

HISTORICAL ARCHAEOLOGICAL ASSESSMENT & RESEARCH DESIGN

Kambala School
Rose Bay

Prepared for
**CARMICHAEL TOMPKINS PROPERTY GROUP, ON
BEHALF OF KAMBALA GIRLS SCHOOL**
24 June 2021



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EXECUTIVE SUMMARY

Urbis have been engaged by Carmichael Tompkins Property Group, on behalf of Kambala Girls School, to prepare a Historical Archaeological Assessment and Research Design (HAARD), to support a State-Significant Development Application (SSD-10385) for the redevelopment of sporting facilities at Kambala Girls School, 794-796 New South Head Road, Rose Bay (herein the subject area).

In February 2020 Urbis was engaged by Carmichael Tompkins Property Group on behalf of Kambala Girls School to prepare a Historical Archaeological Assessment (HAA) of the subject area.

On 16 November 2020 comments were received from Heritage NSW in respect of the EIS, which made a number of specific recommendations. The HAA was subsequently updated, as detailed in a Response to Submissions (RtS).

A request for Information (RFI) issued on 24/05/2021 found that the HAA was insufficient and requested the following additional information prior to further assessment of the application:

- *a detailed explanation of the impact that the proposed development has on the potential archaeological remains as outlined in Section 4 of the updated HAA;*
- *a statement of archaeological significance that clarifies and appropriately addresses the significance of the identified potential archaeological remains/ resources that have been outlined in Section 4 of the updated HAA; and*
- *an outline of an Archaeological Research Design (ARD) for areas identified as containing moderate archaeological potential and the overall site. The ARD should clearly indicate how the different areas of the site have been assessed and should detail the proposed approach and methodology (broad) that would be undertaken to ensure appropriate archaeological management of the site.*

*The Notice of Exhibition dated 17 May 2021 provides additional information in respect of the above-requested items. This document further requested that:

The applicant shall nominate a suitably qualified and experienced historical archaeologist to manage the historical archaeological program. The person must be able to meet the Heritage Council's Excavation Director Criteria (2019) for the proposed activity and significance level.

This updated HAARD has been prepared in response to the abovementioned RFI.

Kambala is located at 794 -796 New South Head Road, Rose Bay and is within the Woollahra Council local government area (LGA). Situated in the eastern suburbs of Sydney, the school is approximately 8km east of the Sydney CBD. The school is located on New South Head Road which is a classified road connecting the city with the eastern beaches. The school is surrounded by predominantly residential areas. The school encompasses Lot 67 DP2538, Lot 1 DP1089403, Lot 1 DP187595, Lot Null SP64653, Lot C DP310074 and Lots 1 - 12 DP1116858.

The campus is bound by New South Head (to the east), Bayview Hill Road (to the north) and Tivoli Avenue (to the west). Fernbank Boarding House is located at 1A -3 Bayview Hill Road (Lot 45 DP2538 and Lot 1 DP173852) opposite the Kambala School grounds. No works are proposed to this part of the campus.

Archaeological Potential

An assessment of archaeological potential has established that much of the area where works are proposed has low archaeological potential. Very few historical buildings and structures are shown in historical plans in the north eastern portion of the school campus and extensive disturbance associated with the 20th century development is anticipated to have removed archaeological resources in this area. Discrete areas of high and moderate archaeological potential, however, have been identified within the footprint and in close proximity to Tivoli House, including the rear courtyard and areas where former outbuildings, wells, a convict built stone bridge and the original carriageway are shown in historical plans.

Archaeological Significance

Potential relics that may be impacted by the works are likely to be locally significant for their historical heritage value, research potential and rarity. Such relics may include: structural remains of mid-to-late nineteenth century outbuildings shown in historical plans, including a stables and coach house, although construction of the Hawthorne Building is likely to have disturbed and or removed evidence of these former

buildings; and two (2) wells shown in the 1881 subdivision plan, between the Alexander and Hawthorne buildings. If these archaeological remains have survived, they would likely provide insights into the layout and evolution of the Tivoli estate during the mid-to-late nineteenth century and the lives of its workers. Whilst it is unlikely that remains of the convict-built stone bridge, to the south east of the house, have survived, if such relics are present, they may be significant at a State level for their technical and historical value and rarity.

Impact Assessment

Based on the assessment of archaeological potential and significance, this HAA has established that the proposal may impact on areas of moderate and high archaeological potential. These areas include the former footprint of outbuildings and wells shown in historical plans and areas in close proximity to Tivoli House. Specific activities that may impact on relics include:

- Stage 2C – landscaping in the forecourt near the Hawthorn Building footprint;
- Stage 2D – landscaping between the music and Tivoli buildings
- Stage 3 – partial demolition of the Arts building and addition to the Tivoli Building and landscaping around the Tivoli and Hawthorne buildings
- Stage 4 - Installation of a stormwater retention tank to the north of Tivoli House.

Recommendations

The Archaeological Research Design (ARD) included in this report outlines a program of archaeological monitoring for all proposed works within the subject area which may impact historical archaeological resources. This will ensure that, where possible, locally significant relics are identified, recorded and assessed before they are removed. It will also ensure that, should any unexpected substantially intact State significant relics be identified, they are appropriately protected and further advice from Heritage NSW is sought regarding their management. Implementation of this program would mitigate the potential impacts of the proposal on historical archaeological remains.

1. INTRODUCTION

Urbis have been engaged by Carmichael Tompkins Property Group on behalf of Kambala Girls School to prepare a Historical Archaeological Assessment and Research Design (HAARD) to support a State-Significant Development Application (SSD-10385) for the redevelopment of sporting facilities at Kambala Girls School, 794-796 New South Head Road, Rose Bay (herein the subject area).

1.1. PROJECT BACKGROUND

In February 2020 Urbis was engaged by Carmichael Tompkins Property Group on behalf of Kambala Girls School to prepare a Historical Archaeological Assessment (HAA) for the subject area.

The report was prepared having regard to the Secretary's Environmental Assessment Requirements issued for the project by DPIE, ref no SSD-10385 issued on 24 November 2019. The HAA responded to requirement 9 of the Planning Secretary's Environmental Assessment Requirements (SEARs), which stated:

If the Statement of Heritage Impact identifies impact on potential historical archaeology, an historical archaeological assessment should be prepared by a suitably qualified archaeologist in accordance with the Heritage Division, Office of Environment and Heritage Guidelines 'Archaeological Assessment' 1996 and 'Assessing Significance for Historical Archaeological Sites and Relics' 2009. This assessment should identify what relics, if any, are likely to be present, assess their significance and consider the impacts from the proposal on this potential archaeological resource. Where harm is likely to occur, it is recommended that the significance of the relics be considered in determining an appropriate mitigation strategy. If harm cannot be avoided in whole or part, an appropriate Research Design and Excavation Methodology should also be prepared to guide any proposed excavations or salvage programme.

On 16 November 2020 comments were received from Heritage NSW in respect of the EIS, which made a number of specific recommendations. The HAA was subsequently updated, as detailed in a Response to Submissions (RtS).

A request for Information (RFI) issued on 24/05/2021 found that the HAA was insufficient and requested the following additional information prior to further assessment of the application:¹

- a detailed explanation of the impact that the proposed development has on the potential archaeological remains as outlined in Section 4 of the updated HAA;
- a statement of archaeological significance that clarifies and appropriately addresses the significance of the identified potential archaeological remains/ resources that have been outlined in Section 4 of the updated HAA; and

an outline of an Archaeological Research Design (ARD) for areas identified as containing moderate archaeological potential and the overall site. The ARD should clearly indicate how the different areas of the site have been assessed and should detail the proposed approach and methodology (broad) that would be undertaken to ensure appropriate archaeological management of the site.

*The Notice of Exhibition² dated 17 May 2021 provides additional information in respect of the above-requested items. This document further requested that:

The applicant shall nominate a suitably qualified and experienced historical archaeologist to manage the historical archaeological program. The person must be able to meet the Heritage Council's Excavation Director Criteria (2019) for the proposed activity and significance level.

This updated HAARD has been prepared in response to the abovementioned RFI.

1.2. RESPONSE TO SEARS

This HAARD has responded to the SEARs as outlined in Table 1 below.

¹ Kambala Sport, Wellbeing and Senior Learning Precinct (SSD-10385), Request for additional information, Heritage NSW, 24/05/2021

² Notice of Exhibition of application for Kambala Sport, Wellbeing and Senior Learning Precinct, Rose Bay, NSW, SSD-10385, Heritage NSW, 17/05/2021

Table 1 – SEARs table

SEARs Requirement	Report Section
<i>An historical archaeological assessment should be prepared by a suitably qualified archaeologist in accordance with the Heritage Division, Office of Environment and Heritage Guidelines 'Archaeological Assessment' 1996 and 'Assessing Significance for Historical Archaeological Sites and Relics' 2009.</i>	This HAARD has been prepared in response to this requirement.
<i>This assessment should identify what relics, if any, are likely to be present</i>	See Section 4 of this HAARD
<i>assess their significance</i>	See Section 5 of this HAARD.
<i>and consider the impacts from the proposal on this potential archaeological resource.</i>	See Section 6 of this HAARD.
<i>If harm cannot be avoided in whole or part, an appropriate Research Design and Excavation Methodology should also be prepared to guide any proposed excavations or salvage programme</i>	See Section 7 of this HAARD.

1.3. LOCATION AND SITE DESCRIPTION

Kambala is located at 794 -796 New South Head Road, Rose Bay and is within the Woollahra Council local government area (LGA) (see Figure 1 & Figure 2). Situated in the eastern suburbs of Sydney, the school is approximately 8km east of the Sydney CBD. The school is located on New South Head Road which is a classified road connecting the city with the eastern beaches. The school is surrounded by predominantly residential uses. The school encompasses the following lots:

- Lot 67 DP2538
- Lot 1 DP1089403
- Lot 1 DP187595
- Lot Null SP64653
- Lot C DP310074
- Lots 1 - 12 DP1116858

The campus is bound by New South Head (to the east), Bayview Hill Road (to the north) and Tivoli Avenue (to the west). Fernbank Boarding House is located at 1A -3 Bayview Hill Road (Lot 45-46 DP2538 and Lot 1 DP173852) opposite the Kambala School grounds. No works are proposed to this part of the campus in this DA.

The south western and north western part of the campus accommodates much of the school's existing built form, while the eastern part has the school's sporting fields and courts. The Kambala School building known as Tivoli House is in the heart of the campus. The house, its interiors, gateposts, gates and flanking walls with railing facing Tivoli Avenue, as well as 2 Norfolk Island Pines are listed as a heritage item in Woollahra Local Environmental Plan 2014 (WLEP 2014).

1.4. THE PROPOSAL

This SSDA includes detailed plans for a new sport, wellbeing and senior learning precinct. A selection of these plans is included as Figures 3 - 6. Accordingly, consent is sought for the following:

The excavation of part of the existing sports field to facilitate the construction of the following:

- sports facilities including weights room and dance rooms;
- indoor multipurpose sports courts for use by up to 1500 people;

- innovative and flexible teaching and learning spaces;
- amenities, store rooms, plant, circulation and ancillary spaces;
- reinstatement of the sports field surface on the roof (sports field and perimeter fencing); and
- spectator seating / bleachers.
- The removal of the tennis courts (currently on the roof of the music building), and the construction of the following:
 - a wellbeing centre, called the SHINE centre, to accommodate the Kambala SHINE program;
 - a new staff centre, called the KITE centre, to accommodate staff workstations, meeting areas, staff development workshop rooms and amenities; and
 - reinstatement of the tennis courts, lighting and perimeter fencing on the new roof.
- a new eastern forecourt for the school, new external landscaped areas and new courtyards;
- minor works to the existing music building to facilitate a new connection to the new courtyard;
- the partial demolition of the Hawthorne building and the construction of a new façade, roof and landscaping; and
- the demolition of the Arts building and the construction of new facades to adjacent affected buildings, and new landscaping to the footprint of the demolished building.

As shown in Figure 3, the subject area is restricted to the northern portion of the school campus. Proposed demolition work and associated façade redevelopment and landscaping works is shown in Figure 4 and is limited to a portion of the existing Hawthorne Building and the Arts building. New buildings are proposed on top of the existing sports field and music building, as shown in Figure 5. The extent of new landscape works is shown in Figure 6 and includes all external spaces connecting these works. The construction works will be staged, so the construction site for any given stage will be smaller than the overall site identified.

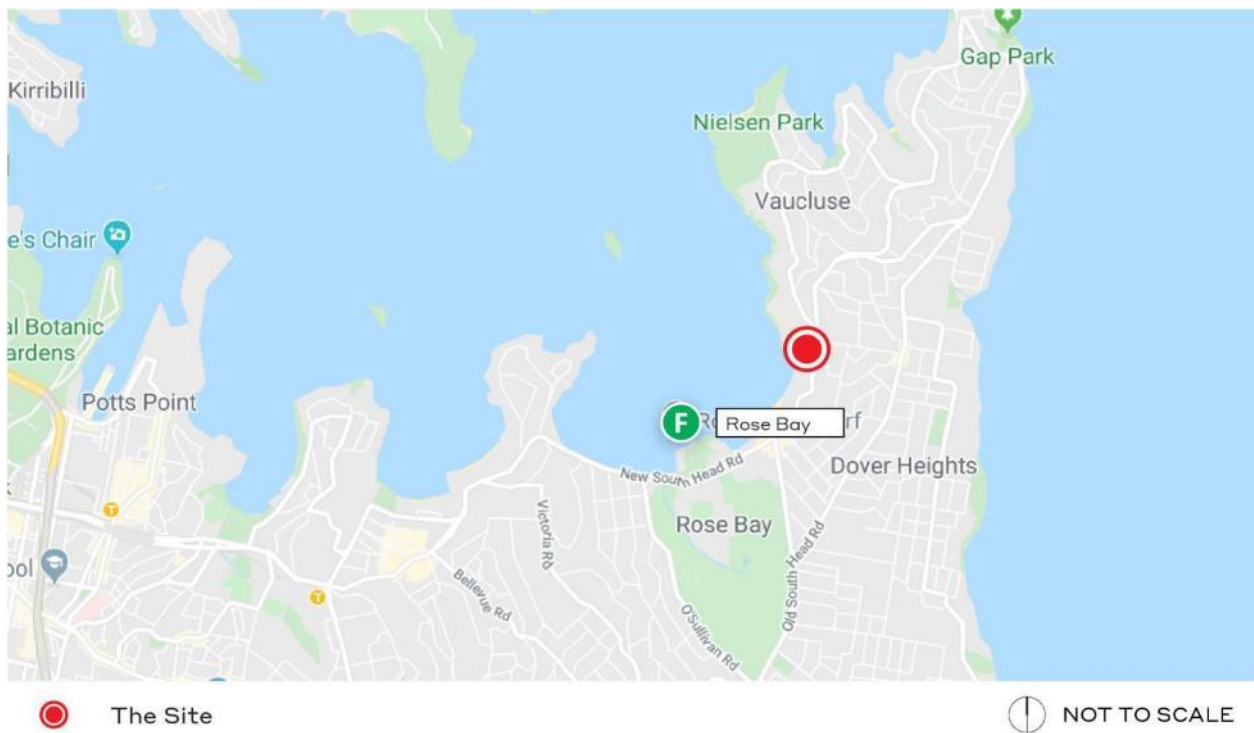


Figure 1 – Regional location



Figure 2 – Location of Kambala school



Figure 3 – Proposed works
Source: AJ+C, DA1003, 09/06/2020



Figure 4 – Level 1 Demolition Plan
Source: AJ+C, DA1101, 21/07/2020



Figure 5 – Elevation of proposal
Source: AJ+C, DA3201, 09/06/2020

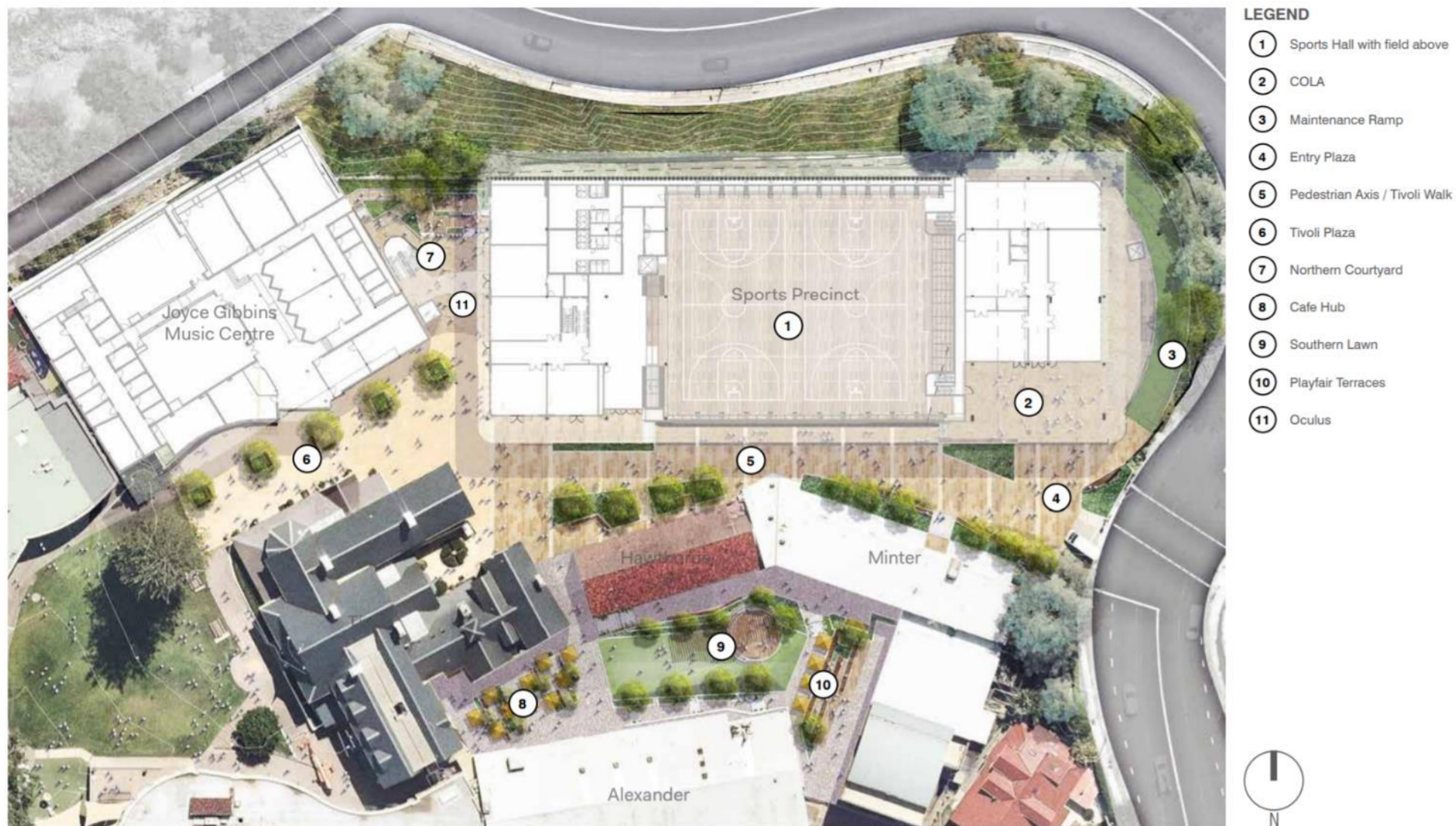


Figure 6 – Landscape plan
 Source: OCULUS, August 2020

1.5. METHODOLOGY

This HAA has been prepared in accordance with the NSW Heritage Division guidelines:

- 'Assessing Heritage Significance' (NSW Heritage Office 2001)
- 'Statements of Heritage Impact' (NSW Heritage Manual 1996)
- 'Assessing Significance for Historical Archaeological Sites and 'Relics' (NSW Office of Environment and Heritage (OEH) (2009).
- 'Historical Archaeology Code of Practice' (Heritage Council of NSW 2006).

The philosophy and process adopted is that guided by the Australia ICOMOS Burra Charter 1999 (revised 2013). Site constraints and opportunities have been considered with reference to relevant controls and provisions contained within the *Woollahra Local Environmental Plan 2014*.

1.6. AUTHOR IDENTIFICATION

The following report has been prepared by Alexandra Ribeny (Heritage Consultant/ Archaeologist). Balazs Hansel (Associate Director) and Fiona Leslie (Principal Archaeologist, MTS Heritage) have reviewed its content.

Unless otherwise stated, all drawings, illustrations and photographs are the work of Urbis.

1.7. LIMITATIONS

A site inspection has not been undertaken specifically for the preparation of this HAA. Site inspections and photography have been undertaken by Urbis in 2019 for other project phases, and those results inform this HAA.

This report is limited to a presentation and analysis of potential impacts on the historical archaeological (non-Aboriginal) potential only.

No intrusive archaeological methods including archaeological test excavation have been applied for the purposes of this report.

1.8. RELEVANT DEFINITIONS

Relevant terms and definitions used throughout this HAA are defined in Table 1.

Table 2 – Terms & Definitions

Term	Definition
Archaeological assessment	A study undertaken to establish the nature, extent, and significance (research potential) of archaeological resources that may exist within a particular site and to identify appropriate measures to manage those resources.
Archaeological potential	The degree of physical evidence present at an archaeological site, usually assessed on the basis of physical evaluation and historical research.
Archaeology	The study of past human culture, behaviour and society through the study and analysis of physical remains, including buildings, graves, tools and other objects.
Australia ICOMOS	The national committee of the international Council on Monuments and Sites.
Burra Charter	Charter adopted by Australia ICOMOS, which establishes the nationally accepted principles for the conservation of places of cultural significance. Although the Burra Charter is not cited formally in statutory legislation, it is nationally recognised as a document that shapes the policies of Heritage NSW, Department of Premier and Cabinet.

