

# **Preliminary Geotechnical Research – Proposal for new Crown Cemetery in Lidcombe**

October 2025

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# 1. Introduction

In August 2025, The NSW Government's Metropolitan Memorial Parks (MMP) identified Carnarvon Golf Course, located at 65-95 Nottinghill Road, Lidcombe, as the preferred site for redevelopment into a new Crown cemetery. In response, Cumberland City Council resolved at the Ordinary Council Meeting of 27 August 2025:

*“That the General Manager take necessary action to develop a submission on behalf of Cumberland Council opposing the creation of a cemetery on the site of Carnarvon Golf Course.”*

This research outlines the potential geotechnical considerations / issues associated with the redevelopment of the site. Key concerns are that Council remains unsatisfied that a thorough study has been conducted regarding geotechnical and contamination on the site to ensure this sensitive use is suitable.

## 1.1 SITE IDENTIFICATION AND DESCRIPTION

Site identification details are summarised in Table 1. The location and layout of the site is shown in Figures 1.

|                          |                                         |
|--------------------------|-----------------------------------------|
| <b>Site Address:</b>     | 65-96 Nottinghill Road, Lidcombe NSW    |
| <b>Site Area:</b>        | 459,911 sqm (approximately 45 hectares) |
| <b>Current Zoning:</b>   | RE1 Public Recreation                   |
| <b>Current Land Use:</b> | Golf Course                             |

The subject site is approximately 45 hectares and is located at 65-96 Nottinghill Road, Lidcombe, within the Cumberland local government area. Zoned RE1 Public Recreation under the Cumberland Local Environmental Plan (LEP) 2021, the site is currently operating under a lease issued by Council in our capacity as Crown land manager for the use of the site as a golf course. The location and boundary extent can be seen in Figure 1.



Figure 1: Map showing the site boundary of Carnarvon Golf Course (Nearmap, 2025)

A desktop review of the current surrounding land uses are as follows:

- North – Georges Avenue, and low density residential dwellings
- South – Amy Street, followed by the railway line and low density residential dwellings.
- East – Joseph Street, followed by the NSW Forensic Medicine and Coroners Court Complex and low density residential dwellings.
- West – Nottinghill Road, followed by low density residential dwellings.

## 1.2 SITE HISTORY

Through historical aerial photograph review, the subject site appears to be under different land uses overtime. In summary, the following key land uses were found:

- 1940s – The area was occupied by residential dwellings, paddocks and ovals
- 1950s to 1970s – The area was occupied by denser residential dwellings and playing fields
- 1980s to 1990s – Some non-residential buildings were developed adjacent to the south-east corner of the subject site



## 2. Geotechnical Research

### 2.1 TOPOGRAPHY

The site topography sits within a gently undulating landscape typical of the Cumberland Plain in Western Sydney. The elevation across the area ranges from approximately 25 to 35 metres above sea level to the north, and 40 to 45 above sea level metres to the south, with no significant slopes or escarpments, as shown in Figure 2. This relatively flat terrain makes it ideal for recreational uses such as golf, allowing for smooth fairway transitions and minimal grading requirements.

