

KAMAY ENERGY STORAGE
171 – 189 CAPTAIN COOK DRIVE, KURNELL, NSW

STATEMENT OF HERITAGE IMPACT

Report to Ausgrid

November 2025





Apex Archaeology would like to acknowledge the Aboriginal people who are the traditional custodians of the land in which this project is located. Apex Archaeology would also like to pay respect to Elders both past and present.

DOCUMENT CONTROL

The following register documents the development and issue of the document entitled 'Kurnell BESS – Statement of Heritage Impact', prepared by Apex Archaeology in accordance with its quality management system.

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GLOSSARY OF TERMS

BESS	Battery Energy Storage System
CHL	Commonwealth Heritage List
CHM	Cultural Heritage Management
CMP	Conservation Management Plan
DA	Development Application
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DECCW	The Department of Environment, Climate Change and Water – now Heritage NSW
Disturbed Land	If land has been subject to previous human activity which has changed the land's surface and are clear and observable, then that land is considered to be disturbed
DPE	Department of Planning and Environment
EP&A Act	The NSW <i>Environmental Planning and Assessment Act 1979</i>
GIS	Geographical Information Systems
Heritage Act	The NSW <i>Heritage Act 1977</i>
Heritage NSW	Heritage NSW within the Department of Climate Change, Energy, the Environment and water, responsible for heritage matters within NSW
LEP	Local Environmental Plan
LGA	Local Government Agency
NHL	National Heritage List
NSW	New South Wales
OEH	The Office of Environment and Heritage – now Heritage NSW
POM	Plan of Management
Project	The BESS at Kurnell
Project Area	The area to be impacted by the construction and operation of the Project
SEPP	State Environmental Planning Policy
SEARs	Secretary's Environmental Assessment Requirements
SHI	State Heritage Inventory
SHR	State Heritage Register



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1.0 INTRODUCTION

Apex Archaeology has been engaged by Ausgrid to prepare a Statement of Heritage Impact (SoHI) for the assessment of the proposed Kamay Energy Storage (the Project) located at 171-189 Captain Cook Drive, Kurnell, NSW (the site). This report considers the heritage impact of the Project on the historic significance of the area.

1.1 STUDY AREA

The site (also referred to as the study area) is located at 171 – 189 Captain Cook Drive, Kurnell, NSW. It is located approximately 21.5km south of the Sydney Central Business District (CBD), within the Sutherland Shire Local Government Area (LGA). The study area is legally known as Lot 1 DP 869365. The study area comprises the existing Kurnell Zone Substation.

1.2 PROPOSAL

The Project comprises of a BESS facility that would store electricity from the grid during periods of high generation and release it during periods of high demand. Key features include:

- Construction and operation of a BESS with up to 150MW maximum power output capacity with 2-hour duration (up to 300MWh)
- Connection of the BESS to Kurnell Zone Substation infrastructure via a 33 kV underground cable
- Ancillary infrastructure including cabling and collector units, internal access roads, laydown areas, control and operational buildings, car parking, fire, stormwater management, lighting and CCTV.

1.3 METHODOLOGY

This SoHI has been prepared with reference to Sutherland Shire Local Environmental Plan (LEP) 2015. It has been prepared in accordance with the requirements of *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013* (Burra Charter) and the best practice standards as provided by Heritage NSW, including *Assessing Heritage Significance: Guidelines for assessing places and objects against the Heritage Council of NSW criteria* (Department of Planning and Environment 2023a) and *Guidelines for preparing a statement of heritage impact* (Department of Planning and Environment 2023b).

A review of statutory registers was completed to identify listings for the study area. A literature search was completed to identify relevant previous assessments and research completed for the area. A site inspection was completed. The results of these investigations guided the preparation of this report.



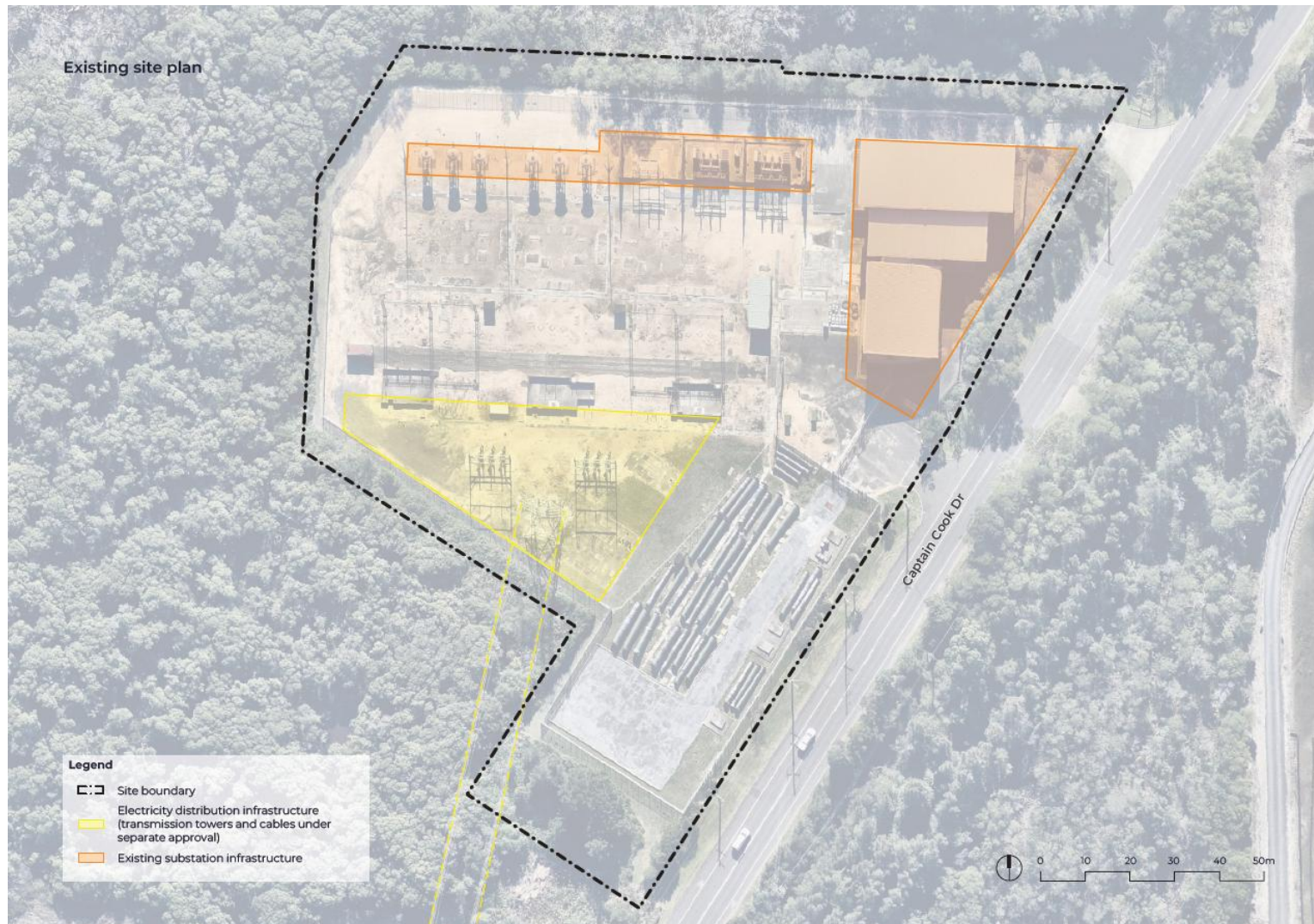


Figure 2: Layout of the study area



1.4 OBJECTIVES

The objectives of the SoHI are to:

- Confirm the heritage status of the study area and understand the history of the study area within the broader cultural landscape;
- Describe the current physical state of the study area;
- Assess the potential heritage significance of the study area;
- Assess the potential impact of the proposed works on the heritage values of the study area; and
- Outline an appropriate method to manage any potential impacts on heritage values.

1.5 AUTHORS

This SoHI has been prepared by Jenni Bate, Director and Archaeologist with Apex Archaeology, Leigh Bate, Director and Archaeologist with Apex Archaeology and Amy Sandkuhl, Graduate Archaeologist with Apex Archaeology.

