APPENDIX A: ABORIGINAL ARCHAEOLOGICAL TECHNICAL REPORT

President Private Hospital

Lot 1 DP 841502, Lot 23 & 24a DP 26995, Lot 53 & 54 DP 29493

369 – 381, President Ave, 61 -65 Hotham Rd & 2-4 Bidurgal Ave Kirrawee, NSW (Sutherland Shire LGA)

Benjamin Streat and Yolanda Pavincich

Archaeo*logical* Management and Consulting Group
& Streat Archaeological Services

For
Macquarie Health Corporation

August 2020

Disclaimer

The veracity of this report is not guaranteed unless it is a complete and original copy.

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Cover Image
Photograph of study area facing northwest.
AMAC 2020 [DSCN3937]

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Study Area

Archaeological Management and Consulting Group (AMAC) in conjunction with Streat Archaeological Services Pty Ltd (SAS) was commissioned by Macquarie Health Corporation in March 2020, to prepare an Aboriginal Cultural Heritage Assessment Report for the proposed redevelopment at Lot 1 DP 841502, Lot 23 & 24a DP 26995, Lot 53 & 54 DP 29493, at the combined street address 369-381 President Avenue, Kirrawee, NSW.

This Aboriginal Cultural Heritage Assessment has been prepared in response to requirement 8 of the Secretary's Environmental Assessment Requirements (SEARs) for State Significant Development (SSD-10320).

Requirement 8:

- *Identify and describe the Aboriginal cultural heritage values that exist across the site and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation.*
- *Identify and address the Aboriginal cultural heritage values in accordance with the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH, 2010).*
- *Undertake consultation with Aboriginal people and document in accordance with Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values of Aboriginal people who have a cultural association with the land are to be documented in the ACHAR.*
- *Identify, assess and document all impacts on the Aboriginal cultural heritage values in the ACHAR.*
- *The EIS and the supporting ACHAR must demonstrate attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.*

This report is to accompany the Aboriginal Cultural Heritage Assessment for submission and outline the archaeological investigations including analysis and results.

Aboriginal Consultation

Consultation for this report has been undertaken in accordance with the Part 6: National Parks and Wildlife Act 1974: *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010) and is in Stage 2. Archaeological Test excavation has been proposed in accordance with *Code of practice for the investigation of Aboriginal Objects in NSW* (DECCW,2010) and/or Aboriginal Cultural Heritage Management Plan, depending on the status of the development.

Recommendations

A background analysis of the environment and archaeological context revealed that the study area has moderate surface disturbances, as a result of filling events and levelling for the development of the hospital. The study area is however likely to contain intact

Aboriginal objects and/or deposits of conservation value below fill materials, as intact soils have a chance of being present below the introduced fill.

The surrounding landscape features present do indicate that sub-surface Aboriginal objects and/or deposits are likely in undisturbed areas and are likely to be considered of low to moderate Aboriginal archaeological significance

The proposed activity is not:

- located within a sand dune system, or
- located within 200m below or above a cliff face, or
- within 20m of or in a cave, rock shelter, or a cave mouth
- located on a ridge top, ridge line or headland, or

The study area is:

- located within 200m of waters

Based on the locale of water and major water tributaries such as Gymea Bay as well as unknown tributary north east of the study area and past tributary running southwest - southeast within the study area. Therefore, it is likely that Aboriginal movement and land use would be channelled to this location and as such the site may hold information regarding cultural activities of the area.

In accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974 (DECCW, 2010)*, it is recommended that further archaeological and cultural assessment is required and in accordance with *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974 (DECCW, 2010).*

In review of the Geotechnical Report (Soilsrock Engineering, 2020), there is an indication that intact natural soils are present within the study area. Natural sand/clayey sand soil have been identified within the soil profile with a depth range between 1.0m – 2.6m. This deposit could be interpreted as an A2 horizon of the Gymea soil profile with the potential for there to be a remnant A horizon (known to be an artefact bearing horizon). The proposed development activity includes basement levels and is to exceed the depth of these soil profiles. It is likely that intact soils with the potential to contain Aboriginal objects and/or features may be impacted as result of this activity.

The following recommendations have been formulated after consultation with the proponent and the Department of Planning, Industry and Environment (DPIE);

- It is recommended that an Aboriginal Cultural Heritage Management Plan (ACHMP) should be in place as part of status of the proposed development as a State Significant Development (SSD-10320). This is to manage and mitigate any potential Aboriginal objects of archaeological and cultural significance that may be present within the study area. Intact soils are likely below fill material therefore there is a potential for intact Aboriginal objects and/or features to be present.
- Consultation with the Registered Aboriginal Parties (RAPs) should continue, as per the requirements detailed in the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010).
- Subsequent to this report and in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974, (DECCW 2010)*, a program of systematic,

sub surface archaeological test excavation in accordance with the *Code Of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010*)* or Aboriginal Cultural Heritage Management Plan (depending on status of the development*),* should be undertaken to establish the nature and extent of any archaeological objects and/or deposits that are/may be present.

- In the event archaeological test excavations *reveal Aboriginal archaeological objects or deposits*, the following is recommended; Once the nature and extent of the archaeological site has been established through test excavation, the data will be analysed and synthesised into the Aboriginal Archaeological Technical Report (AATR) or depending on the status of the project will be updated into the ACHMP.
- If test excavation *does not reveal Aboriginal archaeological objects or deposits*, the following is recommended. Depending on the status of the project as an SSD - an ACHMP will need to be in place in order for the development activity to proceed.
- An analysis of artefacts retrieved should be conducted in a framework to allow for comparison with previous relevant results and to be recorded in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010).

Should any human remains be located during the following development:

- All excavation in the immediate vicinity of any objects of deposits shall cease immediately
- The NSW police and DPIE's Enviroline be informed as soon as possible
- Once it has been established that the human remains are Aboriginal ancestral remains, DPIE and the relevant Registered Aboriginal Parties will identify the appropriate course of action.

Should any Aboriginal archaeological deposits or objects be located during the development:

- all excavation in the vicinity of any objects and/or deposits shall cease immediately and the area secured
- DPIE and a suitably qualified archaeologist should be notified so the significance of the said deposits or objects can be evaluated and presented in a report and the study area recorded as an archaeological site
- the archaeological deposits or objects will require the production of an Aboriginal Cultural Heritage Management Plan, of which the way forward will be subject to the recommendations of this report in consultation with DPIE, prior to the development continuing.

CONTACT DETAILS

The contact details for the following archaeologist, NSW Police, DPIE and Registered Aboriginal Parties are as follows:

Organisation	Contact	Contact Details
NSW Environment Line		131 555
NSW Sutherland Shire Police Area Centre		PAC Office: 111-115 Flora Street Sutherland NSW 2232 Ph: (02) 9542 0899 Fax: (02) 9542 0708
Archaeological Management & Consulting Group	Mr. Benjamin Streat or Mr. Martin Carney	122c-d Percival Road Stanmore NSW 2048 Ph:(02) 9568 6093 Fax:(02) 9568 6093 Mob: 0405 455 869 Mob: 0411 727 395 benjaminstreat@archaeological.com.au
Heritage NSW Department of Planning, Industry and Environment	Archaeologist – Head Office	PO Box A290 Sydney South NSW 1232 Ph: (02) 9995 5000 info@environment.nsw.gov.au
Didge Ngunawal Clan	Lilly Carroll & Paul Boyd	didgengunawalclan@yahoo.com.au
Clive Freeman		clive.galamban@icloud.com
Tocomwall	Scott Franks	scott@tocomwall.com.au

1.0 INTRODUCTION

1.1 BACKGROUND

Archaeological Management and Consulting Group (AMAC) in conjunction with Streat Archaeological Services Pty Ltd (SAS) was commissioned by Macquarie Health Corporation in March 2020, to prepare an Aboriginal Cultural Heritage Assessment Report for the proposed redevelopment at Lot 1 DP 841502, Lot 23 & 24a DP 26995, Lot 53 & 54 DP 29493, at the combined street address 369-381 President Avenue, Kirrawee, NSW.

This Aboriginal Cultural Heritage Assessment has been prepared in response to requirement 8 of the Secretary's Environmental Assessment Requirements (SEARs) for State Significant Development (SSD-10320).

Requirement 8:

- *Identify and describe the Aboriginal cultural heritage values that exist across the site and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation.*
- *Identify and address the Aboriginal cultural heritage values in accordance with the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH, 2010).*
- *Undertake consultation with Aboriginal people and document in accordance with Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values of Aboriginal people who have a cultural association with the land are to be documented in the ACHAR.*
- *Identify, assess and document all impacts on the Aboriginal cultural heritage values in the ACHAR.*
- *The EIS and the supporting ACHAR must demonstrate attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.*

This report conforms to the reporting process, conditions and requirements of *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) and Part 6; National Parks and Wildlife Act *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010)

1.2 STUDY AREA

The study site is that piece of land described as Lot 1 of the Land and Property Information, Deposited Plan 841502, Lot 23 & 24a DP 26995 and Lot 53 & 54 DP 29493 forming the following street addresses 369 – 381, President Ave, 61 -65 Hotham Rd and 2-4 Bidurgal Ave Kirrawee in the Parish of Sutherland, County of Cumberland (Figures 3.1 – 3.2).

1.3 SCOPE

This report forms the results of the programme of test excavation that was conducted, including the synthesis and analysis of information of which may contribute to our understanding of the site characteristics and local and/or regional prehistory. The results of the test excavation will aid in the formalisation of appropriate management recommendations and conservation goals for the proposed development and any archaeological material recovered.

This assessment is intended for submission in conjunction with an Aboriginal Cultural Heritage Assessment Report (AMAC 2020).

1.4 ABORIGINAL CONSULTATION

Consultation for this report has been undertaken in accordance with the Part 6: National Parks and Wildlife Act 1974: *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010) and is in Stage 2. Archaeological Test excavation has been proposed in accordance with *Code of practice for the investigation of Aboriginal Objects in NSW* (DECCW,2010) and/or Aboriginal Cultural Heritage Management Plan, depending on the status of the development.

1.5 AUTHOR IDENTIFICATION

The analysis of the archaeological background and the reporting were undertaken by Mr. Benjamin Streat (BA, Grad Dip Arch Her, Grad Dip App Sc), archaeologist and Director of Streat Archaeological Services Pty Ltd in association with archaeologists Ms. Yolanda Pavincich (B. Arch, Grad Dip Cul Her), under the guidance of Mr. Martin Carney archaeologist and Managing Director of AMAC Group.

1.6 ACKNOWLEDGEMENTS

The author would like to thank the following for advice and/or input into this assessment:

- David Wenkart of Macquarie Health Corporation
- John Simpson of CDP Services
- Stephen Phillips of Imagescape Design Studios
- Makayla Horwood and Richard Silva of La Perouse LALC
- Paul Boyd of Didge Ngunawal Clan
- Clive Freeman
- Scott Franks of Tocomwall

2.0 LEGISLATIVE CONTEXT AND STATUTORY CONTROLS

This section of the report provides a brief outline of the relevant legislation and statutory instruments that protect Aboriginal archaeological and cultural heritage sites within the state of New South Wales. Some of the legislation and statutory instruments operate at a federal or local level and as such are applicable to Aboriginal archaeological and cultural heritage sites in New South Wales. This material is not legal advice and is based purely on the author's understanding of the legislation and statutory instruments. This document seeks to meet the requirements of the legislation and statutory instruments set out within this section of the report.

2.1 COMMONWEALTH HERITAGE LEGISLATION AND LISTS

One piece of legislation and two statutory lists and one non-statutory list are maintained and were consulted as part of this report: The National Heritage List and the Commonwealth Heritage List.

2.1.1 Environmental Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) offers provisions to protect matters of national environmental significance. This act establishes the National Heritage List and the Commonwealth Heritage List which can include natural, Indigenous and historic places of value to the nation. This Act helps ensure that the natural, Aboriginal and historic heritage values of places under Commonwealth ownership or control are identified, protected and managed (Australian Government 1999).

2.1.2 National Heritage List

The National Heritage List is a list which contains places, items and areas of outstanding heritage value to Australia; this can include places, items and areas overseas as well as items of Aboriginal significance and origin. These places are protected under the Australian Government's EPBC Act.

2.1.3 Commonwealth Heritage List

The Commonwealth Heritage List can include natural, Indigenous and historic places of value to the nation. Items on this list are under Commonwealth ownership or control and as such are identified, protected and managed by the Federal Government.

2.2 NEW SOUTH WALES STATE HERITAGE LEGISLATION AND LISTS

The State (NSW) based legislation that is of relevance to this assessment comes in the form of the acts which are outlined below.

2.2.1 National Parks and Wildlife Act 1974

The NSW National Parks and Wildlife Act 1974 (as amended) defines Aboriginal objects and provides protection to any and all material remains which may be evidence of the Aboriginal occupation of lands continued within the state of New South Wales. The relevant sections of the Act are sections 84, 86, 87 and 90.
An Aboriginal object, formerly known as a relic, is defined as:

any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains" (NSW Government, 1974).

It is an offence to harm or desecrate an Aboriginal object or places under Part 6, Section 86 of the NPW Act:

Part 6, Division 1, Section 86: Harming or desecrating Aboriginal objects and Aboriginal places:

(1) A person must not harm or desecrate an object that the person knows is an Aboriginal object.

Maximum penalty:

(a) in the case of an individual—2,500 penalty units or imprisonment for 1 year, or both, or (in circumstances of aggravation) 5,000 penalty units or imprisonment for 2 years, or both, or

(b) in the case of a corporation—10,000 penalty units.

(2) A person must not harm an Aboriginal object.

Maximum penalty:

(a) in the case of an individual—500 penalty units or (in circumstances of aggravation) 1,000 penalty units, or

(b) in the case of a corporation—2,000 penalty units.

(3) For the purposes of this section, ***circumstances of aggravation*** *are:*

(a) that the offence was committed in the course of carrying out a commercial activity, or

(b) that the offence was the second or subsequent occasion on which the offender was convicted of an offence under this section.

This subsection does not apply unless the circumstances of aggravation were identified in the court attendance notice or summons for the offence.

(4) A person must not harm or desecrate an Aboriginal place.

Maximum penalty:

(a) in the case of an individual—5,000 penalty units or imprisonment for 2 years, or both, or

(b) in the case of a corporation—10,000 penalty units.

(5) The offences under subsections (2) and (4) are offences of strict liability and the defence of honest and reasonable mistake of fact applies.

(6) Subsections (1) and (2) do not apply with respect to an Aboriginal object that is dealt with in accordance with section 85A.

(7) A single prosecution for an offence under subsection (1) or (2) may relate to a single Aboriginal object or a group of Aboriginal objects.

(8) If, in proceedings for an offence under subsection (1), the court is satisfied that, at the time the accused harmed the Aboriginal object concerned, the accused did not know that the object was an Aboriginal object, the court may find an offence proved under subsection (2).

2.2.2 Environmental Planning & Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) states that environmental impacts of proposed developments must be considered in land use planning procedures. Four parts of this act relate to Aboriginal cultural heritage.

- Part 3, divisions 3 and 4 refer to Regional strategic plans and both Local Environmental Plans (LEP) and Development Control Plans (DCP), which are environmental planning instruments and call for the assessment of Aboriginal heritage among other requirements.
- Part 4 determines what developments require consent and what developments do not require consent. Section 4.15 calls for the evaluation of

  > *The likely impacts of that development, including environmental impacts on both the natural and built environments and the social and economic impacts in the locality (NSW Government 1979).*

  This part of the legislation also addresses State Significant Developments as mentioned in Division 4.7 with Section 4.38 outlining the consent for State Significant Development in relation to the environmental planning instruments.
- Part 5 of this Act requires that impacts on a locality which may have an impact on the aesthetic, anthropological, architectural, cultural, historic, scientific, recreational or scenic value are considered as part of the development application process (NSW Government, 1979).

2.2.3 The Aboriginal Land Rights Act 1983

The NSW *Aboriginal Land Rights Act 1983* (ALR Act), administered by the NSW Department of Aboriginal Affairs, established the NSW Aboriginal Land Council (NSWALC) and Local Aboriginal Land Councils (LALCs). The ALR Act requires these bodies to:

- take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law;
- promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

These requirements recognise and acknowledge the statutory role and responsibilities of New South Wales Aboriginal Land Council and Local Aboriginal Land Councils.

The ALR Act also establishes the Office of the Registrar whose functions include but are not limited to, maintaining the Register of Aboriginal Land Claims and the Register of Aboriginal Owners.

Under the ALR Act the Office of the Registrar is to give priority to the entry in the Register of the names of Aboriginal persons who have a cultural association with:

- lands listed in Schedule 14 to the NPW Act;
- lands to which section 36A of the ALR Act applies (NSW Government, 1974 & DECCW 2010).

2.2.4 The Native Title Act 1993

The *Native Title Act 1993* (NTA) provides the legislative framework to:

- recognise and protect native title;

- establish ways in which future dealings affecting native title may proceed, and to set standards for those dealings, including providing certain procedural rights for registered native title claimants and native title holders in relation to acts which affect native title;
- establish a mechanism for determining claims to native title;
- provide for, or permit, the validation of past acts invalidated because of the existence of native title.

The National Native Title Tribunal has a number of functions under the NTA including maintaining the Register of Native Title Claims, the National Native Title Register and the Register of Indigenous Land Use Agreements and mediating native title claims (NSW Government, 1974 & DECCW 2010).

2.2.5 New South Wales Heritage Register and Inventory 1999

The State Heritage Register is a list of places and objects of particular importance to the people of NSW. The register lists a diverse range of over 1,500 items, in both private and public ownership. Places can be nominated by any person to be considered to be listed on the Heritage register. To be placed an item must be significant for the whole of NSW. The State Heritage Inventory lists items that are listed in local council's local environmental plan (LEP) or in a regional environmental plan (REP) and are of local significance. These places are protected by the NSW Heritage Act 1977.

2.2.6 Register of Declared Aboriginal Places 1999

The NPW Act protects areas of land that have recognised values of significance to Aboriginal people. These areas may or may not contain Aboriginal objects (i.e. any physical evidence of Aboriginal occupation or use). Places can be nominated by any person to be considered for Aboriginal Place gazettal. Once nominated, a recommendation can be made to EPA/DPIE for consideration by the Minister. The Minister declares an area to be an 'Aboriginal place' if the Minister believes that the place is or was of special significance to Aboriginal culture. An area can have spiritual, natural resource usage, historical, social, educational or other type of significance.

Under Section 86 of the NPW Act it is an offence to harm or desecrate a declared Aboriginal place. Harm includes destroying, defacing or damaging an Aboriginal place. The potential impacts of the development on an Aboriginal place must be assessed if the development will be in the vicinity of an Aboriginal place (DECCW 2010).

2.3 LOCAL PLANNING INSTRUMENTS

2.3.1 Sutherland Shire Council Local Environmental Plan (2015)

The Sutherland Shire Council Local Environment Plan was endorsed in 2015. Heritage Conservation is discussed in Part 5; Clause 5.10. The following section highlights the archaeological considerations of a site in relation to developments:

5.10 Heritage conservation

(1) Objectives

The objectives of this clause are as follows:

(a) to conserve the environmental heritage of Sutherland Shire,

(b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,

(c) to conserve archaeological sites,

(d to conserve Aboriginal objects and Aboriginal places of heritage significance.

(2) Requirement for consent

Development consent is required for any of the following:

(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):

(i) a heritage item,

(ii) an Aboriginal object,

(iii) a building, work, relic or tree within a heritage conservation area,

(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,

(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,

(d) disturbing or excavating an Aboriginal place of heritage significance,

(e) erecting a building on land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,

(f) subdividing land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

(3) When consent not required

However, development consent under this clause is not required if:

(a) the applicant has notified the consent authority of the proposed development and the consent authority has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development:

(i) is of a minor nature or is for the maintenance of the heritage item, Aboriginal object, Aboriginal place of heritage significance or archaeological site or a building, work, relic, tree or place within the heritage conservation area, and

(ii) would not adversely affect the heritage significance of the heritage item, Aboriginal object, Aboriginal place, archaeological site or heritage conservation area, or

(b) the development is in a cemetery or burial ground and the proposed development:

(i) is the creation of a new grave or monument, or excavation or disturbance of land for the purpose of conserving or repairing monuments or grave markers, and

(ii) would not cause disturbance to human remains, relics, Aboriginal objects in the form of grave goods, or to an Aboriginal place of heritage significance, or

(c) the development is limited to the removal of a tree or other vegetation that the Council is satisfied is a risk to human life or property, or

(d) the development is exempt development.

