC for soil. The MPC for water has been derived from aquatic ecotoxicological data. The concentration shown applies to total xylenes and is based on the arithmetic average of the individual xylene MPCs (Van de Plassche et al. 1993; Van de Plassche & Bockting 1993).
- (l) Phenol contamination is not expected to be significant at service station sites. Phenol has been included in the analyte list because it is a potential constituent of waste oil. The potential impact of phenol should be evaluated on a site-specific basis. Phenol may have a significant impact on waters.
- (m) Polycyclic aromatic hydrocarbons

# **APPENDIX G**

## **Chain of Custody**

APPENDIX G  
Chain of Custody Documentation

*NG Child & Associates*

22 Britannia Road  
Castle Hill NSW 2154

Telephone: 61-2-9899 1968  
Facsimile: 61-2-9899 1797

29 470 953 395

Consultants in Environmental  
Science and Engineering

E-mail: ngchild@canda.com.au  
Mobile: 0409 393 024

SAMPLES TO:

ENVIROLAB SERVICES  
12 ASHLEY STREET  
CHATSWOOD NSW 2067  
PH 02 9910 6200

PROJECT: 270 Malabar Road Maroubra – Soil Assessment

135926.1  
135926.2  
135926.3  
135926.4  
135926.5  
135926.6  
135926.7  
135926.8  
135926.9  
135926.10  
135926.11  
135926.12  
135926.13

SAMPLE No.	COLLECTION		SAMPLE DETAIL		ANALYSIS REQUIRED
	DATE	TIME	TYPE	QUANTITY	
MRD-1-SUR	18/2/2016	09:10hrs	Soil	1 x 200g glass jar	12-metals; asbestos
MRD-1-0500	18/2/2016	09:15hrs	Soil	1 x 200g glass jar	sTRH; PAH
MRD-1-2000	18/2/2016	09:26hrs	Soil	1 x 200g glass jar	sTRH; VOC; PCB; phenolics
MRD-2-SUR	18/2/2016	09:35hrs	Soil	1 x 200g glass jar	12-metals; vTRH; BTEXN; asbestos
MRD-2-0300	18/2/2016	09:50hrs	Soil	1 x 200g glass jar	sTRH; PAH
MRD-2-1000	18/2/2016	09:58hrs	Soil	1 x 200g glass jar	sTRH; VOC
MRD-2-2000	18/2/2016	10:04hrs	Soil	1 x 200g glass jar	12-metals; vTRH; BTEXN; phenolics
MRD-3-SUR	18/2/2016	10:10hrs	Soil	1 x 200g glass jar	vTRH; BTEXN; sTRH; OCP; OPP; asbestos
MRD-3-0500	18/2/2016	10:20hrs	Soil	1 x 200g glass jar	12-metals; PAH; PCB
MRD-3-1500	18/2/2016	10:26hrs	Soil	1 x 200g glass jar	vTRH; BTEXN; sTRH; phenolics
MRD-4-SUR	18/2/2016	10:41hrs	Soil	1 x 200g glass jar	12-metals; sTRH; OCP; OPP; asbestos
MRD-4-1000	18/2/2016	11:46hrs	Soil	1 x 200g glass jar	12-metals; vTRH; BTEXN; VOC
MRD-4-1000D	18/2/2016	11:52hrs	Soil	1 x 200g glass jar	12-metals; vTRH; BTEXN; VOC
Trip blank (as supplied by lab)					
Trip spike (as supplied by lab)					

COLLECTED BY: N Child	CHAIN OF CUSTODY INITIATED BY: N Child	DATE: 18/2/2016	TIME: 12:00hrs
TO COURIER BY: N Child	DATE: 19/2/2016	TIME: 10:00hrs	RECEIVED BY: PD 11:30 hrs.
SUBMITTED TO LAB BY: Courier	DATE: 19/2/2016	TIME: 11:00hrs	RECEIVED BY: PD 11:30 hrs.
ANALYSED BY: PD 28/2	CHECKED BY: JH 28/2		
REPORT BY: PD 28/2	APPROVED BY: JH 28/2		
REPORT TO NG CHILD & ASSOCIATES BY: JH 28 FEB 2016	DATE: JH 28 FEB 2016	TIME: 0200 hrs	

## **APPENDIX H**

### **Envirolab Laboratory Report**



Envirolab Services Pty Ltd  
ABN 37 112 535 645  
12 Ashley St Chatswood NSW 2067  
ph 02 9910 6200 fax 02 9910 6201  
enquiries@envirolabservices.com.au  
www.envirolabservices.com.au

**CERTIFICATE OF ANALYSIS 135926**

**Client:**

**NG Child & Associates**  
22 Britannia Road  
CASTLE HILL  
NSW 2154

**Attention:** Noel Child

**Sample log in details:**

Your Reference:	<b>270 Malabar Road Maroubra NSW - Soil Assessment</b>
No. of samples:	13 Soils
Date samples received:	19/2/2016
Date completed instructions received:	19/2/2016

**Analysis Details:**

Please refer to the following pages for results, methodology summary and quality control data.  
Samples were analysed as received from the client. Results relate specifically to the samples as received.  
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.  
**Please refer to the last page of this report for any comments relating to the results.**

**Report Details:**

Date results requested by:	26/2/2016
Date of Preliminary Report:	Not Issued
Issue Date:	26/2/2016

NATA accreditation number 2901. This document shall not be reproduced except in full.  
This document is issued in accordance with NATA's accreditation requirements.  
Accredited for compliance with ISO/IEC 17025.  
**Tests not covered by NATA are denoted with \*.**