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1.6 SEARs

The Secretary's Environmental Assessment Requirements (SEARs SSD-92494458) have the following requirements for the Environmental Impact Statement (EIS) with regard to heritage:

- Assess the impact to historic heritage having regard to the *Guidelines for Preparing a Statement of Heritage Impact*.

This report has been prepared to address this requirement.



2.0 HERITAGE STATUS

2.1 NSW HERITAGE LEGISLATION

2.1.1 HERITAGE ACT 1977

The *Heritage Act 1977* (as amended) (the Heritage Act) provides protection for historical archaeological deposits, relics, structures, buildings, and features within NSW. These may be identified on the State Heritage Register (SHR) or an active Interim Heritage Order (IHO).

Under the Heritage Act, the Minister appoints the Heritage Council, which is responsible for heritage in NSW. The Council includes community, conservation and government experts. Heritage NSW provides operational support to the Council and helps communities to identify important heritage places and relics, as well as guidance on how to provide care for those items. It also provides funding and support for community heritage projects and maintains the NSW Heritage Database, which is a list of all heritage items included on statutory heritage lists within NSW. This database is also known as the State Heritage Inventory (SHI).

Archaeological remains within NSW are protected under the relic provisions of the Heritage Act, Sections 139-146. A relic is defined as “any deposit, artefact, object or material evidence that (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.” Further, “a person must not disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit.”

Guidance for undertaking heritage assessments is provided by the NSW Heritage Division 1996 NSW Heritage Manual and includes criteria to assist in assessing the significance of items.

A search of the SHI identified that the site is not state heritage listed. It is, however, directly north and east of the SHR listed site ‘Kamay Botany Bay National Park (North and South) and Towra Point Nature Reserve’ (SHR #01918).

2.1.2 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) provides the environmental planning and assessment framework for NSW. Impacts on cultural heritage must be considered through the environmental impact assessment stage of any project. Generally, provision for the assessment of cultural heritage is made through statutory planning documents such as Local Environmental Plans (LEPs) or State Environmental Planning Policies (SEPPs).



A search of the Commonwealth Heritage List (CHL), National Heritage List (NHL) and Register of the National Estate (RNE) did not identify any further heritage listings either within or immediately adjacent to the study area.

2.1.3 SUTHERLAND SHIRE LOCAL ENVIRONMENTAL PLAN 2015

The Sutherland Shire LEP guides heritage conservation and assessment within the Sutherland Shire LGA. The objectives of the Sutherland Shire LEP in terms of heritage conservation (5.10.1a-d) include conservation of the environmental heritage of Sutherland Shire, the heritage significance of heritage items and heritage conservation areas including associated fabric, settings and views, the conservation of archaeological sites and the conservation of Aboriginal objects and Aboriginal places of heritage significance. The Sutherland Shire LEP also outlines in clause 5.10(2) that development consent is required in the case of demolishing, moving, or altering the exterior of a heritage item, an Aboriginal object, or a building, work, relic, or tree within a heritage conservation area. Clause 5.10(4) requires that the effect of any development on a heritage item or heritage conservation area must be considered.

As such, consideration of the effect of proposed construction of the Project on the heritage values of the archaeological and environmental heritage items within the wider vicinity of the study area is required. These items are outlined in Table 1 below.

Table 1. Heritage Items within the Sutherland Shire LEP and the Australian Heritage Database in close proximity to the study area (Source: Sutherland Shire LEP 2015).

Item Name	Item Number	Significance	Property Description
Towra Point Nature Reserve and Quibray Bay	A2528 / 2509	State (Sutherland Shire LEP 2015)	Lots 101–109, DP 777967; Lot 31, DP 217907; Lot 101, DP 555205; Lot 4, DP 732257; Lot 2, DP 856868; Lot 1, DP 1014443; Lot 1, DP 1030269
Australian Oil Refinery	A2524	Local (Sutherland Shire LEP 2015)	Part of Lot 1, DP 215819; Part of Lot 25, DP 776328; Lot 283, DP 752064; Lot 570, DP 752064; Lot 56, DP 908; Lot 57, DP 908; Lot 62, DP 908; Lot 1, DP 132055; Part of Lot 2, DP 215818; Lot 1, DP 1044690
Kurnell Historic Site (in Kamay Botany Bay National Park)	2504	State (Sutherland Shire LEP 2015)	Lots 71–76 and 85, DP 908; Lot 7334, DP 1162374; land shown in Miscellaneous Plan of Sydney 20239–3000; Lot 1, DP 556396; land shown in NSW Government Gazette 13 December 1968: folio 4968
Kurnell Peninsula Headland	Place ID: 105812	National (Australian Heritage Database)	Kurnell Headland comprises Botany Bay National Park and the Sydney Water land at Potter Point



Of particular relevance to the study area is the Australian Oil Refinery which is located to the immediate east, and Towra Point Nature Reserve and Quibray Bay which is located to the west.

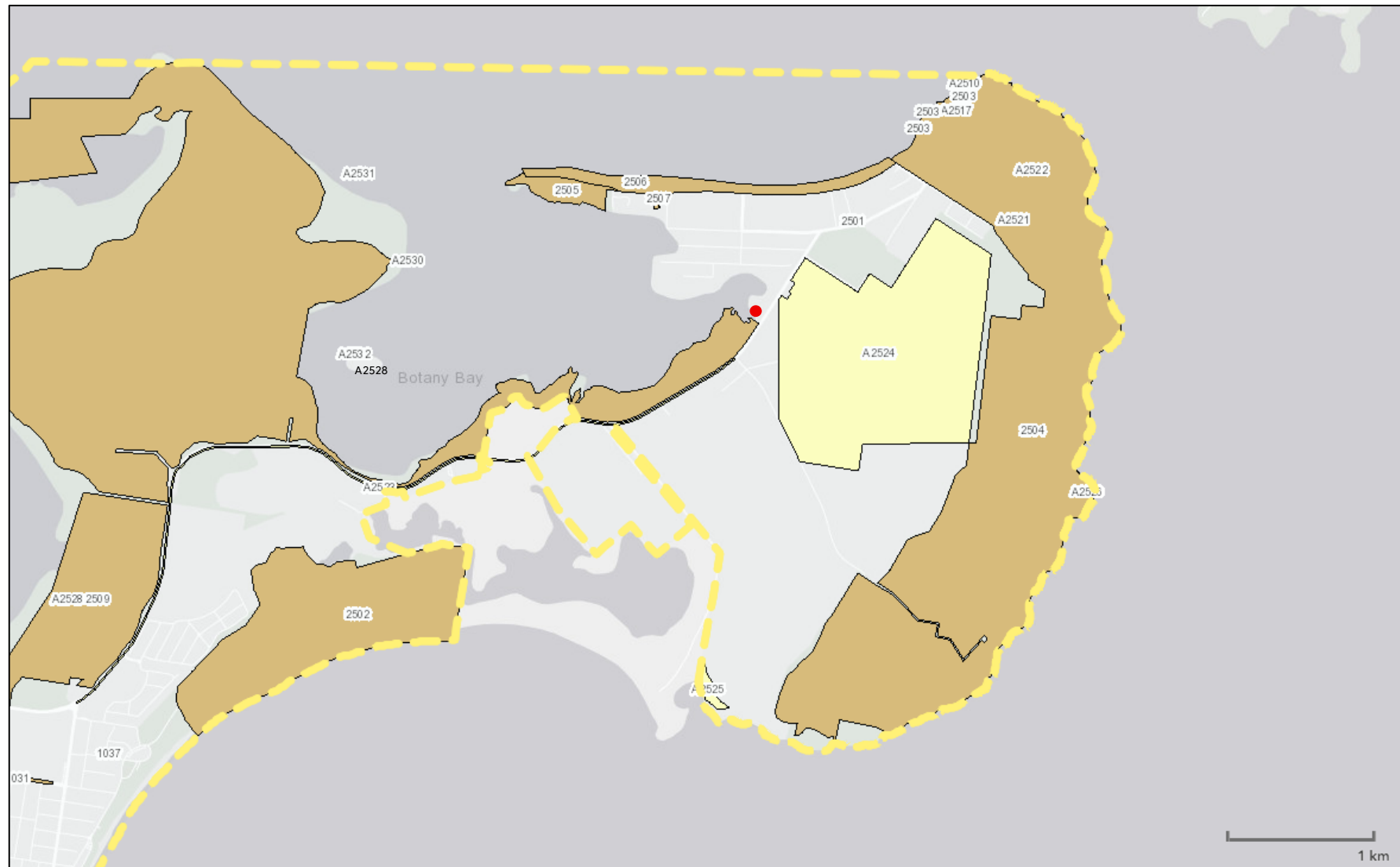


Figure 3: Detail of Sutherland Shire LEP heritage mapping showing study area, circled in red



2.1.4 SUTHERLAND SHIRE DEVELOPMENT CONTROL PLAN 2015

The Sutherland Shire Development Control Plan 2015 (DCP) provides detailed planning requirements for developments within the Sutherland Shire LGA.