(8) Aboriginal places of heritage significance

The consent authority must, before granting consent under this clause to the carrying out of development in an Aboriginal place of heritage significance:

(a) consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place by means of an adequate investigation and assessment (which may involve consideration of a heritage impact statement), and

(b) notify the local Aboriginal communities, in writing or in such other manner as may be appropriate, about the application and take into consideration any response received within 28 days after the notice is sent

(10) Conservation incentives

The consent authority may grant consent to development for any purpose of a building that is a heritage item or of the land on which such a building is erected, or for any purpose on an Aboriginal place of heritage significance, even though development for that purpose would otherwise not be allowed by this Plan, if the consent authority is satisfied that:

(a) the conservation of the heritage item or Aboriginal place of heritage significance is facilitated by the granting of consent, and

(b) the proposed development is in accordance with a heritage management document that has been approved by the consent authority, and

(c) the consent to the proposed development would require that all necessary conservation work identified in the heritage management document is carried out, and

(d) the proposed development would not adversely affect the heritage significance of the heritage item, including its setting, or the heritage significance of the Aboriginal place of heritage significance, and

(e) the proposed development would not have any significant adverse effect on the amenity of the surrounding area

2.4 DUE DILIGENCE CODE OF PRACTICE FOR THE PROTECTION OF ABORIGINAL OBJECTS IN NEW SOUTH WALES

This assessment conforms to the parameters set out in the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*, Part 6 National Parks and Wildlife Act 1974, (DECCW 2010).

The Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales states that if;

- a desktop assessment and visual inspection confirm that there are Aboriginal objects, therefore further archaeological investigation and impact assessment is necessary.

2.5 CODE OF PRACTICE FOR ARCHAEOLOGICAL INVESTIGATION OF ABORIGINAL OBJECTS IN NEW SOUTH WALES

This assessment conforms to the parameters set out in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Part 6 National Parks and Wildlife Act 1974 (DECCW 2010).

2.6 GUIDELINES

This report has been carried out in consultation with the following documents which advocate best practice in New South Wales:

- Aboriginal Archaeological Survey, Guidelines for Archaeological Survey Reporting (NSW NPWS 1998);
- Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974, (DECCW 2010);
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974, (DECCW 2010);
- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW, Part 6 National Parks and Wildlife Act 1974 (OEH 2011)
- Aboriginal Cultural Heritage Standards and Guidelines Kit (NPWS 1998);
- Australia ICOMOS 'Burra' Charter for the conservation of culturally significant places (Australia ICOMOS 1999);
- Part 6; National Parks and Wildlife Act Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010);
- Protecting Local Heritage Places: A Guide for Communities (Australian Heritage Commission 1999).

3.0 DESCRIPTION OF STUDY AREA

The study site is that piece of land described as Lot 1 of the Land and Property Information, Deposited Plan 841502, Lot 23 & 24a DP 26995 and Lot 53 & 54 DP 29493 forming the following street addresses 369 – 381, President Ave, 61 -65 Hotham Rd and 2-4 Bidurgal Ave Kirrawee in the Parish of Sutherland, County of Cumberland (Figures 3.1–3.2).

Address	Lot	Deposited Plan
369-391 President Ave, Kirrawee	1	841502
61 Hotham Rd, Kirrawee	23	26995
65 Hotham Rd, Kirrawee	24A	26995
2 Bidurgal Ave, Kirrawee	53	29493
4 Bidurgal Ave, Kirrawee	54	29493

3.1 REGISTERED ARCHAEOLOGICAL SITES WITHIN THE STUDY AREA

There are no registered sites within the study area that the author of this report is aware of.

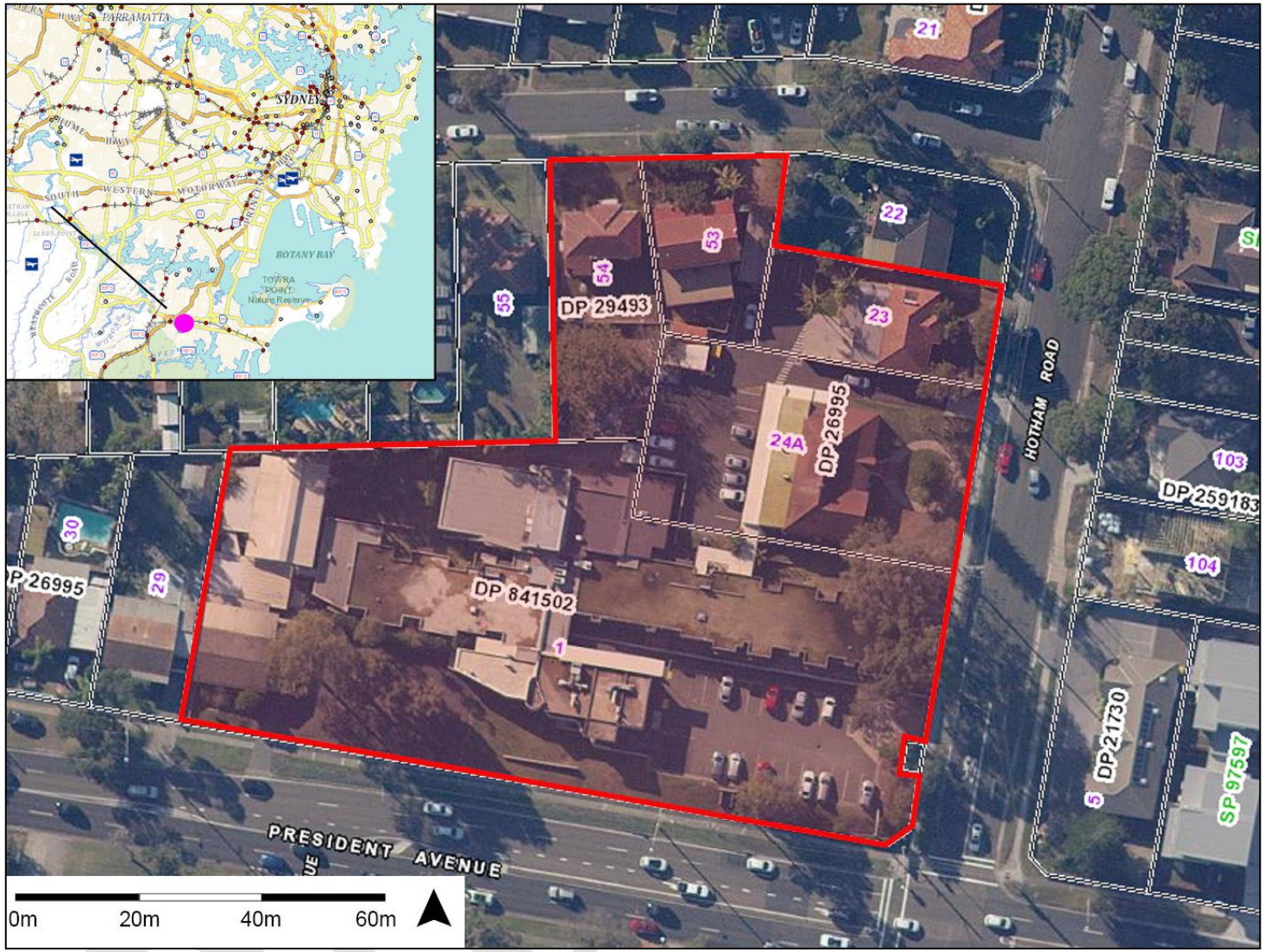

Figure 3.1 Aerial of study area.
Study area in red. Six Maps, LPI Online (accessed 10/04/20).

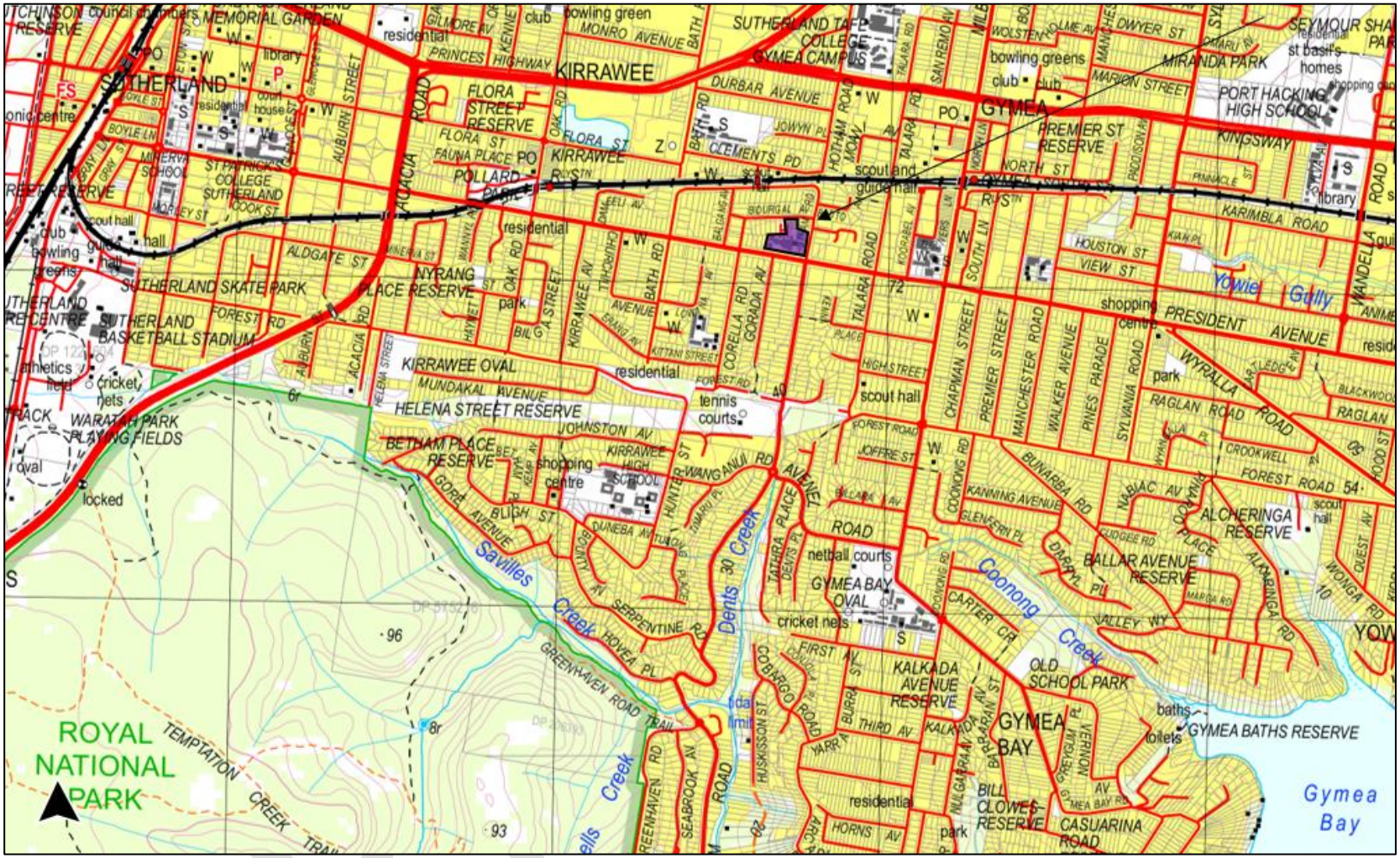

Figure 3.2 **Topographic map with site location.**
Study area indicated in purple with black arrow. Six Maps, LPI Online (accessed 10/04/20).

4.0 ENVIRONMENTAL CONTEXT

To adequately understand and assess the potential Aboriginal archaeological resource that may be present within the study area it is vital to understand the environment in which the Aboriginal inhabitants of the study area carried out their activities. The environment that Aboriginal inhabitants lived in is a dominant factor in shaping their activity and therefore the archaeological evidence created by this activity. Not only will the resources available to the Aboriginal population have an influence on the evidence created but the survival of said evidence will also be influenced by the environment.

4.1 TOPOGRAPHY

The study area is located within the Port Hacking topographic zone. The site lies on the Hornsby Plateau on Hawkesbury Sandstone and consists of undulating to rolling low hills (slopes 5-25%). The topography also contains in areas very steep hills.

The local relief varies from 40m – 200m. In these areas, slopes can have a moderate incline to precipitous. Crests and ridges are convex and narrow at 300m wide. Rock outcrops occur as horizontal benches and broken scarps are present. Nearby valleys are likely to be narrow and incised. This topographic zone is associated with both the Gymea (gy) soil landscape. The study area is located along a slope and drainage line.

Figure 4.1 **Study area on soil map.**
Study area in red. Soil Landscapes of the Wollongong – Port Hacking 1:100 000 Sheet Report. (Hazelton & Tille 1990).

4.2 GEOLOGY AND SOILS

The geology of the study area consists of Hawkesbury Sandstone – a quartz sandstone with minor shale and laminate lenses. These are the dominant geological formations of the Sydney Basin. As part of this geological unit it is situated within a shale lense of claystone and siltstone. (Figure 4.1).

The Gymea soil profile is known to be shallow to moderately deep (30-100m) consisting of yellow earths and earthy sands as well as siliceous sands along drainage lines. The soil ranges between strongly acidic pH levels to slightly. This is common within sands. The soil materials are found to have low erodibilities due to effective drainage as well as being held together by high organic matter. Therefore, surface movement is found to be stable amongst the sandy soils, while being slightly reactive with depth.

The study area is located on a lower slope/side slope with a low relief (Figure 4.2).

Table 4.1 Description of dominant soil material

Dominant Soil Material	Soil Horizon	Description
gy1	A1 Horizon	Loose, coarse sandy loam ranging from a brownish - black – when organic matter is present to a dull yellow – orange, often becoming lighter with depth. It generally contains small sandstone and ironstone fragments, as well as charcoal and roots.
gy2	B Horizon	Earthy, yellowish – brown clayey sand. This often overlays a sandstone bedrock. When exposed the soil can become hardsetting. The soil becomes a light sandy clay loam with depth along with orange mottles occurring. Less charcoal and root inclusions, however, weathered sandstone and ironstone fragments remain present.
gy3	B/C Horizon	Earthy, yellowish – brown sandy clay loam to sandy clay. The soil increases to a sandy clay with depth along with orange mottles occurring with depth. Weathered sandstone fragments remain common.

Table 4.2 Expected Gymea soil profile depth based on landform

Crest
➢ >30cm of loose sandy quartz loam (gy1) overlying, ➢ <30cm of yellowish- brown clayey sand (gy2) overlaying (sometimes), ➢ >30cm of yellow earthy sandy clay loam (gy3) overlaying, ➢ Sandstone bedrock. *N.B The total soil profile consists of <50 cm. The boundaries between the soil horizons is gradual.* *gy2 and gy3 can often be hardsetting deposits where exposure and erosion has occurred.*
Side Slopes

- 20cm of loose sandy quartz loam (gy1) overlying,
- Bedrock (Outside of benches and areas close to sandstone outcrops)

Alternatively, side-slopes located within the inside of benches can consist of the following:

- 30cm of loose sandy quartz loam (gy1) overlying,
- 10-30cm of yellowish- brown clayey sand (gy2) overlaying,
- 30cm of yellow earthy sandy clay loam (gy3)

N.B The total soil profile consists of 30-70 cm. The boundaries between the soil horizons are gradual.

Drainage Lines

- 100cm of loose sandy quartz loam (gy1);
- Overlies bedrock and leached sands.

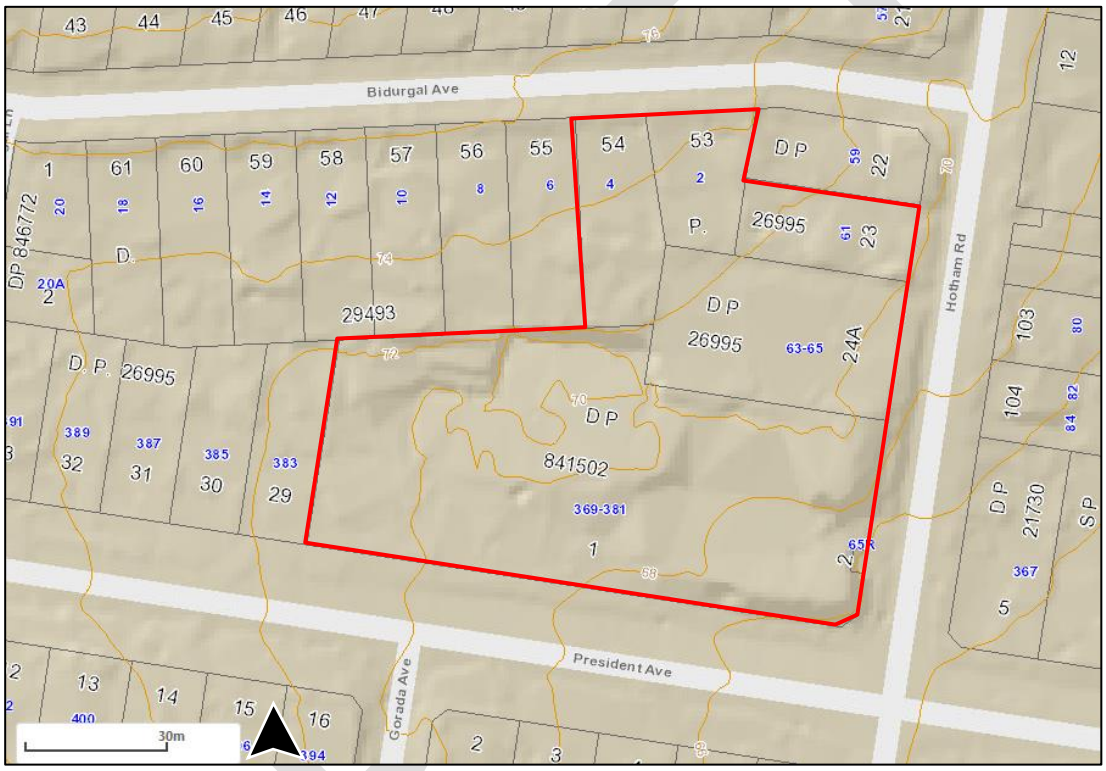

Figure 4.2 **Contour map of study area.**
Study area in red (maps.ssc.nsw.gov.au/ShireMaps accessed 10/03/20).

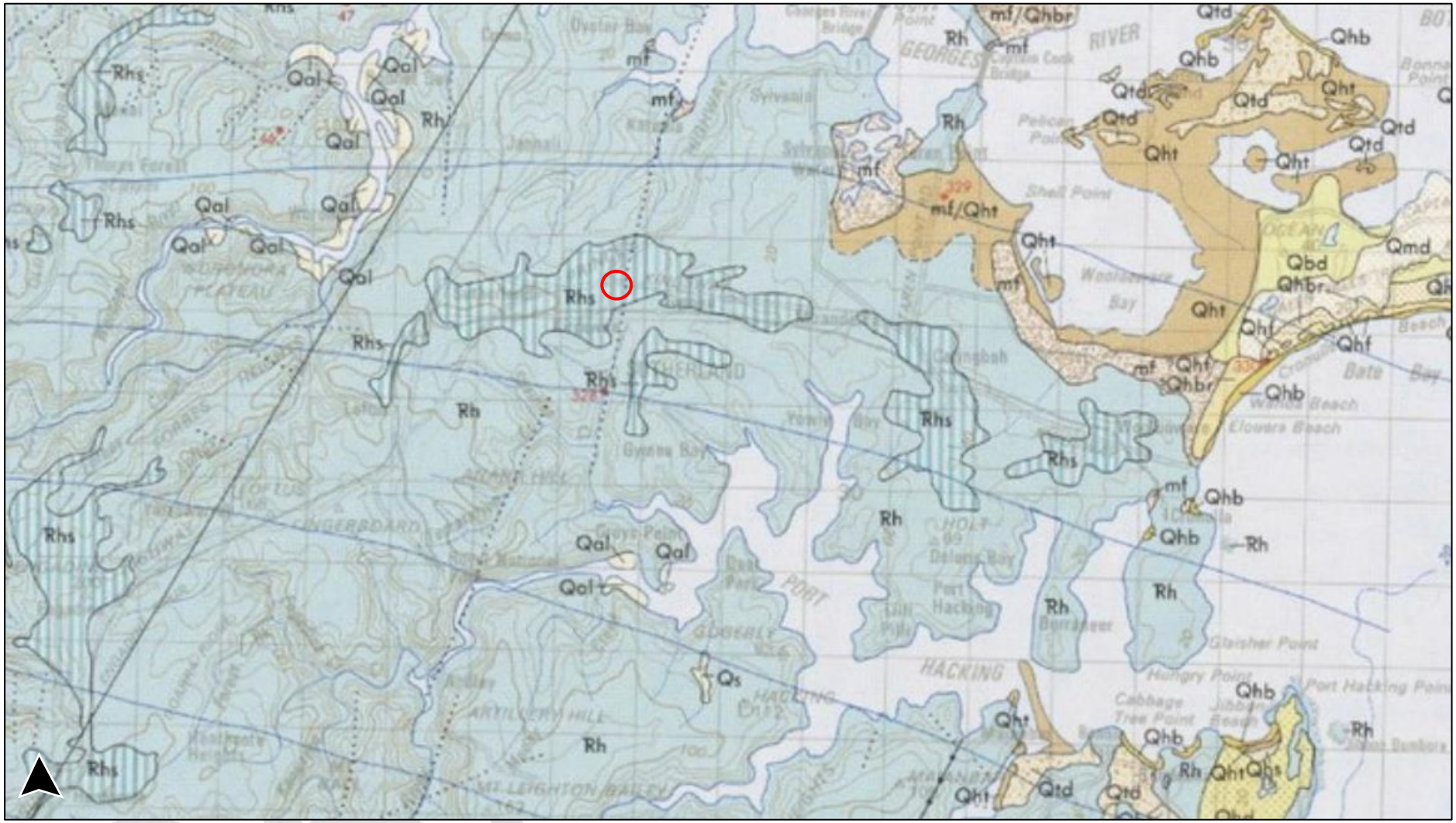

Figure 4.3 **Geological map of region with study area indicated in red outline.**
Wollongong – Port Hacking 9029 -9129 (Department of Mineral Resources, Sydney).