**Results Approved By**

  
\_\_\_\_\_  
Brent Hurst  
Laboratory Manager

Envirolab Reference: 135926  
Revision No: R 00



270 Malabar Road Maroubra NSW – Soil Assessment

vTRH and BTEX in Soil		UNITS	135926-3	135926-4	135926-7	135026-8
Our Reference:	.....		MRD-1-2500	MRD-2-SUR	MRD-2-2000	MRD-3-SUR
Your Reference	.....					
Date Sampled	.....		18/2/2016	18/2/2016	18/2/2016	18/2/2016
Type of sample			Soil	Soil	Soil	Soil
Date extracted			24/2/2016	24/2/2016	24/2/2016	24/2/2016
Date analysed			25/2/2016	25/2/2016	25/2/2016	25/2/2016
TRH C <sub>6</sub> - C <sub>9</sub>	mg/kg		<10	<10	<10	<10
Benzene	mg/kg		<1	<1	<1	<1
Toluene	mg/kg		<1	<1	<1	<1
Ethylbenzene	mg/kg		<1	<1	<1	<1
m+p-xylene	mg/kg		<2	<2	<2	<2
o-xylene	mg/kg		<1	<1	<1	<1
Naphthalene	mg/kg		<1	<1	<1	<1
Surrogate Dibromofluoromethane	%		101	106	104	105
Surrogate Toluene-d8	%		99	99	98	101
Surrogate 4-BFB	%		103	102	101	99

vTRH and BTEX in Soil		UNITS	135926-10	135926-12	135926-13
Our Reference:	.....		MRD-3-1500	MRD-4-0500	MRD-4-0500D
Your Reference	.....				
Date Sampled	.....		18/2/2016	18/2/2016	18/2/2016
Type of sample			Soil	Soil	Soil
Date extracted			24/2/2016	24/2/2016	24/2/2016
Date analysed			25/2/2016	25/2/2016	25/2/2016
TRH C <sub>6</sub> - C <sub>9</sub>	mg/kg		<10	<10	<10
Benzene	mg/kg		<1	<1	<1
Toluene	mg/kg		<1	<1	<1
Ethylbenzene	mg/kg		<1	<1	<1
m+p-xylene	mg/kg		<2	<2	<2
o-xylene	mg/kg		<1	<1	<1
Naphthalene	mg/kg		<1	<1	<1
Surrogate Dibromofluoromethane	%		102	104	102
Surrogate Toluene-d8	%		100	99	97
Surrogate 4-BFB	%		101	98	101

270 Malabar Road Maroubra NSW – Soil Assessment

VOCs in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	135926-3 MRD-1-2500 18/2/2016 Soil	135926-6 MRD-2-1000 18/2/2016 Soil	135926-12 MRD-4-1000 18/2/2016 Soil	135926-13 MRD-4-1000D 18/2/2016 Soil
Date extracted	-	24/2/2016	24/2/2016	24/2/2016	24/2/2016
Date analysed	-	25/2/2016	25/2/2016	25/2/2016	25/2/2016
Dichlorodifluoromethane	mg/kg	<1	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1	<1	<1
1,1-dichloroethane	mg/kg	<1	<1	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1	<1	<1
bromochloromethane	mg/kg	<1	<1	<1	<1
chloroform	mg/kg	<1	<1	<1	<1
2,2-dichloropropane	mg/kg	<1	<1	<1	<1
1,2-dichloroethane	mg/kg	<1	<1	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1	<1	<1
1,1-dichloropropene	mg/kg	<1	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1	<1
carbon tetrachloride	mg/kg	<1	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2
dibromomethane	mg/kg	<1	<1	<1	<1
1,2-dichloropropane	mg/kg	<1	<1	<1	<1
trichloroethene	mg/kg	<1	<1	<1	<1
bromodichloromethane	mg/kg	<1	<1	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1	<1	<1
dibromochloromethane	mg/kg	<1	<1	<1	<1
1,2-dibromoethane	mg/kg	<1	<1	<1	<1
tetrachloroethene	mg/kg	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1	<1	<1
chlorobenzene	mg/kg	<1	<1	<1	<1
Ethylbenzene	mg/kg	<1	<1	<1	<1
bromoform	mg/kg	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2
styrene	mg/kg	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	<1	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1	<1
1,2,3-trichloropropane	mg/kg	<1	<1	<1	<1

270 Malabar Road Maroubra NSW – Soil Assessment

VOCs in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	135926-3 MRD-1-2500 18/2/2016 Soil	135926-6 MRD-2-1000 18/2/2016 Soil	135926-12 MRD-4-1000 18/2/2016 Soil	135926-13 MRD-4-1000D 18/2/2016 Soil
isopropylbenzene	mg/kg	<1	<1	<1	<1
bromobenzene	mg/kg	<1	<1	<1	<1
n-propyl benzene	mg/kg	<1	<1	<1	<1
2-chlorotoluene	mg/kg	<1	<1	<1	<1
4-chlorotoluene	mg/kg	<1	<1	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1	<1	<1
tert-butyl benzene	mg/kg	<1	<1	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1	<1	<1
sec-butyl benzene	mg/kg	<1	<1	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1	<1	<1
4-isopropyl toluene	mg/kg	<1	<1	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1	<1	<1
n-butyl benzene	mg/kg	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1	<1	<1
hexachlorobutadiene	mg/kg	<1	<1	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1	<1	<1
MEK	mg/kg	<10	<10	<10	<10
Methylisobutylketone (MIBK)	mg/kg	<10	<10	<10	<10
Surrogate Dibromofluorometha	%	103	104	100	99
Surrogate aaa-Trifluorotoluene	%	101	102	100	101
Surrogate Toluene-ds	%	101	100	102	99
Surrogate 4-Bromofluorobenzene	%	96	97	95	96

270 Malabar Road Maroubra NSW – Soil Assessment

sTRH in Soil (C10-C38)	UNITS	135926-2	135926-5	135926-6	135926-8	135926-10
Our Reference:	-----	MRD-1-0500	MRD-2-0300	MRD-2-1000	MRD-3-SUR	MRD-3-1500
Your Reference						
Date Sampled		18/2/2016	18/2/2016	18/2/2016	18/2/2016	18/2/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/2/2016	24/2/2016	24/2/2016	24/2/2016	24/2/2016
Date analysed	-	25/2/2016	25/2/2016	25/2/2016	25/2/2016	25/2/2016
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<10	<100	<100	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<10	<100	<100	<100
Surrogate o-Terphenyl	%	102	101	103	104	103

sTRH in Soil (C10-C38)	UNITS	135926-11
Our Reference:	-----	MRD-4-SUR
Your Reference		
Date Sampled		18/2/2016
Type of sample		Soil
Date extracted	-	24/2/2016
Date analysed	-	25/2/2016
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100
Surrogate o-Terphenyl	%	102

270 Malabar Road Maroubra NSW – Soil Assessment

Organochlorine Pesticides in soil	UNITS	135926-8	135926-11
Our Reference:	-----	MRD-3-SUR	MRD-4-SUR
Your Reference	-----	18/2/2016	18/2/2016
Date Sampled		Soil	Soil
Type of sample			
Date extracted	-	24/2/2016	24/2/2016
Date analysed	-	25/2/2016	25/2/2016
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	101	99