Conservation	All the processes of looking after an item so as to retain its cultural significance. This includes maintenance and may, according to circumstances, include preservation, restoration, reconstruction, and adaptation, and will commonly be a combination of more than one of these processes.
Conservation Management Plan	A document explaining the significance of a heritage item, including a heritage conservation area, and proposing policies to retain that significance. It can include guidelines for additional development of maintenance of the place.
Conservation policy	A proposal to conserve a heritage item arising out of the opportunities and constraints presented by the statement of heritage significance and other considerations.
Context	The specific character, quality, physical, historical and social characteristics of a building's setting.
Curtilage	The geographic area that provides the physical context for an item which contributes to its heritage significance. Land titles boundaries do not necessarily coincide with the curtilage.
Heritage and Conservation Registers	A register of heritage assets owned, occupied or controlled by a State agency, prepared in accordance with Section 170 of the <i>Heritage Act 1977</i> .
Heritage item	A landscape, place, building, structure, relic or other work of heritage significance.
Heritage significance	Of aesthetic, historic, scientific, cultural, social, archaeological, natural or aesthetic value for past, present or future generations.
Heritage value	Often used interchangeably with the term 'heritage significance'. There are four nature of significance values used in heritage assessments (historical, aesthetic, social and technical/research) and two comparative significance values (representative and rarity).
Relics	A relic is defined under the NSW <i>Heritage Act 1977</i> as any deposit, object or material evidence which relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and is of state or local heritage significance.
Use	Means the functions of a place and the activities and practices that occur at the place. A compatible use respects the cultural significance of the place.

2. STATUTORY CONTEXT

2.1. NATIONAL LEGISLATION

2.1.1. Environment Protection and Biodiversity Conservation Act 1999

In 2004, a new Commonwealth heritage management system was introduced under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The National Heritage List (NHL) was established to protect places that have outstanding value to the nation. The Commonwealth Heritage List (CHL) was established to protect items and places owned or managed by Commonwealth agencies. The Australian Government Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) is responsible for the implementation of national policy, programs and legislation to protect and conserve Australia's environment and heritage and to promote Australian arts and culture. Approval from the Minister is required for controlled actions which will have a significant impact on items and places included on the NHL or CHL.

Commonwealth Heritage List

The (CHL) was established by the EPBC Act to protect Indigenous, historic, and natural heritage places owned or controlled by the Australian Government. The CHL and EPBC Act contain provisions for the management and protection of listed places under Commonwealth ownership or control. There are no items on the Commonwealth Heritage List within the study area. As such, the heritage provisions of this act do not apply, and project works for the Proposal would not require referral to the Minister.

Does the subject area contain (or is it located within proximity of) any sites which are listed on the Commonwealth Heritage List?

The subject area is not included on the CHL, and no historic heritage items in or within the vicinity of the subject area are listed on the CHL.

National Heritage List

The National Heritage List (NHL) was established by the EPBC Act to protect places of significant natural or cultural heritage value at a National level. The EPBC Act requires NHL places to be managed in accordance with the National Heritage Management Principles. Under sections 15B and 15C of the EPBC Act, a referral must be made to the Department of the Environment and Energy for actions that are likely to have a significant impact on National Heritage listed properties. There are no items listed on the National Heritage List within the study area. As such, the heritage provisions of this act do not apply, and project works for the Proposal would not require referral to the Minister.

Does the subject area contain (or is it located within proximity of) any sites which are listed on the National Heritage List?

The subject area is not included on the NHL and no historic heritage items in or within the vicinity of the subject area are listed on the NHL.

2.2. STATE LEGISLATION

2.2.1. NSW Heritage Act 1977

The NSW Heritage Act 1977 (the Heritage Act) provides protection to items of environmental heritage in NSW. This includes places, buildings, works, relics, moveable objects and precincts identified as significant based on historical, social, aesthetic, scientific, archaeological, architectural, cultural or natural values. State significant items are listed on the NSW State Heritage Register (SHR) and are given automatic protection under the Heritage Act against any activities that may damage an item or affect its heritage significance.

Under Section 57(1) of the Heritage Act Heritage Council approval is required to move, damage, or destroy a relic listed in the State Heritage Register, or to excavate or disturb land which is listed on the SHR and there is reasonable knowledge or likelihood of relics being disturbed.

The Act defines a 'relic' as:

Any deposit, object or material evidence

- (a) *which relates to the settlement of the area that comprises New South Wales, not being an Aboriginal settlement, and;*
- (b) *which is 50 or more years old. A Section 60 application is required to disturb relics on an SHR listed site.*

Under section 139 of the *Heritage Act*, an excavation permit is required to disturb or excavate 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*”. This section of the *Heritage Act* identifies provisions for items /relics outside of those on the State Heritage Register or subject to an Interim Heritage Order (IHO).

State Significant Development Applications (SSDAs)

The subject proposal is a State Significant Development (SSD), meaning that the provisions of the *Heritage Act 1977*, as outlined above, do not apply. The development application will instead be assessed under Division 5.2 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Projects approved under Division 5.2 do not require approval under Part 4 of the *Heritage Act 1977*, but the Historical Archaeological Assessment (HAA) must outline proposed mitigations measures for any potential harm to relics. The Standard Secretary’s Environmental Assessment Requirements (SEARs) must also be strictly adhered to.

State Heritage Register

The *Heritage Act* is administered by the Office of Environment and Heritage. The purpose of the *Heritage Act 1977* is to ensure cultural heritage in NSW is adequately identified and conserved. Items of significance to the State of NSW are listed on the NSW State Heritage Register (SHR) under Section 60 of the Act.

The subject area does not contain, nor is it located within proximity of, any sites which are listed on the State Heritage Register.

Section 170 Heritage and Conservation Register

The *Heritage Act* also requires government agencies to identify and manage heritage assets in their ownership and control. Under Section 170 of the *Heritage Act*, Government agencies must keep a register which includes all local and State listed items or items which may be subject to an interim heritage order that are owned, occupied or managed by that Government body. Under Section 170A of the *Heritage Act* all government agencies must also ensure that items entered on its register are maintained with due diligence in accordance with State Owned Heritage Management Principles.

The subject area does not contain, nor is it located within proximity of, any sites which are listed on a S.170 Register.

2.2.2. Environmental Planning and Assessment Act 1979

Local Environmental Plans (LEPs) are made under the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Woollahra LEP 2014 is applicable to the subject area.

Woollahra Local Environmental Plan (LEP) 2014

Under Section 5.10, Clause 2 of the Woollahra LEP 2014, development consent is required when:

- (c) *disturbing or excavating an archaeological site while 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.*

Under Section 5.10, Clause 7 it is specified that:

(the) consent authority must, before granting consent under this clause to the carrying out of development on an archaeological site (other than land listed on the State Heritage Register or to which an interim heritage order under the Heritage Act 1977 applies):

- (a) *notify the Heritage Council of its intention to grant consent, and*
- (b) *take into consideration any response received from the Heritage Council within 28 days after the notice is sent.*

Historical archaeological sites are listed under Part 3 of Schedule 5 of the Woollahra LEP 2014.

The subject area is listed under Part 1 of Schedule 5 of the Woollahra LEP 2014 as 'Kambala School—building formerly Tivoli and interiors, gateposts, gates and flanking walls with railing facing Tivoli Avenue, 2 Norfolk Island Pines' (Item no. I325).

The subject area is located in proximity to an archaeological site listed under Part 3 of Schedule 5 of the Woollahra LEP 2014 as 'Emma's Well' (A3). This is located across New South Head Road, to the east of the subject area. This well is the site of a perennial spring which was potentially named after Emma Collins, an Aboriginal woman who showed settlers the place to access fresh water running from the Tivoli Stream (SMH, 1939).

The subject area is located in proximity to the following local heritage items listed under Part 1 of Schedule 5 of the Woollahra LEP 2014:

- 'Four Norfolk Island pines' (Item no. I395); and
- 'Kincoppal, Roman Catholic Convent of the Sacred Heart and school—buildings and interiors, grounds, trees, sandstone and wrought iron fence, gateposts and gates' (Item no. I396).

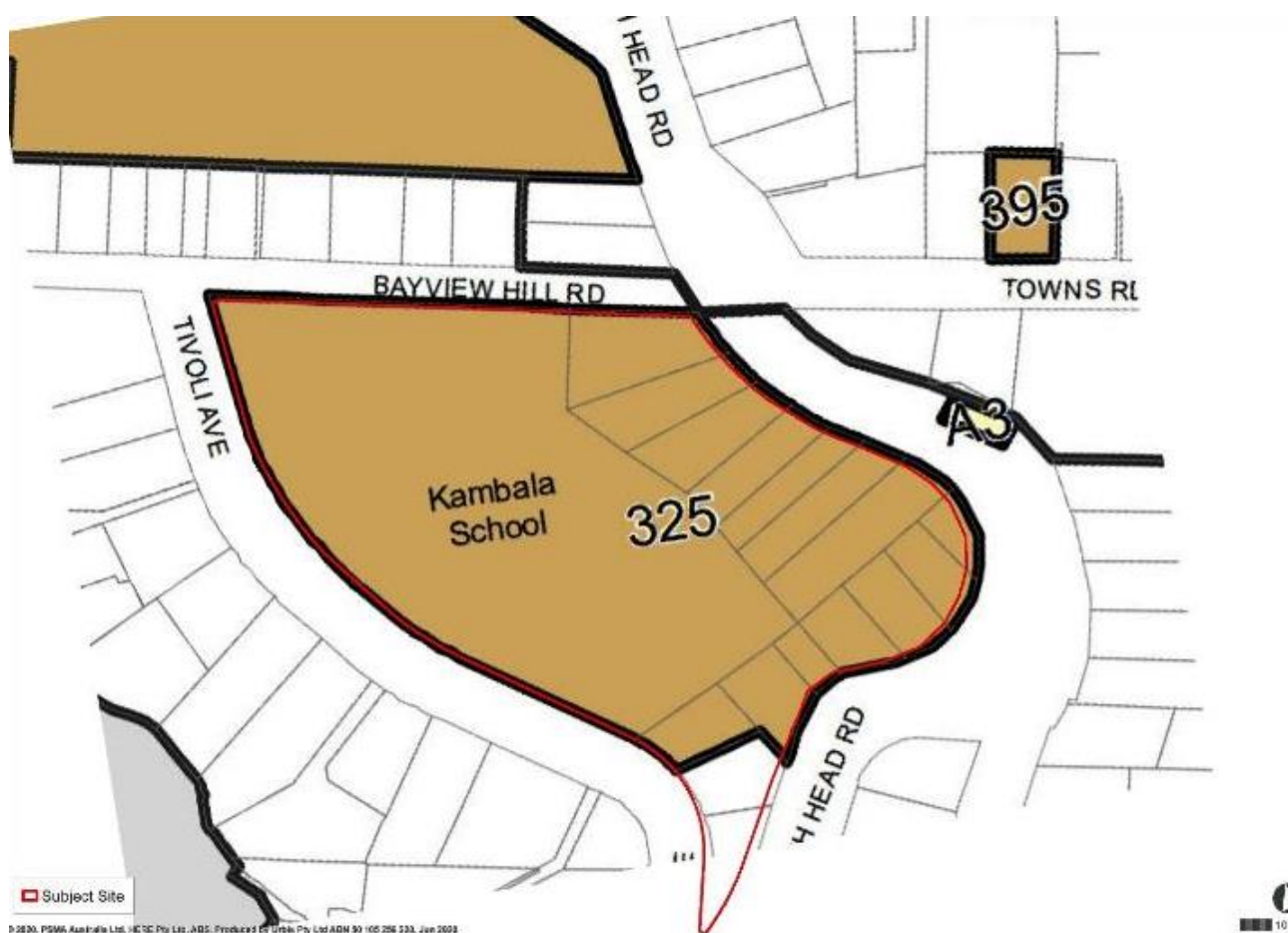


Figure 7 - LEP map showing subject area outlined in red

Source: Woollahra LEP 2014

2.3. NON-STATUTORY INSTRUMENTS

2.3.1. Conservation Management Plan (Urbis 2017)

In 2017, Urbis prepared a Conservation Management Plan (CMP) for the entirety of Kambala Girls School. Regarding historical archaeology, the CMP stated the following:

The subject site has local research potential.

Historic research indicates other buildings and landscape elements were located within the current boundary of the main school site, and that the site may contain archaeological deposits relating to early European occupation and landscaping.

One such element is an early 19th century convict built stone bridge over a stream which was located on the school grounds. This was demolished in c1958 when a new drainage system for the oval and drive was incorporated.

It is important to note that the CMP was prepared for the whole of the school, and historical mapping identifies the location of the former convict bridge outside the footprint of the proposed works. For further discussion of potential impacts reference should be made to Section 6.

Further discussion on the historical archaeological potential of the subject area is included in Section 4.

2.4. SUMMARY OF HERITAGE CONTEXT

The heritage context of the subject area is summarised as follows:

- The subject area is listed under Part 1 of Schedule 5 of the Woollahra LEP 2014 as 'Kambala School—building formerly Tivoli and interiors, gateposts, gates and flanking walls with railing facing Tivoli Avenue, 2 Norfolk Island Pines' (Item no. I325).
- The subject area is located in proximity to an archaeological site listed under Part 3 of Schedule 5 of the Woollahra LEP 2014 as 'Emma's Well' (A3).
- The subject area is located in proximity to the following local heritage items listed under Part 1 of Schedule 5 of the Woollahra LEP 2014:
 - 'Four Norfolk Island pines' (Item no. I395); and
 - 'Kincoppal, Roman Catholic Convent of the Sacred Heart and school—buildings and interiors, grounds, trees, sandstone and wrought iron fence, gateposts and gates' (Item no. I396).
- The 2017 CMP prepared for Kambala Girls School identified the subject area as having archaeological research significance at a local level.

3. HISTORICAL DEVELOPMENT OF THE SUBJECT AREA

The following section is based upon the history and data from the Urbis, 2017 *Kambala School Conservation Management Plan*. The history for this Conservation Management Plan was prepared by Dr Noni Boyd. This has been supplemented with additional research and graphics for the current report.

A consideration of Aboriginal history and potential archaeological remains was not undertaken as part of this assessment.

3.1. EARLY LAND GRANTS (1788-1806)

The Eastern suburbs of Sydney were settled quickly following the landing of the First Fleet. By 1807, Government Salt Pans and a Salt House had been erected at Rose Bay and this enterprise lasted until around 1810. Other early attempts at industry were short lived and the area developed a residential character with a series of substantial marine villas and small villages along the road to the lighthouse at South Head.

Old South Head Road had been constructed in 1811 during Governor Macquarie's term in office and can be seen on the early Parish map below (Figure 8). Thomas Mitchell laid out a new road to South Head that was constructed in the early 1830s. This new route now forms the southern boundary of Kambala School and is still known as New South Head Road. The original land grant extended to Old South Head Road. The marine villas were initially connected by a bridal trail from Rose Bay that passed below the houses. There is some potential that the construction of New South Head Road caused disturbance to the eastern portions of the subject area.

3.2. SAMUEL BREAKWELL AND EARLY SUBDIVISIONS (1807-1833)

An area comprising 60 acres was granted to Mr Samuel Breakwell by Governor Macquarie and it was Breakwell who named the estate Tivoli after the village and grand house at Tivoli near Cork in Ireland. This grant encompassed the subject area. The name was initially spelt the French way - Tivolé. The more common spelling is now Tivoli and this is how the grant was named in the later subdivisions. Breakwell was in the employ of Sir Henry Brown Hayes and whilst in Sydney he served land steward and manager of Hayes' Vacluse Estate. Unlike Hayes, who was transported for abducting an heiress, Breakwell came to Sydney as a free man, initially as Hayes' valet. Breakwell petitioned Governor Macquarie for a land grant, which he duly received. In October 1812, shortly after having been notified of the granting of an allotment of land near to Haye's Vacluse estate, Breakwell announced that he was returning to Great Britain. He was returning with Hayes who had been pardoned by the Governor (SG&NSWA, 1912).

No records have been located that indicate the extent of improvements or buildings on Breakwell's land, although he later described the property as a farm, so some agricultural activities may have been undertaken between 1812 and 1830. For the purpose of farming, there may have been some temporary timber structures erected, including fences and outbuildings. Material remains of these are unlikely to survive but may be evidenced through postholes and fence slots.

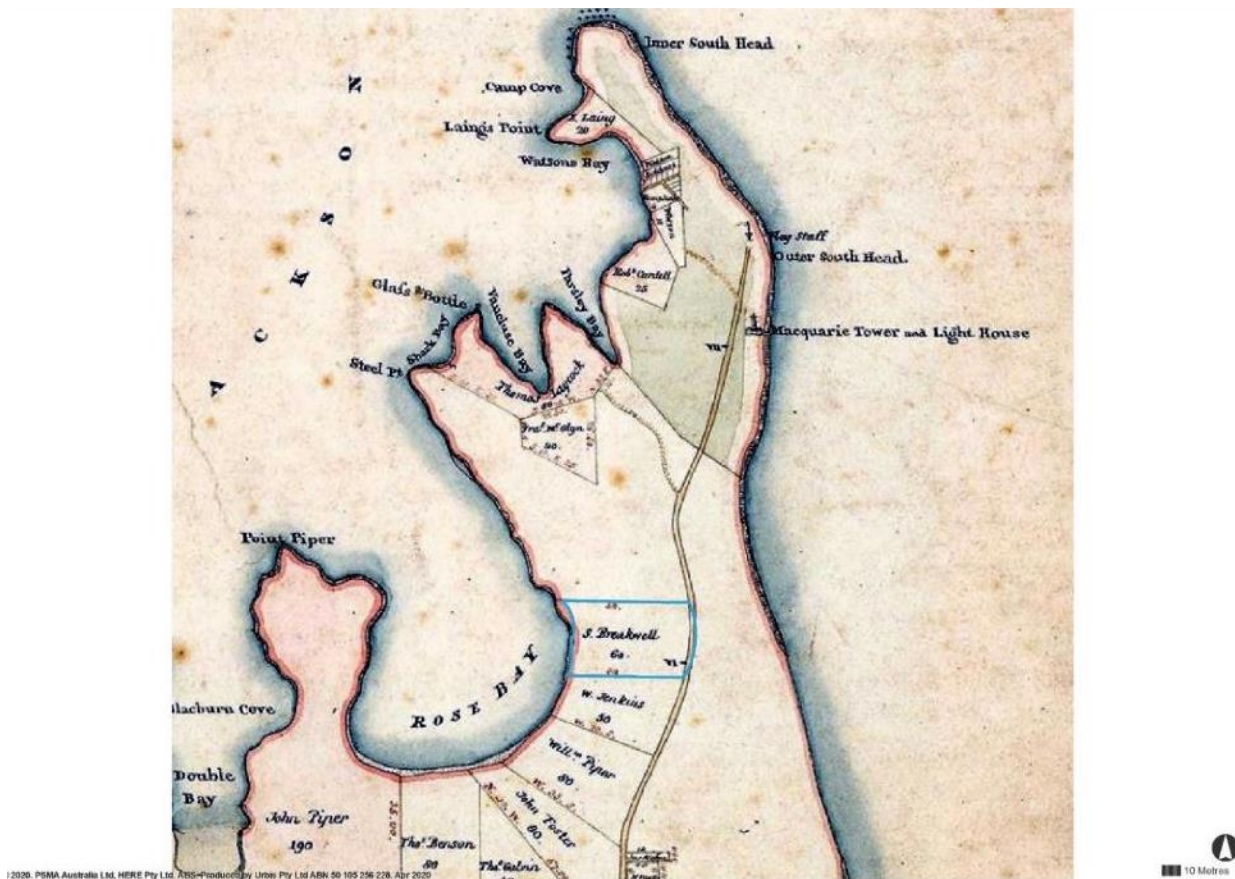


Figure 8 - 1830s Parish map showing Samuel Breakwell's 60 acre grant in the blue polygon.

Source: HLRV

The 60 acres bounded by the South Head Road in the Parish of Alexandria promised to Breakwell by Governor Macquarie was included in the series of formalized grants published in the Sydney Gazette in September 1830 (SG&NSWA, 1830).

Shortly after having received notification of the creation of title deeds, Breakwell instructed Atwell Adam Hayes to "Go to the farm at Rose Bay that nearly adjoins the one that I had lived on, see what state it is in and what it may be worth, and then sell it" (Kambala Archives, 'Notes on Samuel Breakwell', viewed 2017).

Atwell Hayes, nephew of Sir Henry, was charged with selling the Sydney properties of both Hayes and Breakwell. The convenience of the location was spelt out in an article on Hayes' estate.

"The New South Head Road passes through the [Vaucluse] Estate, which makes its distance from the Capital about four miles, along a good and lively road; it is also the same distance by water; so that conveyances at all seasons are practicable, a desideratum of great importance, as gentlemen in public offices (particularly those with families) might here live economically and conveniently" (Australian, 1838).

Attempts to subdivide land described as 'splendid marine allotments' within Breakwell's Tivoli estate date back to 1830. The land between Vaucluse and Point Piper was described in real estate advertisements as containing two 'romantic and picturesque bays', Rose Bay and Tivoli Bay (Ibid). Six lots were for sale in 1830 and the subdivision was aimed at free settlers rather than ticket-of-leave convicts. The lots were marketed at those seeking a change of scene such as "invalids of rank from India (who) would prefer the fine salubrious and luxuriant air of NSW to that of proceeding to the capricious climate of Great Britain" (Sydney Gazette, 1830).