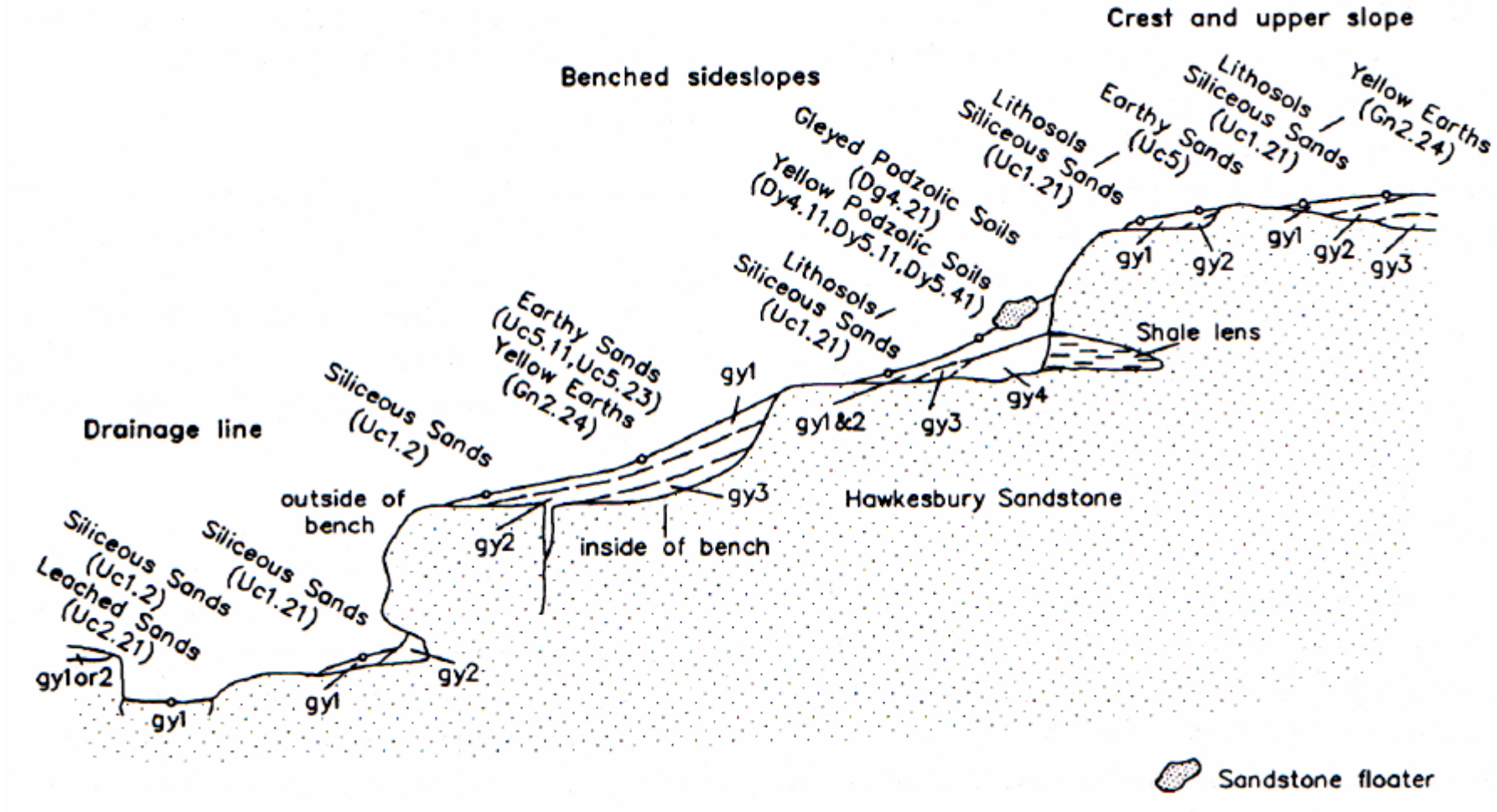

Figure 4.4 **Cross Section of soil landscape illustrating relationships between landscape features and dominant soil materials.** Soil Landscapes of the Soil Landscapes of the Wollongong – Port Hacking 1:100 000 Sheet Report. (Hazelton & Tille 1990).

4.3 WATERCOURSES

The study area is located on a peninsula bounded by the South Pacific Ocean. The ocean has been a drainage outlet creating a number of bays and inlets forming the peninsula. The following major water bodies have been identified along with their distance from the study area; Gymea Bay (SE, 2km), North West Arm (S, 2km), Woolooware Bay (NE, 4.9km), Oyster Bay (N, 2.9km) and Woronora River (W, 3.2km). Other minor watercourses have been identified including; Savilles Creek (SW, 1.2km), Temptation Creek (SW, 1.8km), Campbells Creek (S, 1.4km), Dents Creek (S, 700m), Coonong Creek (SE 1.1km) and Yowie Gully (E, 1.2km).

These surrounding watercourses would have made this a resource rich area with both estuarine as well as fresh and saltwater bodies. The boundary of the aforementioned water bodies would have extended further in the past such as Dents Creek extending further north prior to development within the area (Figure 4.6). Past aerials indicate an unknown minor tributary running southwest to southeast through the study area (Figure 4.5).

4.4 VEGETATION

The vegetation found in the study area is no longer in a native state and is comprised of a variety of introduced and noxious types of vegetation. This movement away from the natural vegetation is a result of previous land clearing for farming and development.

The natural vegetation would have been woodland and open dry sclerophyll forests. Areas closer to ridges and upper slopes would have been low open woodlands. The common plant communities within these areas would have consisted of red bloodwood, yellow bloodwood, scribbly gum, grey gum and old man banksia. Sheltered areas would have contained silvertop ash, Sydney peppermint and smooth-barked apple with an understorey of christmas bush, forest oak and she-oak and grass trees.

Smaller species would have included broad-leaf geebung and red spider-flower with flannel flowers on free draining benches.

For the most part this indigenous vegetation has been cleared for grazing, urban residential and light industry land use throughout the Cumberland Plain (Walker 1975, p. 11 – 13).

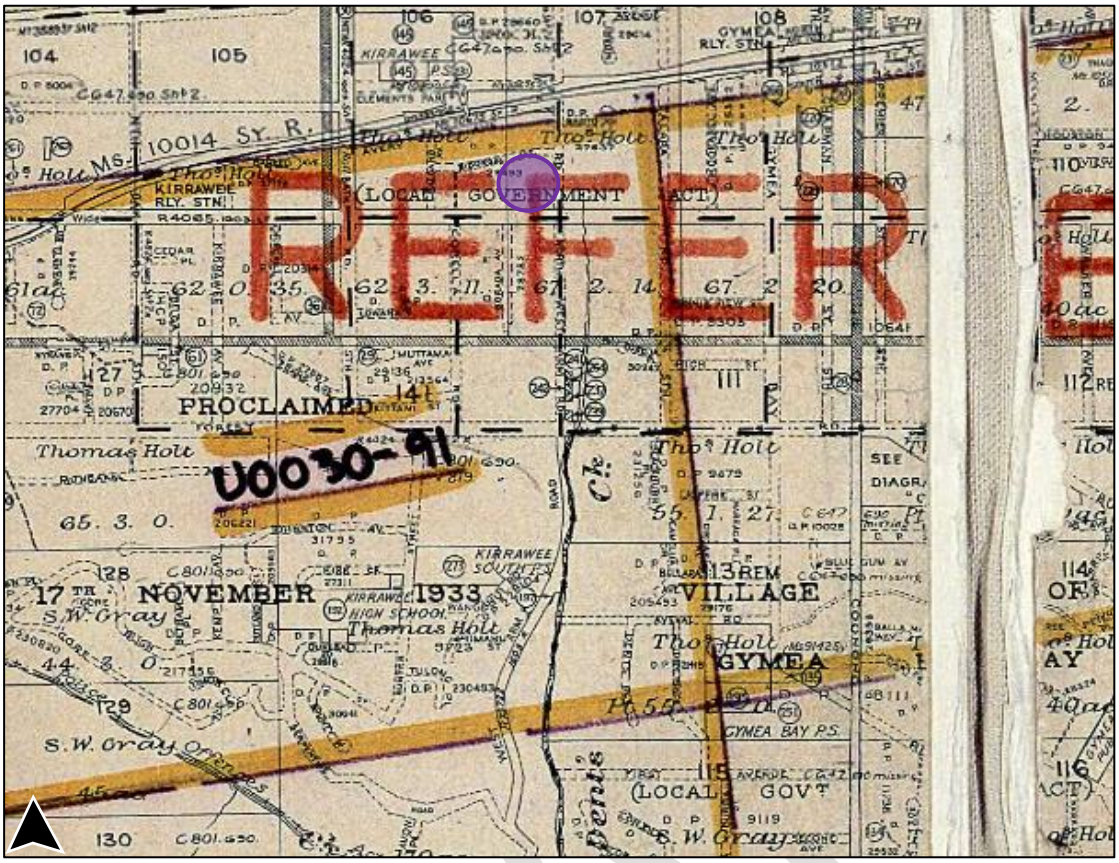

Figure 4.5 **Parish Map 1969 with study area indicated in purple circle.**
NSW LRS HLRV (accessed 11/03/20).

Figure 4.6 **1955 aerial of study area with minor tributary running through site.**
Study area indicated by red outline. (ShireMaps accessed 13/03/20).

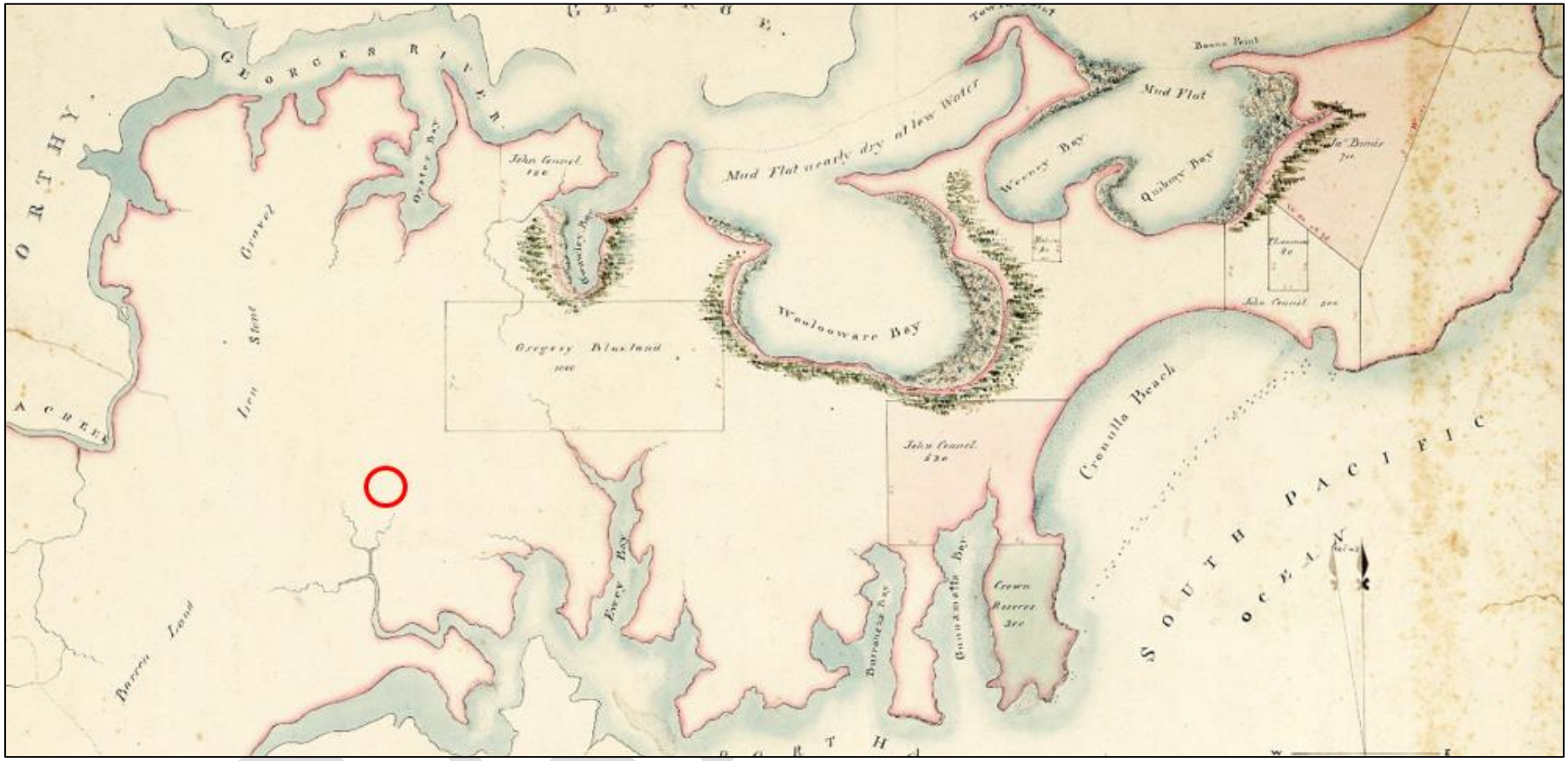

Figure 4.7 **Historical Sutherland Parish Map (date unknown) with approximate location of study area indicated in red, illustrating surrounding watercourses.**
NSW LRS HLRV, A.O Map number 289 (accessed 11/03/20).

Figure 4.8 **Topography map indicating watercourses in blue.**
Study site indicated in purple with black arrow. Port Hacking 9129 – 4n 1:25 000 Topographic map, 2017.

5.0 RESEARCH CONTEXT

Pre-field work research consisted of an analysis and synthesis of the background data to determine the nature of the potential archaeological and cultural heritage resource in the region.

The research of this cultural heritage assessment consisted of stages which are listed below:

- Background research;
- Aboriginal consultation and oral history interviews;
- Site inspection and cultural heritage mapping;

Background research entailed a detailed review of sources of information on the history, oral history, ethno-history and archaeological background of the study area and surrounds and includes but is not limited to material from:

- DPIE archaeological assessment and excavation reports and cultural heritage assessments;
- DPIE Library;
- State Library of NSW including the Mitchell Library;
- Local libraries and historical associations;
- National Library of Australia.

A search of the Heritage NSW AHIMS was undertaken and the results examined. The site card for each site within 1000m in all directions from the centre of the study area was inspected (where available) and an assessment made of the likelihood of any of the sites being impacted by the proposed development. The Heritage NSW library of archaeological reports (Hurstville) was searched and all relevant reports were examined. Searches were undertaken on the relevant databases outlined in *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Part 6 National Parks and Wildlife Act 1974, (DECCW 2010);

Further to this the following sources were examined:

- The National Heritage List;
- The Commonwealth Heritage List;
- The NSW State Heritage Inventory;
- The Register of the National Estate;
- The National Native Title Register;
- The Register of Declared Aboriginal Places;
- Prevailing local and regional environmental plans;
- Environmental background material for the study area.

5.1 ARCHAEOLOGICAL CONTEXT

It is generally accepted that Aboriginal occupation of Australia dates back at least 40,000 years (Attenbrow 2002 p.20-21 & Kohen et al 1983). The result of this extensive and continued occupation which includes the Sydney region has left a vast amount of

accumulated depositional evidence and the Cumberland Lowlands is no exception. The oldest date generally considered to be reliable for the earliest occupation around the region comes from excavations at Parramatta which contain objects or features which have been dated to 30,735 ± 407 BP (McDonald et al 2005).

The majority of reliably dated archaeological sites within the region are less than 5,000 years old which places them in the mid to late Holocene period. A combination of reasons has been suggested for this collection of relatively recent dates. There is an argument that an increase in population and 'intensification' of much of the continent took place around this time, leading to a great deal more evidence being deposited than was deposited as a result of the sparser prior occupation period. It is also the case that many archaeological sites along the past coastline may have been submerged as the seas rose approximately to their current level around 6,000 years ago. This would have had the effect of covering evidence of previous coastal occupation. In addition, it is also true that the acidic soils which are predominate around the Sydney region do not allow for longer-term survival of sites (Hiscock 2008 p.106).

Different landscape units not only influence the preservation of sites but can determine where certain site types will be located. Across the whole of the Sydney Basin, the most common Aboriginal archaeological site type is occupation evidence within Rock Shelters. However, the most common Aboriginal archaeological site type in the Cumberland Lowlands is Open Artefact Scatters or Open Campsites, which are locations where two or more pieces of stone show evidence of human modification. These sites can sometimes be very large, with up to thousands of artefacts and include other habitation remains such as animal bone, shell or fireplaces [known as *hearths]* (Attenbrow 2002 p.75–76). Many hundreds of artefact sites have been recorded within the Cumberland Lowlands. This is despite the fact that at least 50% of the Cumberland Lowlands has already been developed to such an extent that any archaeological evidence which may have once been present has been destroyed.

5.2 ABORIGINAL LAND USE AND RESOURCES

Georges River provided a rich dietary intake for the local inhabitants. These coastal tribes depended heavily on marine resources such as fish and shellfish but were not limited to such diets, as cabbage palms and bracken fern roots were also included (Dyall 1971). Farming practices were also utilised in the form of land clearing. This was conducted through the burning of grasslands in order to encourage new growth which attracted local game. Based on the predominance of rock shelters found within the Hawkesbury sandstone landscape, it is also evident that natural rock overhangs were utilised as an alternate place of temporary and/or repeated occupation.

The procurement of specific resources for ceremonial or domestic purposes would rely on the accessibility and availability of these resources. There are readily mapped resources within the region that may have been exploited by Aboriginal occupants, with more being present before the land was cleared and settled.

Sites containing fresh water and sedentary food sources, coupled with the presence of other resources which may have been exploited or available on a seasonal basis, would suggest that Aboriginal land use of the study area was regular and repeated, with this reflected in the archaeological record. These areas will possess a high archaeological potential (Goodwin 1999).

5.3 PREVIOUS ARCHAEOLOGICAL STUDIES NEAR THE STUDY AREA

As part of the research process of this report the library of archaeological assessments, test excavation and open area salvage excavation reports which is located at the offices of DECCW at Hurstville was consulted. Presented below are summaries of indigenous archaeological survey assessments, test excavations and salvage excavations in the vicinity of the study area, which have all been carried out. This list is by no means exhaustive and is merely a representative sample of archaeological activity within the vicinity of the study area.

J. Megaw, Department of Archaeology, University of Sydney NSW 1966– Rock Shelter Excavation - Gymea Bay

In 1962, the discovery of an Aboriginal skeleton led to further archaeological investigations of a rock shelter located at Gymea Bay. The rock shelter was situated under a sandstone overhang with a second shelter located nearby. A large area of midden was also recorded and would have extended further but evidence of levelling and disturbance was noted. At the base of the excavated midden was a second skeleton suggesting a potential initial occupation phase of the shelter and midden. Test excavation resulted in an additional 121 artefacts being located within the shelter as well as ochre, hammerstones and ground stone implements. The cultural material was found in-situ and indicated repeated occupation of the surrounding area and shelter, with smoke stains found marking the roof. Radiocarbon dating placed the shelter at 1,000 BP.

S. McIntyre 1984 – Aboriginal archaeological survey - Towra Point Nature Reserve

McIntyre conducted an Aboriginal archaeological survey within the estuarine wetland at Towra Point. The site has been subject to human activity and erosion, with the survey area having low visibility. The survey resulted in the location of two sites, an artefact scatter consisting of two flaked bottle glass artefacts as well as a midden. Both sites where within 100m of freshwater area with further investigation of the midden site being recommendation in order to salvage the site form the effects of tidal erosion within the area and both areas being marked as areas of Aboriginal cultural sensitivity.

Rich, E., Heap, P. & L. Smith 1989 – Aboriginal sites management study - Kurnell Peninsula

A management study was compiled by Rich *et al* in 1989 for the National Parks and Wildlife Services. Eleven registered sites were reviewed within the Kurnell Peninsula. These sites were found to range from extensive complex midden sites to open artefact scatters as well as burials and ceremonial. These sites were found to be situated along the transgressive dune field dating to both Pleistocene and mid-Holocene periods. Kurnell Peninsula has been subject to varying levels of disturbance and land clearance as a results of post colonisation human activity. Artefacts and significant deposits of cultural heritage were still located within these disturbed environments.