In this instance, the study area does not contain any currently listed heritage items, however, a Statement of Heritage Impact is required due to the proximity of environmental and archaeological heritage sites to the study area. In addition, as the study area is located on Captain Cook Drive, it is important to consider development impact on the significance of the Kurnell Peninsula due to its environmental and heritage significance.

2.2 LIMITATIONS

This SoHI focuses on European cultural heritage values within the study area. Apex Archaeology acknowledges that Aboriginal people have occupied this land for over forty thousand years, and their culture is living and ongoing. No assessment of Aboriginal cultural or archaeological values has been made as part of this assessment.

Recommendations are based on the available documentary evidence, as well as an inspection of the existing fabric on site. Further detailed historical research was outside the scope of this project.

3.0 HISTORICAL CONTEXT

3.1 REGIONAL CONTEXT

3.1.1 KURNELL

Kurnell is an historically significant place in the history of Australia. Lieutenant James Cook and his crew first landed at Kurnell on the 29th of April 1770 whilst navigating along the East Coast of Australia on the *Endeavour*. On the 28th of April 1770 Cook recorded the following: 'At day light in the morning we discovered a Bay [Botany Bay] which appeared to be tolerably well sheltered from all winds and into which I resolved to go with the Ship' (SSEC and Figure 4). Joseph Banks, botanist aboard the *Endeavour*, recorded Aboriginal people living in the area where the *Endeavour* first landed, "we soon saw about 10 people, who on our approach left the fire and [retired] to a little eminence where they could conveniently see our ship... We came to anchor abreast of a small village consisting of about 6 or 8 houses" (Joseph Banks, n.d.). Kurnell Peninsula was where the first landfall was made by Cook during his journey mapping the eastern coastline of Australia, in addition to being the place of first recorded contact between Indigenous Australians and the British (DCCEEW: Kurnell Peninsula).

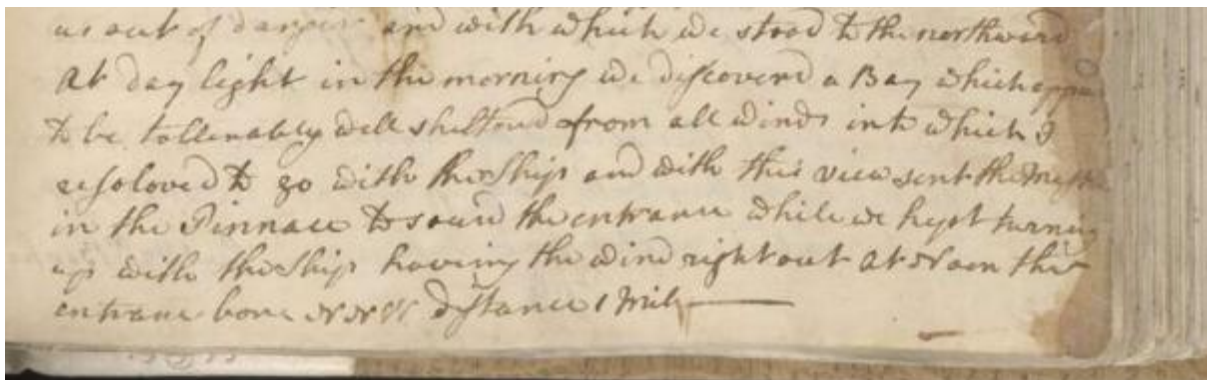


Figure 4. Captain Cook's diary entry from the 28th of April 1770 (Source: National Museum Australia).

The *Endeavour* was anchored in Botany Bay for a period of eight days, during which the crew of the ship explored the Kurnell Peninsula and engaged in activities including collecting scientific samples, gathering food and observing Indigenous people and the landscape (DCCEEW: Kurnell Peninsula). The area which the *Endeavour* had anchored was named 'Botany Bay' by Cook on the 6th of May 1770 as Joseph Banks and his assistant Daniel Solander had recorded and collected 132 unique plant specimens in the surrounding area (DCCEEW: Kurnell Peninsula).

The *Banksia* was one genus of flora recorded by Banks and Solander and was subsequently named after Joseph Banks (Australian Heritage Database: ID105812). It is thought that Kurnell, the name given to the area after British settlement, is a corruption of 'cunnel', an Aboriginal word for family, or alternatively, the Aboriginal corruption of 'Connell', the surname of a British landowner on the peninsula (Sutherland Shire 'About Kurnell'). Other sources suggest that the word 'Cunnell' is

related to an Aboriginal family group from the area, and a derivation of one leader's name, Cundlemong, who was born at Kurnell, and also died and was buried there in the 1840s (Sutherland Shire Aboriginal Heritage Study).

3.1.2 HISTORY AND DEVELOPMENT OF THE SUTHERLAND REGION

The first land grant within the Sutherland Shire was to Captain James Birnie, who had arrived in Sydney in 1806 (Sutherland Shire AHS). The grant included 700 acres of land at Kurnell in 1815 under the Free Grants Scheme. Birnie later named the property Alpha Farm (Figure 5). Birnie constructed a cottage near Captain Cook's landing place. In 1828 Birnie was declared insane, and the trustees of his estate sold his land to John Connell.