Deeds for the land were advertised as being available from the Surveyor General in March 1831 and by May 60 acres of land had been purchased by Thomas Horton James (Kambala Archives, 'Notes on Thomas Horton James', viewed 2017). James mortgaged the property, raising money for other, unspecified projects and he seems to have made no attempt to build on, or improve, the land.

He subdivided the Tivoli Estate but initially had little success in selling smaller portions of the estate, which were sandwiched between two much larger estates, the Point Piper Estate and the Vaucluse Estate. Press releases indicate a level of interest that does not match the actual rate of sales.

TIVOLI ESTATE AND ROSE BAY

Bounded by that superb sheet of water on the west, by the estate of Point Piper on the east, by the South Head Road on the South, and Major Mitchell's new and beautiful drive to the Lighthouse running all through the Estate. Numerous applications have been made to the Proprietor to purchase this property as a whole ; but it forming so many little gems of situations for country houses for the Merchants of Sydney, abounding in fresh water, and superb views of the Ocean, Port Jackson, Blue Mountains, &c., it has been divided into Allotments, so as to afford every one the opportunity of escaping out of a crowded and unhealthy Town to one of the most elegant spots near Sydney, now (by the Governor's new road) only four miles distant (The Sydney Herald, March 1834).

Corresponding subdivision plans were drawn up which could be viewed at the Auctioneers rooms; however none have yet been located dating from the 1830s for the Tivoli Estate.

3.3. PETER & ELIZABETH HAYDON (1834-1840)

In 1834 the Irish born Sydney-based merchant Peter Haydon purchased one of the lots in the Tivoli estate. In May of the same year his marriage to Miss Elizabeth Jenkins, the youngest of the three Jenkins sisters, occurred. The house erected on the Tivoli estate was intended to be for the newlyweds – *"Mr. Haydon, of Sydney, has also laid the foundation of a house farther on, on an elevated site which commands a delightful view of the harbor"* (Sydney Gazette, 1834).

No architect has been identified for the initial house erected by Haydon nor have any plans been located. Suggestions have previously been made that John Verge or Mortimer Lewis may have been involved. Other than the newspaper report in November 1834 mentioned above noting that the foundations having been started, no tender notices have been located.

The house was probably built for Haydon by his assigned convicts and some of the building's materials are likely to have been obtained from the site. As was common practice, stone was likely to have been quarried from the site, creating a level platform to build on and also creating a cellar and possibly additional water storage. This is likely to have been sourced to the east of the land along the coast, where sandstone outcrops abound. The main roof and verandah roof is likely to have been shingled. An unpublished MS in the Kambala archives refers to an 1838 plan of the house and grounds; however, this has not been located and it is not referred to in the earlier CMP, nor is the rectangular outline of the house included on the 1840 Vaucluse Estate sale plan.

Since the 1950s various historians and architects have speculated as to which portion of the house was the original section. An assumption has been made is that the house built by Haydon was a U-shaped cottage with a verandah. The entrance hall is believed to have been in the same location as it is today. The previous CMP has an annotated plan showing walls that are believed to have survived within the existing ground floor. Newspaper articles attest to the worn flagstones near the entrance which *"were cut and laid by convicts, as was the quaintly carved stone bridge over the Tivoli stream"* (Farmer and Settler, 1939).

The bridge over the Tivoli Stream was likely constructed immediately prior to, or concurrently with, the original Tivoli House by the assigned convicts from locally sourced materials, in the same manner that the original house was constructed. This puts the date of construction of the bridge approximately within the late 1830s. The bridge was located on the Carriageway leading up to the house and provided access over the Tivoli Stream, and thus access via this roadway would not have been possible without the bridge. This bridge is believed to have been demolished during works for Kambala School in the mid-20th century (Urbis, 2017).

In a subsequent sale notice for Vaucluse Village, Mr Haydon's house is described as having a 'domain' or extensive grounds and he employed several staff (Sydney Mail, 1838). A plan of the grounds, drawn in 1838 and mentioned in notes held in the Kambala Archive describes the house, garden, stables, stockyard, water supply, wells, fences and roads. This document has not been located and may still be in the possession of the Haydon family.

Peter Haydon's letters to his business partner and future brother in law Peter Brodie that show he continued to have an interest in the estate improvements, arranging for planting of exotic species, even though he was intending to sell his property at Rose Bay.

"You will hardly know Rose Bay when you come down, I have had it laid with couch and English grape seeds. I am planting many now in great style" (P. Haydon, 'Haydon Family Letters', 1836).

Few structures are known to occur within the subject area at the time. These include the original Tivoli house, the convict bridge over the Tivoli Stream, and various stables and stockyards. The exact location of these structures is not known, although it is likely these structures are the same as indicated on later plans during subsequent phases of occupation.



Figure 9 - Martens Sketch of Tivoli from the west. Note the natural topography and vegetation cover is vastly different to what is now present. No outbuildings are visible in this drawing.

Source: Private collection sold by Sotheby's in Melbourne. Image by Artecord.com.

Peter Haydon did not like Sydney, rather he preferred living on his pastoral holdings in the Page Valley in the Upper Hunter Valley. In his letters to his business partner and future brother in law Peter Brodie, which the Haydon family retain today, he complains that he did not enjoy family events in Sydney such as concerts and in another letter states that he preferred to live in a slab hut.

As early as 1836 Haydon was arranging for the sale of his Rose Bay property, but there was a problem with the title, which Mr. Norton estimated would delay the sale for a year (P. Haydon, 1836). Terry Hughes came to look at the property however it was the Dumaresq family who finally purchased Tivoli from Peter and Elizabeth Haydon, with the sale formalised in 1840. No photos of this bridge were identified nor plans detailing its removal, however it has been suggested that it was removed in the mid-20th century in association with the works at Kambala School (Urbis, 2017).

3.4. THE DUMARESQ FAMILY (1840-1881)

There are numerous mentions of the Dumaresq family in the Haydon letters. William Dumaresq of St Aubin, Scone, purchased Tivoli in 1840. Unlike Haydon, he preferred to be near Sydney and from 1840 spent much of his time there. His business and political activities required this. Dumaresq did not waste any time in improving the house and he had raised funds by mortgaging their property to his sister's husband, Sir Ralph Darling.

By late August 1840 the architect James Hume had been engaged and the plans had already been prepared and were ready for tender.

"Tenders will be received at the office of Mr James Hume, No 10 King Street, Sydney, where the plans and specifications may be seen...for portions of masons', carpenters'. Joiners and other artificers' work required in making alterations and additions to the dwelling-house at Tivoli, the property of Captain Dumaresq near Sydney." (Sydney, 20 August 1840).

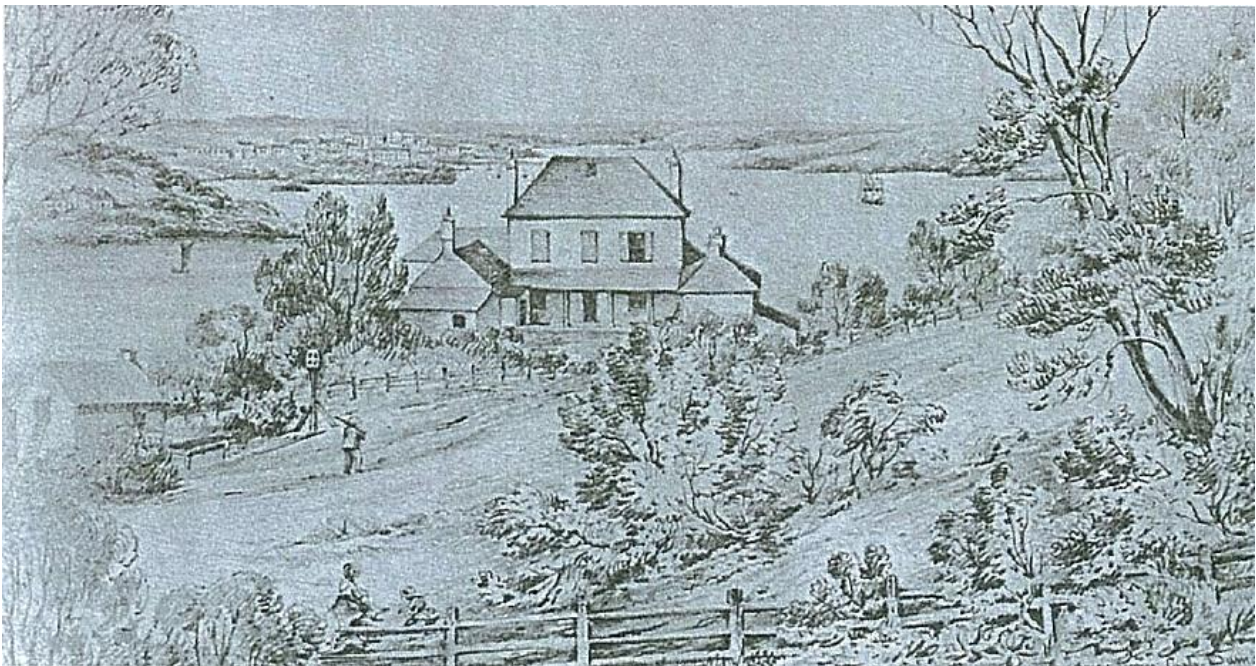


Figure 10 - Henry Campbells Sketch of the rear of Tivoli showing the additions carried out by James Hume. with the majority of the site is covered by natural vegetation and rolling hills. There is an outbuilding of Tivoli present in proximity to what appears to be a windmill. Both are located in proximity to the carriageway.

Source: ML PXC 291 Sydney Views circa 1840-42, Album of Sketches by Henry Campbell Folio 42, Sydney from Cap Dumaresq's, South Head Road, Digital order a6273025.

A sketch of the rear of Tivoli dating from 1842 show Tivoli as extended by Hume (Figure 10). This foreground of this sketch is likely indicative of the subject area at the time, sloped with natural vegetation partially cleared and some fencing. The building to the southwest is believed to have been a stable or coach house and can be seen in photographs from the 1920s. The sketch does not indicate construction materials. This structure appears to have a chimney present and is most likely to be a coach house.

The Dumaresq family leased Tivoli to Alexander Macleay in 1846. At the time of his death in 1848 Macleay was residing at Tivoli. A second wave of additions to the house may have been to accommodate Macleay and may have included the library mentioned in later for lease notices. One of William Dumaresq's earlier roles had been as Civil Engineer and he is credited with the design of a number of watch houses including Erskine Street. The various rooms added to Tivoli may have been designed by Dumaresq as the need arose. No tenders have been located dating from the 1840s or 1850s except for the 1840 additions by Hume.

In a survey of Port Jackson in 1853 by Thomas Mitchell, several outhouses are depicted immediately to the south of Tivoli, between the stream and the house. It is likely that these are outbuildings for the property, including the coach house seen above, and they follow closely along the carriageway leading up to the house (see Figure 11)

In 1860 Dumaresqs once again sought to lease the house, probably in order to spend extended amounts of time at other family properties. Following the deaths of his youngest daughter (1865), one of his two sons (1866) and his wife in 1868, William J. Dumaresq moved to Queensland to live with his remaining daughter Susan, Mrs Louis Hope. Around the time of the death of her mother, Susan had come down to Sydney for a while, giving birth to a daughter at Tivoli in June 1868. His surviving son (William A Dumaresq) inherited Tivoli.



Figure 11 - Extract from Thomas Mitchell's Survey, 1853, approximate location of subject site indicated. Note the standing structures associated with Tivoli concentrated along the carriageway to the original house.

Source: NLA Map RM 1267.

Members of the Dumaresq family were still occupying the house in 1873, although arrangements for new staff were made by 'Mrs Dumaresq at Mrs Macleay's in Elizabeth Bay' (SMH, 1873). Attempts to sell the estate in the mid-1870s had not been successful.

A description of Tivoli from advertisements in 1874 described the grounds as follows:

The out-buildings comprise extensive, stabling, coachhouse, harness and groom's rooms, hayloft, &c. A never failing supply of pure water, from a constantly running spring, is obtained from the higher level of the land which, by gravity which supplies the residence and outbuildings. The grounds contain an area of about fourteen acres and a half, with very extensive frontage to the South Head Road, and to a road dividing the property from the Vacluse Estate...

The residence is approached by a magnificent avenue and carriage drive (one of the most beautiful in the colony) entered on to from the main road by stately, handsome recently erected iron gates, supported by massive stone pillars, dwarf wall and palisade fencing. These grounds are exceedingly beautiful, and will be found unsurpassed by any other site overlooking the harbour.

Immediately surrounding the house are tastefully arranged gardens, croquet ground, rich lawn banks, huge masses of evergreens and beautiful clumps of native and imported timber, through which a splendid panoramic vista of the harbour scenery is obtained, from the south head of Rose Bay to the Parramatta River...

The serene quietude and beauty of this lovely scene is enhanced by the soothing gentle sounds of miniature torrents and waterfalls through depths of wilderness, primitive tracts of dense wilderness...” (SMH, 1874).

The gates to the carriage drive erected in the early 1870s were relocated to the south west of the house where they were included on Richardson and Wrench’s subdivision plans (Figure 13). Tivoli Avenue follows the alignment of the carriage road. The addition of the now relocated gateposts on New South Head Road seems to have been undertaken during the Dumaresq family occupation in the early 1870s and may have been undertaken to make the property more attractive to prospective tenants. Elaborate gates were also erected at Vacluse House. The windmill documented to occur within the subject area was constructed during the Dumaresq period of occupation. The below image (Figure 10) shows an example of 1800s windmills in Sydney, from Observatory Hill. While no specific information on the windmill has been locatable, it can be assumed to be of timber construction with lattice frame, as the contemporary windmill at nearby Claremont House (now Kincoppal College) was documented to be (MDCA, 2009).



Figure 12 - Example of 1800s windmills in Sydney, from sketch by H. Bloxsome of Observatory Hill. Note this structure is indicated to be constructed of timber

Source: Henrietta Bloxsome, c.1820, trove: <https://nla.gov.au/nla.obj-135207038/view>Henrietta Bloxsome, c.1820, trove: <https://nla.gov.au/nla.obj-135207038/view>

From 1876-1878, Tivoli was tenanted by William Bede Dalley and his wife. Dalley was a lawyer and politician. In 1875 Dalley had been appointed Attorney General. One of their sons was born at Tivoli in 1876. The Dalley’s then moved to their new home Clairvaux, however this residence was sold following the death of Eleanor Dalley (nee Long) in 1881. In 1878 Tivoli was again put up for lease. The next tenants were Mr Scarvell and then Alfred Bennett of the Evening News.

It was not until after William A. Dumaresq’s death that the house was put up for sale by the executors in 1881. Dumaresq had died in London in 1880 having been in poor health for some time, his family having ‘proceeded from Glen Innes to England’ in 1878 in the hope that ‘a visit to the mother country would bring about a happier state of things (ATCJ, 1880). The Dumaresq family ownership is recognised in the street names given to the subdivided estates. The property was transferred briefly to Mr Louise Hope (on behalf of wife’s family) and sold.

Richardson and Wrench released a series of subdivision plans for the Tivoli Estate from 1881 onwards. The initial subdivision divided the estate into 4 lots west of New South Head Road. Two reserved roads were also shown. The entrance gates to Tivoli were located on New South Head Road adjacent to the southern boundary of the large lot surrounding the house. The carriage drive served both the rear service yard and the front of the house, approaching from the west. Another drive (more likely a path) led down from the corner of what is now Bayview Hill Road to the east. The fourth lot was on the eastern side of this road reserve. The house itself is U shaped with a breakfront to the north and bay to the east, the eastern side of the residence having a similar configuration to the house as shown in the Macarthur album photographs. There are no photographs of the service yard.

To the southwest two working yards are shown on the subdivision plan, the poultry yard and the stable yard. Below the stable block was a pond and bridge for the carriage drive (and the convict built bridge constructed under the Dumaresq period of occupation). No photographs or detailed plans dating from this period have been located. The metropolitan detail series plans do not extend this far. The Water Board plan dates from 1919.

The subdivision plan (Figure 13) identifies outbuildings across the subject area, primarily in the south and associated with the carriageway leading towards the main house. These structures fulfilled specific purposes to support the functioning of Tivoli, namely the housing of animals in the poultry and stockyards and stables. Based on contemporary sketches and the availability of stone, it is likely that these outbuildings were substantial structures of stone or brick construction with sandstone floors. Furthermore, these structures appear to correspond to a similar location to that of the Hawthorne building, which was constructed in the 1950s and has a basement level present, which will have involved excavation beyond the natural soil level.

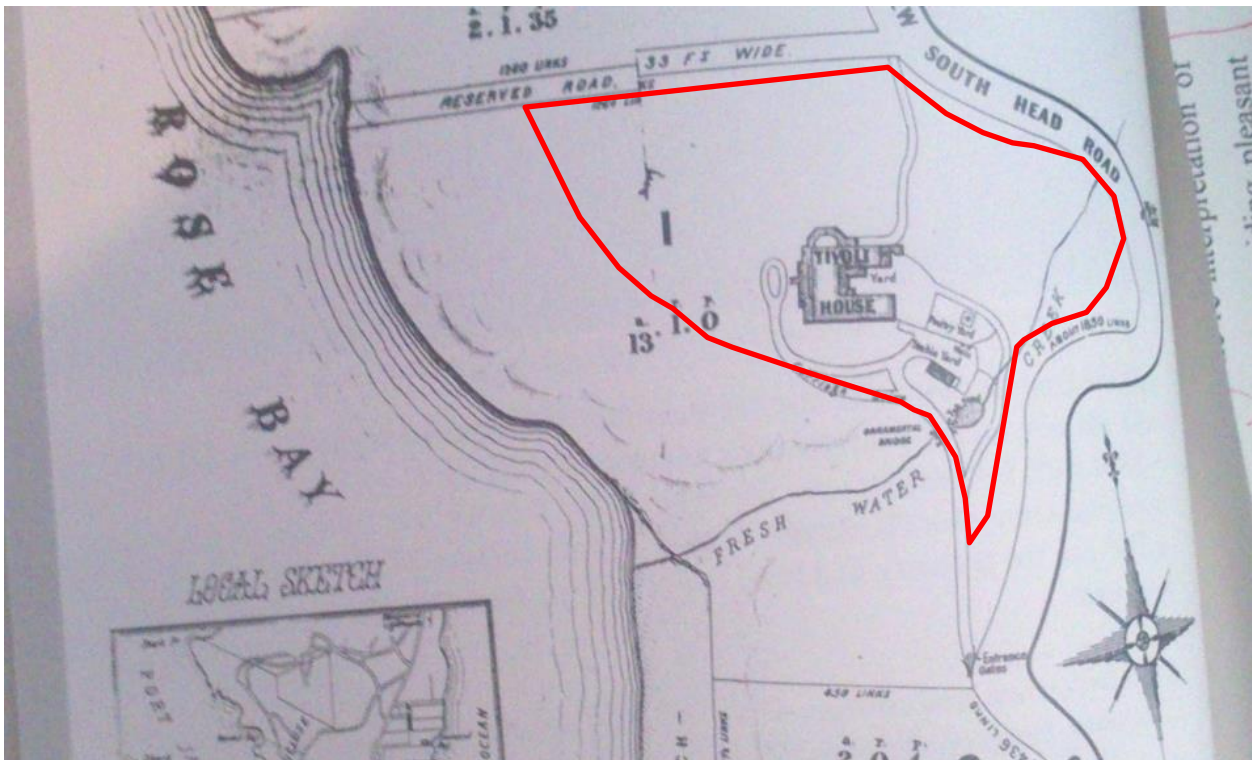


Figure 13 - Subdivision plan by Richardson & Wrench, 1881, showing the original position of the entrance gates.

Source: ML Rose Bay Subdivision Plans, Z/SP/R13/79 not available on line. Copy held on file at the Kambala Archives.

3.5. MORRICE BLACK (1881-1892)

Tivoli was purchased from the executors of W.A Dumaresq by Morrice Black in 1881 (SMH, 1881). The sale of the estate by Richardson & Wrench was reported in May 1881 (Maitland Mercury, 1881). The house was now known as Tivoli House rather than simply Tivoli. The planned enlargement of the house was for the return of Mrs Black, her daughters and youngest son. however shortly before returning to Sydney one of their daughters died. He took out three mortgages, one to purchase the house, one in 1884 and a second in 1887. These later mortgages would have been to fund improvements. Rather than utilize a bank, Morrice Black borrowed from the heiress Mrs Elizabeth Onslow, who was now managing her family estate.

The title deed from Black's purchase shows the Tivoli stream running through the south east of the subject area, with the sandstone convict-built bridge present over the Tivoli stream where the carriageway ran. (Figure 14).