270 Malabar Road Maroubra NSW – Soil Assessment

Organophosphorus Pesticides	UNITS	135926-8	135926-11
Our Reference:	-----	MRD-1-SUR	MRD-4-SUR
Your Reference	-----	MRD-1-SUR	MRD-4-SUR
Date Sampled	-----	18/2/2016	18/2/2016
Type of sample		Soil	Soil
Date extracted	-	24/2/2016	24/2/2016
Date analysed	-	25/2/2016	25/2/2016
Diazinon	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	97	99

270 Malabar Road Maroubra NSW – Soil Assessment

Total Phenolics in Soil				
Our Reference:	UNITS	135926-3	135926-7	135926-10
Your Reference	-----	MRD-1-2500	MRD-2-2000	MRD-3-1500
Date Sampled	-----	18/2/2016	18/2/2016	18/2/2016
Type of sample		Soil	Soil	Soil
Date extracted	-	24/2/2016	24/2/2016	24/2/2016
Date analysed	-	25/2/2016	25/2/2016	25/2/2016
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5

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Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	135926-1 MRD-1-SUR 18/2/2016 Soil	135926-4 MRD-2-SUR 18/2/2016 Soil	135926-7 MRD-2-2000 18/2/2016 Soil	135926-9 MRD-3-0500 18/2/2016 Soil
Date digested	-	24/2/2016	24/2/2016	24/2/2016	24/2/2016
Date analysed	-	25/2/2016	25/2/2016	25/2/2016	25/2/2016
Arsenic	mg/kg	<4	5	<4	<4
Boron	mg/kg	<2	<2	<2	<2
Beryllium	mg/kg	<1	<1	<1	<1
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Cobalt	mg/kg	<1	2	3	3
Manganese	mg/kg	11	16	12	12
Chromium	mg/kg	7	11	9	13
Copper	mg/kg	9	7	6	2
Lead	mg/kg	33	22	5	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	2	4	1
Zinc	mg/kg	9	8	12	14

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	135926-11 MRD-4-SUR 18/2/2016 Soil	135926-12 MRD-4-1000 18/2/2016 Soil	135926-13 MRD-4-1000D 18/2/2016 Soil
Date digested	-	24/2/2016	24/2/2016	24/2/2016
Date analysed	-	25/2/2016	25/2/2016	25/2/2016
Arsenic	mg/kg	<4	<4	<4
Boron	mg/kg	<2	<2	<2
Beryllium	mg/kg	<1	1	<1
Cadmium	mg/kg	<0.4	<0.4	<0.4
Cobalt	mg/kg	<1	<1	<1
Manganese	mg/kg	12	12	12
Chromium	mg/kg	8	6	6
Copper	mg/kg	2	4	3
Lead	mg/kg	17	11	10
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	1	3	3
Zinc	mg/kg	11	7	8

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Asbestos ID - materials Our Reference: Your Reference	UNITS ----- - ----- -	135926-1 MRD-1-SUR 18/2/2016 Soil	135926-4 MRD-2-SUR 18/2/2016 Soil	135926-8 MRD-3-SUR 18/2/2016 Soil	135926-11 MRD-4-SUR 18/2/2016 Soil
Date	-	25/2/2016	25/2/2016	25/2/2016	25/2/2016
Mass/Dimension of Sample	-	200 gram	200 gram	200 gram	200 gram
Sample	-	Soil	Soil	Soil	Soil
Asbestos ID in materials	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

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QUALITYCONTROL	UNITS	PQL	METHOD	Blank	DuplicateSm#	Duplicate results	SpikeSm#	Spike % Recovery
VOCs in soil						Base  Duplicate  %RPD		
Date extracted	-			24/2/2016	135926-13	24/2/2016    24/2/2016	W-SPIKE	24/2/2016
Date analysed	-			25/2/2016	135926-13	25/2/2016    25/2/2016	W-SPIKE	25/2/2016
Dichlorodifluoromethane	mg/kg			<1	135926-13	<1    <1	[NR]	[NR]
Chloromethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
Vinyl Chloride	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
Bromomethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
Chloroethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	W-SPIKE	113%
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
bromochloromethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
chloroform	mg/kg	1	Org-014	<1	135926-13	<1    <1	W-SPIKE	107%
2,2-dichloropropane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	W-SPIKE	107%
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	W-SPIKE	101%
1,1-dichloropropene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
Cyclohexane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
carbon tetrachloride	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
Benzene	mg/kg	0.2	Org-014	<0.2	135926-13	<0.2    <0.2	[NR]	[NR]
dibromomethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
trichloroethene	mg/kg	1	Org-014	<1	135926-13	<1    <1	W-SPIKE	99%
bromodichloromethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	W-SPIKE	96%
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
Toluene	mg/kg	0.5	Org-014	<0.5	135926-13	<0.5    <0.5	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
dibromochloromethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	W-SPIKE	98%
1,2-dibromoethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
tetrachloroethene	mg/kg	1	Org-014	<1	135926-13	<1    <1	W-SPIKE	102%
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
chlorobenzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
Ethylbenzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
bromoform	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
m+p-xylene	mg/kg	2	Org-014	<2	135926-13	<2    2	[NR]	[NR]
styrene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
o-Xylene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]

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**270 Malabar Road Maroubra NSW – Soil Assessment**

QUALITYCONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base  Duplicate  %RPD	SpikeSm#	Spike % Recovery
isopropylbenzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
bromobenzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
n-propyl benzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
2-chlorotoluene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
4-chlorotoluene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
tert-butyl benzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
sec-butyl benzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
n-butyl benzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,2-dibromo-3- chloropropane	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	135926-13	<1    <1	[NR]	[NR]
MEK	mg/kg	10	Org-014	<10	135926-13	<10    <10	[NR]	[NR]
Methylisobutylketone (MIBK)	mg/kg	5	AT-008	<5	135926-13	<10    <10	[NR]	[NR]
Surrogate Dibromofluorometha	%		Org-014	104	135926-13	118    104    RPD: 13	W-SPIKE	102%
Surrogate aaa- Trifluorotoluene	%		Org-014	121	135926-13	111    113    RPD: 2	W-SPIKE	101%
Surrogate Toluene-ds	%		Org-014	100	135926-13	100    103    RPD: 3	W-SPIKE	102%
Surrogate 4- Bromofluorobenzene	%		Org-014	84	135926-13	75    79    RPD: 5	W-SPIKE	97%