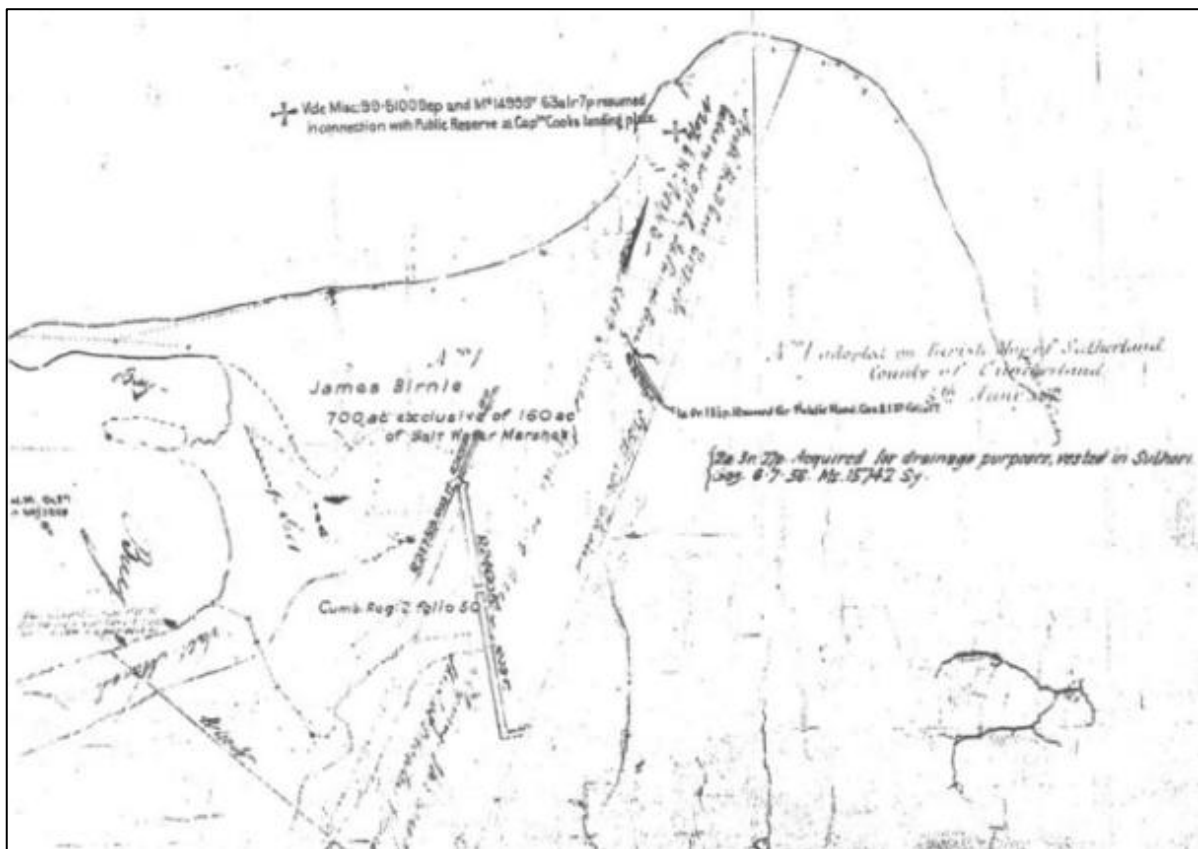


Figure 5. Plan of Kurnell showing Birnie's land Grant (ND, Source: Sutherland Shire Aboriginal Heritage Study).

John Connell migrated to Australia with his family as a free settler in 1801 and transferred his iron monger business to Sydney. In 1821 Connell obtained 1000 acres at Quibray Bay, followed by the Kurnell land which was obtained in 1828. The Kurnell land was used by Connell to run cattle, and the land owned by Connell gradually increased to holdings of 3000 acres within the district (Sutherland Shire AHS). By 1838 Connell and his son, John Connell junior, owned almost the entirety of the Kurnell Peninsula.

Activities carried out by the Connells significantly modified the local landscape, particularly through clearing land and selling timber to Sydney, including ironbark,

turpentine, blackbutt, mahogany and red cedar (Sutherland Shire AHS). Despite the modifications to the landscape during this period, the Kurnell area contained numerous flora and faunal resources and became a popular destination for hunting and fishing by settlers in the 1840s, and which continued into the 20th century (Sutherland Shire AHS).

The first releases of land for sale by the Crown occurred in 1856, and several large tracts of land were purchased at this time by John Connell Junior and his nephew John Connell Laycock (NBRS Architecture 2023). Thomas Holt arrived in Sydney from Yorkshire in 1842, establishing himself in the commercial and public life of Sydney. In 1861 Thomas Holt began acquiring large portions of land within the Sutherland area, eventually comprising a total of approximately 12,000 acres between Botany Bay and Port Hacking (NBRS Architecture 2023). Holt had initially attempted cattle and sheep farming on his land, however, was not particularly successful with his endeavours (Curby 1993). This prompted Holt to allow timber lessees to engage in the export of ironbark and blackbutt timbers. By the 1920s the timber industry was no longer viable due to the large scale at which it had occurred, leaving a lack of marketable timber in the area (Curby 1993). Later attempts were made at establishing a coal mining industry in the area; these were, however, unsuccessful.



Figure 6. Map of Kurnell c. 1874 (Source: NSW LRS Map Number 359).

In 1881 the Holt-Sutherland Estate Land Company was formed, and attempted to encourage the settlement of tenant farmers, which leased 1,682 acres of land to tenants until around 1900 (Curby 1993). Holt died in 1888, and in his will, left his estate to his heirs in perpetuity; however, this was put aside, and tenants were able to purchase land under a new agreement. 8,732 acres were converted to freehold

(Figure 7, Curby 1993). Small scale farming continued in the area until it became more profitable to subdivide land for suburban development in the 1950s (Curby 1993).



Figure 7. Holt Sutherland Estate (Source: Dictionary of Sydney, Holt Sutherland Estate, Como Heights 1888 Access at <https://dictionaryofsydney.org/media/3283>).

The main route of access to land in the Sutherland area was through waterways. In the 1820s or 1830s, Connell had a canal dug to the bottom of Woollooware Road (approximately 5km southwest of the study area) so that timber could be floated to the market (Curby 1993). The canal was visible in the area until around the 1920s and was used by several others including Thomas Holt to transport timber in the 1870s (Curby 1993). In 1864 a ferry service was established at Tom Ugly's across the Georges River and provided the Sutherland area with a river crossing to bring people to the area, as opposed to going around it via the Old Illawarra Road which had opened in 1844 (Curby 1993). The hand punt was eventually replaced by a steam punt in 1882 (Curby 1993, Figure 8).



Figure 8. The punt at Tom Ugly's c. 1903. (Source: The Dictionary of Sydney, Tom Ugly's Punt, Wednesday 30 September 1903, Album 31: Photographs of the Allen Family, accessed at: <https://dictionaryofsydney.org/media/3366>).

In 1885 the Illawarra railway line was extended to Sutherland with a single-track bridge crossing constructed across the Georges River (Curby 1993). The railway construction resulted in suburban land opening along its route, which enabled further development of the area, particularly at the settlement of Como, located approximately 20km west of the study area (Curby 1993). The single-track bridge was eventually replaced by a double-track bridge in 1972 (Curby 1993). A private ferry service was run from Bundeena to Cronulla regularly from 1916 by Captain Ryall until 1947. In the same year, residents of Bundeena petitioned for a road, which was opened in 1952, connecting Bundeena to Cronulla by road (Curby 1993).

Kurnell itself was accessible by car on a track from Cronulla through the sandhills, which was established in 1912; however, the area was still considered to be highly isolated (Curby 1993). After an extreme weather event on Australia Day in 1949 left around 500 people stuck at Kurnell, a four-wheel drive track was graded. A road was finally constructed to Kurnell after Caltex decided to locate their oil refinery in the area (Curby 1993). Pauline Curby suggests that the development of the Sutherland Shire area did not take off until land transport had become efficient enough for people to be able to transit easily to places of work, which was compounded by the lack of natural resources in the area except for fish and shell grit (Curby 1993). The largest industrial development in the area was the Caltex oil refinery, the other main industrial enterprises in the area were predominantly comprised of fishing, shell gritting, poultry farming and logging (Curby 1993).

The environmental impact of white settlers in the Sutherland area are discussed by Curby in her *Thematic History of the Sutherland Shire*, noting that the area had been 'systematically cleared since the days of John Connell' and was 'comprehensive' in nature, though not on the same scale across the district (Curby 1993). By 1871 only the remains of mangroves of Woollooware Bay were noted,

whilst other mangroves had been significantly reduced due to the oyster leases granted by Holt (Curby 1993). Exotic species were also introduced to the area including buffalo grass, deer and fish. In the 1950s, suburban development resulted in the levelling of dunes and swamps near Quibray Bay to make room for the Caltex oil refinery, whilst larger developments, such as the Sydney Airport, included dredging and land reclamation in Botany Bay which altered wave patterns, removed sand and changed the shoreline of the Bay (Curby 1993). Figure 9 to Figure 12 include mud maps which easily show the development of the Sutherland Shire over a period of 100 years from 1850 to 1950, taken from the *Sutherland Shire Heritage Study* (Curby 1993).