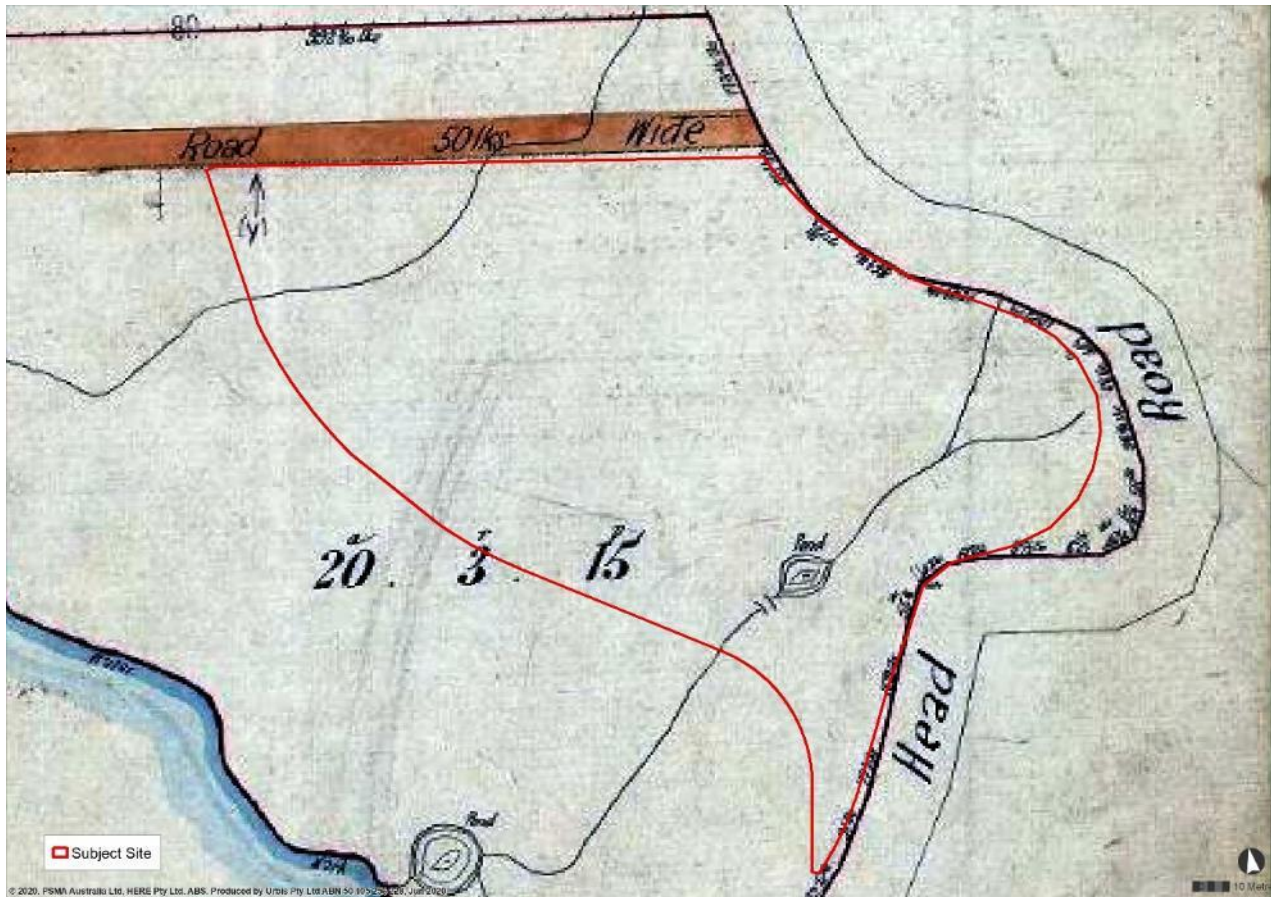


Figure 14 - Title deed from Morrice Black's purchase of the Tivoli estate, 1888

Source: HLRV, vol-fol 874-115

During Black's ownership of Tivoli, he engaged Horbury Hunt to undertake alterations and additions to the house. No documentation relating to the commission has been located. Black is noted in later publications as being unhappy with the final cost of the project, and is reputed to have not paid Hunt's fees, forcing Hunt to sue his client.

John Horbury Hunt reworked the planning of the house to create a 'modern country house' suitable for wealthy professional man. The designs for large waterfront mansions erected in the mid-1880s such as Penshurst, Hollowforth and Gundimaine in Neutral Bay and the series of houses in Victoria Road Bellevue Hill drew on American and English precedents such as those published in the Builder and American Architect, all overlooked the harbour with extensive balconies and verandahs. English modern country houses designed by Richard Norman Shaw were widely published, as were American examples by William Ralph Emerson or Stanford White. The American examples were often designed as summer residences and frequently made use of decorative gables and sculptural chimneys as Hunt did.

Following the completion of the extension of the house, considerable improvements were made to the grounds, including the forming of roads, the erection of fencing and the removal and erection of gates.

Unfortunately, the reunited Black family did not enjoy their substantial new home in Sydney for long. Morrice Black had been in poor health since his return from London in 1886. Six months leave and an extended trip to San Francisco with his wife in 1889 did not result in an improvement. He continued to work until September 1890 but was forced to take leave. He did not recover and died at Tivoli on the 27th of August 1890 aged 59. Morrice Black left a wife and four children, two sons and two daughters, including the attorney Morrice Alexander Black (junior). In the obituary, the house was named Tivoli Bay whilst other reports listed the house as Tivoli. Morrice Black was interred at Waverley Cemetery.

3.6. THE SALE AND SUBDIVISION OF TIVOLI (1892-1913)

Joseph Pearse [Pearce] of Bishopthorpe, Armidale purchased the property in 1891 and died the following year aged 81. He left a lifetime interest in Tivoli to his wife Hester Irwin Forster Pearse along with an annuity of 1400 pounds (Table Talk Melbourne, 1882). The provisions of Pearse's will were contested by his daughters Marie Isabell Russell and Eva Maria Blanche Pearse in 1893 to determine what interest they had in Tivoli after the death or remarriage of their mother. The property was to be 'converted' and trusts set up for the two daughters, each of 22,000 pounds and the estate paid the cost of the court case. The sale in December 1895 of two American buggies, a very stylish buggy horse, a brougham horse, a milking cow and heifer were put up for sale at Tivoli may indicate that the family was downsizing (SMH, 1895). Horses were however still kept at Tivoli until at least 1903.

Although the Pearse family had not lived at Tivoli since the mid-1890s, press coverage for the next 20 years still mentioned the late Joseph Pearse or Pearse of Tivoli, Rose Bay (National Advocate, 1915). From 1896 until 1913 Tivoli was rented or leased. Mrs Pearse and then her executors continued to pay the rates until the sale of the property in the 1920s. Lessee's of Tivoli during this time included Barney Allen, a racehorse owner, and The Love family.

In 1904 the estate was subdivided, and the trustees brought a case against two men who had been removing stone from the estate. The water frontages were to be sold. An un-named purchaser recalled:

The happiest Christmas time of my life and the one I shall always look back upon with the greatest satisfaction, was December 17th 1904 when I took the free steamer and purchased a block of water frontage at the sale of the Tivoli estate, Rose Bay (SMH, 1904).

Sale plans from the early 1900s show that the Tivoli Stream, which the convict bridge passed over, has become a drainage reserve. They also demonstrate only one other built item, presumably an outbuilding of Tivoli although it may be the convict bridge, on the lot (see Figure 15). There are no known improvements to the gardens of Tivoli at this time.

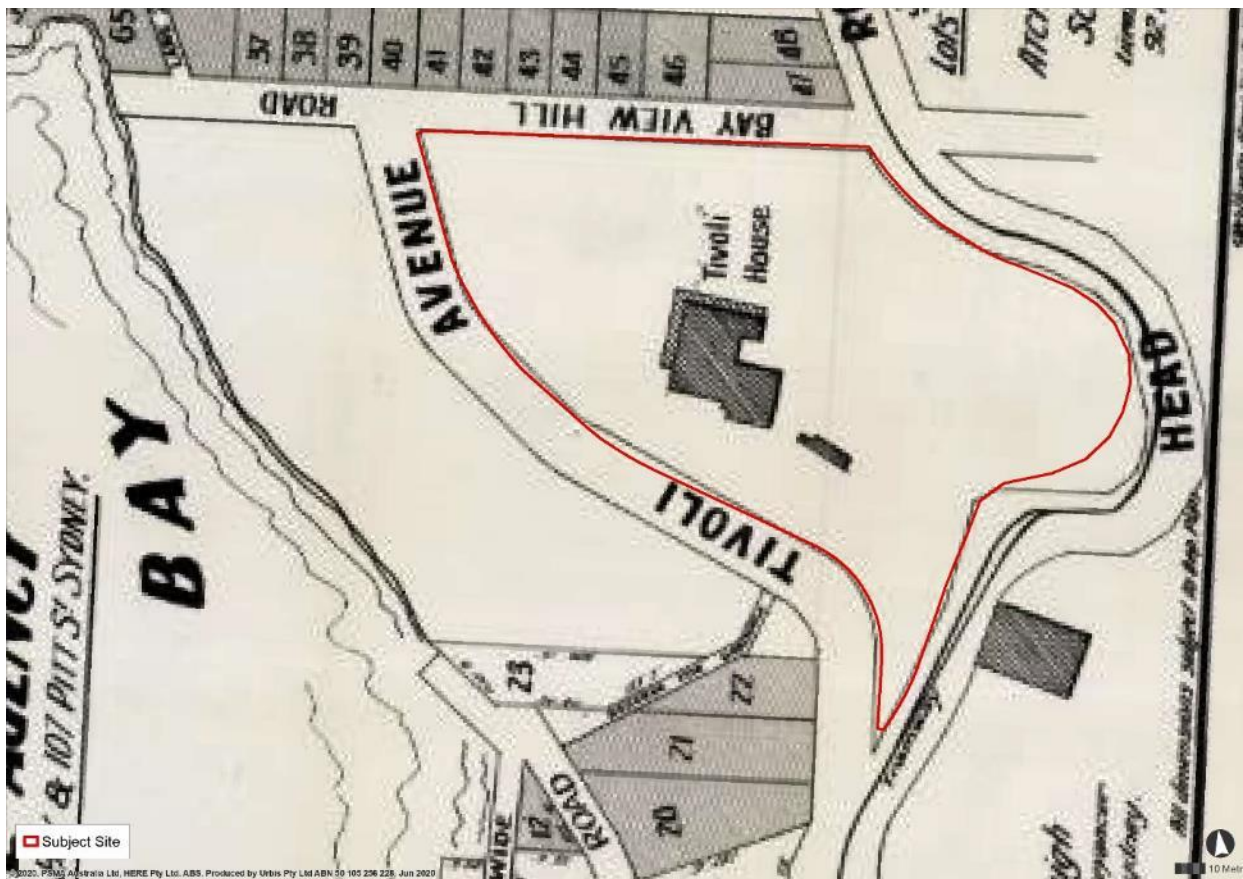


Figure 15 – 1890 Tivoli Estate subdivision plan

Source: State Library of NSW

3.7. KAMBALA SCHOOL (1913-PRESENT DAY)

In 1913 Tivoli became the home of Kambala school when the school moved from Bellevue Hill. Kambala school remains on the site, which has been developed with a sequence of school buildings, starting with the additional accommodation or overflow moved from Bellevue Hill to Tivoli in 1913. Having overseen the transfer and establishment of the school at its new site Miss Gurney and Mlle Soubeiran retired.

In March 1924 preparations were made for a Vice Regal visit.

Tivoli, or as it is now called, Kambala, is to be the scene of the garden party given on Monday afternoon, to welcome Lady de Chair [Clair] on behalf of the Country Women, hundreds of whom we hope will be there to convey that welcome in person. This is a home rich in history, and it is set in perhaps the most beautiful spot on the harbour shores... This wonderful little stream which runs through our Tivoli passed right through Kambala, under the most quaint stone bridge and so out into Rose Bay. In the old days it supplied the household with its water by means of an old windmill which still stands in the grounds, and one can today see the old stone well where the convict servants drew their supplies and where in an old stone trough close to the house they washed (Country Life Stock and Station Journal, 1924).

The Architect and Town Planner Albert Phipps Coles does not appear to have made substantial changes to the exterior of the building. Woollahra Council retains a series of plans that he submitted. A photograph of the 1928 Sports Champions on the verandah shows the sandstone flagging, shutters and a section of archway. Only the sills appear to a darker colour.

Substantial alterations were however made to the grounds, including the provision of a sports ground and an additional tennis court. It was during these works that the 'windmill' was removed, which was reputed to have been erected by the Dumaresqs (see Figure 16). The tennis courts constructed in this period are those to the immediate north east of the subject area in Figure 16.

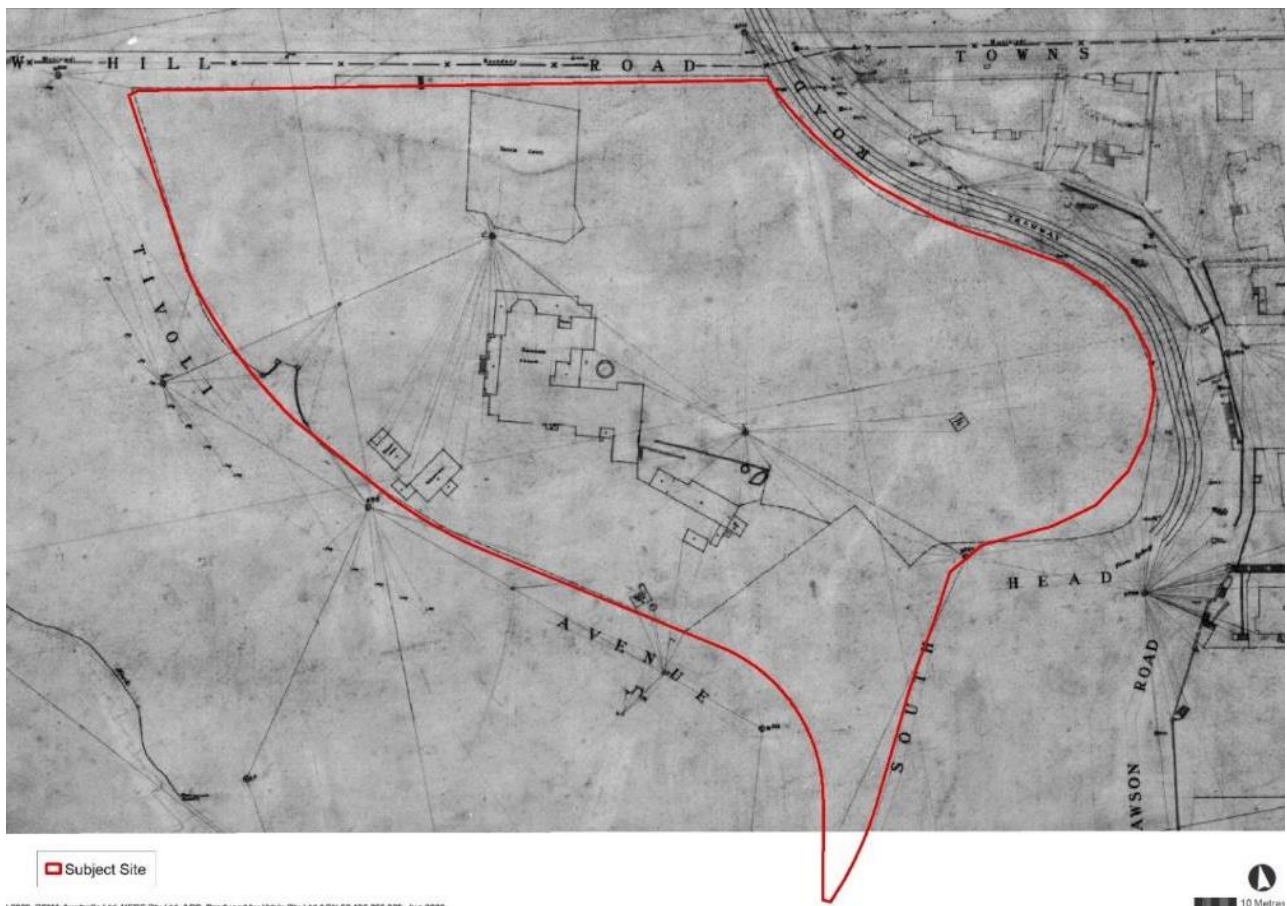


Figure 16 - Detail sheet, 1923. Small structure in southeast of subject area is identified as a windmill, which was erected by the Dumaresq Family during their period of occupation 1840-1881. The subject area is connected to the sewer main at this time. There are also outbuildings associated with Tivoli present in the west and north of the site.

Source: Sydney Water Archives

By 1930, the tennis court had a high fence and steps led up the bank to the southeast. This area has been completely redeveloped with buildings and playing fields. A 1932 view shows terracing beyond the two large Araucarias. This terracing can also be seen on the 1935 aerial, as can the playing fields and tennis courts (see Figure 15). Buildings were located along the line of the drive from New South Head Road. The line of the former drive beyond the relocated gates can also be seen and the terracing is probably contemporary with this feature.

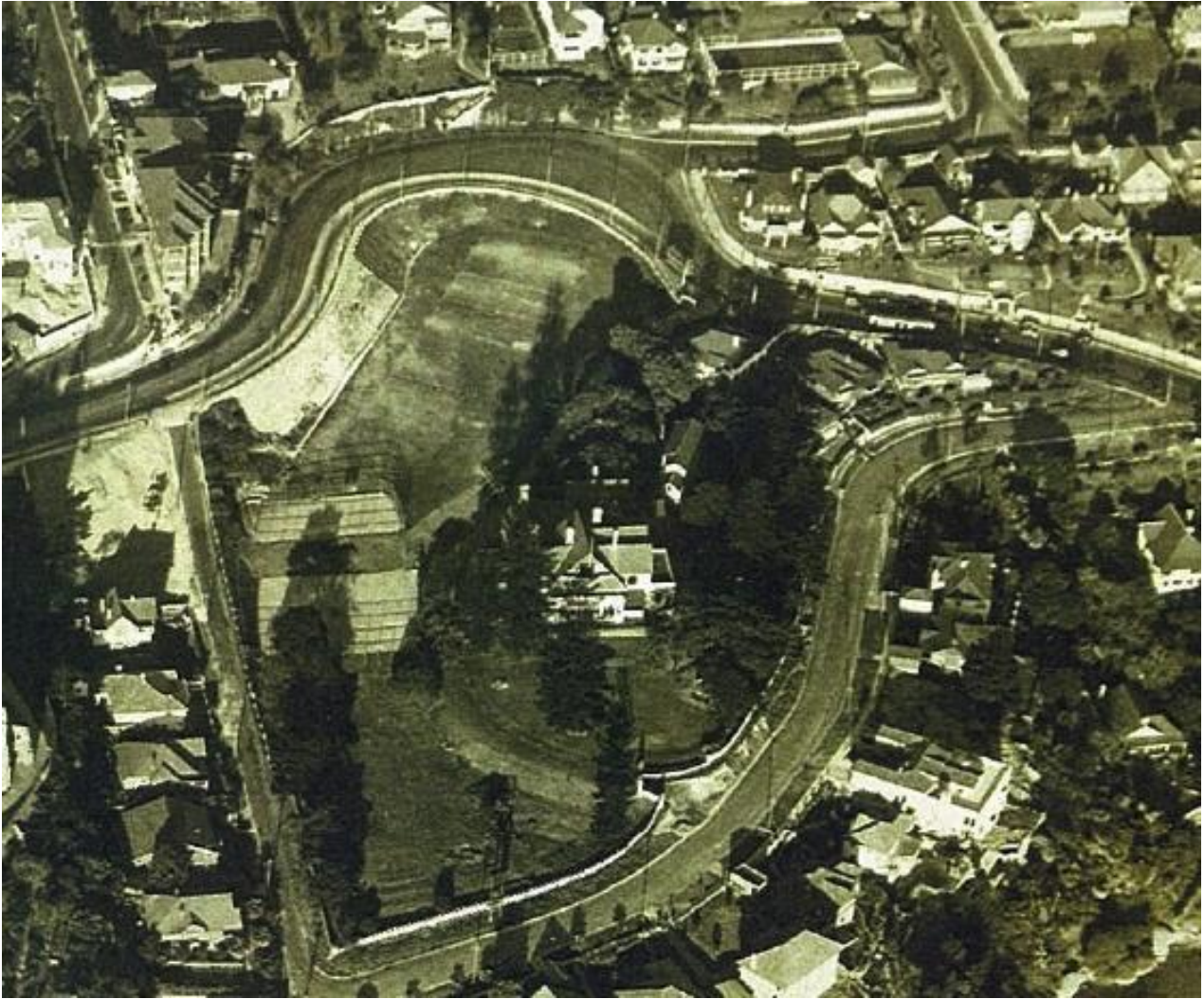
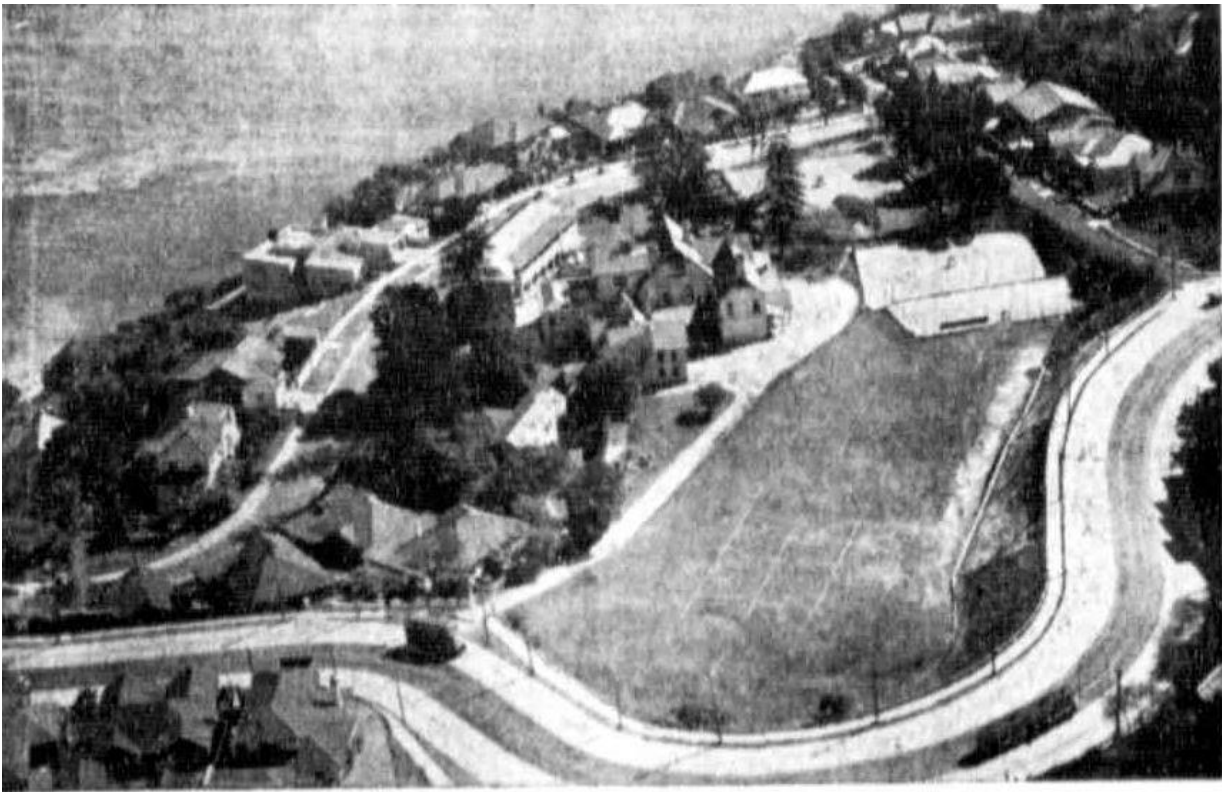


Figure 17 - Aerial view of the school taken prior to the addition of new wings and buildings, c1935. Note the substantial change in the landscape at the sporting fields.