Dallas, M. 1996 – Archaeological Study – Cronulla Sewage treatment plant upgrade

An archaeological survey was conducted by M. Dallas in 1996 as part of the archaeological study for the Cronulla sewage treatment plant upgrade. Resulted in no finds due to the low visibility and exposure. Although the site is considered disturbed in

areas, archaeological monitoring was recommended during trenching in case subsurface deposits and artefacts were located, as a result, of these impacts.

Heritage Search 1998 –Aboriginal site survey – Robvic Avenue, Sylvania

This site survey was conducted by Heritage Search in 1998 and consisted of 10,000m2 area along the foreshore down from Robvic Avenue, Sylvania. The study area was identified as having moderate potential for objects and/or deposits of Aboriginal cultural significance. The survey resulted in the identification of a rock shelter along the eastern boundary of the study area as well as sandstone shelving with the potential to bear rock engraving – however visibility and exposure were poor on account to the heavily vegetation nature of the landscape. However, no objects and/or deposits were located within the study area, therefore the study area was deemed as low potential and works continued with additional management plans to be in place for the adjacent rock shelter due to the potential impact of the construction activity.

Jo McDonald CHM Pty Ltd 2000 – Archaeological assessment – Corea Street, Sylvania

Jo McDonald conducted a survey in 2000 for a residential development at Corea Street, Sylvania. The survey resulted in the identification of a rock shelter towards the northern slopes of the study area approximately 15m in elevation above the tide mark and falls within the foreshore setback. Within the rock shelter were pigment art on the walls as well as a midden deposit. The site had been identified as being disturbed on account of the sewerage construction by Sydney Water, indicating that soils were disturbed and not completely intact. However, subsurface objects of Aboriginal cultural heritage are believed to be present and further investigation is required if any works are proposed that directly impact the rock shelter site ‘Sylvania 2’.

Kayandel 2000–Cultural Heritage Desktop Assessment – Georges River Estuary

Kayandel undertook a desktop study in 2000, compiling all the registered Aboriginal sites within the Georges River Estuary including around Botany Bay, Woolooware Bay, Kogarah Bay, etc. A total of 112 registered sites were recovered, however, a large number of these sites require reassessment and inspection based on the date on registration being more than 20 years ago of which some of the registered sites are now below the high tide line or errors found with the grid references. The most common site type found were middens and rock shelters followed by artefact scatters and isolated finds and being an elevation of <10m.

AMBS 2017–Heritage Assessment – Captain Cook Drive, Kurnell

AMBS undertook a heritage assessment in 2017 for the construction of a distribution centre. The assessment involved an AHIMS search resulting in site #52-3-0212 being located within 150m form the study area, consisting of a moderately disturbed midden. A site inspection resulted in no identified Aboriginal objects and/or features. It was recommended that further investigation in the form of test excavation should be undertaken prior to the development taking place, in order to assess the nature and extent of any subsurface potential deposits.

The practical ramifications of the results of the archaeological assessments and excavation is that there is a low - moderate potential for Aboriginal archaeological objects to be present. These past studies have also identified objects and deposits of Aboriginal cultural and archaeological significance within disturbed contexts.

5.4 AHIMS SEARCH RESULTS

The Archaeological Heritage and Information Management System Database (AHIMS) is located at the Heritage NSW Offices at Hurstville in New South Wales. This database comprises information about all the previously recorded Aboriginal archaeological sites registered with Heritage NSW. Further to the site card information that is present about each recorded site, the assessments and excavation reports that are associated with the location of many of these sites are present in the library of reports.

The location of these sites must be viewed as purely indicative as errors in the recording of the locations of sites often occurs due to the disparate nature of the recording process, the varying level of experience of those locating the sites and the errors that can occur when transferring data. If possible, sites that appear to be located near a study area should be relocated.

An AHIMS extensive 1km search was conducted on the 10/03/20 (ID 490045). This search resulted in 1 registered site within 1000 m of the study area. The following table is comprised of the results listed from the extensive search.

Table 5.1 AHIMS Search Results

Site ID	Site name	Site status	Site features
52-3-0051	Dents Creek; Loftus	Valid	Shell, Artefact

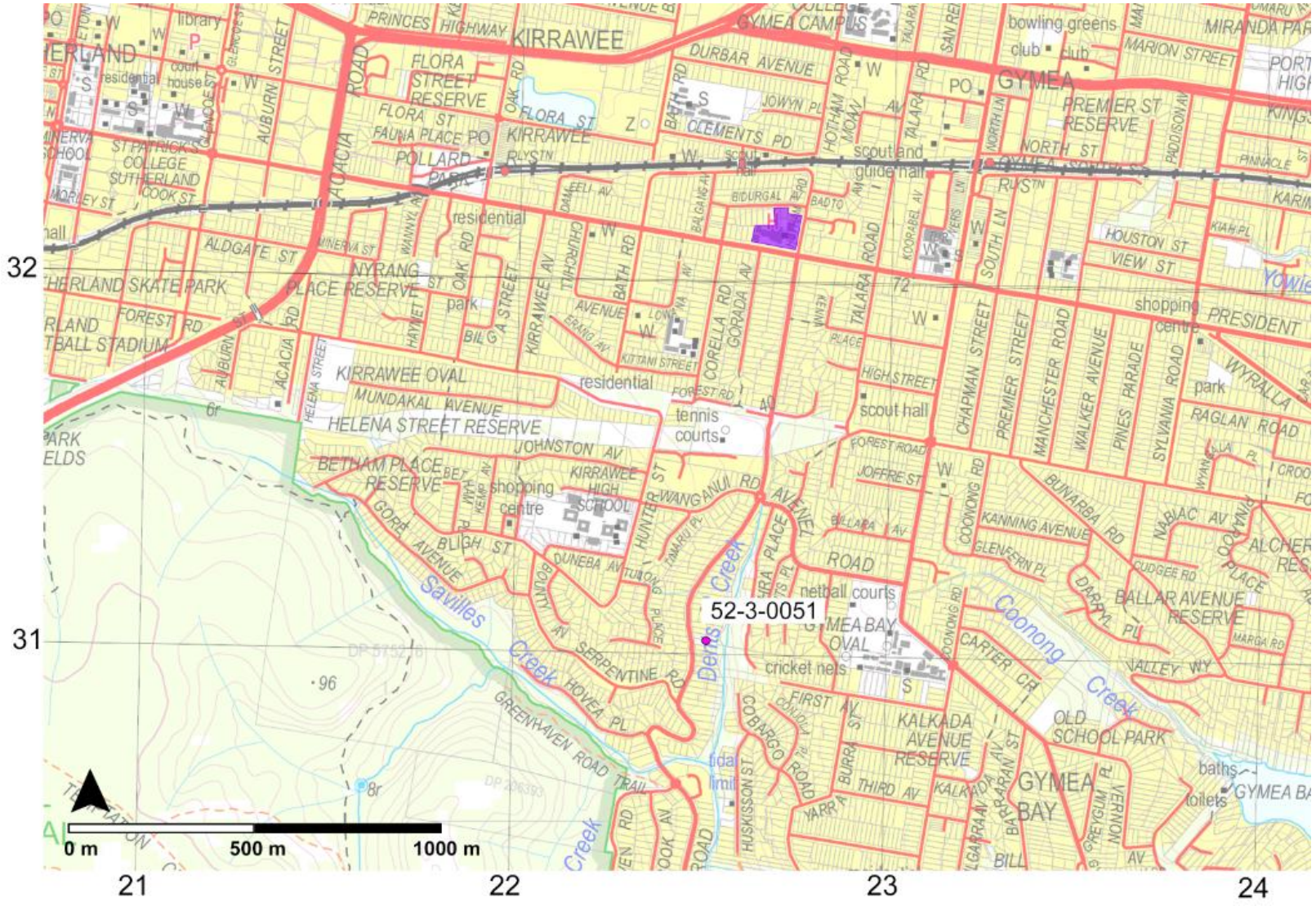

Figure 5.1 AHIMS Search Results. AHIMS (2020), Port Hacking 1:25 000 (9129 -4n) Topographic map. AHIMS site indicated in pink, study area indicated in purple.

5.5 OTHER SEARCH RESULTS

Results for other statutory databases searched are given below;

Heritage Listings/ Register/ Other	Result
National Heritage List	N/a
Commonwealth Heritage List	N/a
NSW State Heritage Register	N/a
Register of Declared Aboriginal Places	N/a
National Native Title Register	N/a
LEP/DCP Mapping -Archaeological Sensitivity Map	Low Sensitivity

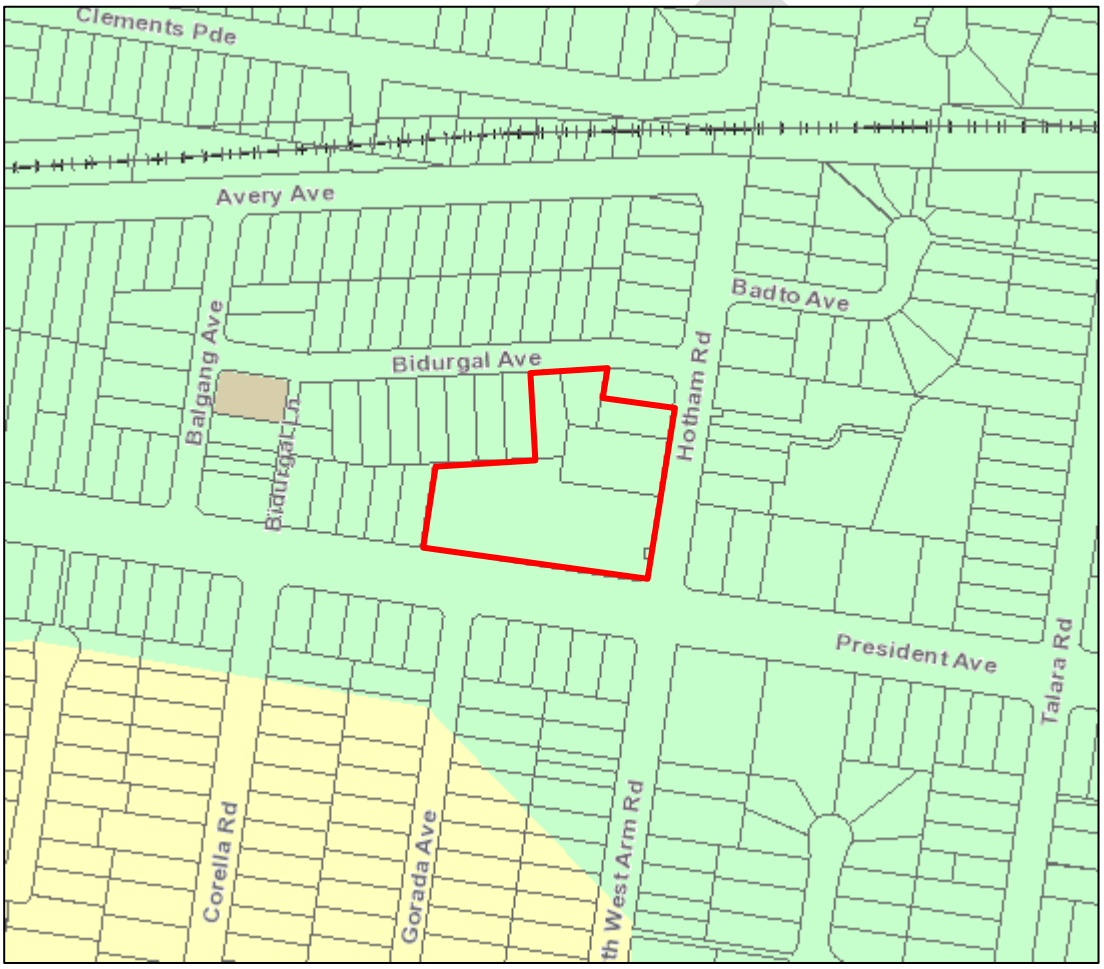

Figure 5.2 Sutherland Shire Archaeological Sensitivity Map.
Study area indicated in red, (maps.ssc.nsw.gov.au/ShireMaps, accessed 10/03/20).

5.6 SUMMARY OF ARCHAEOLOGICAL PREDICTIVE MODEL FOR THE REGION

Predictive modelling is an adaptive process which relies on a framework formulated by a number of factors, including but not limited to the use of local land systems, the environmental context, archaeological work and any distinctive sets of constraints that would influence land use patterns. This is based on the concept that different landscape zones may offer different constraints, which is then reflected in the spatial distributions and forms of archaeological evidence within the region (Hall and Lomax 1996).

Early settlement models focused on seasonal mobility, with the exploitation of inland resources being sought once local ones become less abundant. These principles were adopted by Foley (1981) who developed a site distribution model for forager settlement patterns (Figure 5.3). This model identifies two distinctive types of hunter and gather settlements; 'residential base camps' and 'activities areas'. Residential base camps are predominately found located in close proximity to a reliable source of permanent water and shelter. From this point the surrounding landscape is explored and local resources gathered. This is reflected in the archaeological record, with high density artefact scatters being associated with camp bases, while low density and isolated artefacts are related to the travelling routes and activity areas (Foley 1981).

However, more recently, investigation into understanding the impacts of various episodes of occupation on the archaeological record has been explored, of which single or repeated events are being identified. This is often a complex process to establish, specifically within predictive models as land use and disturbance can often result in post depositional processes and the superimposition of archaeological materials by repeated episodes of occupation.

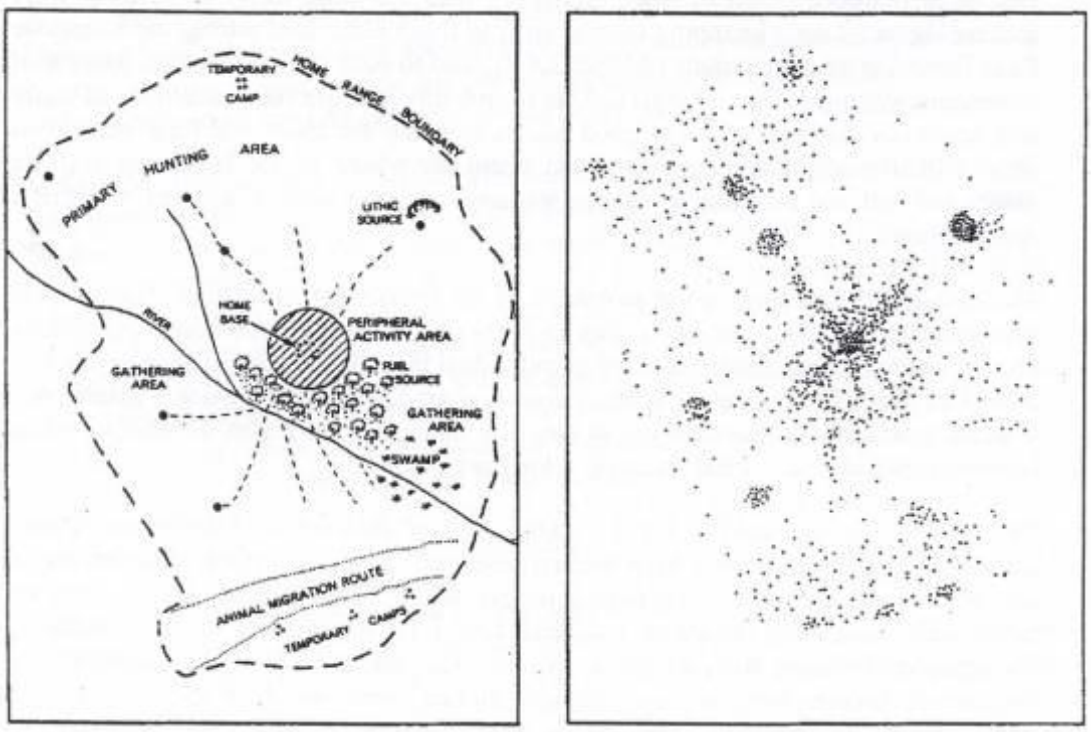

Figure 5.3 **Examples of forager settlement patterns.**
Foley (1981).

The principals behind this model have been incorporated into other predictive models such as that of McBryde (1976). McBryde's model is centred on the utilisation of food resources as a contributor to settlement patterns, specifically with reference to the predictability and reliability of food resources for Aboriginal people within the immediate coastal fringe and/or hinterland zone, with migratory behaviour being a possibility. Resources such as certain species of animals, particularly small marsupials and reptiles, plant resources and nesting seabirds may have been exploited or only available on a seasonal or intermittent basis. As such, archaeological sites which represent these activities whilst not being representative of permanent occupation may be representative of brief, possibly repeated occupation.

Jo McDonald and Peter Mitchell have since contributed to this debate, with reference to Aboriginal archaeological sites and proximity to water using their Stream order model (1993). This model utilises Strahler's hierarchy of tributaries (Figure 5.4).

This model correlates with the concept of proximity to permanent water and site locations and their relationship with topographical units. They identify that artefact densities are greatest on terraces and lower slopes within 100m of water.

Intermittent streams however, also have an impact on the archaeological record. It was discovered that artefacts were most likely within 50 – 100m of higher (4^{th}) order streams, within 50m of 2^{nd} order streams and that artefact distributions around 1^{st} order streams was not significantly affected by distance from the watercourse. Landscapes associated with higher order streams, (2^{nd}) order streams were found to have higher artefact densities and more continuous distribution than lower order streams (Table 5.2).

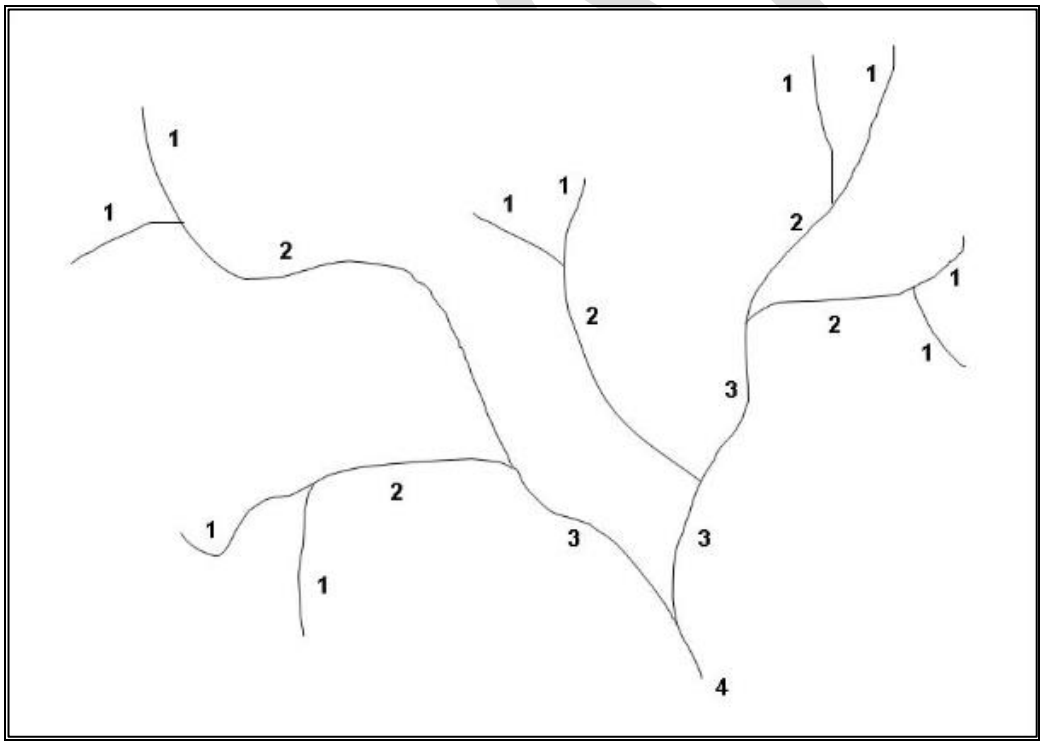

Figure 5.4 **Strahler's hierarchy of tributaries.**
Strahler (1957).