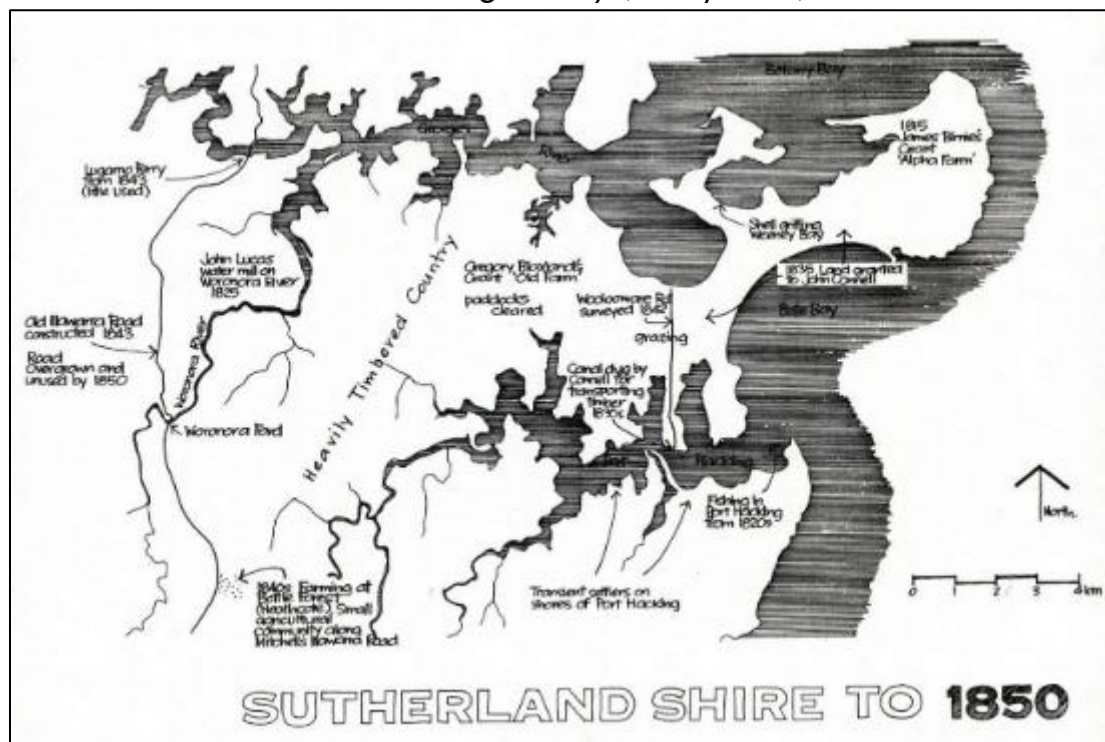


Figure 9. Sutherland Shire to 1850 (Source: Sutherland Shire Heritage Study Historical Context Report, Curby 1993).

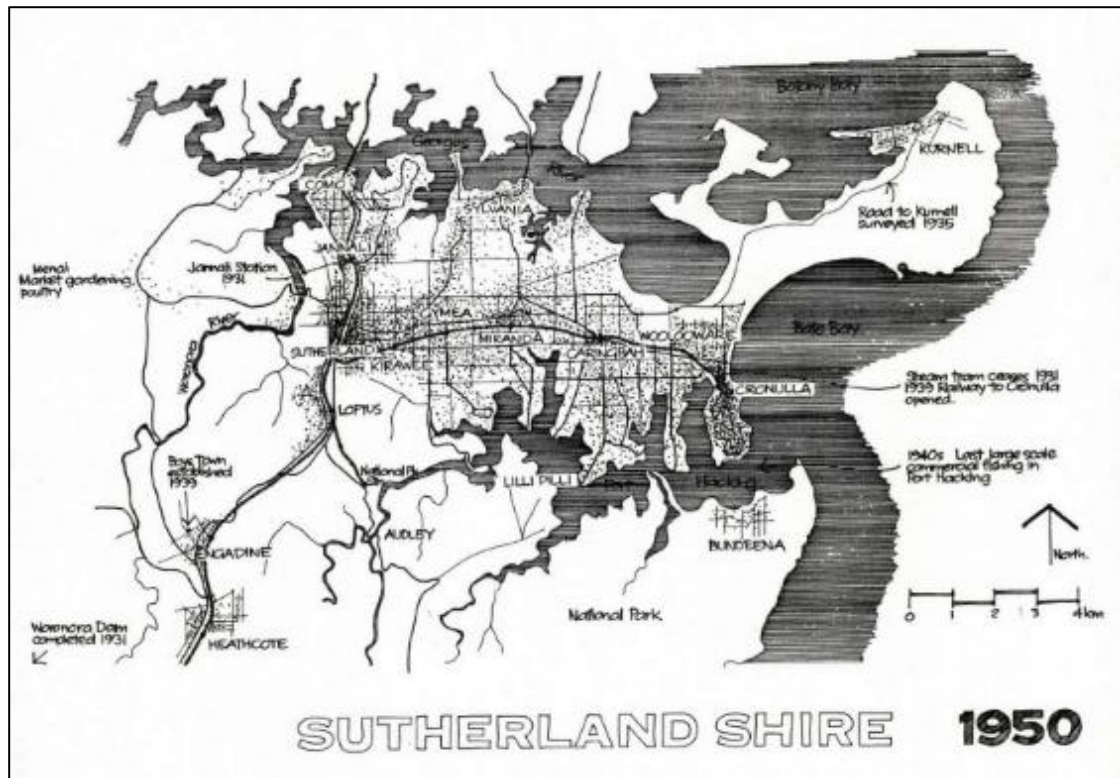


Figure 12. Sutherland Shire to 1950 (Source: Sutherland Shire Heritage Study Historical Context Report, Curby 1993)

3.1.3 KURNELL PENINSULA HEADLAND

The Kurnell Peninsula Headland was added to the National Heritage List on the 28th of February 2005 as it is of 'outstanding heritage value to the nation as the site of the first recorded contact between Indigenous people and Britain in eastern Australia'. It is also recognised to symbolise 'the birthplace of a nation, and the dispossession of Indigenous people' (Australian Heritage Database). The landing of Captain Cook at Kurnell Peninsula informed the British declaration of terra nullius and the recommendation of the area to be the destination for the First Fleet under Captain Arthur Philip in 1787 (Australian Heritage Database).

Several commemorative monuments have been placed at the area since 1822. The first was a brass plate on a cliff-face northeast of the Landing Place, to commemorate 50 years since the landing of Cook (SSEC). In 1870 Thomas Holt paid for the construction of an obelisk at his own expense to celebrate the centenary of Cooks' landing (SSEC). In 1881 Prince Albert and Prince George planted four pine trees at the Landing Place, including one *Araucaria Cookii* (SSEC).

Approximately 250 acres of land were resumed by the Government in 1899 and dedicated as the Captain Cook Landing Place Reserve for the use of the public (SSEC). The Landing Place came under the provisions of the National Parks and Wildlife Service Act in 1967 when the reserve was proclaimed as an historic site (SSEC). Later, in 1984, the Captain Cook Landing Place Reserve, along with Towra Point and Endeavour Heights were combined to form the Botany Bay National Park.



The Kamay Botany Bay National Park now comprises an area of 456 hectares of the northern and southern headlands to the entrance to Botany Bay, including over 13 kilometres of coastline.

3.1.4 AUSTRALIAN OIL REFINERY

Several other locations were considered by Caltex for a new oil refinery before settling on the Kurnell Peninsula, which offered proximity to Botany Bay, for the supply of oil by ship, and to the Sydney Airport (AECOM 2023). The location at Kurnell also offered the distribution of petrol to other local markets, access to labour and access to water. The proposal for the oil refinery's construction was initially rejected by the Sutherland Shire Council due to its proximity to Captain Cook's Landing Place, however the objection was later withdrawn, and the project was approved in 1952 (AECOM 2023).

Caltex purchased 174 hectares of swampland at Kurnell and contributed to the construction of Captain Cook Drive (AECOM 2023). Construction of the main refinery was completed in 1956, which employed approximately 3,000 people. Once completed, the refinery had some 500 permanent employees, and by 1961 required further expansion, which increased by 400% by 1964 (AECOM 2023). When constructed, the refinery was considered to be the largest petroleum installation in NSW, and was the largest industrial plant constructed by a private enterprise in the state (Higginbotham 1993). The site underwent a series of further upgrades and expansion between the 1980s to 2005, before eventually being transitioned to a 'finished products terminal' in 2012 (AECOM 2023).

The refinery site has been listed as an item of heritage significance due to being one of only two oil refineries in the Sydney area. It demonstrates the industrialisation of the area along with the growth and dominance of Sydney (Higginbotham 1993).