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QUALITY CONTROL vTRH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base  Duplicate  %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/2/2016	135926-10	24/2/2016    24//2/2016	W-SPIKE	24/2/2016
Date analysed	-			25/2/2016	135926-10	25/2/2016    25//2/2016	W-SPIKE	25/2/2016
vTRHCs - C <sub>8</sub>	mg/kg			<25	135926-10	<25    <25	W-SPIKE	102%
Benzene	mg/kg	0.2	Org-016	<0.2	135926-10	<0.2    <0.2	W-SPIKE	99%
Toluene	mg/kg	0.5	Org-016	<0.5	135926-10	<0.5    <0.5	W-SPIKE	103%
Ethylbenzene	mg/kg	1	Org-016	<1	135926-10	<1    <1	W-SPIKE	103%
m-p-xylene	mg/kg	2	Org-016	<2	135926-10	<2    2	W-SPIKE	101%
o-Xylene	mg/kg	1	Org-016	<1	135926-10	<1    <1	W-SPIKE	105%
Surrogate aaa- Trifluorotoluene	%		Org-016	121	135926-10	111    113    RPD: 2	W-SPIKE	104%
QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base  Duplicate  %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/2/2016	135926-10	24/2/2016    24//2/2016	W-SPIKE	24/2/2016
Date analysed	-			25/2/2016	135926-10	25/2/2016    25//2/2016	W-SPIKE	25/2/2016
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg			<50	135926-10	<50    <50	W-SPIKE	99%
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-003	<100	135926-10	<100    <100	W-SPIKE	102%
TRHC <sub>28</sub> - C <sub>36</sub>	mg/kg	100	Org-003	<100	135926-10	<100    <100	W-SPIKE	99%
Surrogate o-Terphenyl	%		Org-003	104	135926-10	114    105    RPD: 8	W-SPIKE	98%

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QUALITYCONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm #	Duplicate results BaseI DuplicateII %RPD	Spike Sm #	Spike% Recovery
Dateextracted	-			24/2/2016	[NT]	[NT]	135926-8	24/2/2016
Dateanalysed	-			25/2/2016	[NT]	[NT]	135926-8	25/2/2016
HCB	mg/kg			<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	98%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	98%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	96%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	97%
HeptachlorEpoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	98%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	98%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	99%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	98%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	99%
EndosulfanII	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
EndosulfanSulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	135926-8	98%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-005	98%	[NT]	[NT]	135926-8	99%

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**270 Malabar Road Maroubra NSW – Soil Assessment**

QUALITYCONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm #	Duplicate results BaseII DuplicateI %RPD	Spike Sm #	Spike % Recovery
Date extracted	-			24/2/2016	[NT]	[NT]	135926-8	24/2/2016
Date analysed	-			25/2/2016	[NT]	[NT]	135926-8	25/2/2016
Diazinon	mg/kg			<0.1	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	135926-8	94%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	135926-8	89%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	135926-8	99%
Surrogate TCLMX	%		Org-008	95	[NT]	[NT]	135926-8	97%
QUALITYCONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm #	Duplicate results BaseII DuplicateI %RPD	Spike Sm #	Spike % Recovery
Date extracted	-			24/2/2016	[NT]	[NT]	135926-7	24/2/2016
Date analysed	-			25/2/2016	[NT]	[NT]	135926-7	25/2/2016
Total Phenolics (as Phenol)	mg/kg			<5	[NT]	[NT]	135926-7	99%

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**270 Malabar Road Maroubra NSW – Soil Assessment**

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base   Duplicate   %RPD	Spike Sm#	Spike % Recovery
Date digested	-			24/2/2016	135926-11	24/2/2016    24/2/2016	W-SPIKE	24/2/2016
Date analysed	-			25/2/2016	135926-11	25/2/2016    25/2/2016	W-SPIKE	25/2/2016
Arsenic	mg/kg		Metals-020 ICP-AES	<4	135926-11	<4    <4	W-SPIKE	100%
Boron	mg/kg	3	Metals-020 ICP-AES	<3	135926-11	<3    <3	W-SPIKE	97%
Beryllium	mg/kg	1	Metals-020 ICP-AES	<1	135926-11	<1    <1	W-SPIKE	102%
Cadmium	mg/kg	0	Metals-020 ICP-AES	<0.5	135926-11	<0.5    <0.5	W-SPIKE	101%
Cobalt	mg/kg	1	Metals-020 ICP-AES	<1	135926-11	<1    <1	W-SPIKE	101%
Manganese	mg/kg	1	Metals-020 ICP-AES	<1	135926-11	5    5    RPD: 0	W-SPIKE	98%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	135926-11	2    2    RPD: 0	W-SPIKE	101%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	135926-11	2    2    RPD: 0	W-SPIKE	102%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	135926-11	5    5    RPD: 0	W-SPIKE	100%
Mercury	mg/kg	0	Metals-021	<0.1	135926-11	<0.1    <0.1	W-SPIKE	103%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	135926-11	<1    <1	W-SPIKE	101%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	135926-11	13    13    RPD: 0	W-SPIKE	102%

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Method ID	Methodology Summary
Org-014 AT-008 Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Determination of volatile organic compounds in charcoal tubes following NIOSH methods.
Org-003	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-005	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Inorg-030	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Metals-020 ICP-AES	Total Phenolics - determined colorimetrically following distillation, based upon APHA 21st ED 5530 D. Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
004 ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

270 Malabar Road Maroubra NSW – Soil Assessment

**Report Comments:**

**Acid Extractable Metals in Soil:**

Good spike recovery was obtained for this sample.