Table 5.2 Relationship between landscape unit and site distribution for region

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Landscape Unit /Site types	Site Distribution and activity
1st order stream	Archaeological evidence will be sparse and reflect little more than a background scatter
Middle reaches of 2nd Order Stream	Archaeological evidence will be sparse but focus activity (one off camp locations, single episodes and knapping floor)
Upper reaches of 2nd order stream	Archaeological evidence will have a relatively sparse distribution and density. These sites contain evidence of localised one-off behaviour.
Lower reaches of 3rd order stream	Archaeological evidence for frequent occupation. This will include repeated occupation by small groups, knapping floors (used and unused material) and evidence of concentrated activities.
Major creeklines 4th order streams	Archaeological evidence for more permanent or repeated occupation. Sites will be complex and may be stratified with a high distribution and density.
Creek junctions	This landscape may provide foci for site activity, the size of the confluence in terms of stream rankings could be expected to influence the size of the site, with the expectation of there being higher artefact distribution and density.
Ridge top locations between drainage lines	Ridge Tops will usually contain limited archaeological evidence, although isolated knapping floors or other forms of one-off occupation may be in evidence in such a location.
Raw Materials near watersources	The most common raw materials are silcrete and chert in sites closer to coastal headlands, though some indurated mudstone/silicified tuff and quartz artefacts may also be found.
Grinding Grooves	Grinding Grooves may be found in the sandstone or shale/sandstone transition areas.
Scarred trees -	May occur in stands of remnant vegetation.
Ceremonial Sites	Consultation with relevant Aboriginal Stakeholder groups, individuals and review of ethnographic sources often reveal the presence of ceremonial or social sites.

This predictive model has been refined with focus on the dominant environment and landscape zones of the Cumberland Lowlands, such as the Wianamatta Group Shales, Hawksbury Sandstone, Quaternary alluvium, Quaternary Aeolian and Tertiary alluvium. Attenbrow (2002) discovered that the Quaternary alluvial deposits had a greater concentration of archaeological sites, which is likely the result of these deposits being located towards major creeklines and rivers, such as Eastern Creek, Second Ponds Creek etc. Areas of alluvial deposits were found by Kohen (1986) to contain artefact scatters of a large and complex nature the closer they were to permanent creeks.

Umwelt (2004) have identified similar environmental – archaeological relationships which contribute to the mapping and modelling of archaeological sites, such as;

- The pattern of watercourses and other landscape features such as ridge lines affected the ease with which people could move through the landscape;
- Certain landscape features such as crests or gently sloping, well-drained landforms, influenced the location of camping places or vantage points that provided outlooks across the countryside;
- The morphology of different watercourses affected the persistence of water in dry periods and the diversity of aquatic resources and so influenced where, and for how long, people could camp or procure food;
- The distribution of rock outcrops affected the availability of raw materials for flakes and ground stone tools;
- The association of alluvial, colluvial and stable landforms affects the potential that sites will survive;
- European land-use practices affect the potential for site survival and/or the capacity for sites to retain enough information for us to interpret the types of activities that took place at a specific location.

The *Aboriginal Cultural Heritage Data Audit* (DOP, 2005) produced the following table as part of the *NSW Comprehensive Coastal Assessment Toolkit* (DOP, 2005) which made the following statements outlined in Table 4.3 about the predictive location of Aboriginal sites in Coastal NSW. These statements support the conclusions drawn in the following predictive model established for the study area. The study makes one very important claim which is that Aboriginal Ceremonial or Dreaming Sites can only be identified by Aboriginal community knowledge.

All models state that the primary requirement of all repeated, concentrated or permanent occupation is reliable access to fresh water. Brief and possibly repeated occupation may be represented in areas that have unreliable access to ephemeral water sources, however these areas will not possess a high archaeological potential (Goodwin 1999).

Table 5.3 Aboriginal Cultural Heritage Data Audit, Predictive Modelling for Coastal Aboriginal Sites, NSW.

Site Type	Archaeological/ Predictive Modelling
Aboriginal Ceremony and Dreaming Sites	Can only be identified on the basis of Aboriginal community knowledge.
Aboriginal Resource and Gathering Sites	Can occur at any location where plant and animal target species are found at present or were available in the past.
Art Sites	All rock paintings or drawings and some rock engravings will occur within rock shelters/overhangs, most commonly within sandstone cliff lines and in granite boulder fields. Rock engravings may occur wherever there are suitable rock-surface exposures.
Artefacts	Will occur in all landscapes with varying densities. Artefacts of greatest scientific significance will occur in stratified open contexts (such as alluvial terraces, sand bodies) and rock shelter floors.
Burials	Most likely (but not always) to be buried in, or eroding from, sandy soils. Can occur within rock shelters/overhangs, most commonly within sandstone cliff lines and in granite boulder fields.
Ceremonial Ring Sites	Environmental factors may be of particular importance in site location including association with sources of water, ridges, unstructured soils and geological boundaries. Distance to adjacent ceremonial ring sites may influence site location.
Conflict Sites	Can only be identified on the basis of historical records and community knowledge.
Grinding Grooves	Most likely to occur on surface exposures of sandstone. Occasionally occur within sandstone rock shelters.
Modified Trees	Will only occur where target tree species survive and if these are of an age generally greater than 100 years old.
Non-Human Bone and Organic Material Sites	Will occur in any surface or buried context where preservation conditions allow. Most commonly survive in open shell midden sites and in rock shelter floor deposits.
Ochre Quarry Sites	Can occur at any location where suitable ochre sources are found, either as isolated nodules or as suitable sediments (clays).
Potential Archaeological Deposits	Can occur in all landscape types. PADs of greatest scientific significance will occur in stratified open contexts (such as alluvial terraces, sand bodies) and rock shelter floors.
Shell Middens	Will occur as extensive packed shell deposits to small shell scatters in all coastal zones along beaches, headlands and estuaries, both in open situations and in rock shelters. May occur along rivers and creeks where edible shellfish populations exist or existed in the past.
Stone Arrangements	Tend to be on high ground, often on the tops of ridges and peaks commanding views of the surrounding country. Often situated in relatively inaccessible places.
Stone Quarry Sites	Can occur at any location where suitable raw materials outcrop, including pebble beds/beaches.
Waterholes	May occur within any river or creek. Rare examples may occur in open exposures of rock.

5.7 ARCHAEOLOGICAL PREDICITVE MODEL FOR THE STUDY AREA

The following section gives an indication of the likelihood of certain site types being located within the study area. These indications are based on the research and results of assessments and excavations in the vicinity of the study area and also from the greater Cumberland Region.

Site Type	Research	Likelihood
Open Artefact Scatters	Higher order streams are located in the landscape units surrounding the study area, chiefly Gymea Bay and surrounds. The dearth of known reliable raw material source (outcrops of silcrete, chert or mudstone) within nearby landscape units. This may be evident of greater levels of stone tool reduction due to the lower availability of raw materials.	Likely
Isolated Artefacts	Higher order streams are located in the landscape units surrounding the study area, chiefly Gymea Bay and surrounds. The dearth of known reliable raw material source (outcrops of silcrete, chert or mudstone) within nearby landscape units. This may be evident of greater levels of stone tool reduction due to the lower availability of raw materials.	Likely
Grinding Grooves	Boulders of sandstone or outcrops do not occur on the site.	Unlikely
Midden Deposits	Given the proximity of the study area to the Gymea Bay, it is likely to be the site of food procurement, consumption, and refuse discard.	Likely
Stone Resources Sites	Rock outcrops of suitable flaking material are almost absent from the study area.	Unlikely
Scarred Trees	Trees of sufficient age do not appear to remain within the study area	Unlikely
Sandstone Shelter Sites	The soil landscape of the study area does not contain sandstone overhangs.	Unlikely
Burials	While it is possible that undisturbed sand bodies may lie within the study area. These sites tend to occur within deep, sandy and/or soft soil contexts within sand dune formations, often in association with midden materials.	Unlikely

5.8 LAND USE AND DISTURBANCE FACTORS

This section of the report provides an assessment of land use, the level of disturbance and the likely archaeological potential of the study area. The archaeological potential is based on the level of previous disturbance as well as the previously discussed predictive model for the region.

The *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*, Part 6 National Parks and Wildlife Act 1974, (DECCW 2010); defines disturbed lands as given below.

Land is disturbed if it has been the subject of a human activity that has changed the land's surface, these being changes that remain clear and observable. Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure and construction of earthworks).

This definition is based on the types of disturbance as classified in *The Australian Soil and Land Survey Field Handbook* (CSIRO 2010). The following is a scale formulated by CSIRO (2010) of the levels of disturbances and their classification.

Minor Disturbance		Moderate Disturbance		Major Disturbance	
0	No effective disturbance; natual	**3**	Extensive clearing (eg: poisoning and ringbarking)	**6**	Cultivation; grain fed
1	No effective disturbance other than grazing by hoofed animals	**4**	Complete clearing; pasture native or improved, but never cultivated	**7**	Cultivation; irrigated, past or present
2	Limited clearing (eg: selected logging)	**5**	Complete clearing; pasture native or improved, cultivated at some stage	**8**	Highly disturbed (quarrying, road works, mining, landfill, urban)

The above scale is used in determining the level of disturbance of the study area and its impact on the potential archaeology which may be present.

5.9 EUROPEAN LAND USE

European land use led to extensive clearing of the land. The study site was previously a poultry farm with a drainage line running through the southwest corner (Figure 5.6) and poultry sheds located to the northern end of the study area (Figure 5.5). The discontinuation of the poultry farm saw the land purchased and developed into a hospital.

In light of this, and in the context of the information provided about the land use of the site, its proximity to major tributaries indicates that potential for Aboriginal objects and deposits of archaeological and/or cultural heritage to be present.

Figure 5.5 **1930s image of Hotham House and Poultry Farm within study area.**
Located at 61-65 Hotham Road and 2-4 Bidurgal Road, facing west, (https://www.theleader.com.au/story/5577743/should-this-house-be-demolished/#slide=0).

Figure 5.6 **1930 aerial of study area.**
Study area indicated by red outline, (ShireMaps, accessed 13/03/20).

Figure 5.7 **1955 aerial of study area.**
Study area indicated by red outline, (ShireMaps, accessed 13/03/20).

Figure 5.8 **1961 aerial of study area.**
Study area indicated by red outline, (ShireMaps, accessed 13/03/20).

Figure 5.9 **1970 aerial of study area.**
Study area indicated by red outline, (ShireMaps, accessed 13/03/20).

Figure 5.10 **1978 Aerial of study area.**
Study area indicated by red outline, (ShireMaps, accessed 13/03/20).

Figure 5.11 **1984 Aerial of the study area.**
Study area indicated by red outline, (ShireMaps, accessed 13/03/20).

Figure 5.12 **2001 aerial of study area.**
Study area indicated by red outline, (ShireMaps, accessed 13/03/20).

Figure 5.13 **2010 aerial of study area.**
Study area indicated by red outline, (ShireMaps, accessed 13/03/20).

5.10 GEOTECHNICAL INVESTIGATION SUMMARY

Geotechnical investigations were undertaken on the 29th May 2020 by Soilsrock Engineering Pty Ltd. This investigation involved the drilling of two boreholes (BH1/BH2). Boreholes were drilled by the BG RIG 3 – HANJIN and BG RIG 8 – HANJIN drilling rigs to depths of 2.6m to 11.60m (BH1) and 2.8m to 8.46m (BH2) and terminating to high strength sandstone bedrock with soil samples collected at regular depth intervals.

Each borehole was found to comprise of the following soil profile (Soilsrock Engineering Pty Ltd 2020):

Soil title	Description
Asphalt/Topsoil	Asphalt (BH1) and Topsoil (BH2) were present on the ground surfaces to depths of 0.10 m in both boreholes.
Sand/Silty Sand	Brown silty sands and White/Reddish fine grained sands to a depth of 2.6m were present in BH1 and Light Brown/Grey silty sand, fine grained in BH2 to a depth of 1.0m
Clay	Seams of clay were present at varying intervals in the boreholes. Two Reddish Brown to Dark Grey clay seams were located in BH1 at depths of 3.3m-3.4m and at 9.0m. Three medium-high plasticity Light Grey/Dark Grey narrow clay seams were located at depths of 3.45m, 3.56m, and 4.59 in BH2.
Sandstone	Sandstone was located from depths of 1.0m (BH2) – 2.6m (BH1) to borehole termination at both locations. White/Pink to Light Brown/Light Grey sandstone, medium strength in BH2 was located to a depth of 3.5m. A Light Grey/Light Brown highly weathered, high strength sandstone was present in BH1 to depth of 3.3m. Strength typically increased with depth from medium to high strength and ranging from slightly to highly weathered.

In review of the borehole logs (Figures 5.14-5.21), there is an indication that intact natural soils are present within the study area. Natural sand/clayey sand soil have been identified within the soil profile of both BH1 and BH2. The depth of the sand/clayey sand soil deposits range between 1.0m – 2.6m. This deposit could be interpreted as an A2 horizon of the Gymea soil profile with the potential for there to be a remnant A horizon (known to be an artefact bearing horizon).

The proposed development activity for the accommodation of basements is to exceed the depth of these soil profiles. It is likely that intact soils with the potential to contain Aboriginal objects and/or features may be impacted as result of this activity.

GEOTECHNICAL BOREHOLE LOG

CLIENT:	PRESIDENT PRIVATE HOSPITAL	BOREHOLE NO:	BH1
PROJECT:	ADDITIONS & ALTERATIONS TO PRESIDENT PRIVATE HOSPITAL	PAGE:	1 of 3
LOCATION:	369-381 PRESIDENT AVENUE, 61-65 HOTHAM ROAD, 2-4 BIDURGAL AVENUE KIRRAWEE NSW	DATE STARTED:	29/05/2020
DATE:	19/06/2020	DATE COMPLETED:	29/05/2020
PROJECT NO:	SRE/564/KW/20	LOGGED BY:	AT

Equipment:	BG RIG 3 - HANJIN	Hole Diameter:	90mm	Coring Size:	-	RL Surface:	
Driller:	BG Drilling	Drilling Method:	Solid Flight Auger	Inclination:	90°	Easting:	-
						Northing:	-

METHOD	GROUNDWATER RECORD		Field Tests SPT	Sample ID	DEPTH R.L (m)	DEPTH (m)	GRAPHIC LOG	SOIL MATERIAL DESCRIPTION	SOILS CLASSIFICATION: MOISTURE CONTENT	SOILS CLASSIFICATION: STRENGTH (Consistency, Relative Density)	SOILS CLASSIFICATION: DENSITY INDEX	REMARKS AND ADDITIONAL OBSERVATION
SOLID FLIGHT AUGER WITH TC BIT	NO GROUNDWATER OBSERVED	Dry through the Completion of Augering				0.0		**ASPHALT:** 100mm thickness of Asphalt	-	-	-	
								SILTY SAND: Dark grey to light brown silty sands, medium grained.	D	-	L	
						0.5		**SILTY SAND:** Brown silty sands, medium grained.	D	-	M	
								SAND: White sands, fine grained.	D	-	M	
			SPT1 (13,13,18) Np = 31			1.0		**SAND:** White, reddish grey sands, fine grained.	D	-	D to VD	Residual Soils (Sandstone)
						1.5						
						2.0						
						2.5						Low to Medium TC Bit Resistance
								END OF AUGERING @ 2.6m **PLEASE REFER TO CORE BOREHOLE LOG**				
						3.0						
						3.5						
						4.0						
						4.5						
						5.0						
						5.5						
						6.0						

Comments:		CHECKED BY:	JC
A General Remark:		APPROVED BY:	JC DATE: 19/06/2020

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Figure 5.14 **Geotechnical Bore Log BH1, 1-3.**
Soilsrock Engineering Pty Ltd, 2020.

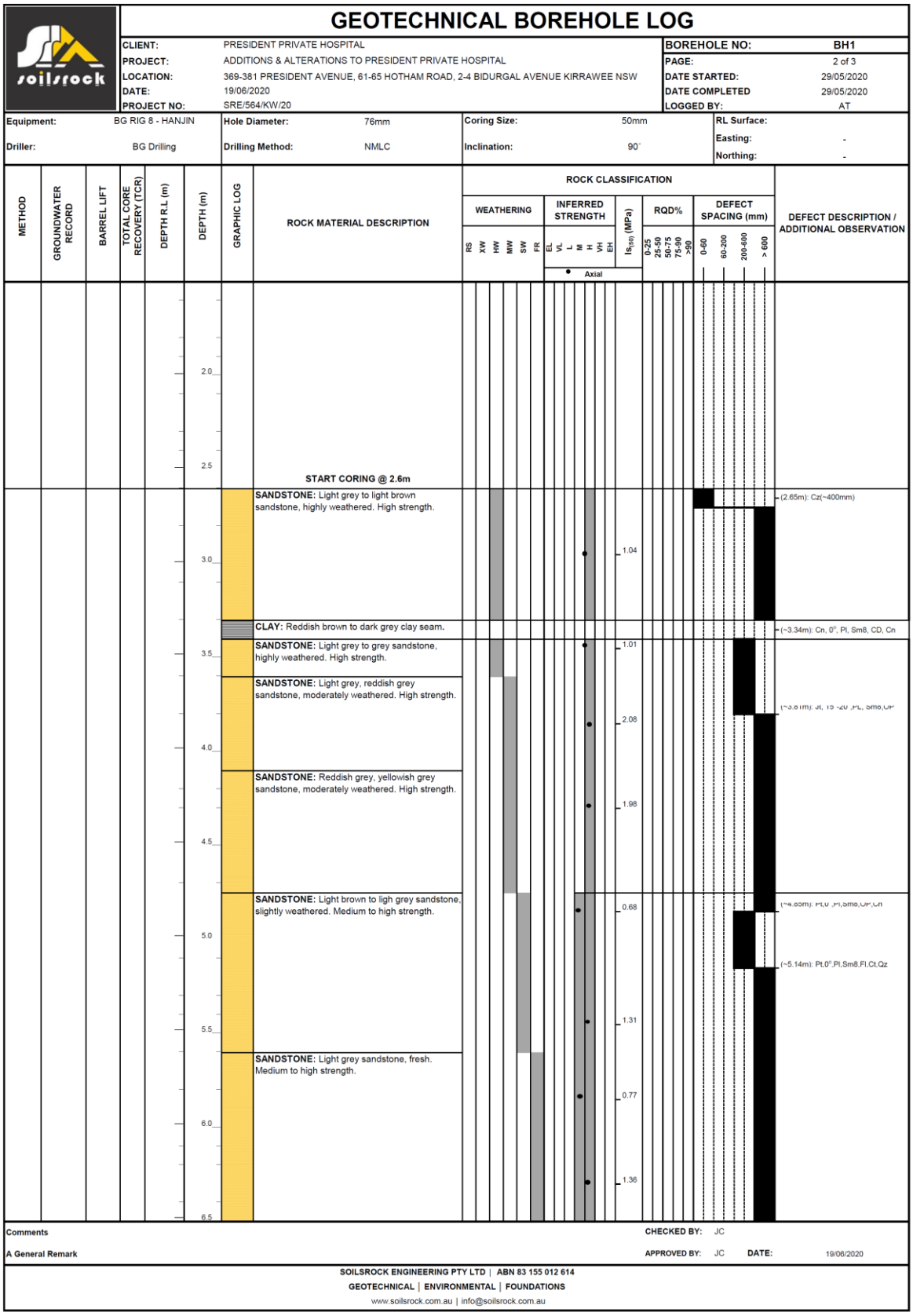

Figure 5.15 **Geotechnical Bore Log BH1, 2-3.**
Soilsrock Engineering Pty Ltd, 2020.

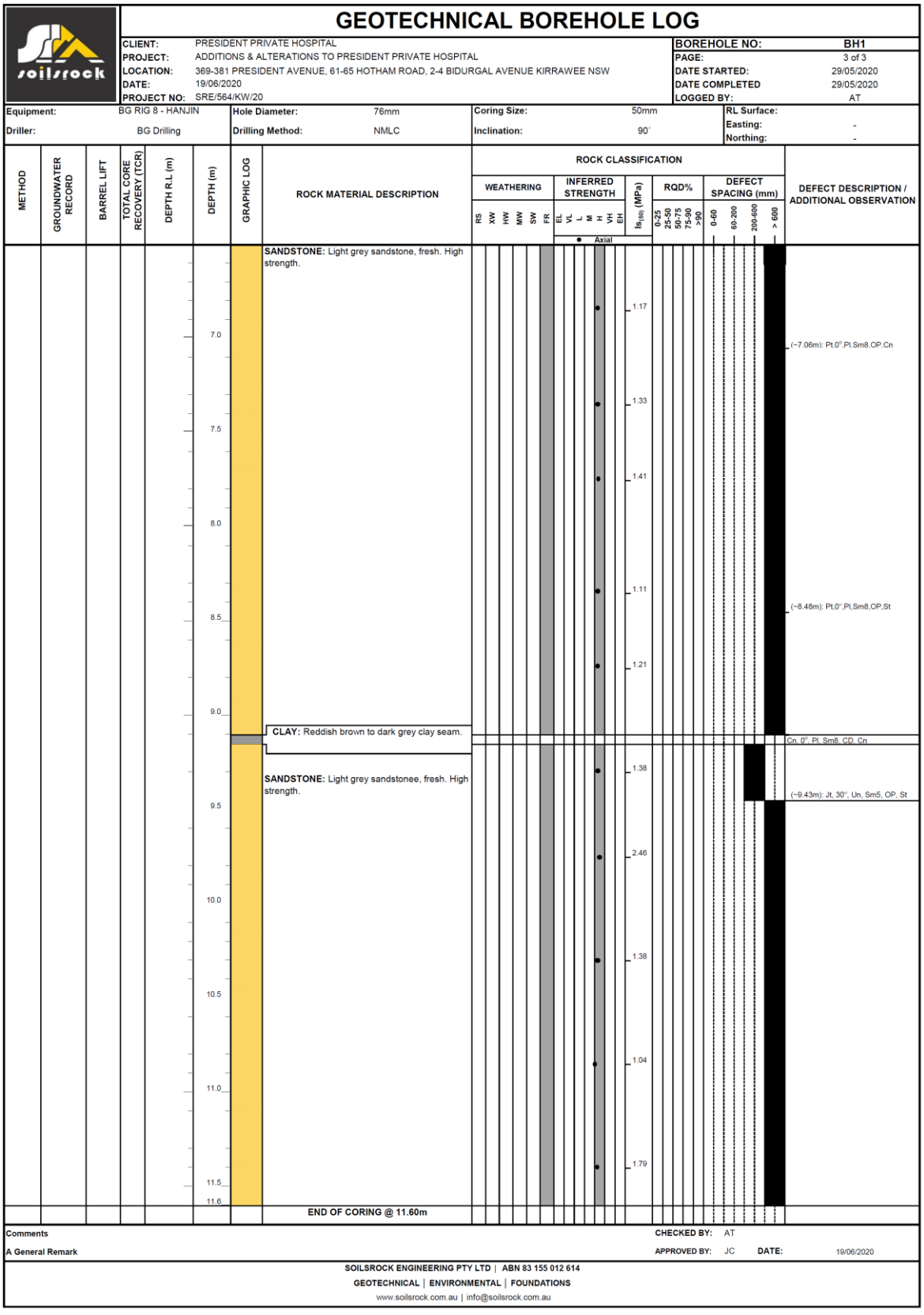

Figure 5.16 **Geotechnical Bore Log BH1, 3-3.**
Soilsrock Engineering Pty Ltd, 2020.