Source: *Kambala Archives*

Extracts from the *Farmer and Settler Magazine* identify that Kambala was advertised as a promising city school for the daughters of wealthy families across the country, with the sporting fields and facilities of Kambala a considerable point of attraction. Advertisements boasted “51 acres of playing fields – 5 tennis courts, etc’ (Farmer and Settler, 1938).



Aerial view showing Kambala's ideal situation at Rose Bay, with Buildings and Sports Field in the centre.

Figure 18 - Aerial View of Kambala from the Farmer and Settler Magazine, 1938. Note the substantial difference in ground surface level from New South Head Road and the sporting fields.

Source: *Farmer and Settler*, 1938. Trove.

4. ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL

4.1. TERMS & DEFINITIONS

Historical archaeological potential is defined as:

The degree of physical evidence present on an archaeological site, usually assessed on the basis of physical evaluation and historical research (Heritage Office and Department of Urban Affairs and Planning 1996).

Archaeological research potential of a site is the extent to which further study of relics likely to be found is expected to contribute to improved knowledge about NSW history which is not demonstrated by other sites, archaeological resources or available historical evidence. The potential for archaeological relics to survive in a particular place is significantly affected by later activities that may have caused ground disturbance. These processes include the physical development of the site (for example, phases of building construction) and the activities that occurred there. The archaeological potential of the subject area is assessed based on the background information presented in Section 3, and graded as per:

- **Nil Potential:** the land use history demonstrates that high levels of ground disturbance have occurred that would have completely destroyed any archaeological remains. Alternatively, archaeological excavation has already occurred, and removed any potential resource;
- **Low Potential:** the land use history suggests limited development or use, or there is likely to be quite high impacts in these areas, however deeper sub-surface features such as wells, cesspits and their artefact bearing deposits may survive;
- **Moderate Potential:** the land use history suggests limited phases of low to moderate development intensity, or that there are impacts in the area. A variety of archaeological remains is likely to survive, including building footings and shallower remains, as well as deeper sub-surface features; and
- **High Potential:** substantially intact archaeological deposits could survive in these areas.

The potential for archaeological remains or 'relics' to survive in a particular place is significantly affected by land use activities that may have caused ground disturbance. These processes include the physical development of the site (for example, phases of building construction) and the activities that occurred there. The following definitions are used to consider the levels of disturbance:

- **Low Disturbance:** the area or feature has been subject to activities that may have had a minor effect on the integrity and survival of archaeological remains;
- **Moderate Disturbance:** the area or feature has been subject to activities that may have affected the integrity and survival of archaeological remains. Archaeological evidence may be present; however it may be disturbed; and
- **High Disturbance:** the area or feature has been subject to activities that would have had a major effect on the integrity and survival of archaeological remains. Archaeological evidence may be greatly disturbed or destroyed.

4.2. CONSERVATION MANAGEMENT PLAN (URBIS 2017)

In 2017, Urbis prepared a Conservation Management Plan (CMP) for the entirety of Kambala Girls School. Regarding historical archaeology, the CMP stated the following:

The subject site has local research potential.

Historic research indicates other buildings and landscape elements were located within the current boundary of the main school site, and that the site may contain archaeological deposits relating to early European occupation and landscaping.

One such element is an early 19th century convict built stone bridge over a stream which was located on the school grounds. This was demolished in c1958 when a new drainage system for the oval and drive was incorporated.

Section 8.7 of the CMP outlines the following policy in relation to archaeology:

Policy 84

In the event that sub-surface works are proposed at depths greater than the existing basement/ground floor levels of Tivoli, an assessment of the potential archaeological impacts should be undertaken.

It is important to note that the CMP was prepared for the whole of the school, and historical mapping identifies the location of the former convict bridge outside the footprint of the proposed works. For further discussion of potential impacts reference should be made to Section 6.

4.3. TOPOGRAPHY AND GEOLOGY

The subject area slopes down from New South Head Road in the east to the west. The 1:100,000 Geological Map of Sydney indicates that the subject area is underlain by the Hawkesbury soil landscape (ha), which is comprised of shallow soils (>50cm) overlying medium to coarse-grained quartz sandstone, very minor shale and laminate lenses. A variable groundwater table has also been identified in some areas of the site.

4.4. GEOTECHNICAL STUDIES

Pells Sullivan Meynink (PSM) was engaged by Kambala Girls School to undertake geotechnical investigations at the subject area.

Seven boreholes were situated on the existing sports field at a depth of between 1.0-5.2 metres. Subsurface conditions were defined as follows:

Table 3 – Summary of inferred subsurface conditions encountered in PSM boreholes

Inferred Unit	Encountered Depth to Top of Inferred Unit (m)	Typical Description
FILL	0.0 to 5.1	Silty SAND: grey to dark brown, fine to medium grained; trace of gravel and minor lenses of clay, low plasticity clay, sub-angular gravel up to 3mm, roots and rootlets observed down to approximately 0.2m, occasional crushed sandstone gravel encountered, generally loosely compacted and moist.
NATURAL SOIL	1.2 to 5.1	SAND: grey, brown and orange, fine to medium, with some silt and clay, low plasticity clay, generally loose to medium dense consistency and moist to wet.
WEATHERED ROCK	1.9 to 4.0	SANDSTONE: orange/red and light grey, medium to coarse grained, extremely weathered to moderately weathered and medium to high strength.
FRESH ROCK	3.3 to 7.0	SANDSTONE: light grey and black, medium to coarse grained, slightly weathered and high to very high strength.

4.5. LITERATURE REVIEW

Mary Dallas Consulting Archaeology (MDCA), 2009. 'Kincoppal College, Rose Bay: Historical Archaeological Investigation'.

Kincoppal College is adjacent to the subject area to the north and is an educational facility predominantly for girls. Kincoppal College was formerly part of Vaucluse Estate, prior to being subdivided. It was at one point the site of Claremont House. In these ways, Kincoppal College is not only located in close proximity to the subject area but is also comparable in terms of historic land use, having been settled and developed in a similar period, and the location of a distinguished historical estate.

In 2009, MDCA undertook an historic archaeological monitoring program, following the receipt of Development Consent from Woollahra Council for the purpose of the establishment of upgraded sporting facilities (a similar proposal to that assessed in the current report). Previous archaeological assessment of the area identified its past use as primarily horticultural and recreational, with known outbuildings. These

buildings had since been demolished, and the area levelled for playing fields and further disturbed by the widening of Vaocluse and New South Head roads, with further works to the playing fields in the 1990s.

The development consent conditions stated that due to the potential of 'former outbuildings associated with Claremont and the old school...an archaeologist must be present on site to monitor all excavations' (Heritage Condition A.6). A Section 140 historical archaeological excavation permit was obtained in order to permit the monitoring program and ensure any items uncovered could be recorded and assessed without delay.

The monitoring program identified that the subject area had been heavily modified, with cutting and filling occurring for the sporting fields, and original soil profiles encountered only in small portions in the west. The monitoring program resulted in the identification of locally significant structural remains (Figure 25). These remains included a partial sandstone footing below the retaining wall of the hard courts (Figure 19), a brick-paved driveway dating to c. 20th century (Figure 20), a stone and slurry footing north of the driveway (Figure 21) and an irregular deposit of sandstone blocks near a drainage pit to the east (Figure 22), presumably associated with the demolition of a structure. Artefactual materials were limited and derived from disturbed contexts, and none were associated with structural remains. Artefactual material included metal, plastic, ceramic, glass, brick and stone (Figure 23).

There was the potential for a windmill, of a similar date to that of the windmill known to have existed at Kambala School (19th century) to occur in the northeast corner, however these works were not subject to monitoring due to the design of the proposed works and the low potential for the windmill to remain due to cutting for the playing fields. MDCA argued that the cutting and modification of their subject area would have removed the traces of the windmill. This is likely to be the case at Kambala.

Overall, MDCA concluded that the episodic cutting and filling across the site had compromised the archaeological integrity and research potential of remnant features, making conclusions about their provenience difficult if not impossible. Given the comparable land use and disturbance across the current subject area, it is likely to be the same for any archaeological materials present within. Given the comparable historic record of the two sites, Urbis considers that similar conclusions will be drawn for Kambala and that a similar approach with monitoring in areas of moderate potential is appropriate.



Figure 19 – Sandstone footings

Source: MDCA 2009



Figure 20 – Brick driveway

Source: MDCA 2009



Figure 21 – Stone and slurry footing

Source: MDCA 2009



Figure 22 – Stone deposit, likely the result of demolition

Source: MDCA 2009



Figure 23 – Representative sample of artefacts uncovered during monitoring

Source: MDCA 2009



Figure 24 – Sandstone bedrock

Source: MDCA, 2009

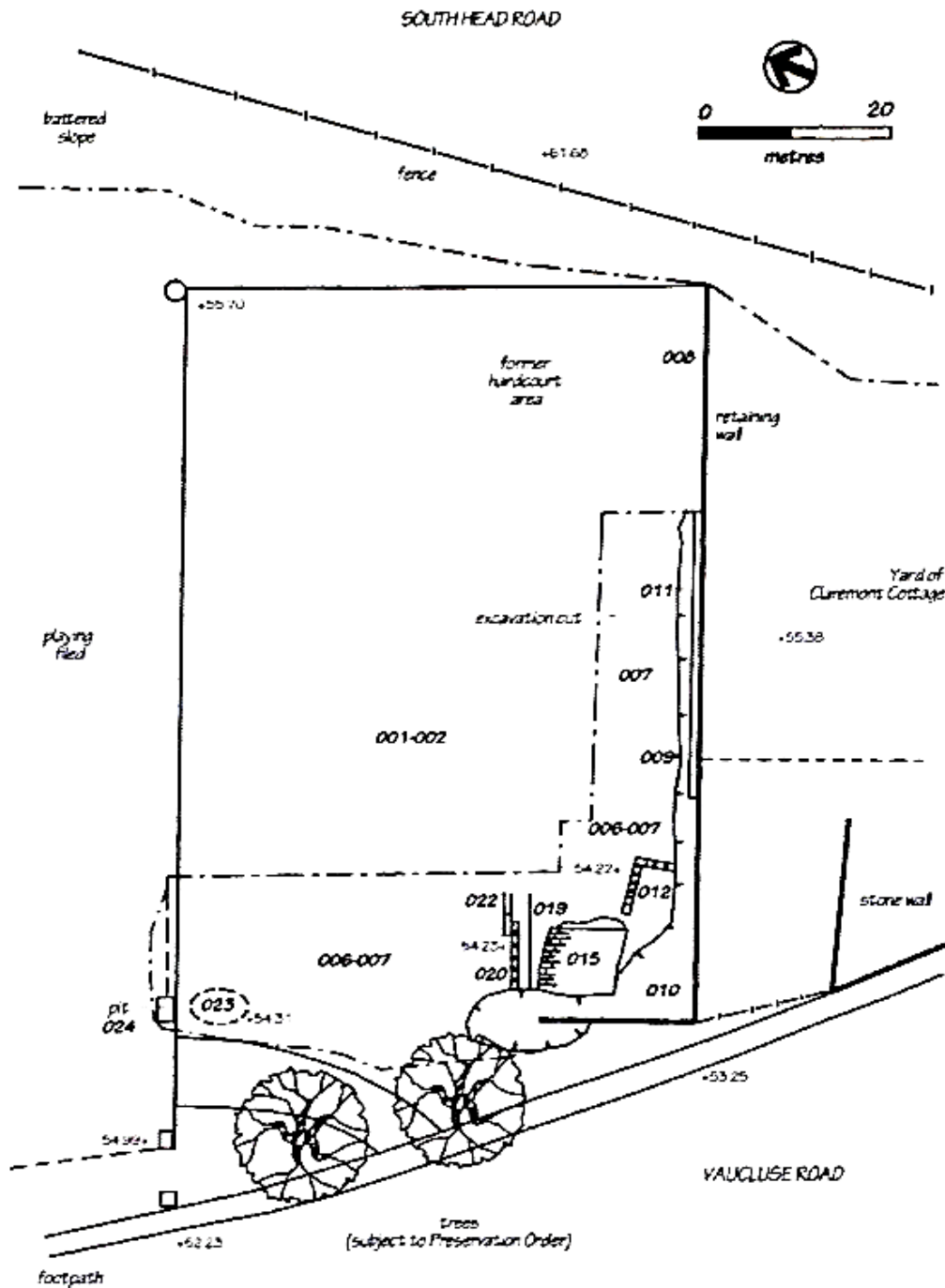


Figure 25 - Site plan of monitored area and the location of archaeological features

Source: MDCA, 2009

4.6. ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL

The following assessment of archaeological potential is based on the following information:

- Historical occupation and evolution of the estate as described by historical records (Section 3);
- An overlay of historical plans on current aerial imagery showing the location of former outbuildings and structures within the school grounds (See Figure 25); and
- an assessment of topography and ground disturbance based on photographs included in the CMP (Urbis, 2020).

In general, the subject area has been subject to considerable disturbance associated with the development of Kambala School, including the terracing of the natural slope for the establishment of playing fields and construction of school infrastructure. In many areas, these works are likely to have resulted in the removal of the top 500 mm to 1 m of fill down to the natural soil profile (which is comprised of the Hawkesbury Soil Landscape with soils at >1.2 m below ground level) and, therefore, disturbing and/or removing the archaeologically sensitive strata, depending on the depth of excavation.

With regards to the earliest phase of European occupation of the subject area, disturbance associated with the Kambala School is likely to have removed physical evidence of agricultural activities which were undertaken during the period of Samuel Breakwell's ownership (1807-1833). Such evidence may have included post holes from fences and temporary structures. More diffuse evidence may, however, be available in the form of archaeobotanical evidence of land clearing activities and charcoal deposits.

The original house on the Tivoli estate was constructed under the period of the Haydon's ownership (1834-1840) and forms part of the current Tivoli House. The convict-built dwelling was constructed of stone with a cellar, shingled roof and verandah. As shown in Mitchell's 1853 survey of the estate, the house was originally 'L' shaped with a detached structure, presumably the kitchen, on its north east side. By 1881 this separate building had been incorporated as a wing of the main house, with additional buildings and yards added to the east. The southern servants wing of the house appears to have also been extended by this time. The original privies would have been located at the rear of the main house, in close proximity, possibly adjacent to the southern wing, and it is likely that a well or cistern was located in the former courtyard. The house was subsequently added to in the early 20th century, with the southern wing extended to the south, as shown in the 1923 Detail Sheet. Given the additions and alterations to the main house over time and the presence of deeper subsurface features, such as privies and wells, there is high potential for archaeological evidence of this initial phase within the footprint of the existing building, in the courtyard area and in the immediate surrounds of the house.

The bridge over the Tivoli Stream was also constructed during this Haydon's occupation. The bridge was constructed of sandstone and local materials using convict labour and was located in the south-east portion of estate. Early maps contain inconsistencies in respect of the precise location of the bridge. The 1881 subdivision plan locates the bridge south of and outside the footprint of the subject area whereas the 1888 title deed map locates the bridge further north and, potentially, within the footprint of the Arts Building (see Figure 25). It is considered unlikely that substantial evidence of this feature would survive, given its demolition in 1958 and high levels of subsequent disturbance associated with the development of the school. However, should foundations survive, there is some possibility that they would be located within the vicinity of the Arts Building.

Various stables, stockyards and outbuildings were also known to exist within the subject area throughout the 19th century. The exact location of these structures under the Haydon's ownership is unknown, however, they are depicted in plans from the mid-19th century onwards. A description of the estate in 1838 indicates that by this time there was the house, garden, stables, stockyards, water supply, wells, fences and roads. An c1840s sketch of the rear of the house indicates that the house was U-shaped with a possible privy in the courtyard area and separate stables to the south east of the house. By 1853, the estate was described as including several outbuildings including: stables, coach house, harness and groom's rooms and hayloft with the water supply being gravity fed from a stream to the house. A windmill was also located within the vicinity of the former stables. The 1881 subdivision plan shows the main house and yard and two separate areas: a poultry yard and a stable yard with two (2) wells between the boundary of the two yards. Based on the historical records, including early sketches of the estate, it is likely that the original stables and coach house were constructed of stone, or brick and featured hard floor surfaces. The hayloft would have been 2-storeys and likely constructed of timber. Given that the water supply was gravity fed, it is possible that more than one cistern or well was present. The wells shown in the 1881 subdivision plan may have been connected to a below-ground cistern in the courtyard behind the main house.

As shown in Figure 25, the majority of the outbuildings were located in the vicinity of the Hawthorne building, constructed c. 1958, which has a basement level. From later plans the stables appears to have been extended to the north west with additional rooms added. It is possible that some remnants of the two wells shown in the 1881 subdivision plan have survived between the Hawthorne and Alexander buildings, below the current Arts building. Given that these features were deep, it is highly likely remnants would survive below current surfaces. This area is considered to have moderate archaeological potential.

Other features associated with 19th century occupation of the estate include the circular driveway at the front of Tivoli House, with a separate rear access road leading to the estate from South Head Road. During ownership of the estate by Morrish Black (1881-1892) the carriageway was re-surfaced. Some remnants of the circular drive may survive below the current lawn at the front of Tivoli House, although such evidence is likely to be fragmented and ephemeral in places depending on the level of disturbance from later landscaping. This area is considered to have moderate archaeological potential.

Remaining portions of the subject area have low archaeological potential with extensive disturbance associated with the 20th century development of the school anticipated to have removed any ephemeral archaeological resources. There is also an absence of documented activity within the western portion of the site.

The following table provides a succinct assessment of archaeological potential in association with each phase of development across the site. An archaeological zoning plan, showing areas of high, moderate and low archaeological potential, is presented as Figure 26.



Figure 26 - Overlay of former buildings and structures shown on historical plans over current aerial imagery.