**Asbestos:**

Asbestos ID was analysed by Approved Identifier: Applicable for this job

Asbestos ID was authorised by Approved Signatory: Applicable for this job

**Laboratory Definitions:**

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

**Quality Control Definitions:**

**Blank:** This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples. **Duplicate:** This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

**Matrix Spike:** A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

**LCS (Laboratory Control Sample):** This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

**Surrogate Spike:** Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

**Laboratory Acceptance Criteria:**

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

# **APPENDIX I**

## **Noel Child Summary of Qualifications, Capability & Experience**

## 1 PERSONAL DETAILS

**Full Name:** Noel George CHILD  
**Profession:** Consultant in Environmental Assessment and Management  
**Date of Birth:** 6th December 1946  
**Nationality:** Australian  
**Experience:** > 30 Years  
**Address:** 22 Britannia Road, Castle Hill, NSW, 2154  
**Contact:** **Phone:** 61 2 9899 1968 **Fax:** 61 2 9899 1797 **Mobile:** 0409 393024

## 2 CAPABILITY AND EXPERIENCE - SHORT SUMMARY

Noel Child is a successful and experienced commercial and technical professional with over 30 years' experience in a variety of senior level appointments and assignments, within both the corporate and private sectors, with a particular focus on infrastructure, environmental and air quality applications.

Noel's experience includes senior management at both the State and National levels in the Australian petroleum industry, and a number of senior consultancies for both government and corporate clients. His record reflects the ability to develop and achieve positive commercial outcomes through effective planning and communication; critical and objective analysis; and quality task completion and delivery at both the personal and team level.

His management responsibilities have included transport, environmental, safety, and general operational activities at a national level, while his formal professional training includes environmental, scientific, engineering and business disciplines. He has undertaken a number of senior corporate appointments with distinction, and been successfully involved in the ownership and operation of a major petroleum distribution and marketing company in regional Australia. More recently, working through his own businesses Environment Australia and NG Child & Associates, he has applied his knowledge and experience in the areas of infrastructure development, the environment and air quality on a consultancy and contractual basis to a number of private and public sector clients, both nationally and internationally.

Noel has had post-graduate training in several technical and commercial disciplines, and provides specialised teaching input, by invitation, to post graduate environmental assessment and environmental management courses conducted by the Faculties of Business and Engineering at Sydney's University of Technology. He has strong affiliations with a number of international corporations and agencies, and has worked closely with both the regulators and the regulated in a number of aspects of environmental management, assessment and performance. He has also been recognised as an independent expert on environmental, air quality and odour issues by the Land and Environment Court of NSW.

Noel has a detailed understanding of environmental assessment procedures and protocols, and has specific experience and expertise in the fields of air quality, odour, acoustic and electromagnetic field assessment. He also provides post graduate teaching input on environmental, air quality and acoustic issues to post graduate courses at the University of Technology, Sydney, and La Trobe and Monash Universities in Melbourne.

## 3 EDUCATION, QUALIFICATIONS AND AFFILIATIONS

BE, PhD (Chemical Engineering), UNSW, Sydney  
Master of Business Studies, University of New South Wales, Sydney  
B.Sc. (Hons) Applied Chemistry (Environmental), University of Technology, Sydney  
Graduate Diploma (Environmental Engineering and Management), UNSW, Sydney  
Qualified Environmental Auditor, Standards Australia  
Member, Royal Australian Chemical Institute, 1972/2016  
Member, Institution of Engineers, Australia, 1972/2016  
Member, Clean Air Society of Australia and New Zealand, 1992/2016  
Member, Australian Natural Gas Vehicle Council, 1996/2004  
Executive Director, Australasian Natural Gas Vehicles Council, 2003/2004  
Visiting Fellow, Institute for Sustainable Futures, UTS, 1995/2002  
Research Fellow, Faculty of Civil & Environmental Engineering, UTS, 1996/2016  
Research Associate, New York Academy of Sciences, 2000/2016

## 4 SOME RECENT ASSIGNMENTS & EXPERIENCE

**Archizen Architects (2015/16)** - Acoustic assessment of proposed child care centre at 276 Norton Street Leichhardt NSW.

**Ingham Planning (2015/16)** - Acoustic assessment of proposed child care centre at 1 Alpha Road Willoughby NSW.

**Redwood Projects (2015/16)** – Acoustic, air quality and site contamination assessments of proposed child care centre at 86 Dickson Avenue Artarmon NSW.

**Montessori Academy (2015)** – Acoustic, EMF and air quality assessment of a proposed Child Care Centre development at Building 2, 160 Bourke Street, Alexandria NSW.

**Trumen Corp (2015)** – Acoustic and air quality assessment of proposed mixed use development (including child care) at 97 Old Pittwater Road Brookvale NSW.

**First Impressions Property (2015)** – Acoustic, electromagnetic field (EMF) and air quality assessments of a Child Care Centre proposed for 185 Briens Road, Northmead NSW.

**Futurespace & Clients (2014)** – Electromagnetic field, acoustic, air quality and contamination assessments of Child Care Centre developments at 35 Waterloo Road Ryde, Cleveland Street Strawberry Hills and Cawarra Road Caringbah NSW.

**Liskowski Architects (2014)** – Electromagnetic field assessment of prospective Child Care Centre sites at 17 and 19 Orchard Road, Chatswood, NSW.

**Australian Consulting Architects (2014)** – Electromagnetic field and stray current assessment of development sites at 520 Windsor Road, Vineyard and 8 Field Place Telopea NSW.

**Australian Consulting Architects (2013)** – Electromagnetic field and stray current assessment of a proposed Child Care Centre at Ramsay Road, Five Dock NSW.

**First Impressions Property (2014)** – Stage 1 Site Contamination and Electromagnetic Field Assessments of a proposed Child Care Centre development at Unit 10, 34-36 Ralph Street, Alexandria NSW.

**Trumen Corporation (2015)** – Environmental assessment, including acoustic and air quality assessment and certification, of mixed use and Child Care Centre development projects at Waine Street Freshwater, Fitzroy Street Marrickville, and at Huntley Street and Burrows Road Alexandria, NSW.

**Commonwealth Bank (2015)** – Environmental assessment, including general, acoustic, air quality and electromagnetic field assessment, of a new Child Care Centre development to be located on Level 2 of Darling Park Power 2, Sussex Street, Sydney.

**McCormack (Current)** – Stage 2, 3 and 4 Environmental Site Assessment of 7,9 & 11 Bayard Street, Mortlake, NSW as part of the process of assessing the site for medium density residential development, and obtaining a site audit statement confirming the suitability of the site for this purpose. Work inclusive of the assessment of all relevant environmental impacts.

**Gundagai Meat Processors (Current)** – Review of environmental, air quality, electromagnetic field and acoustic control systems at GMP's Gundagai abattoir, including the review of odour issues from both meat processing and waste management operations.

**Campbelltown City Council (Current)** – Peer review of acoustic assessments submitted to Campbelltown City Council regarding assessment of the acoustic impacts of a truck maintenance facility on adjoining residential receivers, including the conduct of noise measurements.