Figure 5.17 Geotechnical Bore Log BH1 - Rock Core Photograph.
Soilsrock Engineering Pty Ltd, 2020.

GEOTECHNICAL BOREHOLE LOG

CLIENT:	PRESIDENT PRIVATE HOSPITAL	BOREHOLE NO:	BH2
PROJECT:	ADDITIONS & ALTERATIONS TO PRESIDENT PRIVATE HOSPITAL	PAGE:	1 of 3
LOCATION:	369-381 PRESIDENT AVENUE, 61-65 HOTHAM ROAD, 2-4 BIDURGAL AVENUE KIRRAWEE NSW	DATE STARTED:	29/05/2020
DATE:	19/06/2020	DATE COMPLETED:	29/05/2020
PROJECT NO:	SRE/564/KW/20	LOGGED BY:	AT

Equipment:	BG RIG 3 - HANJIN	Hole Diameter:	90mm	Coring Size:	-
Driller:	BG Drilling	Drilling Method:	Solid Flight Auger	Inclination:	90°

RL Surface:
Easting: -
Northing: -

METHOD	GROUNDWATER RECORD	Field Tests SPT	Sample ID	DEPTH R.L (m)	DEPTH (m)	GRAPHIC LOG	SOIL MATERIAL DESCRIPTION	SOILS CLASSIFICATION: MOISTURE CONTENT	SOILS CLASSIFICATION: STRENGTH (Consistency, Relative Density)	SOILS CLASSIFICATION: DENSITY INDEX	REMARKS AND ADDITIONAL OBSERVATION
SOLID FLIGHT AUGER WITH TC BIT+A14:A133	NO GROUNDWATER OBSERVED Dry through the Completion of Augering				0.5 1.0 1.5 2.0 2.5		**TOPSOIL:** Brown/Dark brown silty sand with grass roots. **SAND:** Light brown/Grey silty sand, fine-grained.	D	-	-	LOW TC BIT RESISTANCE
							SANDSTONE: White/Pink residual sandstone, medium strength.	-			MEDIUM TO HIGH TC BIT RESISTANCE
					3.0 3.5 4.0 4.5 5.0 5.5 6.0		**END OF AUGERING @ 2.8m** **PLEASE REFER TO CORE BOREHOLE LOG**				

Comments:
A General Remark:

CHECKED BY: JC
APPROVED BY: JC DATE: 19/06/2020

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Figure 5.18 **Geotechnical Bore Log BH2, 1-3.**
Soilsrock Engineering Pty Ltd, 2020.

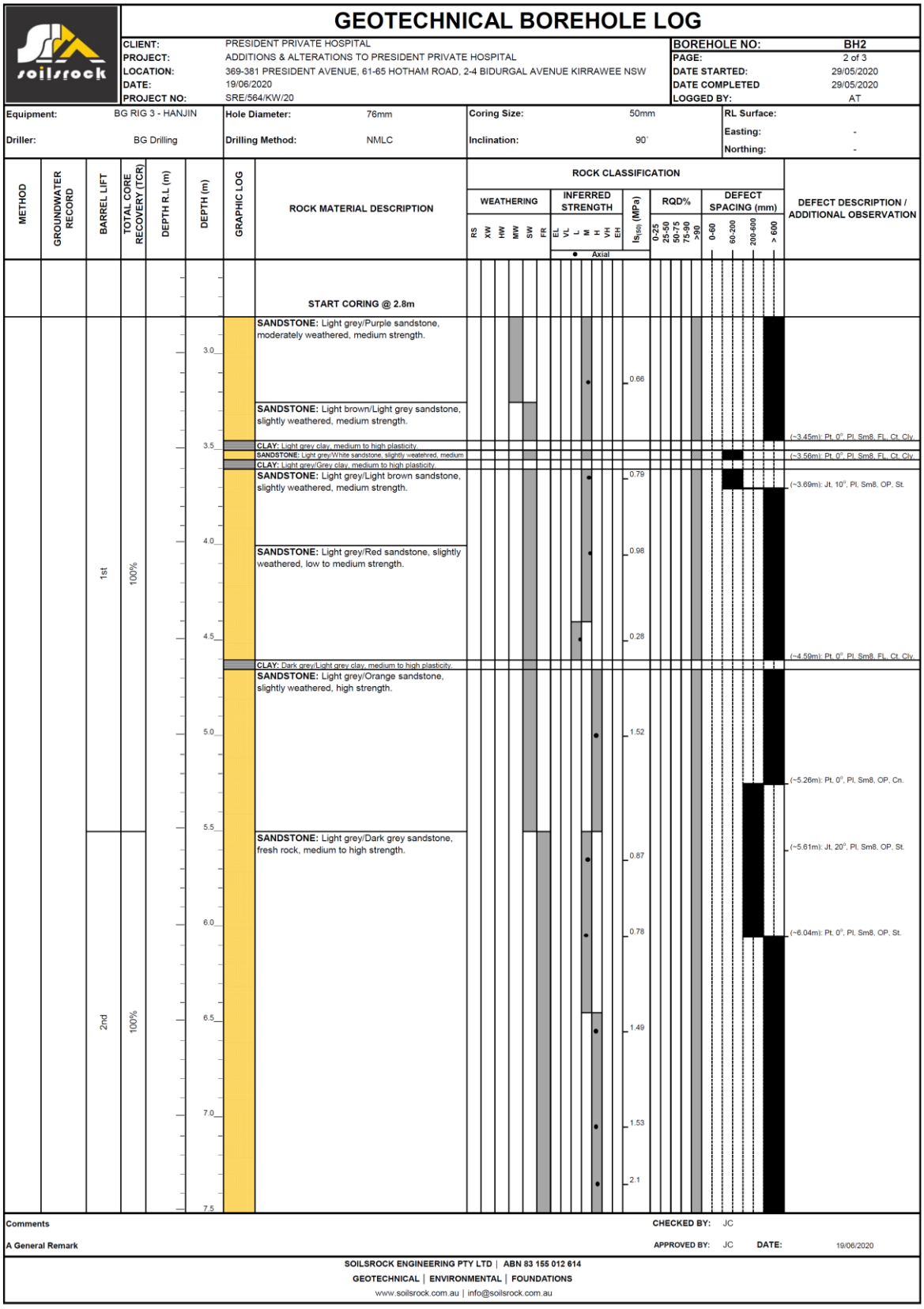
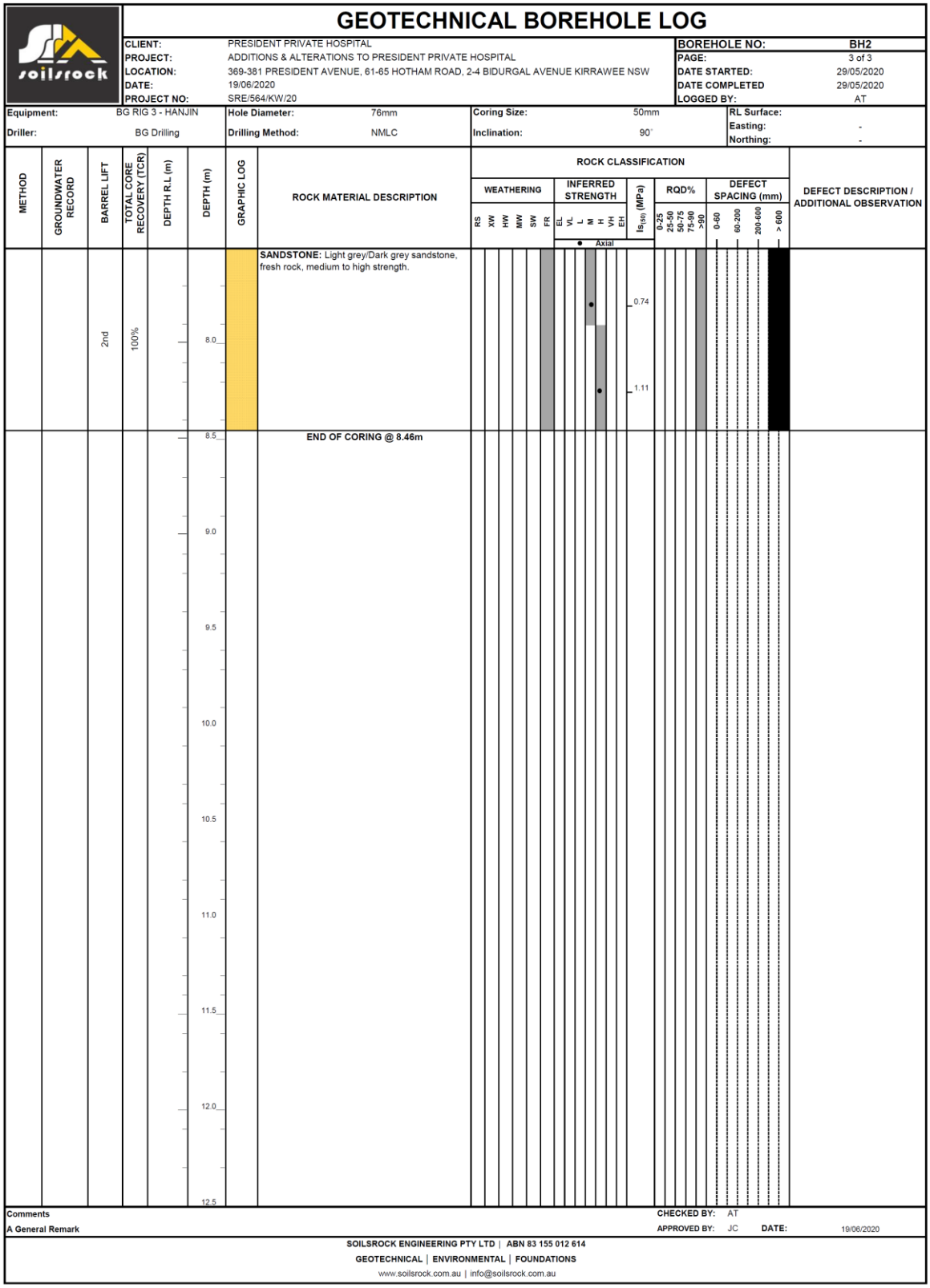


Figure 5.19 **Geotechnical Bore Log BH2, 2-3.**
Soilsrock Engineering Pty Ltd, 2020.



GEOTECHNICAL BOREHOLE LOG

CLIENT:	PRESIDENT PRIVATE HOSPITAL	BOREHOLE NO:	BH2
PROJECT:	ADDITIONS & ALTERATIONS TO PRESIDENT PRIVATE HOSPITAL	PAGE:	3 of 3
LOCATION:	369-381 PRESIDENT AVENUE, 61-65 HOTHAM ROAD, 2-4 BIDURGAL AVENUE KIRRAWEE NSW	DATE STARTED:	29/05/2020
DATE:	19/06/2020	DATE COMPLETED	29/05/2020
PROJECT NO:	SRE/564/KW/20	LOGGED BY:	AT

Equipment:	BG RIG 3 - HANJIN	Hole Diameter:	76mm	Coring Size:	50mm
Driller:	BG Drilling	Drilling Method:	NMLC	Inclination:	90°

RL Surface: -
Easting: -
Northing: -

METHOD	GROUNDWATER RECORD	BARREL LIFT	TOTAL CORE RECOVERY (TCR)	DEPTH R.L (m)	DEPTH (m)	GRAPHIC LOG	ROCK MATERIAL DESCRIPTION	ROCK CLASSIFICATION: WEATHERING (RS, XW, HW, MW, SW, FR)	INFERRED STRENGTH (EL, VL, L, M, H, VH, EH; Axial)	$Is_{(50)}$ (MPa)	RQD% (0-25, 25-50, 50-75, 75-90, >90)	DEFECT SPACING (mm) (0-60, 60-200, 200-600, > 600)	DEFECT DESCRIPTION / ADDITIONAL OBSERVATION
		2nd	100%		8.0		**SANDSTONE:** Light grey/Dark grey sandstone, fresh rock, medium to high strength.	FR	M	0.74 1.11	>90	> 600	
					8.5		**END OF CORING @ 8.46m**						
					9.0								
					9.5								
					10.0								
					10.5								
					11.0								
					11.5								
					12.0								
					12.5								

Comments
A General Remark

CHECKED BY: AT
APPROVED BY: JC DATE: 19/06/2020

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Figure 5.20 **Geotechnical Bore Log BH2, 3-3.**
Soilsrock Engineering Pty Ltd, 2020.

soilsrock
geotechnical engineering consultants

CLIENT:	PRESIDENT PRIVATE HOSPITAL	**TITLE:**	Rock Core Photograph
PROJECT:	ADDITIONS & ALTERATIONS TO PRESIDENT PRIVATE HOSPITAL	**BOREHOLE NO:**	BH2
ADDRESS:	369-381 PRESIDENT AVENUE, KIRRAWEE NSW 2232	**SCALE:**	NTS
PROJECT NO:	SRE/564/KW/20	**DATE RECORDED:**	29/05/2020

CORING STARTED AT 2.80m

CORING TERMINATED AT 8.46m

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Figure 5.21 Geotechnical Bore Log BH2 - Rock Core Photograph.
Soilsrock Engineering Pty Ltd, 2020.

5.11 DISTURBANCE AND ARCHAEOLOGICAL POTENTIAL

Background research and review of historical aerials indicate that past European land use led to extensive clearing of the land. The study site was previously a poultry farm with a drainage line running through the southwest corner (Figure 5.6) and poultry sheds located to the northern end of the study area (Figure 5.5).

There is only one area of deep excavation in the form of a basement near the west car park associated with the existing west wing, as well as a hydrotherapy pool at the western boundary of the study area. No other deep excavation is evident. The standing buildings predominately consist of a ground and first floor with associated services.

The President Private Hospital construction in the 70s, with land modification of moderate disturbance with significant filling events have occurred as well as ongoing and more recent construction of pathways and carparks and utility services (Figures 5.8-5.13).

The geological formation of the study area puts it within a shale lense of the Hawkesbury sandstone geology. The soil profile depth is considered shallow-moderate which suggests structural foundations and deep excavations would result in a disturbed profile and removal of topsoil and A horizon (known as the artefact bearing deposit). Geotechnical investigations indicate that natural soils are present within the study area between 1.0m-2.6m in depth.

A disturbance map outlining the level of disturbance from past land-use can be seen in Figure 5.22.

In light of this, and in the context of the information provided about the land use of the site and its proximity to major tributaries, the following has been predicted:

Moderate disturbance to sections of the landscape: Sub-surface Aboriginal objects with potential conservation value have a low–moderate probability of being present within the study area.

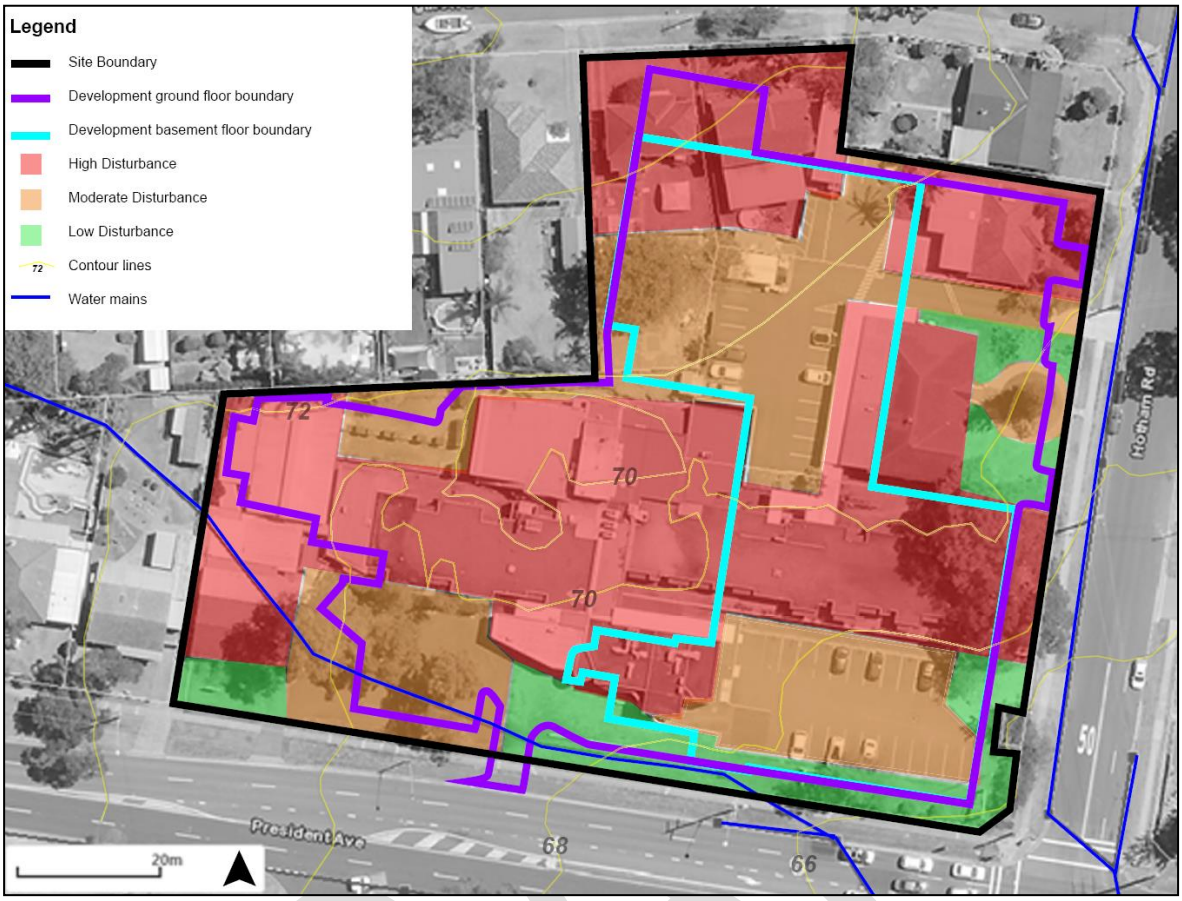

Figure 5.22 **Disturbance Map.**
Study area indicted in black outline. Area of high disturbance in red, moderate disturbance in orange and low disturbance in green. Purple outline indicates ground floor boundary. (AMAC Group 2020, Six Maps (accessed 10/04/20).

6.0 TEST EXCAVATION

Test excavation has been proposed but has yet to been undertaken.

6.1 AIMS

The purpose of subsurface test excavation is to identify the nature and extent of any intact archaeological deposit and/ or objects which may be situated within the study area and its significance.

It aims to collate additional information regarding any site characteristics which may enhance our understanding of the local and/or regional prehistory of the area. The results of the test excavation aid in the formalisation of appropriate management recommendations and conservation goals for the proposed development and any archaeological material recovered.