3.1.5 TOWRA POINT NATURE RESERVE AND QUIBRAY BAY

The 1999 *Towra Point Nature Reserve Management Plan* outlines the historic and environmental significance of the area (NPWS 1999). The nature reserve is located 16km south of the centre of Sydney and comprises the largest and most diverse estuarine wetland complex within the Sydney region (NPWS 1999). The Towra Point Nature Reserve and wetlands are environmentally significant as they contain remnant terrestrial vegetation and wildlife habitats which contain rare or threatened species, such as important seagrasses, mangroves and migratory wading bird habitats (NPWS 1999).

In 1975 the Federal government acquired 281.7 hectares of land at Towra Point for conservation purposes, which subsequently increased to include lands at Weeney Bay and Quibray Bay (NPWS 1999). The Towra Point Nature Reserve is home to more than 400 species of native plants and vertebrate fauna, including vulnerable or endangered species such as the green and golden bell frog (*Litoria aurea*), the peregrine falcon (*Falco peregrinus*), and magenta brush-cherry (*Syzygium paniculatum*), among others (NPWS 1999). The mangroves located within the nature

reserve total approximately 50% of all those remaining within the Sydney region (as at the time of the management plan, NPWS 1999).

European cultural heritage of the Towra Point area is related to the landing of Captain Cook in 1770 and marked by exploration and scientific study of the area during this time. At the time of the report in 1999, little research, recording or assessment of the historical significance of the area had been undertaken and research and field surveys were recognised as high priorities to assess the significance and conserve the cultural and historic heritage values of the area (NPWS 1999).

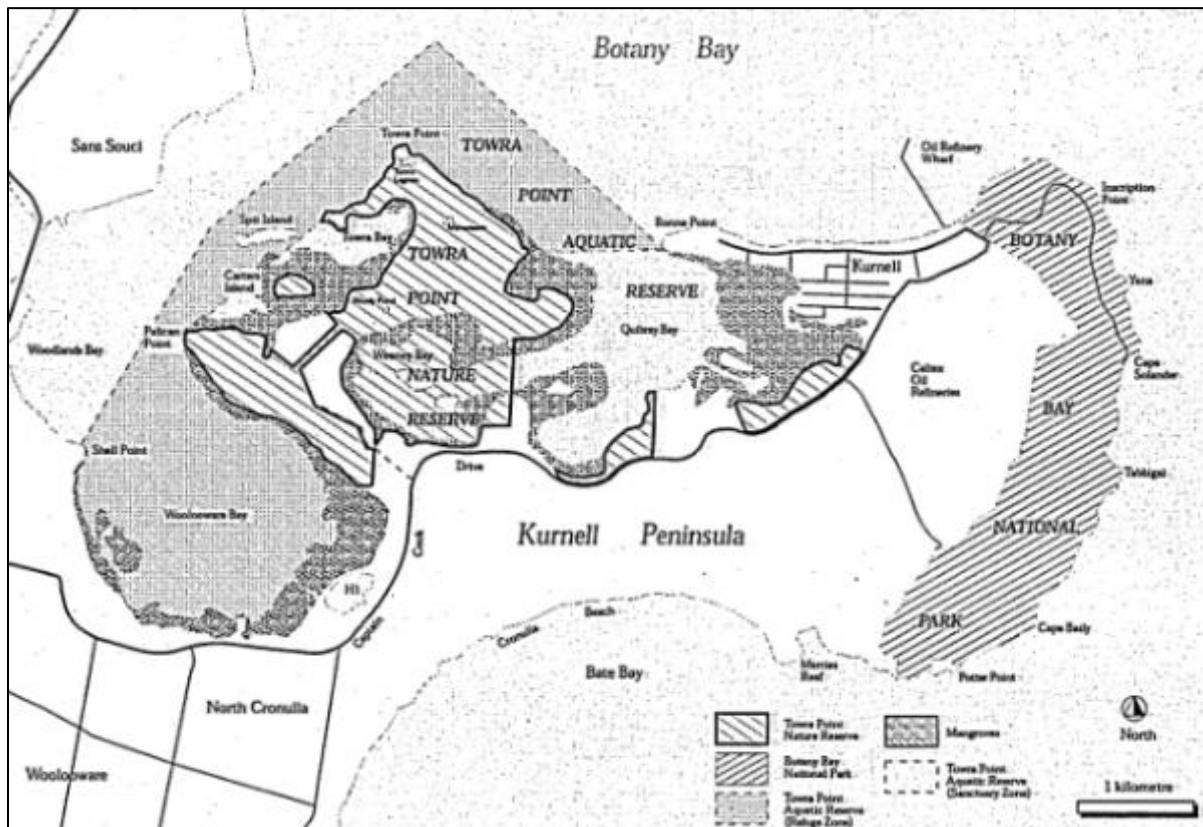


Figure 13. Kurnell Peninsula and Towra International Wetlands (Source: Towra Point Management Plan 1999).

KURNELL HISTORIC SITE

The Kurnell Historic Site is located within the Kamay Botany Bay National Park, which is comprised of the northern and southern headlands of the bay (NPWS 1999). The northern headland of the park includes the numerous monuments dedicated to the landing of Captain Cook, including those established by Holt in the 1800's. A range of built structures are located within the National Park, some of which form the Kurnell Historic Site, including gravesites, monuments, military fortifications, buildings such as the Cable Station, Macquarie Watchtower, Alpha House and the ferry shed, along with light stations and numerous areas related to Aboriginal cultural heritage (NPWS 2020).

3.2 STUDY AREA

3.2.1 DOCUMENTARY EVIDENCE

The study area is not noted to contain any items of historic heritage significance. Parish maps from 1900 to 1925 (Figure 14, 15 and 16) show that little development had occurred within and around the study area during that period, whilst significant subdivision of land had occurred to the north of the study area. By 1925 (Figure 16) the parish map shows that the eastern coast of Kurnell had been recognised as an area of significance and dedicated as a public reserve. The 1951 parish map of Kurnell appears to show the development of a road (presumably Captain Cook Drive), along the western boundary of Kurnell, nearby Quibray Bay, and through the land which had belonged to James Birnie, however other than this, it does not seem that further significant development or subdivision of land had taken place (Figure 17, Figure 19).

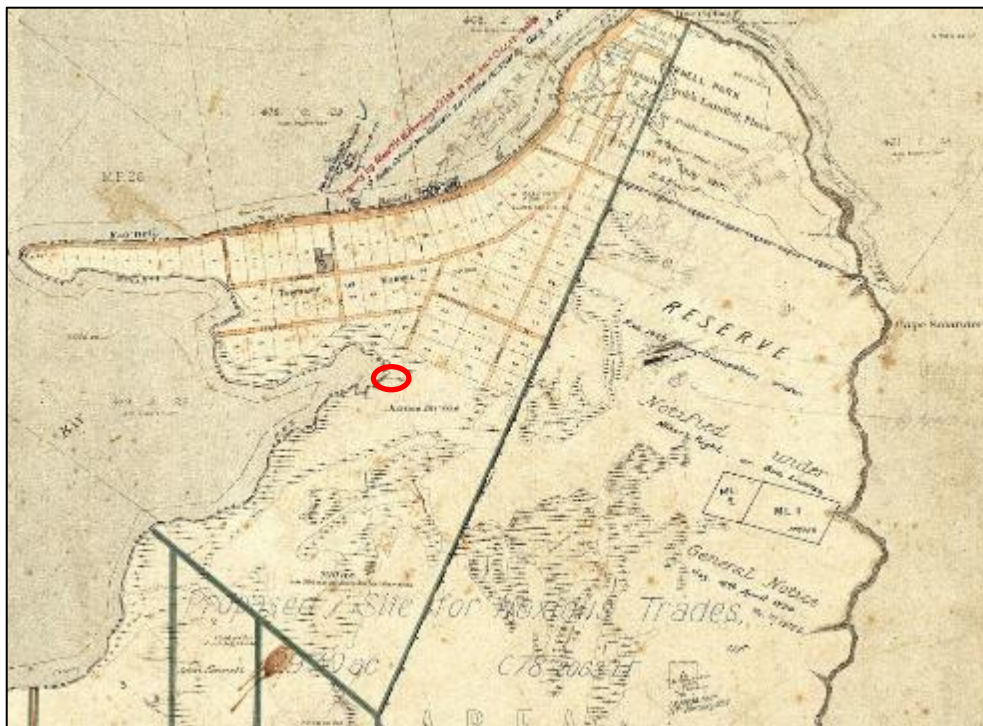


Figure 14. Parish Map of Sutherland c. 1913. Approx study area outlined in red (NSW LRS).