**Brenchley Architects (2009 - Current)** – Acoustic assessments of proposed residential and commercial developments at Elizabeth Street Sydney; Spit Road Mosman, Botany Road Waterloo, Cranbrook Street, Botany and Bellevue Hill Road, Bellevue Hill NSW.

**BJB Design (2009 - Current)** – Acoustic, air quality and odour assessments of residential and commercial developments at Botany Road, Botany and Cranbrook Street Botany.

**Bovis Lend Lease (Current)** – Environmental assessment of a major development site at Darling Walk, Darling Harbour NSW, including a detailed review of air quality, electromagnetic field and acoustic issues for review by the NSW Department of Planning.

**Mode Design (2013)** – Stage 2 Environmental Site Assessment and Electromagnetic Field Assessment of a community centre development, including child care facilities, at Storey Park, Old Berowra Road, Hornsby NSW.

**Harry Azoulay & Michael Bell Architects (2012)** – Assessment of the acoustic impacts on and from a proposed child care and early learning centre at Chatswood, NSW. Assessments lodged with and adopted by Willoughby City Council.

**Wollondilly Shire Council (2012)** – Preliminary environmental assessment and review of the proposed development of a second Sydney airport at Wilton, including a preliminary assessment of acoustic impacts.

**Sydney Skips & Galaxy Waste (Current)** – Environmental assessment of a proposed waste recycling facility to be located on a potentially contaminated site at Stephen Road, Botany, NSW, including a detailed

review of air quality and acoustic issues, and the preparation of relevant documentation including assessment reports for review by Botany City Council.

**Michael Bell Architects & Clients (2004 to Current)** – Assessment of the environmental impacts, including acoustic impacts, associated with various Child Care Centre applications in suburban Sydney, and the Sydney CBD, including the development of plans for the management and control of such impacts.

**ABC Learning Centres Pty Ltd (2005 - Current)** – Provision of professional services re the environmental assessment of prospective Child Care Centre developments, including issues relating to acoustics, air quality, odour, soil, and groundwater contamination.

**NSW Land & Environment Court (1999 to Current)** – Appointed expert on a range of environmental issues involved in the resolution of a number of matters referred to the Court on appeal, including disputed matters involving various Sydney Local Government Areas

**Arup Transport Planning (1999 to Current)** – Provision of expert input in relation to air quality and acoustic issues to consultancy projects undertaken by Arup Transport Planning.

**Western Sydney Alliance of Mayors (1998 to Current)** – Technical and strategic consultant to the Alliance in relation to the development of transport and infrastructure programs and policies for Western Sydney, including provision of advice on all relevant environmental issues, including noise.

**Thyssen Transrapid Australia (1998 to Current)** – Adviser on technical and operational issues associated with the development and construction of a high-speed magnetic levitation train systems within the People's Republic of China, and elsewhere.

**NSW Roads & Traffic Authority (2004 to Current)** – Review of international technologies, systems & applications in relation to the treatment of motor vehicle exhaust emissions and associated air pollution within and discharged from road tunnels, in accordance with the conditions of approval for the M5 East Motorway

**Warren Centre for Advanced Engineering, University of Sydney (2000 to 2003)** – Contribution to the report "Sustainable Transport for Sustainable Cities", a major government and private enterprise funded study into the future sustainability of transport in Sydney and adjoining regions, including in particular a review of associated environmental issues. Study received the 2003 Bradfield Award for Engineering Excellence from the Australian Institute of Engineers.

## 5 CORPORATE EXPERIENCE

### NG Child & Associates

- ❑ **1992--Present**, Managing Principal - Responsible for all aspects of the conduct of a private engineering and environmental consultancy, including administration, marketing, team coordination and technical and professional delivery.

### Western Fuel Distributions Pty Limited, Australia

- ❑ **1984-92** Managing Principal. - Responsible for all aspects of the management and development of one of the largest private petroleum distributorships then operating in Australia, with a peak annual sales volume of 70 million litres, turnover of \$30 million per annum, a direct staff of thirty, and a network of some 40 retail and wholesale agency outlets. This position included direct personal accountability for all aspects of storage, distribution and environmental performance.

### Caltex Oil Australia Limited

- ❑ **1982-84** General Manager, Marketing and Operations. Responsible for the management and operation of Caltex Australia's marketing, storage, warehousing, distribution, environmental and safety functions, including seaboard terminal and marine operations.
- ❑ **1980-82** National Consumer Marketing Manager. Responsible for Caltex Australia's national consumer, industrial and distributor marketing activities.

### Golden Fleece Petroleum Limited

- ❑ **1977 - 1980** Manager Operations, NSW. Responsible for the overall management of the distribution, warehousing, seaboard terminal and lubricant production activities of Golden Fleece Petroleum in New South Wales, including environmental, occupational health and safety matters.

### Esso Australia Limited

- ❑ **1976-77** SA Manager, Marketing and Operations. Responsible for all aspects of the management of Esso's petroleum, lubricant and LPG storage, distribution and marketing throughout South Australia.
- ❑ **1975-76** Refinery Manager. Responsible for all engineering, operational and environmental aspects of the joint Esso/Mobil refinery at Port Stanvac in South Australia.
- ❑ **1975** Manager, Process Operations, Port Dixon Refinery, Malaysia. Six-month special assignment at the Esso Petroleum Refinery, Port Dixon, Malaysia.
- ❑ **1971-75** Senior Analyst, Logistics and Corporate Strategy Departments, Esso Sydney Head office.