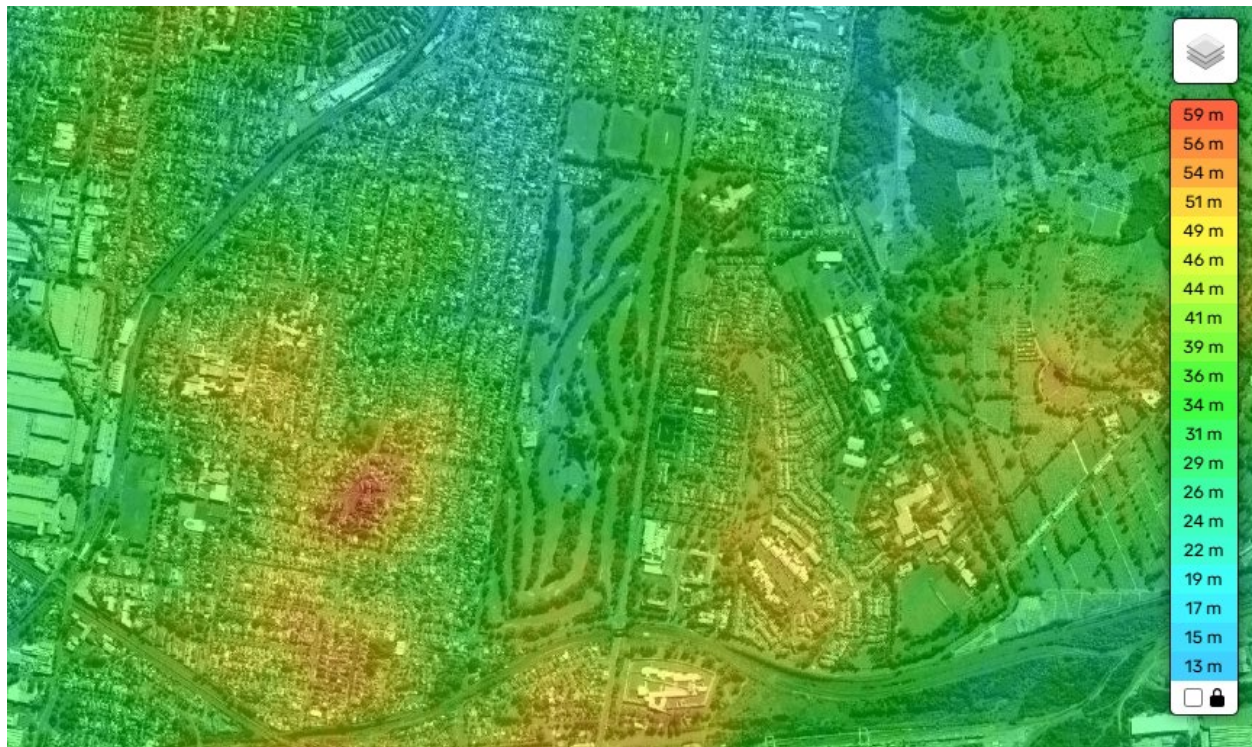


Figure 2: Topographic map showing elevation and terrain (Esri Imagery, 2025)

### 2.2 GEOLOGY

#### 2.2.1 Regional Geology

The site lies within the geological region known as the Wianamatta Group – part of the larger Sydney Basin. The dominant geological units in this area are:

- **Ashfield Shale:** This is the primary bedrock underlying much of Lidcombe. It consists mainly of finely laminated shale, siltstone, and minor sandstone. These rocks were deposited during the Triassic period and are known for their low permeability and moderate reactivity when exposed.
- **Alluvial Deposits:** Overlying the bedrock in some areas are Quaternary alluvial sediments, particularly near low-lying or previously swampy areas. These include clays, silts, sands, and gravels deposited by ancient watercourses. This can be seen

within the subject site in Figure 3 below, labelled 'Qa' representing alluvial deposits. Further investigation would be required to understand the thickness and properties of the soils on the subject site.

- **Soil Profile:** The surface soils are typically clay-rich, derived from weathered shale, and may exhibit moderate to high plasticity. These soils can be reactive, meaning they expand and contract with moisture changes, which is a key consideration for construction and landscaping.

This geological composition provides a relatively stable foundation for recreational developments like golf courses, though soil reactivity and drainage must be managed carefully in design and maintenance.