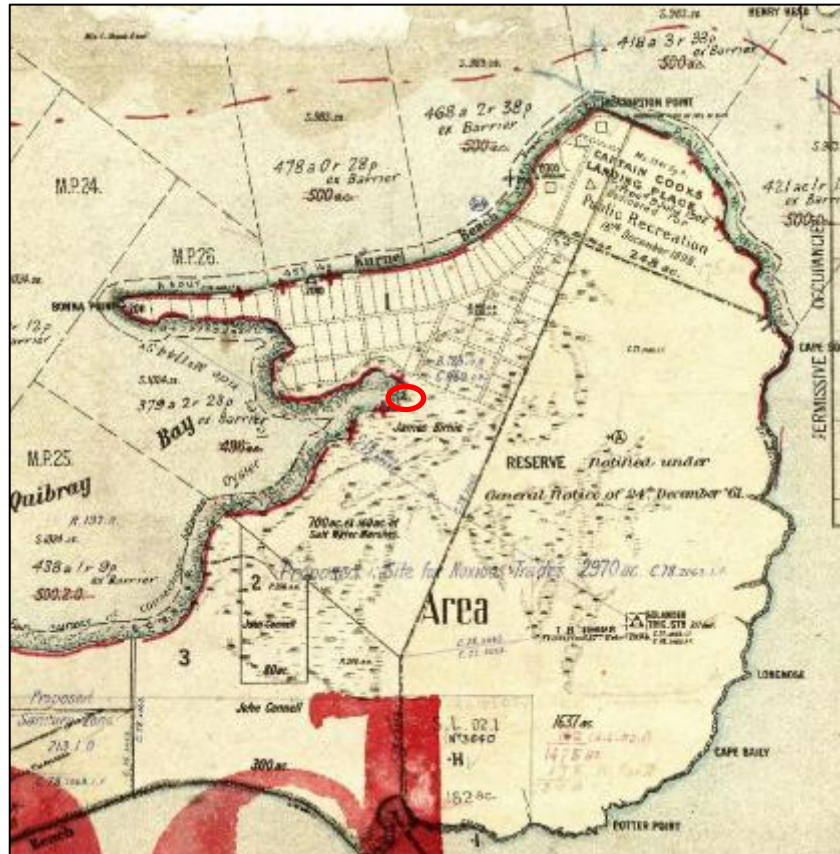


Figure 15. Detailed parish map of Sutherland c. 1900 - 1913 showing the subdivisions of the Township of Kurnell (NSW Land Information Centre, Ref: 14039602 after AECOM 2023).



Figure 16. Parish map of Kurnell c. 1925 (Source: NSW LRS).



Figure 17. Parish map of Kurnell c. 1951 (Source: NSW LRS).

Aerial imagery is available for the study area from 1943 (Figure 18) which shows some minor development north of the study area, and land clearing; however the study area itself and the surrounding area had not undergone much change at this time. By 1955, imagery clearly demonstrates that large developments had occurred in close proximity to the study area, particularly with the construction of Captain Cook Drive and the Australian Oil Refinery adjacent to the study area. Some clearing also appears to have taken place to the south of the southern boundary of the study area.



Figure 18. Aerial photography of Kurnell c. 1943 - Study area outlined in blue (Source: Shire Maps - Sutherland Shire).



Figure 19. Aerial photography of Kurnell c. 1955 - Study area outlined in blue (Source: Shire Maps - Sutherland Shire).

Figure 20 shows that further subdivision and development of Kurnell to the north of the study area had taken place by 1961, as well as further construction of necessary infrastructure within the Australian Oil Refinery. By 1970, the study area had undergone industrial development, with the construction of the Kurnell electrical zone substation. Figure 21 shows that the study area was cleared of vegetation between 1961 and 1970, along with high impact ground disturbance activities necessary for the construction of the electrical substation. Some further industrial and residential developments can be seen in Figure 21 and 22 to the north of the study area.



Figure 20. Aerial photography of Kurnell c. 1961 - Study area outlined in blue (Source: Shire Maps - Sutherland Shire).



Figure 21. Aerial photography of Kurnell c. 1970 - Study area outlined in blue (Source: Shire Maps - Sutherland Shire).



Figure 22. Aerial photography of Kurnell c. 1984 - Study area outlined in blue (Source: Shire Maps - Sutherland Shire).

Between 1970 and 2006, the study area does not seem to have undergone significant changes to the structures which were already present at the site, although some upgrades and minor construction works do seem to have occurred, noticeable with the addition of some shed/building structures in the north of the study area, concreting around structures in the central portion of the study area, and the construction of a tower in the southern portion of the study area (Figures 23 and 24).



Figure 23. Aerial photograph of the study area (outlined in blue) c. 1984 (Source: Shire Maps - Sutherland Shire).



Figure 24. Aerial photograph of the study area (outlined in blue, changes circled in red) c. 2006 (Source: Shire Maps - Sutherland Shire).

Significant changes occurred within the study area between 2006 and 2025. The study area appears to have been under construction at the time of the 2010 aerial photograph (Figure 25), which significant changes evident within the study area by 2014 (Figure 26) including the construction of five large buildings in the northwest of the study area, and the removal of a number of features in the central and southern areas. By 2020 (Figure 27) two of the large buildings had been removed, and vegetation growth is evident in the photography between 2020 and 2025 (Figure 27 to 28).

The aerial photography from 1943 to 2025 clearly shows that the Kurnell Zone Substation has undergone significant development including the removal of vegetation, clearing of land, groundworks required for the construction of the substation, the construction of new features and buildings throughout the life of the substation and the dismantling of several buildings during this time.



Figure 25. Aerial photography of the study area (outlined in blue) c. 2010 (Source: Shire Maps - Sutherland Shire).



Figure 26. Aerial photograph of the study area (outlined in blue) c. 2014 (Source: Shire Maps - Sutherland Shire).



Figure 27. Aerial photograph of the study area (outlined in blue) c. 2020 (Source: Shire Maps - Sutherland Shire).



Figure 28. Aerial photography of the study area c. 2025 (Source: NearMaps 2025).

4.0 SITE ASSESSMENT

4.1 SITE INSPECTION

A site visit was conducted in July 2024. The current condition of the study area was investigated and photographs for context were taken.

No newly identified heritage features or relics were identified within the study area during the inspection. Much of the fabric present was noted to be of recent construction, likely dating to the works completed between 2010 and 2014.



Plate 1: Looking north west at the main entrance into the Kurnell Zone Substation.



Plate 2: Looking north along the eastern boundary of the site.



Plate 3: Looking south west along the eastern boundary within the site.



Plate 4: Looking north at area directly west of main Zone Substation building.



Plate 5: Looking south through the zone substation site.



Plate 6: Looking south through the central portion of the site.



Plate 7: Looking west through the central portion of the site showing significant ground surface disturbance.



Plate 8: Looking north along the western boundary.



Plate 9: Looking north towards the northern boundary showing wind blown sand deposits within the site.



Plate 10: Looking west along the northern boundary of the site.

4.2 DISCUSSION

Despite the association of the Kurnell area generally, as the landing place of Captain Cook, and the site of first contact in Australia between Indigenous people and the British colonisers, the study area itself does not contain any items of heritage significance. The addition of the Project would not impact on the greater environmental and historic heritage significance of the area, as the site already contains the Kurnell Zone Substation and has seen significant disturbance to the site during its initial construction.

The location of the former Caltex Refinery to the east of the study area is of heritage significance due to it being one of only two refineries in NSW; however, the addition of the proposed BESS to the existing Kurnell Zone Substation would not be out of place within the wider industrial landscape. The Caltex Refinery remains a fully operational fuel depot and as such, it represents an evolving industrial precinct. The study area is located approximately 1.4km from the Kurnell Peninsula Headland at the nearest point, and the Project within the study area would not impact on the national heritage values of the area generally.