## 6 SOME REPORTS & PUBLICATIONS

- ❑ **High Speed Rail – Benefits for the Nation**, Keynote address at the UNSW Institute of Environmental and Urban Studies International High Speed Rail Seminar, August 2013.
- ❑ **High Speed Trains in Australia: Connecting Cities and Energising Regions**; with the Hon Peter Nixon AO, October 2010.
- ❑ **Sydney’s High Residential Growth Areas: Averting the Risk of a Transportation Underclass**, World Transport & Environmental Forum, Reims France, June 2006.
- ❑ **The M5 East Road Tunnel: Implications for Ventilation, Air Quality and Emission Treatment Systems**, International Road Transport and Tunneling Forum, Graz Austria, May 2006.
- ❑ **Transport Fuels In Australia: The Folly of Australia’s Increasing Reliance on Imported Crude Oil**, Submission to the Australian Senate Rural and Regional Affairs and Transport Committee Inquiry into Australia’s Future Oil Supply and Alternative Transport Fuels, February 2006.
- ❑ **The Japan 2003 CNG Emission Standard & the Emission Performance of the Isuzu 4HF-1-CNG: The Case for Acceptance under ADR80**. Submission on behalf of Isuzu GM Australia to the Commonwealth Department of Transport and Regional Services, June 2004.
- ❑ **M5 East Freeway: A Review of Emission Treatment Technologies, Systems and Applications**, NSW RTA and NSW Department of Planning, April 2004.
- ❑ **Future Directions: Challenges & Opportunities in the Australian CNG Vehicle Industry**, ANGVC, December 2002
- ❑ **High Speed Rail in Australia: Beyond 2000** (with the Hon Peter Nixon), November 2000
- ❑ **Review of Options for the Treatment or “Filtration” of Tunnel Gases and Stack Emissions**, City of Sydney. January 2003
- ❑ **A Comparative Analysis of Energy and Greenhouse Performance: Austrans Ultras Light Rail System**, Bishop Austrans Limited, January 2003
- ❑ **Engineering and Environmental Aspects of Enclosing the Cahill Expressway Cutting**, City of Sydney, May 2001.
- ❑ **M5 East Motorway: Proposed Single Emission Stack at Turrella – Review of Air Quality Impacts and Consideration of Alternative Strategies**, Canterbury City Council, February 1999

## 7 PERSONAL & PROFESSIONAL REFERENCES

- ❑ The Hon Peter Nixon AO, Former Federal Transport Minister
- ❑ John Black, Professor Emeritus of Civil & Transport Engineering, University of NSW
- ❑ Angela Ferguson, Director, Futurespace
- ❑ Mr Stephen Lye, Development Manager, Trumen Corporation, Sydney.
- ❑ Mr Peter Han, Project Director, Commonwealth Bank, Sydney
- ❑ Mr Michael Bell, Principal, Michael Bell Architects, Sydney.
- ❑ Mr Barry Babikian, Brenchley Architects
- ❑ Mr Luke Johnson, Assistant General Manager, Wollondilly Shire Council
- ❑ Mr Bernie Clark, Chief Executive, Thyssen Australia
- ❑ Mr Alan Ezzy, Former Chairperson, NSW Flood Mitigation Authority.
- ❑ Professor Vigid Vigneswaran, Faculty of Civil & Environmental Engineering, University of Technology, Sydney.
- ❑ Mr Merv Ismay, General Manager, Holroyd City Council, Sydney NSW
- ❑ Dr Jack Munday, Past Chairman Historic Houses Trust, Environmentalist
- ❑ Alex Mitchell, Journalist



**Noel G Child**  
**2 March 2016**

**ATTACHMENT A**  
**Client Reference List**

AC Architects  
Acre Woods Childcare Pty Ltd  
Australian Commonwealth Environmental Protection Agency  
Australian Federal Airports Corporation  
Australian Federal Department of Transport and Regional Development  
Bovis Lend Lease  
Brenchley Architects  
Caltex Oil Australia  
Campbelltown City Council  
Canterbury City Council, Sydney, NSW  
Commonwealth Banking Corporation  
Environment Protection Authority of NSW  
Exxon Chemical  
Fairfield City Council, Sydney, NSW  
FreightCorp, Sydney, NSW  
Futurespace  
Guangxi Environment Protection Bureau  
Gundagai Meat Processors  
Hong Kong Department of the Environment  
Hornsby and Ku-ring-gai Councils, Sydney, NSW  
Hyder Consulting  
ICI Limited  
Leda Developments  
Michael Bell Architects  
Minter Ellison  
Mobil Oil Australia, Associated  
Nettletontribe  
NSW Roads & Traffic Authority  
Ove Arup & Partners  
Port of Seattle Authority  
Qantas Airways  
Queensland Ports Corporation  
Shell Australia  
Sinclair Knight Merz  
Skouras and Mabrokardatos  
Southern Sydney Regional Organisation of Councils (SSROC)  
State Rail Authority of NSW  
Stephen Davidson Property Investments  
The City of Sydney  
The Montessori Academy  
The Western Sydney Alliance of Mayors  
Thyssen Krup Transrapid Australia  
Tom Howard QC  
Trumen Corporation  
UK Department of the Environment  
United States Environment Protection Agency  
University of Technology, Sydney  
Warren Centre for Advanced Engineering, University of Sydney  
Waverley Council, Sydney, NSW  
Western Sydney Parklands Trust  
Wollondilly Shire Council



Reference: 15.022r01v2

**traffix**  
traffic & transport planners

16<sup>th</sup> June 2015

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Childcare Concepts  
C/- Urbis Pty Ltd  
Tower 2, Level 23, Darling Park  
201 Sussex Street  
SYDNEY NSW 2000

Attention: Stephen White, Director

**Re: 270 Malabar Road, Maroubra – Planning Proposal  
Traffic Impact Statement**

Dear Stephen,

We refer to your correspondence dated 9<sup>th</sup> June 2015 concerning the subject planning proposal. It is noted that proposal has arisen as an outcome of previous discussions with Council officers, which alluded to the possible need for a rezoning to permit use of the existing unused church to enable expansion of the existing 29 place child care centre. It is anticipated that following any rezoning, a development application may be sought for such an expansion. Having reviewed all relevant plans and documentation provided to us, we now advise as follows.

### Location and Site

The subject site is located at 270 Malabar Road in Maroubra, on the western corner of the intersection with Storey Street. It is legally described as Lot 3821 in DP752015.

The site has a triangular configuration with a site area of 1,006.6m<sup>2</sup>. It has a southern street frontage to Malabar Road measuring approximately 45 metres and a northern street frontage to Storey Street measuring approximately 53 metres, whilst sharing a western boundary with residential developments that measures approximately 36 metres.

A single vehicular crossing provides the sole access to the site from Storey Street. It is noted that this access is also shared by the neighbouring dwelling house at 319 Storey Street, via a short driveway on the north-western corner of the site. This driveway is not the subject of any easement or right of carriageway.

Reference should be made to the Photographic Record presented in **Attachment 1**, which provides an appreciation of the general character of roads and other key attributes in proximity to the site.