The methodology and recommendations presented in the following section of the report take into account the following:

- Legislation which protects Aboriginal cultural and archaeological objects and places in New South Wales;
- Research and assessment carried out by the author/s of this report and previous reports;
- Results of previous archaeological assessment and excavation in the vicinity of the study area;
- The impact of the proposed development on any Aboriginal archaeological material that may be present;

6.2 TEST EXCAVATION UNDER THE CODE OF PRACTICE

As detailed in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Part 6 National Parks and Wildlife Act 1974 (DECCW 2010). The purpose for test excavation

> *...is to collect information about the nature and extent of sub-surface Aboriginal objects, based on a sample derived from sub-surface investigations. Test excavations contribute to the understanding of site characteristics and local and regional prehistory and they can be used to inform conservation goals and harm mitigation measures for the proposed activity*

As the proposed test excavation is not being carried out in the following areas;

- in or within 50m of an area where burial sites are known or are likely to exist
- in or within 50m of a declared Aboriginal place
- in or within 50m of a rock shelter, shell midden or earth mound
- in areas known or suspected to be Aboriginal missions or previous Aboriginal reserves or institutes
- in areas known or suspected to be conflict or contact sites.

It is therefore excluded from the definition of harm and as such does not require an Aboriginal Heritage Impact Permit and can be completed under the Code of Practice (DECCW 2010).

As set out in the *Code of Practice for the Investigation of Archaeological Objects in NSW*:

> *The test excavation should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area (DECCW 2010)*

Any test excavation carried out under this requirement must cease when:

- suspected human remains are encountered;
- enough information has been recovered to adequately characterise the objects present, with regard to their nature and significance.

The *Code of Practice for the Investigation of Archaeological Objects in NSW* 'enough information' means that the sample of excavated material clearly and self-evidently demonstrates the deposit's nature and significance, and may include things like:

- locally or regionally high object density
- presence of rare or representative objects
- presence of archaeological features of locally or regionally significant deposits, stratified or not.

Decisions regarding the nature and significance of the site and choices about discontinuing the test excavation program are made by the excavation director in consultation with the registered Aboriginal stakeholders and DPIE if required.

Information is reviewed on a daily basis and the excavation director reserves the right to cease all excavation if he/she believes the nature and extent of the site is understood in accordance with the *Code of Practice for the Investigation of Archaeological Objects in NSW.*

6.3 TESTING METHODOLOGY

The following measures are to be taken to establish the nature and extent of any such material discovered during test excavations under the *Code of Practice* (DECCW 2010)

The proposed development does have the potential to disturb any Aboriginal archaeological deposits and/or objects which are/or may be present. Therefore, in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974* (DECCW 2010), it was recommended that a programme of test excavation be conducted before the development can proceed.

The first priority in test excavations, and recording Aboriginal objects during test excavations, must always be to avoid or minimise, as far as practicable, the risk of harm to the objects under investigation. This means due care must be taken when excavating and collecting objects.

In compliance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974*, (DECCW 2010) the following test excavation methodology has been proposed;

- Test excavation units are to be placed on a systematic grid appropriate to the scale of the area – either PAD or site – being investigated e.g. 10 m intervals, 20 m intervals, or other justifiable and regular spacing.
- Any test excavation point are to be separated by at least 5 m.

- Test excavations units are to be excavated using hand tools only.
- Test excavations are to be excavated in 50 cm x 50 cm units.
- Test excavations units may be combined and excavated as necessary to understand the site characteristics, however: the maximum continuous surface area of a combination of test excavation units at any single excavation point conducted in accordance with point (above) are to be no greater than $3m^2$. The maximum surface area of all test excavation units are to be no greater than 0.5% of the area – either PAD or site – being investigated.
- The first excavation unit is to be excavated and documented in 5 cm spits at each area – either PAD or site – being investigated. Based on the evidence of the first excavation unit, 10 cm spits or sediment profile/stratigraphic excavation (whichever is smaller) would then be implemented.
- Test excavation units are to be excavated to at least the base of the identified Aboriginal object-bearing units and to continue below this depth to confirm the soils below are culturally sterile.
- Photographic and scale-drawn records of the stratigraphy/soil profile, features and informative Aboriginal objects are to be made for each single excavation point.
- Test excavations units are to be backfilled as soon as practicable.
- Following test excavation, an Aboriginal Site Impact Recording form would be completed and submitted to the AHIMS Registrar as soon as practicable

6.3.1 Sieving

The excavated soil from each spit is to be placed in buckets of uniform size (9-10kg limit); all material excavated from the test excavation units are to be wet sieved using either a 2.5mm or 5 mm aperture wire-mesh sieve depending on the soil matrix. All archaeological material recovered from sieving is to be placed in a zip lock bag and labelled with the site number, date, trench and spit. All of the bags are then to be placed in a larger zip lock bag for processing.

6.3.2 Recording

A photographic record is to be kept of the progress of each test trench as well as photographic and scale-drawn records of the stratigraphy/soil profile and features will be made for each single excavation point.

Details pertaining to individual spits were recorded through the completion of site forms. The details on the form include site name, pit number, location and landform, area, spit number, spit depth, soil horizon, artefacts, stratigraphic profile as well as additional notes relating to the soil deposits encountered.

Any artefacts recovered are to be recorded under the parameters set out in the *Code of Practice for the investigation of Archaeological objects in NSW* and stored as outlined in the care and control agreement.

6.3.3 Care and Control Agreement

Any archaeological material recovered shall be subject to a care and control agreement established after the nature and significance of the archaeological or cultural material is understood as per Requirement 26 of *the Code of practice for the investigation of Archaeological objects in NSW*.

Any artefacts recovered shall be subject to an as yet unestablished care and control agreement. A secure temporary storage location in accordance with Requirement 26 of the *Code of practice for the investigation of Archaeological objects in NSW*, shall be established (AMAC Office) pending any agreement being reached as to the long-term management of the salvaged Aboriginal objects. The excavation director is responsible for ensuring that procedures are put in place so that Aboriginal objects are not harmed. The location of the secure temporary storage location will be submitted to AHIMS with a site update record card for the site(s) in question.

If long term management of any objects recovered has not been decided in a timely fashion, the objects will be lodged with the Australian Museum.

6.4 TEST PIT LOCATION

Test trench locations will be placed with reference to known or suspected locations of Aboriginal archaeological deposits, the location of development excavation and areas of known disturbance.

The order of excavation is to be established on site, as logistics and site access are factors that needed to be considered, as well as ensuring the investigation of all landforms are performed accordingly in order to maximise the results.

6.5 RESEARCH CONTEXT

The research questions are based on the information that has been gathered from previous excavations within the vicinity of the study area as well as making an attempt to place the site in a regional context and offer some explanation for the activities that may have taken place within the study area.

6.5.1 Response to research questions

- Are archaeological or cultural materials present in the Holocene Age deposits?
- If so, how do these artefact densities compare at a local and regional level?
- Are rare or representative archaeological or cultural materials present?
- Are locally or regionally significant archaeological or cultural material present in the Holocene age deposits?
- Is it possible to assign a temporal framework to any of the excavated material?
- What was the nature and extent of the activity that took place within the study area and how does the study area compare with other sites in the immediate vicinity and similar landforms to the study area?
- What raw materials were chosen for the manufacture of stone implements?
- Is the area suitable to be set aside for preservation of Aboriginal archaeological material?

7.0 SIGNIFICANCE ASSESSMENT

The processes of assessing significance for items of cultural heritage value are set out in *The Australian ICOMOS Charter for the Conservation of Places of Cultural Significance: the Burra Charter* (amended 1999) formulated in 1979 and based largely on the *Venice Charter of International Heritage* established in 1966. Archaeological sites may be significant according to four criteria, including scientific or archaeological significance, cultural significance to Aboriginal people, representative significance which is the degree to which a site is representative of archaeological and/or cultural type, and value as an educational resource. In New South Wales the nature of significance relates to the scientific, cultural, representative or educational criteria and sites are also assessed on whether they exhibit historic or cultural connections.

7.1 ARCHAEOLOGICAL SIGNIFICANCE

7.1.1 Educational Significance

The educational value of any given location will depend on the importance of any archaeological material located, on its rarity, quality and the contribution this material can have on any educational process (Australia ICOMOS, 1999 p. 11).

No specific educational significance can as yet be assigned to the study area. However, intact soils are likely below fill material with the potential for Aboriginal objects and features of archaeological and cultural heritage value to be present.

7.1.2 Scientific Significance

The scientific value of any given location will depend on the importance of the data that can be obtained from any archaeological material located, on its rarity, quality and on the degree to which this may contribute further substantial information to a scientific research process. (Australia ICOMOS, 1999 p.11).

No specific scientific significance can as yet be assigned to the study area. However, intact soils are likely below fill material with the potential for Aboriginal objects and features of archaeological and cultural heritage value to be present.

7.1.3 Representative Significance

The representative value of any given location will depend on rarity and quality of any archaeological material located and on the degree to which this representativeness may contribute further substantial information to an educational or scientific research process. (Australia ICOMOS, 1999 p.11).

No specific representative significance can as yet be assigned to the study area. However, intact soils are likely below fill material with the potential for Aboriginal objects and features of archaeological and cultural heritage value to be present.

8.0 PROPOSED ACTIVITY

This section outlines the proposed activity including the staging and timeframes along with the potential harm of the activity on Aboriginal objects and or declared Aboriginal places, assessing both the direct and indirect result of the activity on any cultural heritage values associated with the study area.

It also aims to outline the justification for harm with the intention of avoiding and minimising harm where possible.

8.1 DESCRIPTION OF PROPOSED ACTIVITY

The proposed redevelopment of the President Private Hospital (Figures 8.1–8.15) will incorporate the demolition of structures on properties 2-4 Bidurgal Ave as well as Hotham House at 65 Hotham road and the building south of the Wellness centre. The operating theatres and west wing as well as west carpark will remain with the rest of the grounds subject to redevelopment. The new design will include a basement carpark and redevelopment of the rehabilitation facilities as well as a new two storey north wing and east wing containing recreation areas and services.

The proposed basement carpark is confined to the eastern and northern end of the study area with access lifts and ramps connecting it to the ground and upper floors. Due to the slope on site the western end is higher than the eastern side fronting Hotham Road of approximately 3m.

As basements have been proposed this will have a high impact and harm on any potential objects and/or deposits of Aboriginal and/or archaeological significance that may be present within this area.

There is a low-moderate potential for Aboriginal artefacts and/or deposits of archaeological and cultural significance to be present.

No formal areas of exclusion have been identified in the current plans.

8.2 POTENTIAL HARM TO ABORIGINAL OBJECTS AND CULTURAL HERITAGE

The proposed development activity will disturb the ground surface and therefore may disturb Aboriginal objects and areas of cultural significance. The study area has been shown through research to have low-moderate archaeological potential. As such the proposed development has low - moderate potential to disturb/ harm Aboriginal archaeological deposits, objects and items or areas of cultural significance. A program of test excavation has been proposed in order to assess the nature and extend of any potential Aboriginal within the study area, in order to effectively assess the potential harm.

8.3 ASSESSING HARM

The proposed development activity will disturb the ground surface and therefore may disturb Aboriginal objects and areas of cultural significance. The study area has been shown through research to have low-moderate archaeological potential. As such the proposed development has low - moderate potential to disturb/ harm Aboriginal archaeological deposits, objects and items or areas of cultural significance. A program

of test excavation has been proposed in order to assess the nature and extend of any potential Aboriginal within the study area, in order to effectively assess the potential harm.

8.4 AVOIDING AND MINIMISING HARM TO ABORIGINAL OBJECTS

A program of test excavation has been proposed in order to assess the nature and extend of any potential Aboriginal within the study area, in order to effectively assess the potential harm.

8.5 JUSTIFICATION OF HARM TO ABORIGINAL OBJECTS

A program of test excavation has been proposed in order to assess the nature and extend of any potential Aboriginal within the study area, in order to effectively assess the potential harm.

8.6 ECOLOGICALLY SUSTAINABLE DEVELOPMENT AND INTERGENERATIONAL EQUITY

The ability of any development to be completely ecologically sustainable will be limited by definition. However, the proponents of this development appear to have made significant efforts to meet the needs of the current generation without compromising the ability of future generations to meet their own needs. This has been accomplished by proposing a plan on a manageable and affordable scale while still protecting and conserving the archaeological resources. This is being accomplished by a program of subsurface test excavation with the possibility of further salvage excavation if needed as well as extensive consultation with the relevant Aboriginal community.

Inter- generational equity refers to the equitable sharing of resources between current and future generations. The planet's current generation should ensure that future generations have the same opportunities and resources available. This idea is being accomplished by designing a building with as little disturbance to the ground surface as possible and as such any archaeological or cultural material that may be present in these areas either identified of unidentified will be left intact and persevered for future generations.

2 A 001 Massing - Existing

1 A 001 Massing - Proposed

3 A 001 Location Map
1 : 500

INPATIENT ACCOMODATION

Levels	Existing	Proposed: General	Proposed: Mental Health Unit (IPU)
Ground Floor		30	
First Floor		49	36
Second Floor		29	36
Total beds	47	108	72
Combined total	**47**	**180**	

EXISTING

Existing: Street address	Site m²	Floor m²	Zone
369-381 President Ave. Kirrawee NSW 2232 DP# 841502, Lot 10	5904.47	2061.61	SP1
63-65 Hotham Road Kirrawee NSW 2232 DP# 26995, Lot 24A	1615.34	321.41	SP1
61 Hotham Road Gymea NSW 2227 DP# 26995, Lot 23	644.45	134.71	SP1
2-4 Bidurgal Ave Kirrawee NSW 2232 DP# 29493, Lot 53	1355.60	213.92	R2
Total m²	9519.86	2731.65	

PROPOSED

Proposed levels	Site m²	Floor m²
Basement		21.20
Ground Floor		4132.84
First Floor		3958.55
Second Floor		3336.34
Total m²	9499.27	11448.93

PROPOSED PARKING

Proposed levels	Car Spaces
Basement 3&4	56
Basement 1&2	97
Ground Floor	13
First Floor	17
Total Parking	183

SSDA Architectural Drawings

Dwg No	Sheet Name	Current Revision
A 001	Title Sheet	
A 005	Perspective President Ave	
A 006	Perspective Hotham Rd	
A 007	Perspective- Wellness Centre	
A 008	Site Analysis	
A 009	Site Analysis Diagrams 1	
A 010	Site Analysis Diagrams 2	
A 011	Transport Connections	
A 012	Concrete Foot Paths	
A 013	Site Wayfinding	
A 014	Services Layout for Ground and First Floor	
A 015	Unnamed	
A 016	Construction Phasing	
A 017	Shadow Analysis-Winter Solstice 9 AM	
A 018	Shadow Analysis-Winter Solstice 12 PM	
A 019	Shadow Analysis-Winter Solstice 3PM	
A 020	Unnamed	
A 024	Existing Site Plan	
A 025	Proposed Site Context Plan	
A 026	Site Set out Plan	
A 100	Existing Hospital Floor Plan	
A 102	Basement Plan LVL 3 & 4	
A 103	Basement Plan LVL 1 & 2	
A 104	Ground Floor General Arrangement Plan	
A 105	First Floor General Arrangement Plan	
A 106	Unnamed	
A 107	Second Floor General Arrangement Plan	
A 108	Roof Plan General Arrangement Plan	
A 123	Ground floor fire strategy plan	
A 124	First floor fire strategy plan	
A 125	Second floor fire strategy plan	
A 300	South & East Elevations	
A 302	North & West Elevations	
A 401	East/West Sections	
A 402	North/South Sections	

Civil Engineering Drawings

Sheet Number	Sheet Name	Current Revision

Landscape Drawings

Sheet Number	Sheet Name	Current Revision
L	Unnamed	
L101	Landscape Concept Plan	
L 101	Unnamed	
L 102	Unnamed	

Draft SSDA

Consultant Team:

Traffic Engineer:	ML Traffic Engineers	- Ph. 02 8004 2434
BCA Consultant:	Blackett Maguire and Goldsmith	- Ph. 02 9211 7777
Electrical Consultant:	Erbas and Associates	- Ph. 02 9437 1022
Hydraulic Consultant:	Erbas and Associates	- Ph. 02 9437 1022
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Landscape Architect:	Habit 8	- Ph. 04 2520 6047
Surveyor:	Dunlop Thorpe & Co.	- Ph. 02 9283 6677

Amendment Issue:

No.	Description	Date
44	Final for Sears Request	24/04/2019
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53	For client approval	20/04/2020
54	For SSDA draft for review	20/04/2020

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Imagescape design Studios (ABN: 24 137 940 017) is an architect corporation registered under the provisions of the NSW Architects Act 2003. Nominated architects are Christine Kelly registration no. 6000 & Stephen Phillips registration no. 4608

Macquarie HEALTH CORPORATION

Redevelopment of President Private Hospital
Macquarie Health Corporation
369-381 President Ave, 61-65 Hotham Rd, 2-4 Bidurgal Ave Kirrawee NSW

NORTH POINT

Title Sheet

Project numbe	MacHealth-06	A 001	
Date	20/08/2019		
Drawn by	NA, AZ	Scale @ A1	Plot stamp: 16/06/2020 7:13:29 PM
Checked by	SP	1 : 500	Version: 54

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Figure 8.1 **Title Sheet – Location Map, Massing View Existing, Massing View Proposed.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 001.

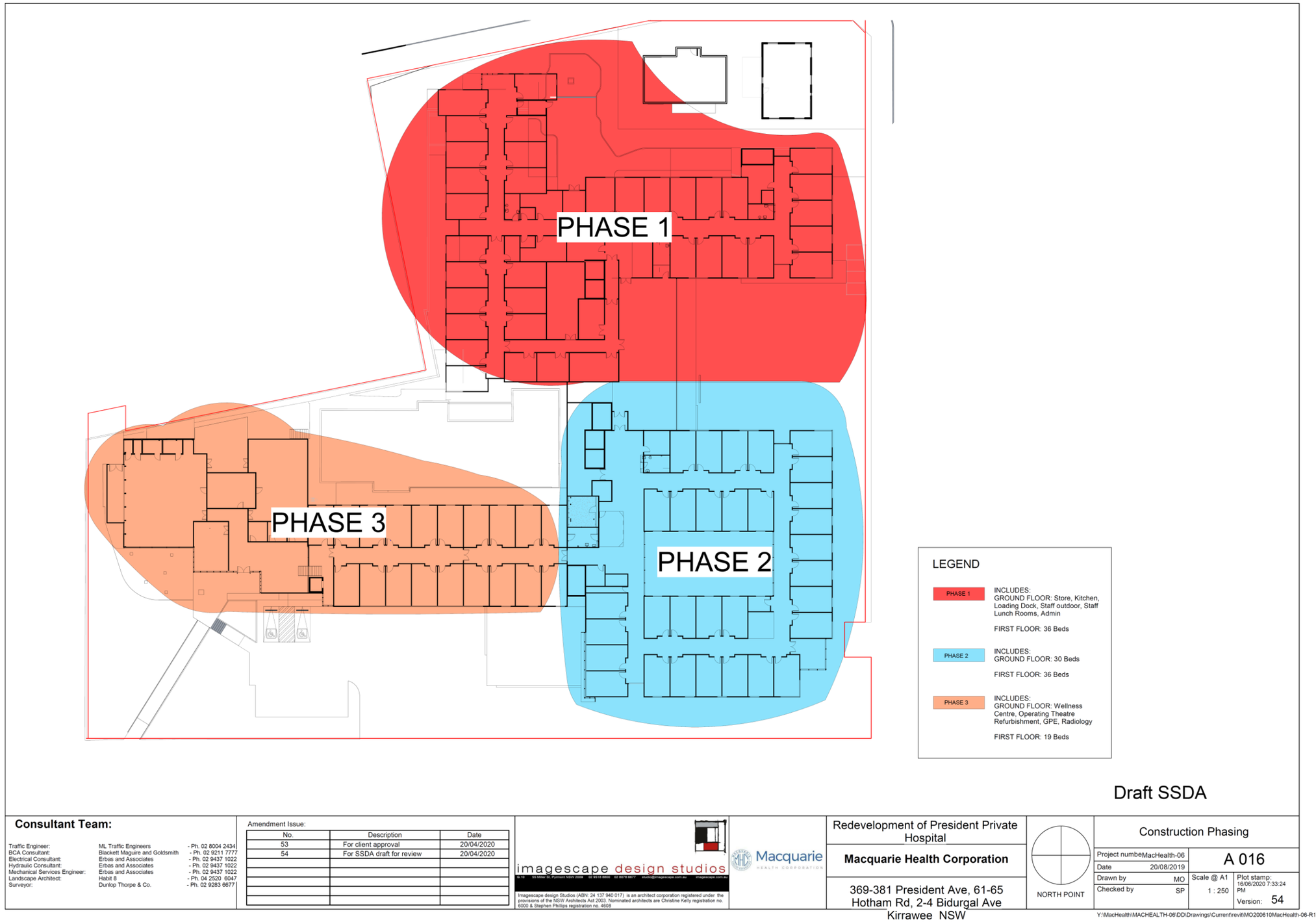


Figure 8.2 **Construction Phasing.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 016.