Table 4 – Assessment of Archaeological Potential

Phase	Evidence	Discussion	Potential
Early European Settlement (1788-1806)	Archaeobotanical evidence of land clearing activities, charcoal deposits as evidence of burning activities, remnant fencing and paths.	It is considered unlikely that evidence of the earliest period of European settlement would survive within the subject area owing to the significant degree of subsequent disturbance and ephemeral character of the expected archaeological record.	Low
Samuel Breakwell & Early Subdivisions (1807-1833)	Post holes from fences and temporary structures, farming equipment, building debris discarded or used as fill during the construction of South Head/New South Head Road.	No records have been located that indicate the extent of improvements or buildings on Breakwell's land, although he later described the property as a farm, so some agricultural activities may have been undertaken between 1812 and 1830. For the purpose of farming, there may have been some temporary timber structures erected, including fences and outbuildings. Material remains of these are unlikely to survive but may be evidenced through postholes and fence slots. Subsequent terracing of the eastern subject area for playing fields, which involved the bulk excavation of natural soils, along with the construction of school infrastructure across the rest of the site would have removed any physical evidence.	Low
Peter & Elizabeth Haydon (1834-1840)	Evidence of material quarrying for construction, rubbish dumps, wells, post holes and evidence of landscaping. Foundations of the sandstone convict bridge, structural remains associated with the former stables and stockyards, remains of the original carriageway.	<p>A house was erected on the Tivoli estate during this period, with building materials likely having been obtained from the site. The dwelling was constructed of stone with cellar, shingled roof and verandah. There is high potential for evidence of this early structure within the footprint of Tivoli House. Associated underfloor deposits containing artefacts are also likely within the footprint of the Tivoli Boarding House.</p> <p>At the rear of Tivoli House, it is likely that structural remains and artefact-rich fills associated with the original privies and possibly a well are present within the former courtyard area.</p> <p>The bridge over the Tivoli Stream was also constructed during this phase. The bridge was located on the carriageway leading up to the house and was constructed of sandstone and local materials. The bridge was located within the south-eastern component of the subject area, although the 1881</p>	<p>High within the footprint of Tivoli House and rear courtyard.</p> <p>Moderate at the front of the house and between the Hawthorne and Alexander buildings.</p>

Phase	Evidence	Discussion	Potential
		<p>subdivision plan locates it on the boundary (Figure 13), whereas an 1888 map locates it further to the east (Figure 14).</p> <p>Various stables and stockyards were also known to exist within the subject area at this time. The exact location of these structures is unknown, but the stables was likely retained and shown in later plans. Structural remains of the original stables and rubbish dumps from this period will likely have been disturbed by subsequent activities including the construction of the Hawthorne building (located in proximity to the location of known outbuildings) and the construction of other school infrastructure.</p> <p>Material quarrying is unlikely to have occurred within the subject area, being more likely to have occurred further west on the shoreline.</p> <p>There is some potential that the original carriageway may remain below the grassed area at the front of Tivoli House. However, the road was re-surfaced during later periods of occupation and it is likely that this will have removed any evidence of the original road, unless materials were re-used.</p>	<p>Low in all other areas.</p>
The Dumaresq Family (1840-1881)	<p>Evidence of alterations and additions to Tivoli House (extant). Fences, structural remains of the windmill, groom's rooms, coach house and outbuildings, postholes. Evidence of the former gardens in the form of archaeobotanical deposits and landscaping.</p>	<p>The windmill and several outbuildings including stables and stockyards were noted to occur within the subject area and supply water to Tivoli House. However, the windmill was removed in the 1920s. Piping may still have existed within the subject area, although this likely would have been removed during subsequent activity, including the terracing of the subject area for playing fields.</p> <p>The outhouses including stables and stockyards were located where the Hawthorne building now stands, constructed c. 1958. This building features a basement level. Other structures known to occur include the groom's room and the coach house, which appears in sketches. These outbuildings are likely to have been constructed from more permanent materials, however again subsequent disturbance including the construction of the Hawthorne building will likely have disturbed the remains of these buildings.</p>	<p>Moderate between the Alexander and Hawthorne buildings.</p> <p>Low in all other areas.</p>

Phase	Evidence	Discussion	Potential
		It is possible that two wells shown in the 1881 subdivision plan have survived between the Alexander and Hawthorne buildings, below the current Arts Building.	
Morrice Black (1881-1892)	Evidence of alterations and additions to Tivoli House (extant). Rubbish dumps, post holes associated with fencing and gates, remnant road surfaces.	The subject area has experienced considerable disturbance associated with the various building programs across Kambala School site. Further to this, Black's changes were minor and pertained mostly to Tivoli House itself, where archaeological material is unlikely to survive due to its continued use and occupation. Black's re-surfacing of the carriageway to the main building may, however, remain below the surface of the present road.	Moderate at the front of Tivoli House. Low in all other areas.
The Sale and Subdivision of Tivoli (1892-1913)	Rubbish dumps.	The subject area has experienced considerable disturbance associated with the various building programs across Kambala School. A 1900s sale plan (Figure 15) indicates the presence of an outbuilding to the south-east of Tivoli House, which is most probably the stable indicated in the 1881 subdivision plan (Figure 13). This could alternatively be interpreted as the sandstone convict-built bridge, although this is considered unlikely on the grounds that it would be located significantly further north than other maps. Subsurface evidence of the former stable, including footings, foundations and rubbish pits, are likely to have been removed in association with the construction of the Hawthorne Building.	Low
Kambala School (1913-Present)	Extant school buildings and landscaping which characterises the site today.	The buildings which characterise the Kambala Girls School site were constructed throughout the 20 th century and remain extant. The steep natural topography, apparent in earlier maps, was altered and levelled significantly in association with these works.	High (extant)



Figure 27 - Archaeological zoning plan – Archaeological potential

5. ASSESSMENT OF ARCHAEOLOGICAL SIGNIFICANCE

5.1. TERMS AND DEFINITIONS

The concept of archaeological significance is independent of archaeological potential. For example, there may be 'low potential' for certain relics to survive, but if they do, they may be assessed as being of 'high (State) significance'.

Archaeological significance has long been accepted as linked directly to archaeological (or scientific) research potential: a site or resource is said to be scientifically significant when its further study may be expected to help answer questions. Whilst the research potential of an archaeological site is an essential consideration, it is one of a number of potential heritage values which a site or 'relic' may possess. Recent changes to the *Heritage Act 1977* (Section 33(3) (a)) reflect this broader understanding of what constitutes archaeological significance by making it imperative that more than one criterion be considered.

The below assessment of archaeological significance considers the criteria, as outlined in the NSW Heritage Branch publication *Assessing Significance for Historical Archaeological Sites and 'Relics'*. Sections which are extracted verbatim from this document are italicized.

For the purposes of this assessment, significance is ranked as follows:

- **No Significance** – it is unlikely that any archaeological materials recovered will be attributed significance in accordance with the assessment criteria on a state or local level.
- **Local Significance** – it is likely that archaeological materials recovered will be significant on a local level in accordance with one or more of the assessment criteria.
- **State Significance** – it is likely that archaeological materials recovered will be significant on a state level in accordance with one or more of the assessment criteria.

5.2. ASSESSMENT OF SIGNIFICANCE

Archaeological Research Potential (current NSW Heritage Criterion E).

Archaeological research potential is the ability of archaeological evidence, through analysis and interpretation, to provide information about a site that could not be derived from any other source and which contributes to the archaeological significance of that site and its 'relics'.

There is nil-low potential for archaeological resources associated with the formation of the Tivoli Estate and its earliest phase of occupation by Samuel Breakwell (1807-1833).

The earliest phase of construction of Tivoli House dates to the acquisition of the subject area by Peter & Elizabeth Haydon (1834-1840). There is high potential for evidence of this initial phase of construction within the footprint of the existing Tivoli House. There is also a high potential for artefact-rich underfloor deposits. The analysis of artefacts recovered from such deposits may provide significant insight into the lives of the Haydon and subsequent Dumaresq family. Archaeological remains of the house itself may also yield information related to the house's early design which is not detailed in historical plans. Such structural remains and archaeological deposits may be significant at a State level.

At the rear of Tivoli House, within the former courtyard, there is a high potential for former privies and a possible well or cistern. Such deep structures are likely to survive in this area and may contain artefact-rich fills. The recovery and analysis of artefacts from such fills have high archaeological research value and may be significant at a State level.

Evidence of former outbuildings, including the original stables and stockyards associated with the Haydon's period of ownership, are likely to be fragmentary and, as such, of local heritage significance for their ability to provide information about the operations of the estate which cannot be garnered from available historical resources. Later historical maps and plans suggest that these structures were located in the vicinity of the Hawthorne building, which includes a basement level. As a result, the potential for substantial remains of these former buildings to survive is considered low.

Two wells shown on the 1881 subdivision plan, at the rear of Tivoli House, between the former poultry yard and stables yard may survive between the Alexander and Hawthorne buildings, below the current Arts building. If these features have survived, analysis of their fills may provide further insight into the

operation and evolution of the estate during the mid-to-late nineteenth century. Depending on their condition and presence of fills, such relics are likely to be of local heritage significance.

If physical evidence of the former sandstone convict bridge located in the south-east portion of the subject area survive, such remains may be significant at a State level. The structural remains may yield information in relation to convict construction and quarrying techniques and the sourcing of locally available materials.

Evidence of the former stables, stockyards, groom's rooms and coach house which existed to the south-east of Tivoli House throughout the 19th century may have significance at a local level for their ability to provide information about the evolving operations of the estate. Construction of the Hawthorne building and its basement is thought to have largely removed any archaeological remains of these former structures.

Associations with individuals, events or groups of historical importance (NSW Heritage Criteria A, B & D).

Archaeological remains may have particular associations with individuals, groups and events which may transform mundane places or objects into significant items through the association with important historical occurrences.

Should any material remains be identified for which a clear relationship can be established with the Dumaresq family (1840-1881) period of occupation, these may be of local and potentially State significance due to the importance of the Dumaresq family in the early history of Sydney and New South Wales. The importance of the Dumaresq family locally is acknowledged in the naming of local streets.

Aesthetic or technical significance (NSW Heritage Criterion C).

Whilst the technical value of archaeology is usually considered as 'research potential' aesthetic values are not usually considered to be relevant to archaeological sites. This is often because until a site has been excavated, its actual features and attributes may remain unknown. It is also because aesthetic is often interpreted to mean attractive, as opposed to the broader sense of sensory perception or 'feeling' as expressed in the Burra Charter. Nevertheless, archaeological excavations which reveal highly intact and legible remains in the form of aesthetically attractive artefacts, aged and worn fabric and remnant structures, may allow both professionals and the community to connect with the past through tangible physical evidence.

Should evidence of the former sandstone convict bridge be located, this may have technical value at a State level as a legible example of early convict construction techniques.

Ability to demonstrate the past through archaeological remains (NSW Heritage Criteria A, C, F & G).

Archaeological remains have an ability to demonstrate how a site was used, what processes occurred, how work was undertaken and the scale of an industrial practice or other historic occupation. They can demonstrate the principal characteristics of a place or process that may be rare or common.

Fabric which relates to the earliest phase of Tivoli House may be State significant for its ability to reflect the use of convict labour in the early development of the estate.

Archaeological remains of the former outbuildings which were established on the Tivoli Estate under the ownership of the Haydon's (1834-1840) may have local or State significance for their ability to reflect the original layout of an early 19th century estate. Evidence of the former sandstone convict bridge which was located within the south-eastern component of the subject area may have significance at a State level for its ability to reflect convict bridge construction in the early colony.

Evidence of the stables, stockyards, groom's rooms and coach house which existed to the south-east of Tivoli House throughout the 19th century may have significance at a local level for their ability to reflect the evolving operations of the estate.

5.3. STATEMENT OF ARCHAEOLOGICAL SIGNIFICANCE

The potential historical archaeological resource at Kambala School is largely limited to specific areas that relate to Tivoli House, its courtyard and the location of former outbuildings, wells, bridge and circular carriageway that have not been significantly disturbed by more recent school infrastructure and associated excavation and levelling. Archaeological remains associated with the original owners of Tivoli House, Peter & Elizabeth Haydon (1834 – 1840), may include structural remains associated with the original house and underfloor deposits contained within the existing footprint of the Tivoli House. These archaeological features and deposits have the potential to provide significant insight into the original construction of the house and its occupation by the Haydon and subsequent Dumaresq family. At the rear of the house, in the original courtyard, there is the potential for former privies and a well. These deep structures are highly likely to survive and their analysis would also provide significant insight into early-to-mid nineteenth century occupation of the estate. The remains of the convict-built stone bridge, to the south east of the house, if they survive, would also have technical and historical value and would be rare to the state of NSW. As such, such relics would potentially be State significant.

The potential for archaeological remains of the original and later outbuildings constructed by the Dumaresq family (1840 – 1881) further to the south and east of Tivoli House is moderate to low, with the former stables likely removed during construction of the Hawthorne Building and its basement. Two wells are shown in the 1881 subdivision plan, between a former poultry yard and stables yard, and may have survived between the Alexander and Hawthorne buildings. Remnant gravel road surfaces and drainage associated with the original and re-surfaced carriageway at the front of Tivoli House, may also survive, but the archaeological remains are likely to be disturbed. If these archaeological remains are present, they may provide some additional insights into the layout and evolution of the Tivoli estate during the mid-to-late nineteenth century and be of local heritage significance for their historical heritage and associative value, research potential and rarity.

Table 5 – Summary of archaeological potential and significance

Phase	Date Range	Potential	Potential Significance
Early Land Grants	1788 - 1806	Nil-Low	Local / State
Samuel Breakwell and Early Subdivisions	1807 - 1833	Low	Local / State
Peter & Elizabeth Haydon	1834 - 1840	High	State
The Dumaresq Family	1840 - 1881	Moderate	Local
Morrice Black	1881 – 1892	Moderate	Local
The Sale and Subdivision of Tivoli	1892 – 1913	Low	Nil
Kambala School	1913 - Present	High (extant)	Nil

6. ARCHAEOLOGICAL IMPACT ASSESSMENT

The assessment of archaeological potential (see Section 4) has established that the north eastern portion of the subject area has low archaeological potential, with extensive disturbance and terracing of the natural topography anticipated to have removed archaeological deposits. A zone of high archaeological potential is restricted to Tivoli House, the rear courtyard and its immediate surrounds. The zone of moderate archaeological potential includes areas where former outbuildings, wells and the circular carriageway were originally located, outside the footprint of later twentieth century buildings.

The assessment of significance (see Section 5) has established that there is potential for State significant relics in the zone of high archaeological potential and potential for locally significant relics in the zone of moderate potential. Historical sources indicate that significant archaeological features and deposits would be particularly concentrated within the vicinity of Tivoli House, to the south-east where the current Arts Building is located and the area between the Hawthorne and Alexander Buildings.

The location of the proposal in relation to former buildings and structures shown in historical plans is illustrated in Figure 27 below. Areas which are proposed for demolition are outlined in red and include the existing sports field, south-eastern corner of the Music Building, the Arts Building and a section of the Hawthorne Building and Tivoli House. The site of new landscape works is shown in cream and includes all external spaces connecting these works. The location of the proposal in relation to areas of archaeological potential is illustrated in Figure 29 overleaf.

Section 6.1 below addresses the potential impacts associated with each aspect of the proposal. Section 6.2 summarises the potential impacts associated with each project stage.

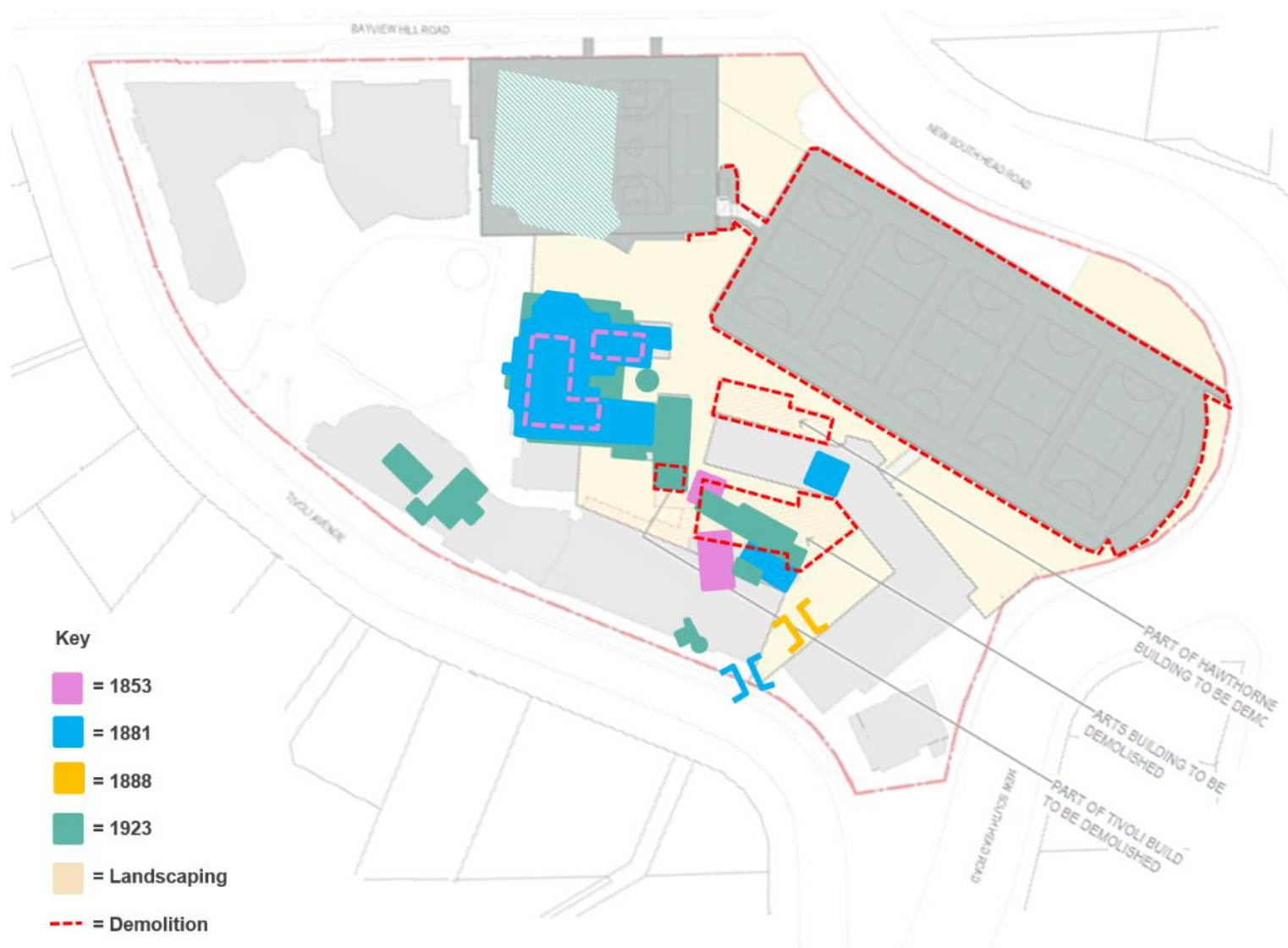


Figure 28 – Location of the proposal in relation to potential historical archaeological resources



Figure 29 - Overlay of proposal footprint on archaeological potential zoning map

6.1. DISCUSSION OF IMPACTS

The potential archaeological impacts of the proposal are discussed below in relation to key areas of the proposal, as depicted in Figure 30 below.

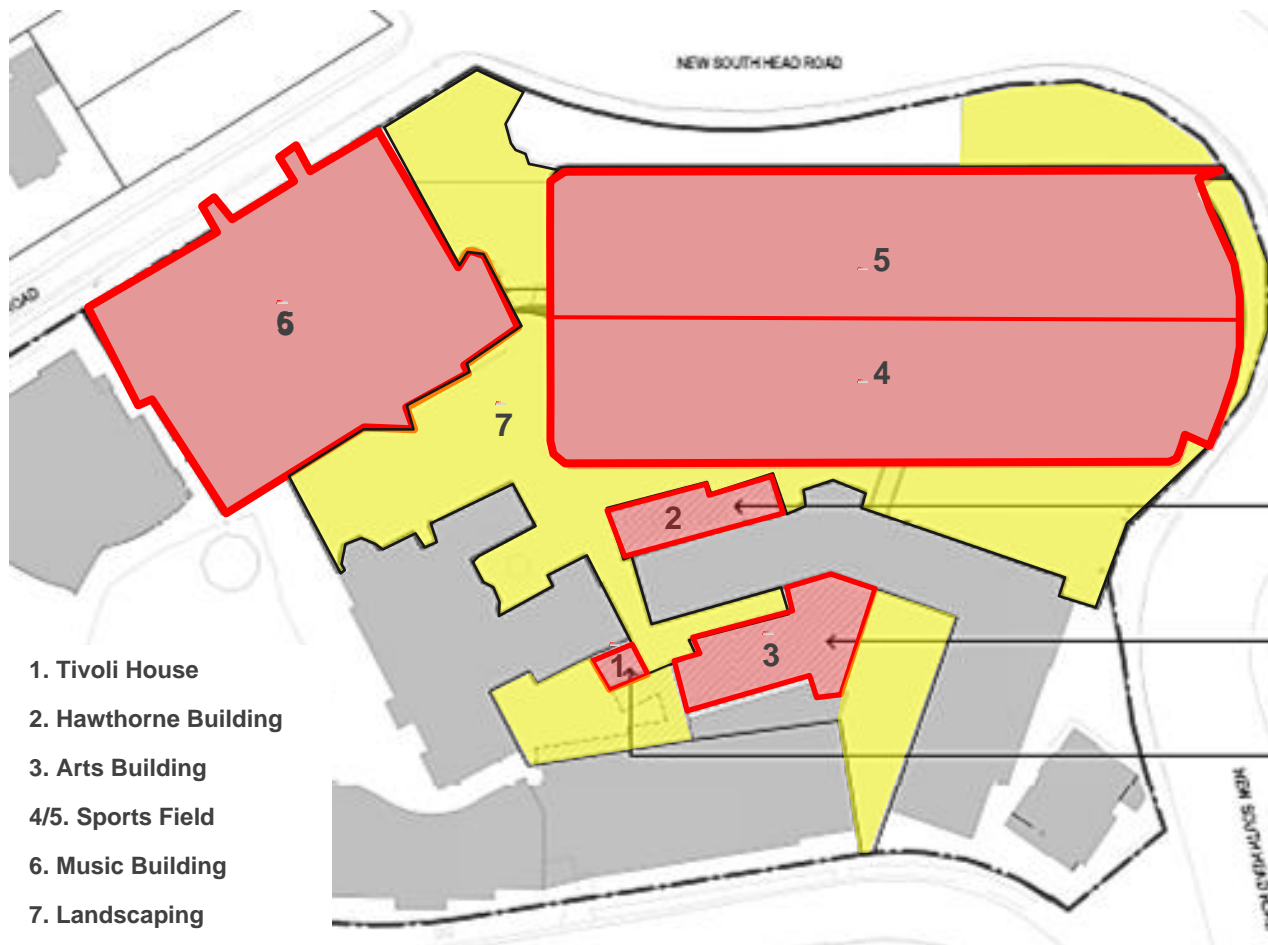


Figure 30 - Key areas of the proposal

1. Tivoli House

Stage 3 of the proposal includes demolition of a section of Tivoli House, which was established post-1890 (Figure 15) and certainly by 1923 (see Figure 16) and which was identified as 'intrusive' in the 2020 CMP (Figure 31). As discussed in Section 3.3, the footprint of the original convict-built house is unknown, however it is later described as a U-shaped cottage with a verandah which encompassed the present entrance hall. The section which is proposed for demolition is a late 20th century addition, which is almost certainly located outside the footprint of the original house. The proposed demolition is therefore unlikely to impact evidence of the original house on the Tivoli estate, although it may uncover evidence of the original extent of the house and any former verandahs, if present.