### Current Planning Context

The subject site is situated within the City of Randwick local government area. Under the *Randwick Local Environmental Plan 2012* (Randwick LEP 2012), this land is zoned as 'SP2 Infrastructure – Place of Public Worship'. Child care centres are a prohibited development within this zone.



## 📍 Road Hierarchy

The following roads are of particular interest:

- **Malabar Road:** a locally managed regional road (RR7340) that generally traverses in a north-south direction between Rainbow Street in the north and Maroubra Road to the south. It has a carriageway of approximately 15 metres in width and accommodates a single lane of traffic in either direction. In the vicinity of the site edge lines separate the kerbside parking aisle from travelling lanes. Along the subject site frontage, an approximate 25 metre long No Stopping restriction extends on Malabar Road from the intersection of Storey Street, with unrestricted parking permitted west of this restriction.
- **Storey Street:** a local road that runs in an east-west direction between Malabar Road in the east and Bunnerong Road to the south. It has a carriageway of approximately 10.5 metres in width and accommodates a single lane of traffic in either direction. Unrestricted parking is generally permitted on Storey Street outside of statutory No Stopping restrictions, with an indented parking bay provided adjacent to the subject site.

## 📍 Public Transport

The site is located within a 400 metre radius from bus stops on Malabar Road, Torrington Road and Maroubra Road, which are serviced by the following routes:

- 376 & 377: Maroubra Beach to City via Randwick
- 395 & 396: Maroubra Beach to City via Anzac Parade
- 317: East Gardens & Coogee to Bondi Junction

## 📍 Existing Development

The complying developments on-site comprise of the following:

- A child care centre for 29 child places which contains a total of 166m<sup>2</sup> gross floor area (GFA) of indoor play area and has access to two on-site staff parking spaces. Pick up and drop off of children is accommodated on-street.
- A church building that contains approximately 74.9m<sup>2</sup> GFA and is essentially unused.

## 📍 Proposal

A detailed description of the planning proposal is provided in the Planning Report prepared separately by Urbis. In summary, approval is sought for the site to be rezoned '*R2 Low Density Residential*'. This would allow child care centres to be a permitted development with consent under the Randwick LEP 2012.

The proposal would permit the use of the church for expansion of the existing child care centre. A concept sketch showing a possible arrangement is presented in **Attachment 2**, noting that this has been adopted as an indicative development scenario that would ultimately be the subject of a later development application. The church can accommodate an additional 74.9m<sup>2</sup> GFA of indoor play area.



Whilst no floor space ratio is currently assigned for the site, the scenario discussed below assumes the lowest maximum floor space ratio permitted by the Randwick LEP 2012 of 0.5:1. For assessment purposes a worst case scenario has been assessed (subject to a later DA) whereby the centre would expand from 29 child places to 66 places, which is a net increase of 37 child places. It is expected that this would be associated with a net increase of 6 staff (from 4 to 10), being the number on-site at any one time.

## Parking Requirements

The Randwick DCP 2013 requires a minimum of one parking space per eight (8) children and one space per two (2) staff. Having regard for the net increase of 37 children and 6 staff, the concept sketch presented in **Attachment 2** would create a need for an additional five (5) set-down spaces and three (3) staff spaces.

In response, the following additional provisions are anticipated, as shown in the concept plan in Attachment 2.

- A net increase of five (5) on-street parking spaces for set-down/pick-up, as required. Two (2) of these spaces are provided to the west of the three (3) existing spaces in Storey Street, with provision also made for a new driveway serving the adjoining dwelling house. The remaining three (3) spaces are provided in Malabar Road at the western end of the site frontage. These 5 spaces all make use of existing on-street parking areas and would be short-term (10 minute) parking during the AM and PM peak periods on weekdays only.
- A net increase of one (1) on-site parking space for staff. While it is evident that this will result in the on-street parking of the balance of 2 spaces, this is a moderate impact that will occur on weekdays during business hours. In addition, there is a reasonable prospect that management arrangements could be put in place to reduce this demand to perhaps a single space, through the implementation of a Work Travel Plan.

In summary, in our view there is no fundamental impediment to the rezoning of the site on parking grounds, noting that any approval would be the subject of a later development application. It is also expected that any future development application would explore the following opportunities:

- The good public transport connections within vicinity of the site;
- The proximity to other road generators defined by Council including schools and open space;
- The provision of ample on-street parking opportunities which can be quantified by undertaking surveys during pick up and drop off times of the existing child care development; and
- Establishing operational management procedures to minimise parking demands.

## Traffic Impacts

The RMS Guide to Traffic Generating Developments provides traffic generation rates for child care centres based upon surveys conducted in Sydney. It recommends for a long day care centre, an average trip rate of 0.8 vehicle trips per child between 7:00am-9:00am and 0.7 vehicle trips per child between 4:00pm-6:00pm. Application of the above rates to the net increase of 37 child places under a worst case (maximum) development scenario results in the following estimate of traffic generation:

- 30 vehicle trips per hour during the AM peak period; and



- 26 vehicle trips per hour during the PM peak period.

These are moderate trip rates and will be distributed onto both road frontages. The additional traffic would be about one single vehicle trip every two minutes at peak times. Whilst a detailed breakdown of these trips can be provided in due course upon confirmation of the numbers of children and staff on-site, it is anticipated that vehicle trips will be readily accommodated.

Hence, rezoning of the site to permit an expanded child care centre is generally supportable.

## Summary

The planning proposal seeks to rezone the subject land as '*R2 Low Density Residential*', which will permit full use of the site for a child care centre. Based on the worst case scenario tested with 66 children, Council's planning controls are expected to be satisfied. The parking and traffic impacts of such a development are considered capable of refinement and/or resolution at development application stage.

In summary, we believe the proposed rezoning of the subject site is supportable on traffic planning grounds. We trust the above is of assistance and please contact the undersigned should you have any queries or require any further information.

Yours faithfully

**traffix**



Graham Pindar  
**Director**

Encl: Attachments 1 and 2



# Attachment 1

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## Photographic Record



View looking west on Storey Street at the intersection of Malabar Road towards subject site.



View looking south on Harrison Avenue towards the Storey Street frontage of site.





View looking south on Storey Street of existing access of subject site.



View looking east on Storey Street of existing indented parking bay.





View looking west on Malabar Road with subject site on right-hand side of photograph.



View on Malabar Road looking west towards existing church building on site.





# Attachment 2

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## Concept Plan