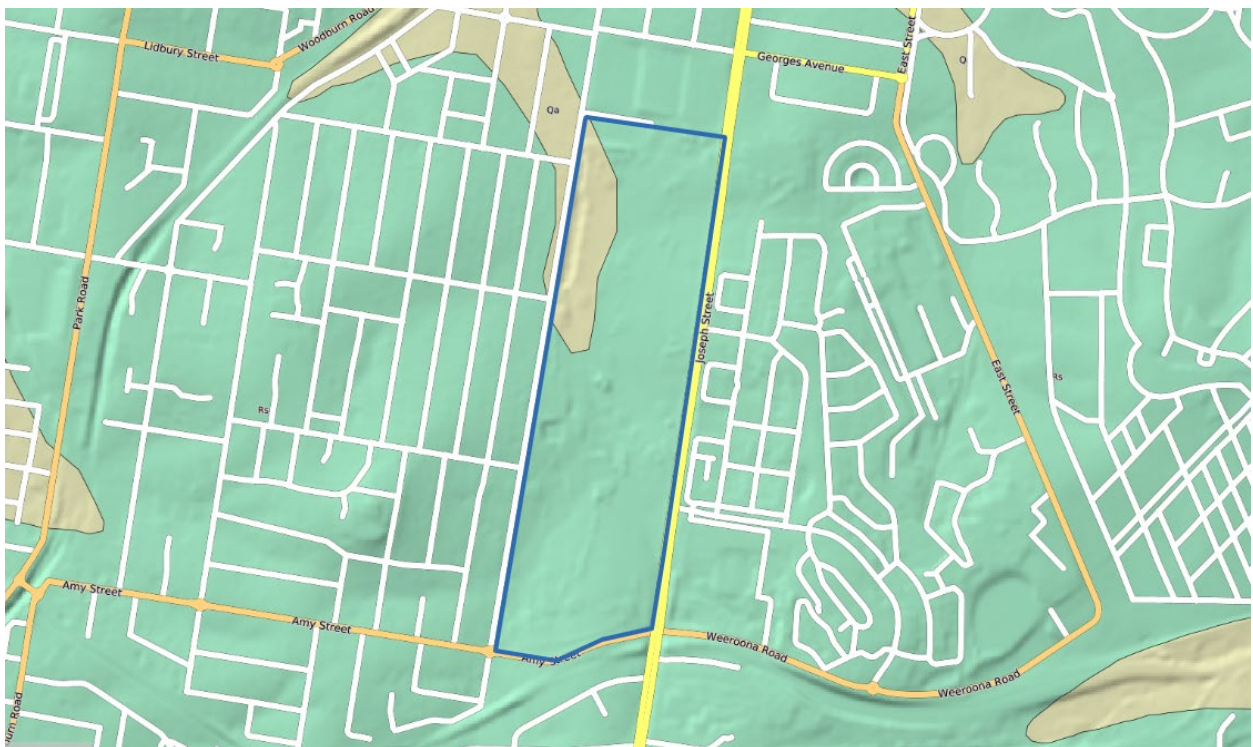


Figure 3: Simplified surface geology of the site (State of NSW through DPIRD, 2025)

### 2.2.2 Acid Sulfate Soils

The NSW Department of Climate Change, Energy, the Environment and Water 1:25,000 Acid Sulfate Soil Risk Map indicates that there is no known occurrence of acid sulfate soil material underlying the site. However, the Cumberland LEP 2021 has the site mapped as Class 5 on the Acid Sulfate Soils Map, as seen in Figure 4 below. Areas mapped as Class 5, do not typically contain acid sulfate soils, but are located within 500 metres on adjacent Class 1, 2, 3 or 4 land, which may.