Historical sources do not identify any earlier structures in this location (Figure 28). The area encompassing Tivoli House has, however, been identified as an area of high archaeological potential on the grounds that it has been subject to lower levels of disturbance. There is therefore some potential for sub-floor deposits, cesspits, rubbish pits or evidence of earlier outbuildings, not indicated on historical maps, within the demolition footprint.



Figure 31 – Grading of Significance – Tivoli House – with location of proposed demolition outlined in red
Source: Urbis 2020

2. Hawthorne Building

A section of the Hawthorne building will be demolished as part of Stages 2 and 3, and the ground levelled in preparation for a new forecourt. Subsurface disturbance will include the removal of footings, foundations and services. The site will then be levelled and landscaped and will form part of the proposed pedestrian access/ Tivoli Walk (see Figure 6). Potential impacts associated with these works are discussed below in reference to 6. *Landscaping*.

Historical research has not identified any potential historical archaeological resources within the demolition footprint (Figure 28). There is no basement level in this location and so there remains some potential for intact soil profiles and historical archaeological resources in this location.

3. Arts Building

The Arts Building will be demolished as part of Stage 3, and the land graded to bring it down to the existing basement level (Figure 32). This will result in the removal of the soil profile outside of the existing basement footprint. These works may therefore result in an impact to historical archaeological resources.

The Arts Building is located within proximity of a number of potential archaeological features (Figure 28), including 19th and 20th century stables, wells, stockyards and outbuildings. A windmill established by the Dumaresq family was also potentially in this location.



Figure 32 – Elevation of proposal with areas of demolition indicated in red and depth of bedrock indicated in yellow
Source: AJ+C, DA3201, 09/06/2020

4 & 5. Sports Field

The existing sports field will be removed to facilitate the construction of a sports hall with raised sports field. All works associated with this structure will be undertaken during Stage 1 of the construction program. Initially, existing sheds on the site will be demolished, followed by excavation of the existing sports field. Excavation will reach bedrock level (Figure 33) at a depth of up to 8 metres (see Section 4.3), resulting in the removal of all archaeological potential in this location.

No potential historical archaeological resources have been identified within the footprint of the sports field (see Figure 28). The HAA has identified low potential for archaeological resources within this location based on little evidence of historical development and high levels of disturbance. As discussed in Section 5, there is greater potential for intact soil profiles within the southern portion of the existing sports field due to the natural gradient in the bedrock and proximity to Tivoli House.



Figure 33 – Section of works to existing sports field with extent of excavation indicated

Source: AJ+C, 21/07/2021, DA3204

6. Music Building

As part of Stage 2, the south-eastern corner of the Music Building will be demolished and a new Level 2 slab below the Multi-Sports Field will be constructed. A 1923 map (Figure 16) indicates the presence of tennis courts within the footprint of the Music Building, as indicated in Figure 28. The section of the Music Building which would be demolished is not located within proximity of the former tennis courts and it is not therefore anticipate that the proposal would impact this feature. There is low potential for historical archaeological resources to be impacted by the proposed demolition works on the grounds that the footprint of the Music Building has been subject to high levels of disturbance.

7. Landscaping

Landscaping will be undertaken within the following spaces (see Figure 6):

- Entry Plaza and Covered Outdoor Learning Area (COLA);
- Pedestrian Axis;
- Tivoli Plaza;
- Northern Courtyard;
- Café Hub;
- Southern Lawn and Playfair Terraces; and
- Sports Fields.

The areas of greatest sensitivity include the proposed Tivoli Plaza and Café Hub, given their proximity to Tivoli House. The former courtyard at the rear of Tivoli House has been identified as having high

archaeological potential for the presence of former privies and a well or cistern. There is also potential for occupational deposits, rubbish pits, evidence of outbuildings and casual finds within the vicinity of the house. The potential impacts of the Southern Lawn and Pedestrian Axis/ Tivoli Walk are also discussed, as they are located within the footprint of the Arts and Hawthorne Buildings respectively.

Tivoli Plaza

Landscaping in association with Tivoli Plaza is minimal with respect to the curtilage of Tivoli house. Paving for the Tivoli Walk would be laid at the same level as the adjacent Music Building and Tivoli House (Figure 35). This would require the removal of the existing paving and leveling and preparation of the ground surface for the installation of new pavers. The greatest potential subsurface impacts may be associated with the establishment of mature plantings on the north side of Tivoli House (see 3 in Figure 34 below).



Figure 34 – Tivoli Plaza landscaping plan

Source: OCULUS, June 2020, Kambala Sports Precinct: SSDA Landscape Report, p.32

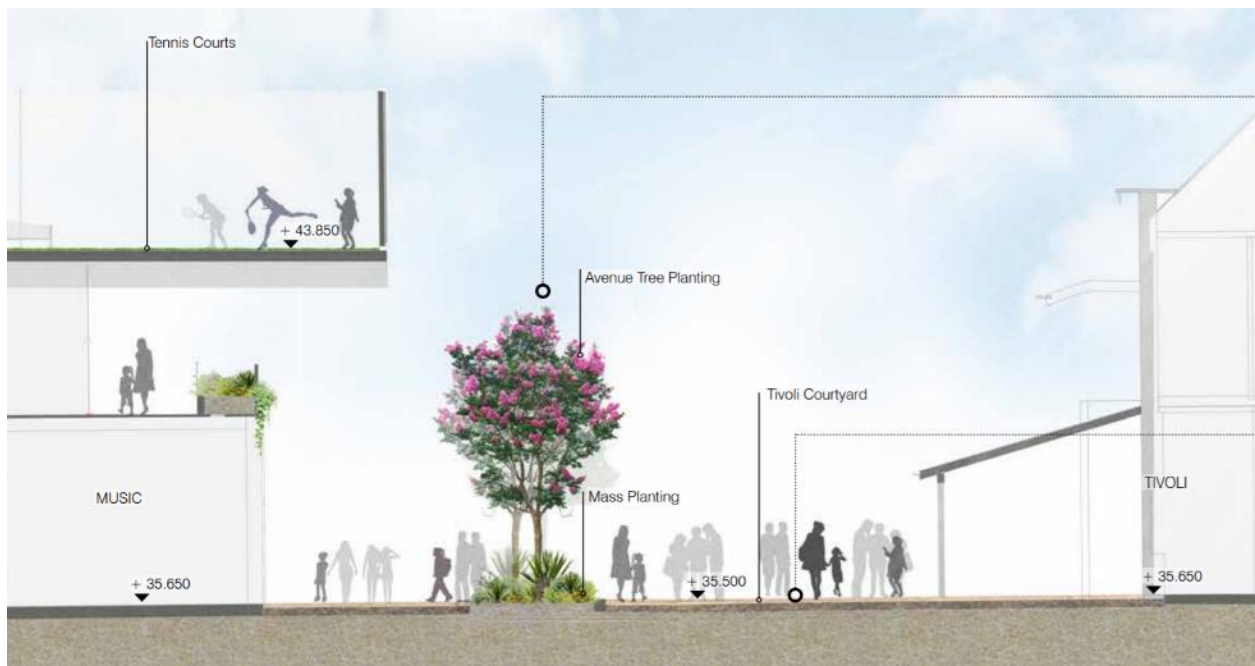


Figure 35 – Tivoli Plaza elevation

Source: OCULUS, June 2020, Kambala Sports Precinct: SSDA Landscape Report, p.32

Café Hub

The proposed Café Hub would be located within the footprint of a section of Tivoli House which will be demolished as part of this proposal. As discussed in Section 6.1, the proposed demolition works may result in an impact to historical archaeological resources.

The Café Hub intended as a flexible space with outdoor furniture and timber benches. Cobbled paving would be installed within the vicinity of the seating area and heritage apron paving within the vicinity of Tivoli House (Figure 36). The site will also be built up by approximately 2 metres so that the proposed plantings would not require any additional excavation in this location.

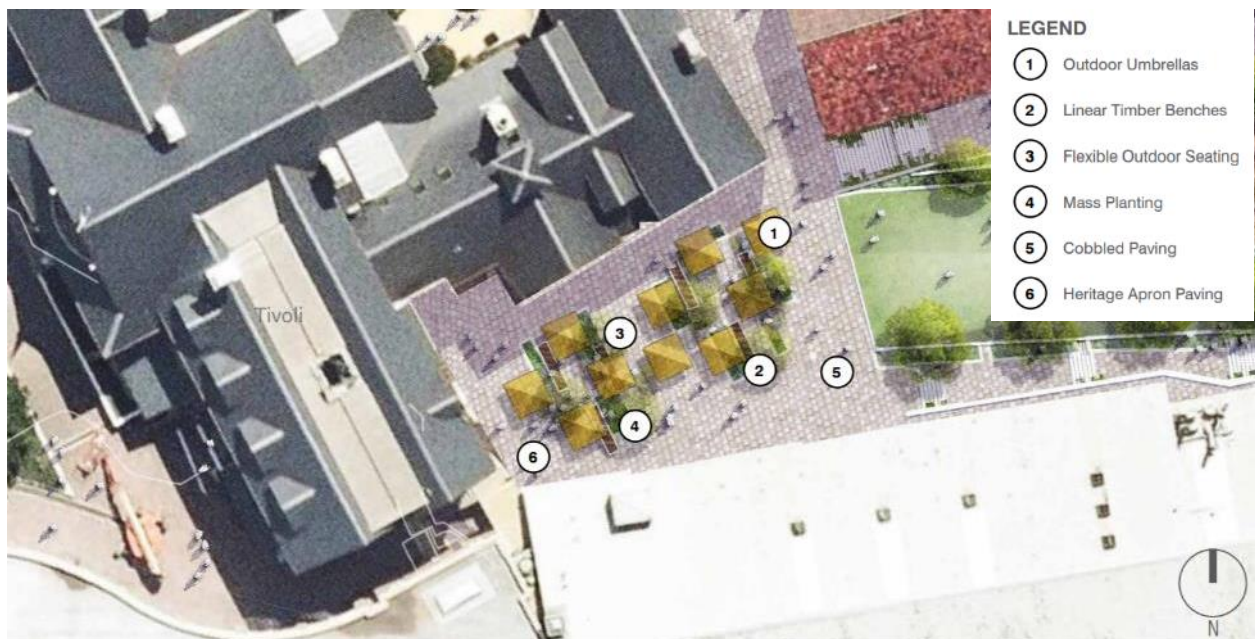


Figure 36 – Café Hub landscaping plan

Source: OCULUS, June 2020, Kambala Sports Precinct: SSDA Landscape Report, p.36



Figure 37 – Café Hub elevation

Source: OCULUS, June 2020, Kambala Sports Precinct: SSDA Landscape Report, p.37

Southern Lawn

The proposed Southern Lawn will be established within the footprint of the Arts Building which will be demolished as part of this proposal. The Arts building is located within proximity of a number of potential archaeological features, including 19th and 20th century stables, stockyards and outbuildings.

The central and western component of the site will become an open lawned area roughly level with Tivoli House (Figure 38). Some subsurface impacts may be associated with the establishment of mature plantings in this location.

The eastern component of the site will comprise planted and hardscape terracing down towards Playfair Pool, which is located approximately 5 metres below Tivoli House. This will require excavation for the purpose of establishing the terracing. There is potential to impact historical archaeological resources in this location.

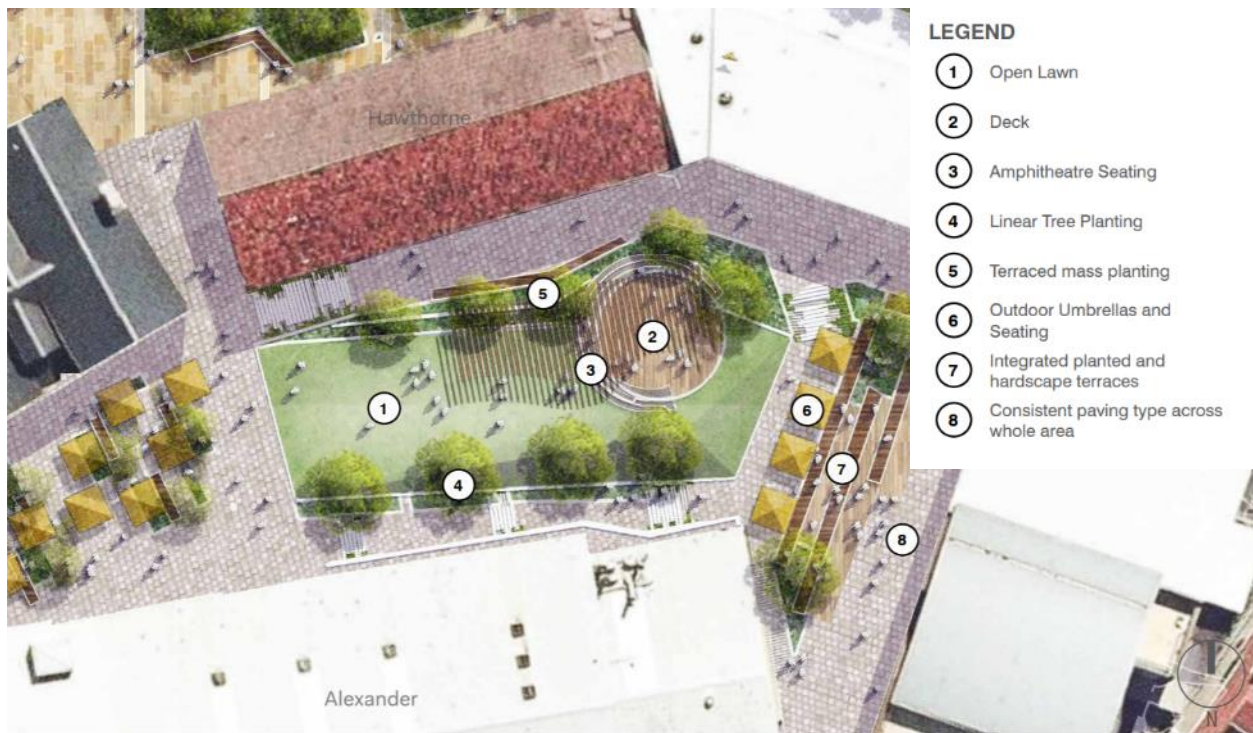


Figure 38 – Southern Lawn landscaping plan

Source: OCULUS, June 2020, Kambala Sports Precinct: SSDA Landscape Report, p.38

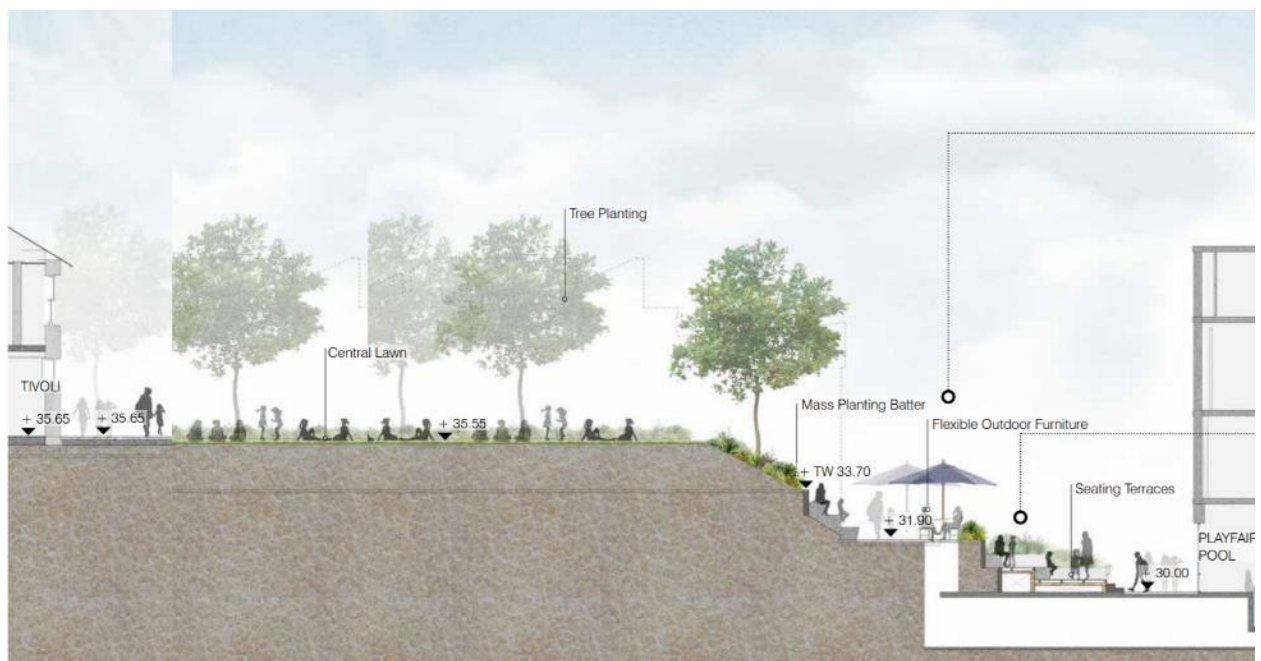


Figure 39 – Southern Lawn elevation

Source: OCULUS, June 2020, Kambala Sports Precinct: SSDA Landscape Report, p.39

Pedestrian Axis and Tivoli Walk

The proposed Pedestrian Axis and Tivoli Walk would be located within the footprint of a section of the Hawthorne Building which will be demolished as part of this proposal. As discussed in Section 6.1, there is low-moderate potential for historical archaeological resources in this location.

A paved walkway will be established at approximately the same level as the Hawthorne Building. This would be lined by mature plantings and planter boxes. The landscape will step down to the level of the

Sports Hall to the north. The potential impacts of excavation associated with the Sports Field are discussed in Section 6.1 – 4. *Sports Field*.

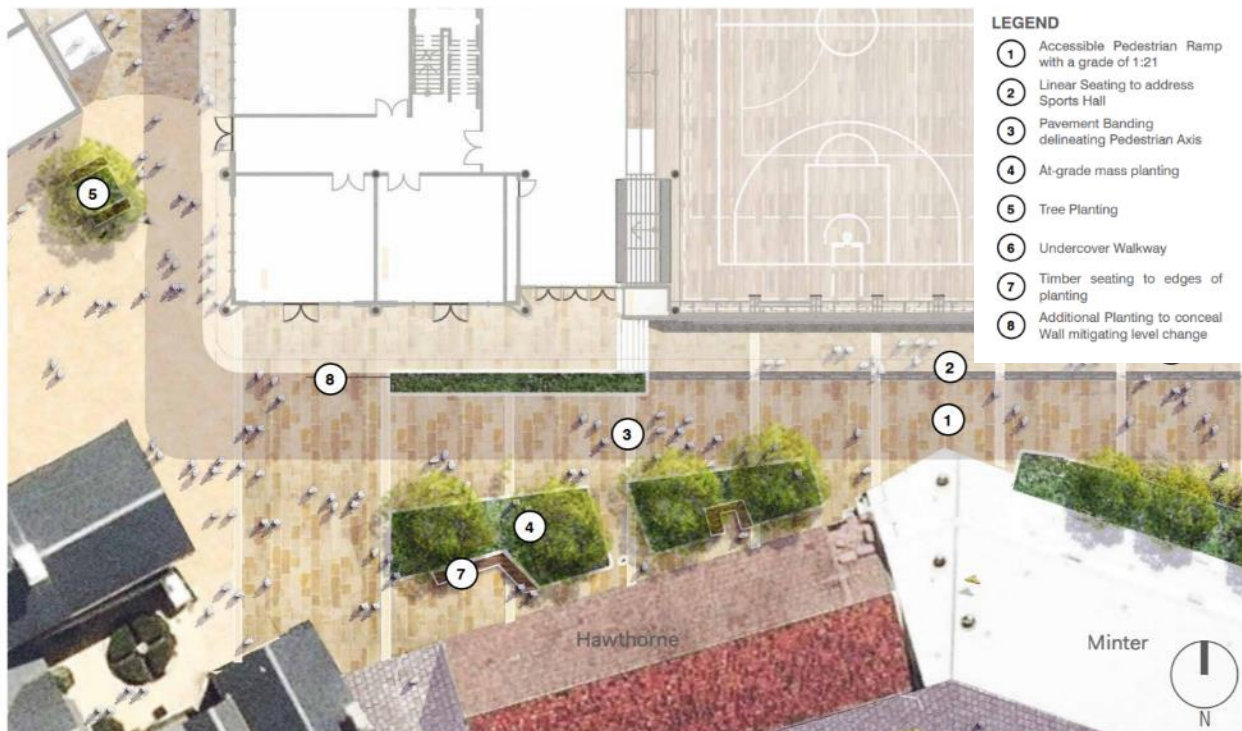


Figure 40 – Pedestrian Axis & Tivoli Walk landscaping plan

Source: OCULUS, June 2020, Kambala Sports Precinct: SSDA Landscape Report, p.30



Figure 41 – Pedestrian Axis & Tivoli Walk – elevation

Source: OCULUS, June 2020, Kambala Sports Precinct: SSDA Landscape Report, p.39

6.2. PROJECT STAGES AND POTENTIAL IMPACTS

The following table (Table 6) outlines the potential archaeological impacts associated with each of the project stages.