The item of closest proximity to the study area is the Towra Point Nature Reserve, which is immediately southwest of the southern boundary of the study area. The Project will be retained within the existing disturbed fenced property boundary of the Kurnell Zone Substation and will not encroach into the nature reserve curtilage. Further, the subject lot currently has an industrial character which will not be altered



by the Project, and as such is considered unlikely to impact further on the heritage values of the Towra Point Nature Reserve.



5.0 ASSESSMENT OF SIGNIFICANCE

5.1 UNDERSTANDING HERITAGE SIGNIFICANCE

All places have unique combinations of values, and as such it is important to understand these values prior to making decisions about the future of a heritage item. This way heritage values can be retained when making decisions relating to the future management of a place.

A statement of heritage significance is prepared to summarise an item's heritage values.

5.2 HERITAGE SIGNIFICANCE

The study area does not contain any items of heritage significance and has been historically disturbed by vegetation clearance and the subsequent construction of the Kurnell Substation. The broader area of the Kurnell peninsula is associated with the landing of Captain Cook in 1770, as well as noted as being the site of first contact between British colonisers and Indigenous Australians.

5.3 ASSESSMENT OF CRITERIA

The Heritage Council of NSW prepared a set of seven criteria for use in assessing heritage significance. Items are considered significant on two levels, these being State and local significance.

The following assessment of significance for the realignment study area has been prepared in accordance with the *Assessing Heritage Significance* 2001 guidelines issued by the NSW Heritage Division. The following assessment is specific to Red Hill Road Bridge in order to determine the overall significance of the bridge.

a) An item is important in the course, or pattern, of the local area's cultural or natural history

Historical research has not indicated that the study area itself contains any specific items which are important in the natural or cultural history of the area. The Kurnell Peninsula more broadly has been recognised to have national heritage significance, however these areas would not be impacted by the Project. The study area is not considered to have significance under this criterion.

b) An item has strong or special associations with the life or works of a person, or a group of persons, of importance in the local area's cultural or natural history

Historical research has shown that the study area was previously held by John Birnie in the early 1800s, however the study area itself does not have strong or special associations with the life or works of Birnie, nor is the study area associated with the life or works of a person or group of importance to the local cultural or natural history. The study area is not considered to have significance under this criterion.



c) An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area

The study area does not demonstrate aesthetic characteristics or a high degree of creative or technical achievement within the local area, pertaining to historic significance. The study area is not considered to have significance under this criterion.

d) An item has strong or special association with a particular community or cultural group in the local area for social, cultural or spiritual reasons

The research undertaken for this assessment did not identify strong or special associations with any particular community or cultural group in the local area.

e) An item has potential to yield information that will contribute to an understanding of the local area's cultural or natural history

The study area is not considered to have the potential to yield information that will contribute to an understanding of the local area's cultural or natural history.

f) An item possesses uncommon, rare or endangered aspects of the local area's cultural or natural history

The study area is not considered to possess any uncommon, rare or endangered aspects of the local area's cultural or natural history. This is due to the clearing and development which has occurred within the boundaries of the study area between 1943 to 2024. As such, the study area is not considered to have heritage significance under this criterion.

g) An item is important in demonstrating the principal characteristics of a class of the local area's

- Cultural or natural places; or
- Cultural or natural environments

The study area does not exhibit principal characteristics of a class of the local area's cultural or natural places or environments, despite sharing a border on the south with the Towra Point Nature Reserve.

5.4 ASSESSMENT

The study area is considered to possess negligible heritage significance as the study area was included in the first land grant in the area, provided to James Birnie in 1815. The study area is surrounded by areas of cultural and environmental significance, however, due to high levels of historic and current disturbance present across the site, these same values are not present within the study area.





6.0 STATEMENT OF HERITAGE IMPACT

6.1 PROPOSED WORKS

Ausgrid is seeking development consent to construct and operate a Battery Energy Storage System (BESS) with a capacity of up to 150 megawatts (MW) over a 2-hour duration (up to 300MWh) (referred to as the Project). The proposed location of the BESS is within the existing Ausgrid 132 kV Kurnell Zone Substation at 171-189 Captain Cook Drive, Kurnell NSW 2231 (the site). The Project is proposed to be in the central and southern part of the property, Lot 1 DP 869365.

Key features of the Project include (but not limited to):

- Construction and operation of a BESS with a capacity of up to 150MW
- Connection of the BESS to Kurnell Zone Substation via a 33 kV underground cable
- Ancillary infrastructure such as internal access roads, laydown areas, control switch room, fire and stormwater systems, security fencing, lighting and CCTV.

The site is industrial containing the existing Kurnell 132 kV/11 kV Zone Substation. Ausgrid will continue to operate the Kurnell Zone Substation, which the Project will connect to, via an underground 33kV cable.

6.2 MATTERS FOR CONSIDERATION

Fabric and spatial arrangements.

The Project is considered unlikely to impact on any heritage fabric within the study area

Setting, views and vistas

The Project is considered unlikely to impact on any significant settings, views and vistas both to and from the study area due to the level of historical development.

Landscape

The Project is considered unlikely to impact on the heritage landscape.

Use

The Project does not alter the use of the study area.

Demolition

No demolition is proposed as part of the works.

Curtilage

The impacts do not apply to this specific heritage value.

Moveable heritage

The impacts do not apply to this specific heritage value.



Aboriginal cultural heritage

The impacts do not apply to this specific heritage value, noting that this report does not assess the potential for Aboriginal heritage.

Historical archaeology

The impacts do not apply to this specific heritage value.

Natural heritage

The impacts do not apply to this specific heritage value.

Conservation areas

The impacts do not apply to this specific heritage value.

Cumulative impacts

The impacts do not apply to this specific heritage value.

The conservation management plan

There is no conservation management plan for the study area. The impacts do not apply to this specific heritage value.

Other heritage items in the vicinity

There is one other heritage item in the immediate vicinity of the study area (A2528 – Towra Point Nature Reserve and Quibray Bay). The Project will have no direct impact and negligible visual impact to the heritage item.

Commonwealth/National heritage significance

There are no items on the Commonwealth Heritage List within or in close proximity to the study area. The impacts do not apply to this specific heritage value.

The Kurnell Peninsula Headland is listed on the Australian Heritage Database; however the Project would have no direct impact and negligible visual impact to the heritage item.

World Heritage significance

There are no items on the World Heritage List within or in proximity to the study area. The impacts do not apply to this specific heritage value.

6.3 SUMMARY OF POTENTIAL HERITAGE IMPACT

The Project is considered unlikely to impact on any historical heritage values of sites within or adjacent to the study area.

6.4 MITIGATION AND MANAGEMENT MEASURES

As the Project is considered unlikely to impact on the heritage values of any heritage items within or adjacent to the study area, no specific mitigation measures are required.



However, any significant alterations to either the development boundaries or the Project proposal, particularly in regard to scale or form, would require further assessment to consider the potential impact of the altered proposal on the heritage significance of the adjacent heritage items.

Additionally, should unanticipated archaeological material be encountered during site works, all work must cease and an archaeologist contacted to make an assessment of the find. Further archaeological assessment and approvals may be required prior to the recommencement of works. Any historical objects must be reported to Heritage NSW.



7.0 SUMMARY AND RECOMMENDATIONS

7.1 SUMMARY

- There are a number of heritage items in the wider vicinity of the study area, including to the immediate south.
- The study area itself is assessed as possessing no heritage significance.
- The Project is considered unlikely to impact on the heritage significance of any heritage items adjacent to the study area.

7.2 RECOMMENDATIONS

The following recommendations are based on the research and conclusions of this assessment:

- No further heritage assessment is required prior to the commencement of works as described in this report.
- This SoHI should be incorporated into the environmental assessment for the Project.
- Should unanticipated archaeological material be encountered during site works, all work must cease and an archaeologist contacted to make an assessment of the find. Further archaeological assessment and approvals may be required prior to the recommencement of works. Any historical objects must be reported to Heritage NSW.



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DCCEEW – Kurnell Peninsula

<https://www.dcceew.gov.au/parks-heritage/heritage/places/national/kurnell>

Aus Heritage Database

https://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;place_id=105812