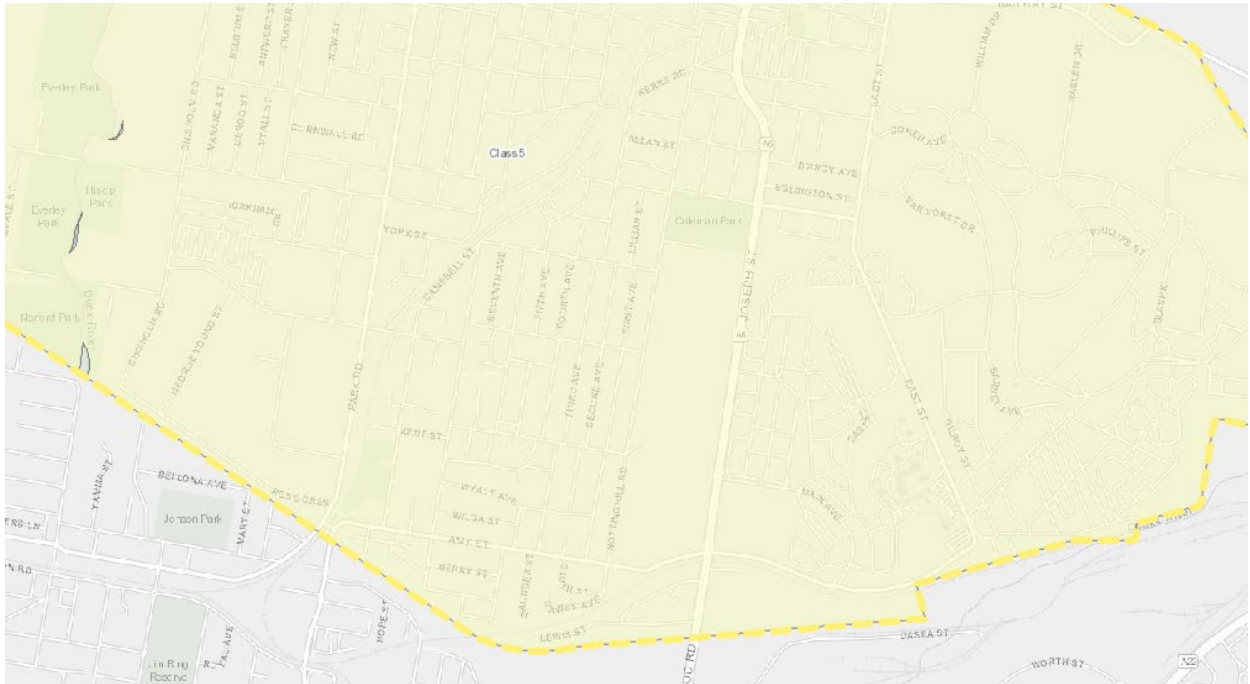


Figure 4: Acid Sulfate Soils Map (NSW Planning Portal, 2025)

## 2.3 GROUNDWATER CONDITIONS

The groundwater conditions at the subject site are influenced by the site's geological setting atop the Ashfield Shale formation, part of the Wianamatta Group. This shale bedrock is known for its low permeability and fractured structure, which limits the movement and recharge of groundwater.

Site-specific investigations in the surrounding area suggest that groundwater is typically encountered at depths between 5 and 12 metres below ground level, although this can vary depending on seasonal rainfall and local topography. The water table is generally stable, with minimal fluctuation, and the site is not located within a designated floodplain or groundwater-dependent ecosystem.

Surface soils at the site consist predominantly of stiff to very stiff clay derived from weathered shale, which further restricts vertical infiltration. However, the reactive nature of these soils – in the context of expanding and contracting with moisture changes—makes it necessary for the careful design of drainage systems to prevent ground movement and waterlogging.

A high-level search of groundwater bore licenses and contaminated land record through Water NSW and NSW EPA does not identify any relevant records on the subject site. This indicates that the subject site may have not been subject to any geotechnical testings or investigation including a contamination assessment. For clarity, a detailed hydrogeological assessment would be required to confirm site-specific conditions, particularly in low-lying areas or zones with historical fill.

## 2.4 CONTAMINATION

The NSW Environmental Protection Authority (EPA) publishes a list of notified contaminated sites monthly, which contains land that has been notified to the EPA as potentially contaminated. A search of this list did not identify the site or any neighbouring properties in Lidcombe or Berala.

A desktop review revealed that there have been no publicly available contamination assessments undertaken at 65–96 Nottinghill Road, Lidcombe. The site has historically been used for residential and recreational purposes, which typically carry lower contamination risk compared to industrial or commercial land uses. However, given the sensitive nature of cemetery development, where soil and groundwater integrity are critical, the risk remains.

A detailed site investigation would be able to confirm the absence of any contaminants such as heavy metals, hydrocarbons, or asbestos. These assessments are especially important if any past land uses involved fill material, waste disposal, or construction activities. Without a formal contamination report, the site cannot be definitively cleared for sensitive use, and further investigation would be required as part of the planning and approvals process.



### **3. Conclusion**

The proposed redevelopment of Carnarvon Golf Course into a new Crown cemetery presents geotechnical risks by way of limited information available. Given the historical uses on the site, which includes residential, non-residential and paddocks, there is a level of uncertainty that the subject site may be exposed to contamination or other unknown geotechnical conditions.

This is further supported by the high-level research through different NSW Government agency websites, which concludes that no relevant records can be located of detailed investigation.

Similarly, inconsistent and limited information is available to show that the appropriate investigations have been undertaken to determine if and what level of remediation may be required for the subject site. In the absence of this information, it is considered premature to change or propose to change the subject site into to a sensitive land use such as that of a cemetery.