Table 6 – Potential archaeological impacts associated with project stages

Project Stage	1853	1881	1923	Areas of Archaeological Potential
Stage 1 <ul style="list-style-type: none"> Demolition of existing metal shed and other minor elements Stormwater pipe & easement realignment New Sports Hall and Covered Outdoor Learning Areas (COLA's) New Multi-Sports Field and perimeter fencing above Sports Hall New stairs and lifts New PV array on existing roof of Alexander Building 	None identified	None identified	None identified	Demolition, excavation, construction and landscaping works located within area of low archaeological potential. Southern section of sports field has greater potential for intact soil profiles and historical archaeological resources.
Stage 2A <ul style="list-style-type: none"> Demolition of temporary hoardings and the south-east corner of existing Music Building New lift within Sports Hall New glass façade & fit out of GLA's and Lite SHINE Centre New Level 2 slab above GLA's and Lite SHINE Centre Fit out of Senior Learning Precinct on Level 2 	None identified	None identified	1923 tennis courts located outside of demolition footprint.	Demolition of south-eastern corner of Music Building located within area of low archaeological potential.
Stage 2B <ul style="list-style-type: none"> Demolition of temporary hoardings New glass façade & fit out of east end PDHPE within COLA 	None identified	None identified	None identified	No impact to areas of moderate or high archaeological potential.
Stage 2C <ul style="list-style-type: none"> Partial demolition of Hawthorne Building New façade to Hawthorne Building Original pitch and extent of Hawthorne Building roof to be reinstated Landscaping to forecourt, main spine and within Hawthorne Building footprint 	None identified.	None identified.	None identified.	Landscaping in the forecourt, closer to the Tivoli Building is within an area of moderate archaeological potential.

Project Stage	1853	1881	1923	Areas of Archaeological Potential
Stage 2D <ul style="list-style-type: none"> Landscaping between Music and Tivoli buildings 	None identified.	None identified.	None identified.	Landscaping to north of Tivoli Building located within area of moderate archaeological potential.
Stage 3 <ul style="list-style-type: none"> Partial demolition of Arts and Tivoli addition New façade works to Arts and Tivoli addition (make-good) Landscaping around Tivoli and Hawthorne Buildings 	1853 outbuildings located within footprint of Arts Building.	1881 outbuildings and wells located within footprint of Arts Building.	1923 outbuilding located within footprint of Arts Building.	Demolition of addition on the south side of the Tivoli Building located within area of high archaeological potential. Landscaping within vicinity of Tivoli Building located within area of moderate archaeological potential.
Stage 4 <ul style="list-style-type: none"> Demolition of existing tennis courts and minor elements Structural strengthening works to Music Building Construction of new Level 3 slab over Music Building Fit out of SHINE and KITE centre on Level 2 New Multi-Sports Courts, perimeter fencing and lighting New paths to Bayview Hill Road New bridge between Sports Hall and Minter Building New stormwater retention tank between Music and Tivoli buildings 	None identified.	None identified.	None identified.	Installation of stormwater retention tank to north of Tivoli House will be located within area of moderate archaeological potential.

7. ARCHAEOLOGICAL RESEARCH DESIGN

7.1. HISTORICAL THEMES AND RESEARCH QUESTIONS

The following Archaeological Research Design (ARD) has established relevant historical themes for the subject area, as outlined by the Heritage Council of NSW.³ These are outlined in Table 6 below. These themes, as well as the relevant outcomes of the HAA, have informed the methodology as outlined in Section 7.2 of this report.

Table 7 – Historical themes which relate to the subject area.

Australian Theme	NSW Theme	Evidence
2. Peopling Australia	Convict	<ul style="list-style-type: none"> Original fabric and design of Tivoli House (c.1834-1840) Sandstone convict bridge over the Tivoli stream (c.1834-1840) Former stables and stockyards (c.1834-1840)
3. Developing local, regional and national economies	Pastoralism	<ul style="list-style-type: none"> Former stables, stockyards and outbuildings (c.1834-1881) Windmill (c.1840-1841)
4. Building settlements, towns and cities	Accommodation	<ul style="list-style-type: none"> Original fabric and design of Tivoli House (c.1834-1840) Evidence of alterations and adaptations to Tivoli House from 1830s to present day.

2. Peopling Australia - Convict

In 1834 the Irish born Sydney-based merchant Peter Haydon purchased one of the lots in the Tivoli estate. In May of the same year his marriage to Miss Elizabeth Jenkins, the youngest of the three Jenkins sisters, occurred. The house erected on the Tivoli estate was intended to be for the newlyweds. The house was probably built for Haydon by his assigned convicts and some of the building's materials are likely to have been obtained from the site. Newspaper articles attest to the worn flagstones near the entrance which *"were cut and laid by convicts, as was the quaintly carved stone bridge over the Tivoli stream"* (Farmer and Settler, 1939). The bridge over the Tivoli Stream was likely constructed immediately prior to, or concurrently with, the original Tivoli House by the assigned convicts from locally sourced materials, in the same manner that the original house was constructed. The bridge was located on the Carriageway leading up to the house and provided access over the Tivoli Stream, and thus access via this roadway would not have been possible without the bridge. In a subsequent sale notice for Vaucluse Village, Mr Haydon's house is described as having a 'domain' or extensive grounds and he employed several staff (Sydney Mail, 1838). A plan of the grounds, drawn in 1838 and mentioned in notes held in the Kambala Archive describes the house, garden, stables, stockyard, water supply, wells, fences and roads. This document has not been located and may still be in the possession of the Haydon family.

Table 8 - Research Questions – 2. Peopling Australia (Convict)

Research Questions
Has any physical evidence of the convict stone bridge survived? If so, can it reveal any insight into its original design, fabric and construction techniques?

³ Assessing Historical Importance, a Guide to State Heritage Register Criterion A, Heritage Office, Department of Planning, 2006

3. Developing local, regional and national economies - Pastoralism

An area comprising 60 acres was granted to Mr Samuel Breakwell by Governor Macquarie and it was Breakwell who named the estate Tivoli after the village and grand house at Tivoli near Cork in Ireland. No records have been located that indicate the extent of improvements or buildings on Breakwell's land, although he later described the property as a farm, so some agricultural activities may have been undertaken between 1812 and 1830. During the period in which subject area formed part of Samuel Breakwell's land grant (1807-1833) there are likely to have been some rudimentary timber structures erected, including fences and outbuildings, which were used for agricultural purposes. Historical sources make reference to a series of stables and stockyards on the property under the ownership of the Haydon family (1834-1840), however, the precise footprint and location of these remains unclear. Sketches and maps depict stables within the vicinity of Tivoli House under the period of occupation by the Dumaresq family (1840-1881). A windmill was also erected during this period. Although no specific information on the windmill has been located, it was likely of timber construction with a lattice frame, much like the contemporary windmill at nearby Claremont House (now Kincoppal College).

Table 9 – Research questions – 3. Developing local, regional and national economies (Pastoralism)

Research Questions
Has any physical evidence of the former stockyards, stables and any other outbuildings which are referenced in historical records survive?
Does the location and extent of the former outbuildings provide any further insight into the layout and operation of Tivoli Estate?
Have any remnants of wells shown in the 1881 Subdivision Plan survive? If so, do they contain artefact-rich fills? What insight do the artefact provide on the operation of the estate and the lives of its workers?

4. Building settlements, towns and cities - Accommodation

A house was erected on the Tivoli estate between 1834-1840 for newlyweds Peter Haydon and Elizabeth Jenkins. No architect has been identified for the initial house erected by Haydon nor have any plans been located. The house was probably built for Haydon by his assigned convicts from stone, which was likely quarried from the site. The main roof and verandah roof is likely to have been shingled. Since the 1950s various historians and architects have speculated as to which portion of the house was the original section. An assumption has been made is that the house built by Haydon was a U-shaped cottage with a cellar and verandah. The entrance hall is believed to have been in the same location as it is today. A number of alterations and additions were made to the house under the ownership of the Dumaresq family (1840-1881). In 1881 Morrice Black acquired the estate and soon after he engaged the services of renowned architect Horbury Hunt. John Horbury Hunt reworked the planning of the house to create a 'modern country house' suitable for wealthy professional man. These adaptations are identified as having exceptional significance in the 2020 CMP.

Table 10 – Research questions – 4. Building settlements, towns and cities - Accommodation

Research Questions
What was the footprint and design of the original Tivoli House? Does the fabric provide any insight into the changing layout of the house and construction techniques?
Have underfloor deposits survived below Tivoli House? Do they contain artefacts? What does the analysis of artefacts reveal about the lives of the occupants of the house and the use of original and later rooms?
Is there evidence of a structure which pre-dates the convict-built house on the Tivoli estate?
Is there evidence of any undocumented adaptations or alterations to Tivoli House?

7.2. EXCAVATION METHODOLOGY

The following excavation methodology has been prepared based on the outcomes of the Historical Archaeological Assessment (HAA). As discussed in Section 4, the majority of the proposed works would be located within areas of low archaeological potential, with a small component affecting areas of moderate and high archaeological potential. For this reason, this section will outline a methodological approach for each.

7.2.1. Aims

The main aims of the archaeological investigation would be to:

- Determine the presence, nature and extent of potential archaeological relics by conducting archaeological monitoring in areas of high and moderate archaeological potential affected by the proposed works.
- Document the results of the investigation in an excavation report to assist Kambala School with the future management of historical archaeological relics within the school grounds.

7.2.2. General strategy and approach

Two strategies are proposed to manage the potential impact of the proposed works on potential relics at Kambala School:

1. Include and deliver heritage inductions as part of the construction program and establish an Unexpected Finds Procedure for construction personnel to follow to ensure that any unexpected heritage finds identified in areas of low archaeological potential are assessed prior to their removal (Section 7.23 and Section 7.24).
2. Archaeological monitoring of demolition and landscaping works in areas of high and moderate archaeological potential. This will ensure that relics of local heritage significance are identified and recorded prior to their disturbance and removal. (Section 7.25 and Section 7.26).

7.2.3. Heritage Induction

Prior to the commencement of each stage of construction a heritage induction should be delivered by the nominated Excavation Director to all relevant construction personnel for the purpose of establishing:

- Heritage obligations of all project personnel;
- Why the subject area is archaeologically significant;
- What kind of relics may occur within the subject area and where;
- What to do in the event that potential relics are uncovered; and
- How to work with monitoring archaeologists, including the Stop Works Procedure for Archaeological Finds.

Heritage induction material should be provided to all site personnel as part of the induction. Monitoring archaeologists should also provide a heritage induction as part of each morning's Pre-Start meeting for the purpose of providing updates on the evolving heritage context of the project.

7.2.4. Unexpected Finds Procedure

In areas identified as having low archaeological potential for archaeological relics, although considered highly unlikely, should any archaeological deposits be uncovered during any site works, the following unexpected finds procedure must be implemented:

1. All works must stop in the immediate vicinity of the find. The find must remain undisturbed and temporary fencing established around the find.
2. The Site Supervisor, or another nominated site representative must contact the Excavation Director to communicate the discovery of the find.

3. The Excavation Director (or an archaeologist delegated by the Excavation Director to assess the find), must examine the find, provides a preliminary assessment of significance, record the item and decides on appropriate management strategy.
4. Depending on the significance of the find, re-assessment of the archaeological potential of the area may be required, and further archaeological investigation required. If further manual excavation and recording is required, the methods outlined in Section 7.2.6 would be followed.
5. Works in the vicinity of the find can only recommence upon on the written advice of the nominated Excavation Director.

7.2.5. Archaeological Monitoring

The proposal includes demolition works to the existing sports field, Hawthorne Building, Arts Building and a section of Tivoli House. As outlined in Table 5, certain activities are proposed in areas of high and moderate archaeological potential. These are listed below and should be monitored by the Excavation Director, or an archaeological approved by the Excavation Director:

- Stage 2C – landscaping in the forecourt near the Hawthorn Building footprint;
- Stage 2D – landscaping between the music and Tivoli buildings
- Stage 3 – partial demolition of the Arts building and addition to the Tivoli Building and landscaping around the Tivoli and Hawthorne buildings
- Stage 4 - Installation of a stormwater retention tank to the north of Tivoli House.

Areas that require archaeological monitoring are shown in Figure 41 overleaf and described in Table 10 in further detail.

In general, archaeological monitoring should adhere to the following:

- Demolition should be undertaken in such a way as to minimise impacts to foundations and subsurface structures. The archaeologist should initially be consulted about the proposed demolition methodology.
- An archaeologist should be present at all times during the lifting of current hard surfaces, excavation and/or other activities that result in ground disturbance.
- Where a mechanical excavator is used, it must have a flat or mud bucket, rather than a toothed bucket, to ensure a level ground surface.
- All machinery should work backwards from a slab surface in order to avoid damage to any exposed archaeological relics.
- Fills should be removed sequentially in reverse order of deposition, starting with any imported fill and overburden, which reflect the archaeological stratigraphy and as instructed by the archaeologist.
- If archaeological relics are identified by the monitoring archaeologist, work must stop immediately. Further assessment and recording of the find will be required, following the methods outlined in Section 7.2.6 overleaf.

7.2.6. Manual Excavation and Recording

In the event that any potential relics are identified during the course of archaeological monitoring, mechanical excavation must immediately cease, and manual excavation be undertaken.

All potential relics should be initially excavated by hand and should adhere with the following:

- A survey datum must be established by a surveyor, or site planner, to record the level of extant deposits and features.
- In the area where relics have been discovered, modern fills should carefully be removed by a 7-tonne excavator under the direction and supervision of the Excavation Director.
- Following the removal of modern fills, manual excavation and recording of deposits should be carried out by a small team of archaeologists, in reverse order of deposition to expose the surface of significant archaeological features or deposits. Manual excavation must be supervised by the Excavation Director at all times.
- Scaled site plans and profile or cross-section drawings showing the location of all archaeological deposits and features revealed during monitoring must be prepared, as required. These would be keyed to the site datum.
- Photographic recording of all phases of work on site would be undertaken. This would involve recording of archaeological features using an appropriate photographic scale.
- A standard context recording system would be employed, namely the location, dimensions and characteristics of all archaeological features and deposits would be recorded on sequentially numbered proforma context recording sheets. This form of written documentation would be supplemented by preparation of a Harris Matrix showing the stratigraphic relationships between features and deposits;
- Historical artefacts retained for analysis would be cleaned off site, sorted according to their fabric classes, bagged and boxed with reference to the context from which they were recovered; and
- Excavation would be conducted until site clearance was achieved to the satisfaction of the Excavation Director.

7.2.7. Artefact processing and storage

All artefact and sample bags should be processed as soon as possible after recovery. Where this is not possible, they should be organised according to area and context and stored in a dry location. Where damp finds have been recovered (e.g. timber or damp soil), bags should be left partially open to allow them to dry. Processing should involve cleaning and photographing each artefact and entering it into a database with all relevant information, as indicated on the bag, as well as additional interpretation, photograph numbers and potential relationships. Artefact bags should then be stored in boxes which are clearly labelled by Area and returned to Kambala School for long-term storage and curation.

7.2.8. Reporting

A final report on the archaeological programme would be prepared by the Excavation Director in accordance with archaeological best practice in NSW, with assistance from the Urbis archaeology team. This report would detail precisely what was found by area, phase and stratigraphic relationships and an analysis of the results of the work. It would also include a response to the research questions outlined in Section 7.1 and include a comparison with the results of archaeological programmes in the local area where possible. The final report would include a completed Harris Matrix, digitised records (context sheets, unit list, photographic register, and artefact catalogue), digitised plans, artefact analysis and artefact photography. Additional historical research may also be conducted in response to the finds of excavation.

7.3. EXCAVATION TEAM

The nominated Excavation Director for the archaeological monitoring program would be Ms Fiona Leslie (Principal Archaeologist, MTS Heritage). Fiona is recognised as an Excavation Director for sites of local and State heritage significance and fulfils the NSW Heritage Council's *Excavation Director Criteria*. Fiona would be supported by a small team of archaeologists from Urbis.

Table 11 – Proposed archaeological methodology by area

Area	Proposed Works	Discussion	Methodology
1. Tivoli House	The proposal includes demolition of a section of Tivoli House. No additional excavation or construction is proposed in this location as it will form part of a forecourt.	<p>The section proposed for demolition was established post-1890, and certainly by 1923, and was identified as 'intrusive' in the 2020 CMP. Historical research suggests that it is almost certainly located outside the footprint of the original house. Earlier outbuildings not shown on historical plans may have been present in this location. The original façade of the house will also be exposed.</p> <p>Archaeological monitoring should be undertaken during demolition and site preparation works that disturb the ground surface, including landscaping.</p>	<p>Archaeological monitoring should be undertaken by a suitably qualified archaeologist for the duration of any demolition and site preparation works which would disturb the ground surface. This includes landscaping works around the perimeter of Tivoli House and installation of stormwater retention tank to the north of Tivoli House.</p> <p>Investigation and/ or manual excavation in the event that potential archaeological deposits, relics or features are identified.</p>
2. Hawthorne Building	A section of the Hawthorne building will be demolished, and the ground levelled in preparation for a new forecourt. Although this would not require additional excavation in this location, there would be some subsurface disturbance, including the removal of footings, foundations and services and levelling of the ground surface.	<p>This location has been subject to high disturbance in association with the development of the school. Archaeological monitoring should be limited to excavation and re-surfacing associated with landscaping works to establish the Tivoli Walk.</p>	Archaeological monitoring by a suitably qualified archaeologist during landscaping works for the Tivoli Walk.

Area	Proposed Works	Discussion	Methodology
3. Arts Building	The Arts Building will be demolished, and the land graded to bring it down to the existing level. This will result in the removal of the soil profile outside of the existing footprint. These works may therefore result in an impact to historical archaeological resources.	The Arts Building is located within proximity of a number of potential archaeological features, including the 19th century stables, stockyards and outbuildings as well as a windmill which was established by the Dumaresq family. The convict-built stone bridge may have also been located within proximity. Any mechanical excavation within intact soil profiles should therefore go down in 100 mm increments and be closely monitored at all times by an archaeologist.	Archaeological monitoring by a suitably qualified archaeologist for the duration of mechanical excavation. Excavation should be undertaken in 100 mm increments by a small excavator (e.g. 5 ton).
4. Sports Field (South)	A portion of the existing sports field will be excavated to facilitate the construction of a sports hall with raised sports field. This will require significant excavation down to bedrock level, resulting in the removal of all archaeological potential in this location.	As discussed in Section 5, there is greater potential for intact soil profiles within the southern portion of the existing sports field due to the natural gradient in the bedrock and proximity to Tivoli House.	No historical buildings or structures are shown in this location and as such, no monitoring is required. Unexpected Finds Procedure applies (see Section 7.2.5).
5. Sports Field (North)		The northern component of the Sports Field contains a shallow soil profile due to the natural gradient in the bedrock. Historical research has not revealed any development within this location prior to the establishment of the school in the 20 th century. Monitoring is not therefore required in this location.	No monitoring is required in this location. Unexpected Finds Procedure applies (see Section 7.2.5).
6. Music Building		No excavation is proposed in this location.	No applicable archaeological methodology in this location.



Figure 42 – Proposed archaeological methodology by area

7.4. POTENTIAL SCENARIOS AND ACTIONS

The following table (Table 12) outlines potential scenarios and actions which apply to the subject proposal.

Table 12 - Potential scenarios and actions

Scenario #1	During inspection or monitoring, the archaeologist discovers archaeological material that is not deemed a relic, i.e. not of local or state significance.
Action	This material can be removed under the advice and direction of the archaeologist.
Scenario #2	During excavation within an area of low archaeological potential, relics are identified by construction personnel and the Unexpected Finds Protocol is followed.
Action	The Site Supervisor would contact the Excavation Director, who would inspect the find and assess its heritage significance. If further recording is required, a small team of archaeologists would follow the methods outlined in Section 7.2.6.
Scenario #3	During monitoring the archaeologist discovers substantially intact relics of State heritage significance not anticipated in Section 4 of this report.

Action	In the event that substantially intact State significant relics not anticipated by this report are located, these must be protected <i>in situ</i> in the first instance. This methodology does not allow for the removal of substantially intact State significant relics. Heritage NSW should be immediately notified under Section 146 of the <i>Heritage Act 1977</i> to discussion management and the requirement for further approval.
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8. CONCLUSION AND RECOMMENDATIONS

8.1. CONCLUSION

An assessment of archaeological potential has established that many areas where works are proposed at Kambala School are located in areas of low archaeological potential. However discrete areas of moderate and high archaeological potential have been identified below and in the immediate vicinity of Tivoli House, based on an analysis of historical records and overlay of historical plans. These areas have a moderate to high potential for relics of local and State heritage significance and require management and mitigation through a program of targeted archaeological monitoring.

8.2. RECOMMENDATIONS

The Archaeological Research Design (ARD) (Section 7) outlines a program of archaeological monitoring for all proposed works within the subject area which may impact historical archaeological resources. This will ensure that where relics may be encountered they will be identified, assessed and recorded prior to their removal. It will also ensure that, should any unexpected State significant resources be identified, they are appropriately protected and Heritage NSW is notified. Implementation of this program would thus mitigate the potential heritage impacts posed by the development.

Based on the results of this assessment it is recommended that:

- Appropriate provisions be made in tender documents to allow sufficient time for archaeological monitoring and recording in areas of high and moderate archaeological potential. Time and cost provisions should be made for periodic delays to the construction program and allow for flexibility in the work schedule. A copy of this assessment should be included as part of the construction tender package.
- Archaeological monitoring be conducted under the supervision and direction of the nominated Excavation Director in accordance with the excavation methodology presented in Section 7 of this report.
- If relics are unexpectedly found during excavation in areas of low archaeological potential, work must stop and the Excavation Director contacted to assess the find. Work in the area can only recommence once written approval has been issued by the Excavation Director.
- In the unlikely event that substantially intact State significant relics not identified by this assessment are found during excavation, work must cease immediately and Heritage NSW notified in accordance with S.146 of the *Heritage Act, 1977*.
- The results of the archaeological monitoring program are to be documented in a detailed Excavation Report on completion of fieldwork and artefact analysis. Copies of this report must be provided to Kambala School, Heritage NSW and Woollahra Council Library.

9. BIBLIOGRAPHY

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