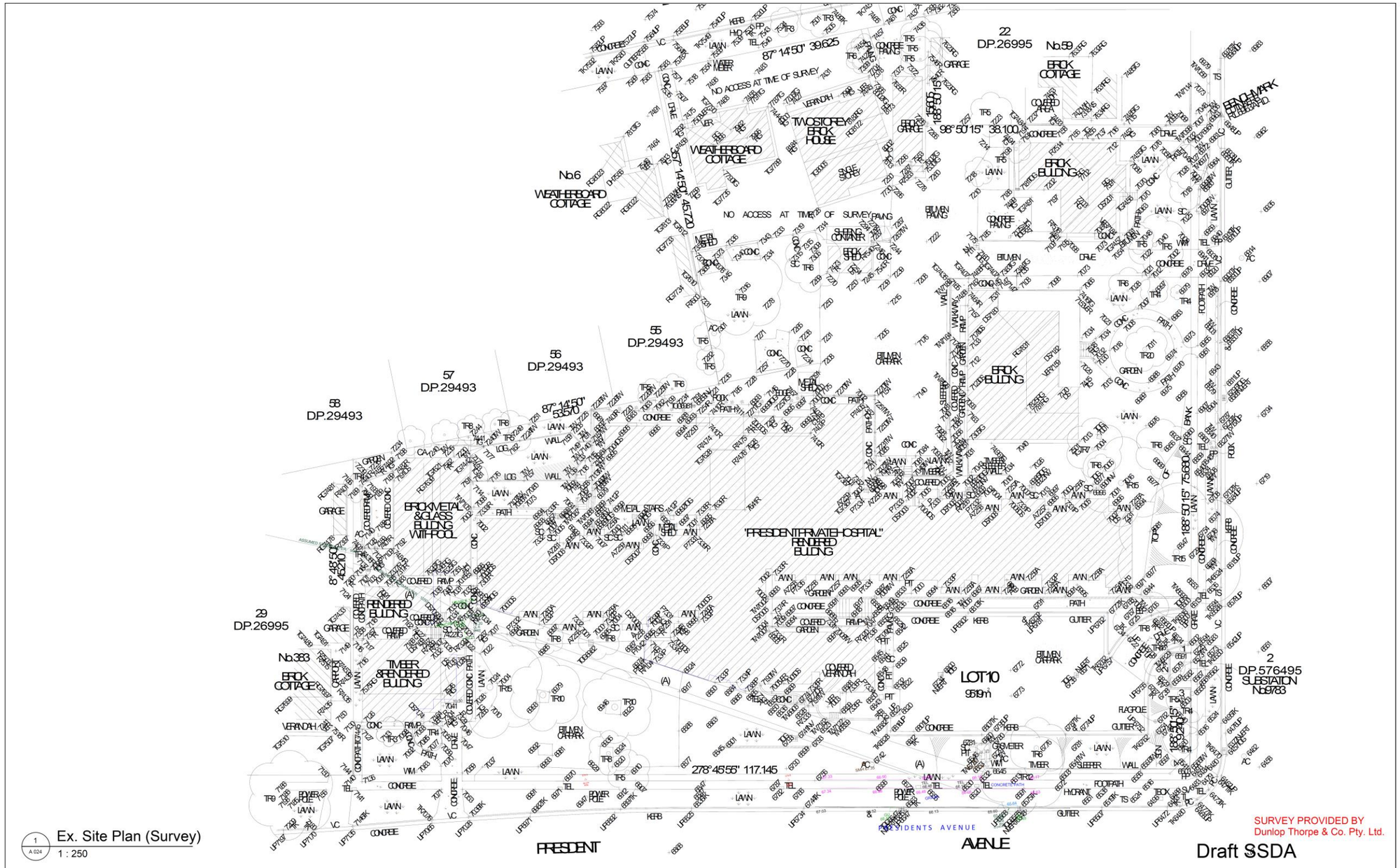


Figure 8.3 **Existing Site Plan.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 024.

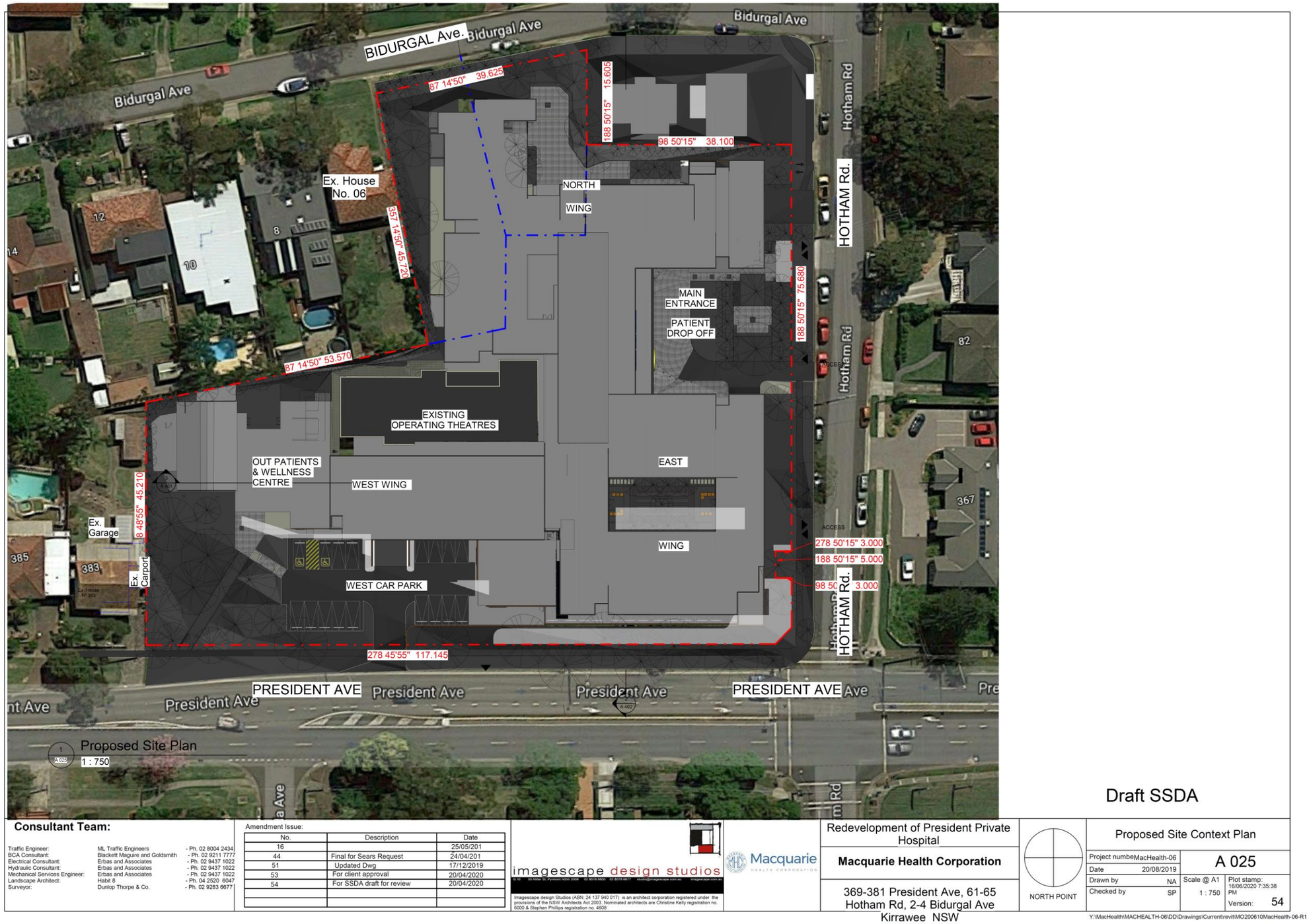
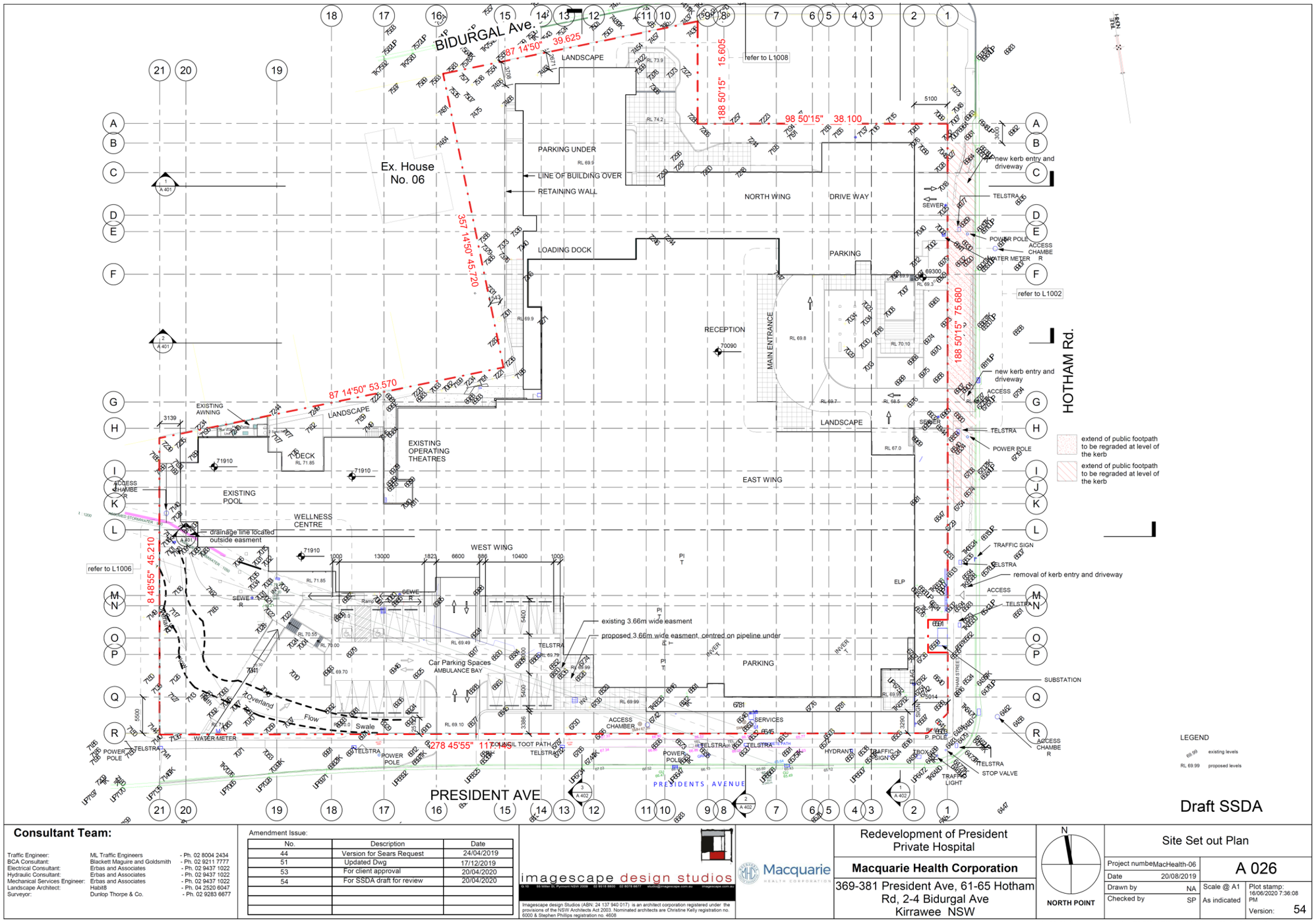


Figure 8.4 **Proposed Site Context Plan.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 025.



Consultant Team:		
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Amendment Issue:

No.	Description	Date
44	Version for Sears Request	24/04/2019
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53	For client approval	20/04/2020
54	For SSDA draft for review	20/04/2020

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Macquarie HEALTH CORPORATION

Redevelopment of President Private Hospital

Macquarie Health Corporation

369-381 President Ave, 61-65 Hotham Rd, 2-4 Bidurgal Ave Kirrawee NSW

NORTH POINT

Site Set out Plan

Project numbe	MacHealth-06	A 026	
Date	20/08/2019		
Drawn by	NA	Scale @ A1	Plot stamp: 16/06/2020 7:36:08 PM
Checked by	SP	As indicated	Version: 54

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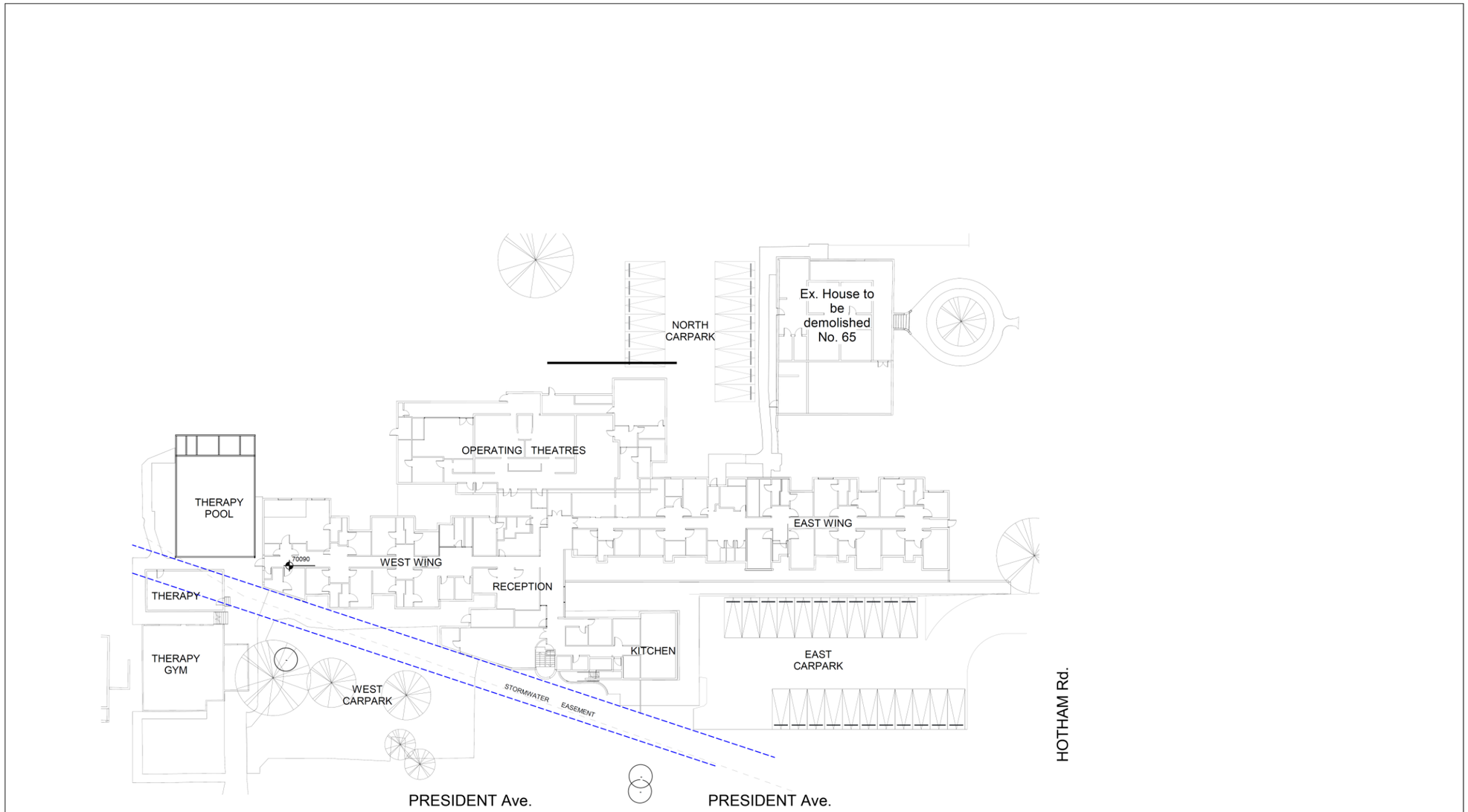
Figure 8.5 **Site Set Out Plan.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 026.



Consultant Team:

Traffic Engineer:	ML Traffic Engineers	- Ph. 02 8004 2434
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Electrical Consultant:	Erbas and Associates	- Ph. 02 9437 1022
Hydraulic Consultant:	Erbas and Associates	- Ph. 02 9437 1022
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Amendment Issue:

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12		11/04/2018
13		10/05/2018
14		18/05/2018
44	Final for Sears Request	24/04/2019
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53	For client approval	20/04/2020
54	For SSDA draft for review	20/04/2020

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Macquarie HEALTH CORPORATION

Redevelopment of President Private Hospital

Macquarie Health Corporation

369-381 President Ave, 61-65 Hotham Rd, 2-4 Bidurgal Ave
Kirrawee NSW

NORTH POINT

Existing Hospital Floor Plan

Project number	MacHealth-06	A 100	
Date	20/08/2019		
Drawn by	NA	Scale @ A1	Plot stamp: 16/06/2020 7:36:39 PM
Checked by	SP	1 : 250	Version: 54

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Figure 8.6 **Existing Ground Floor Plan.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 100.

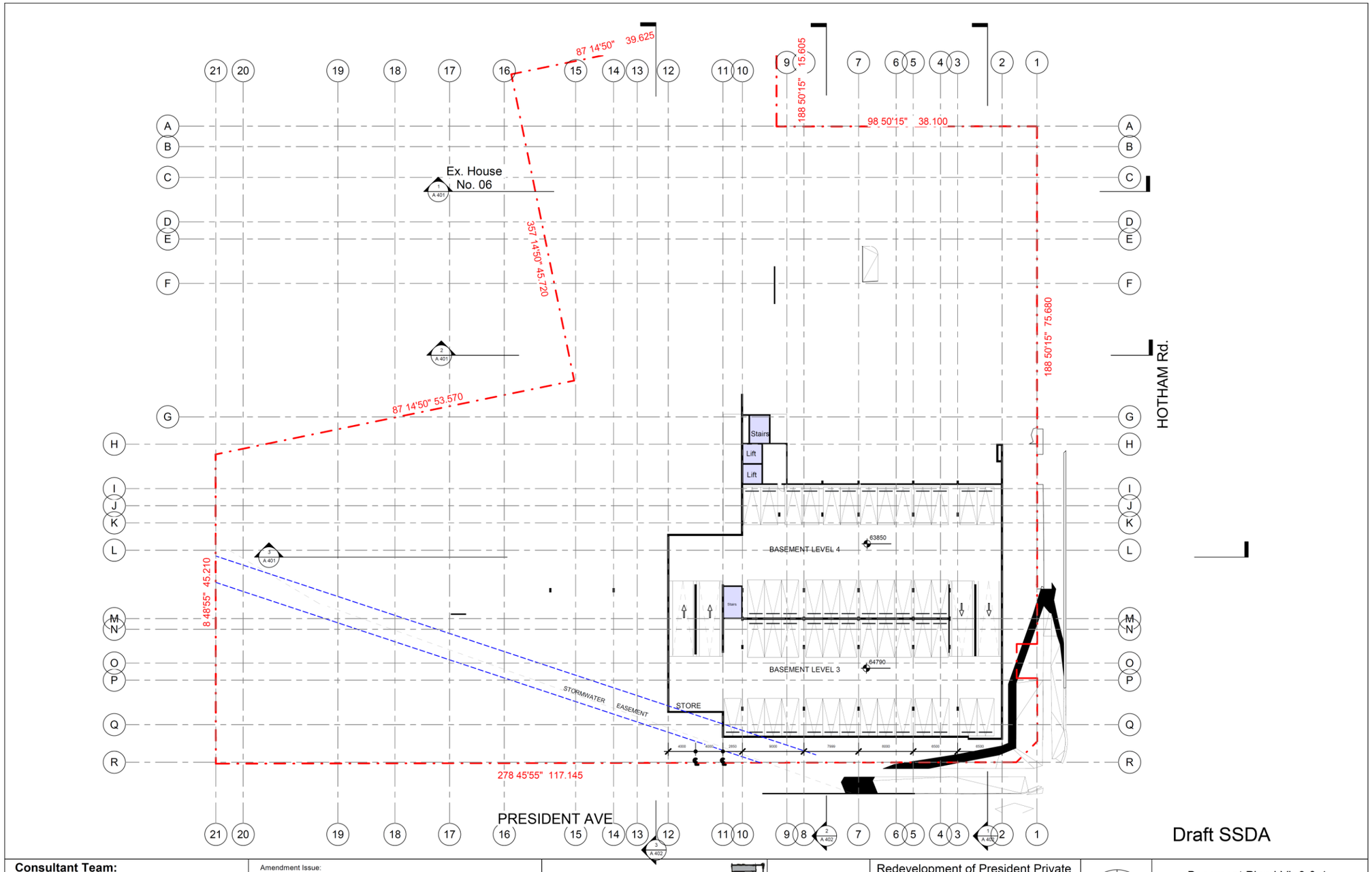
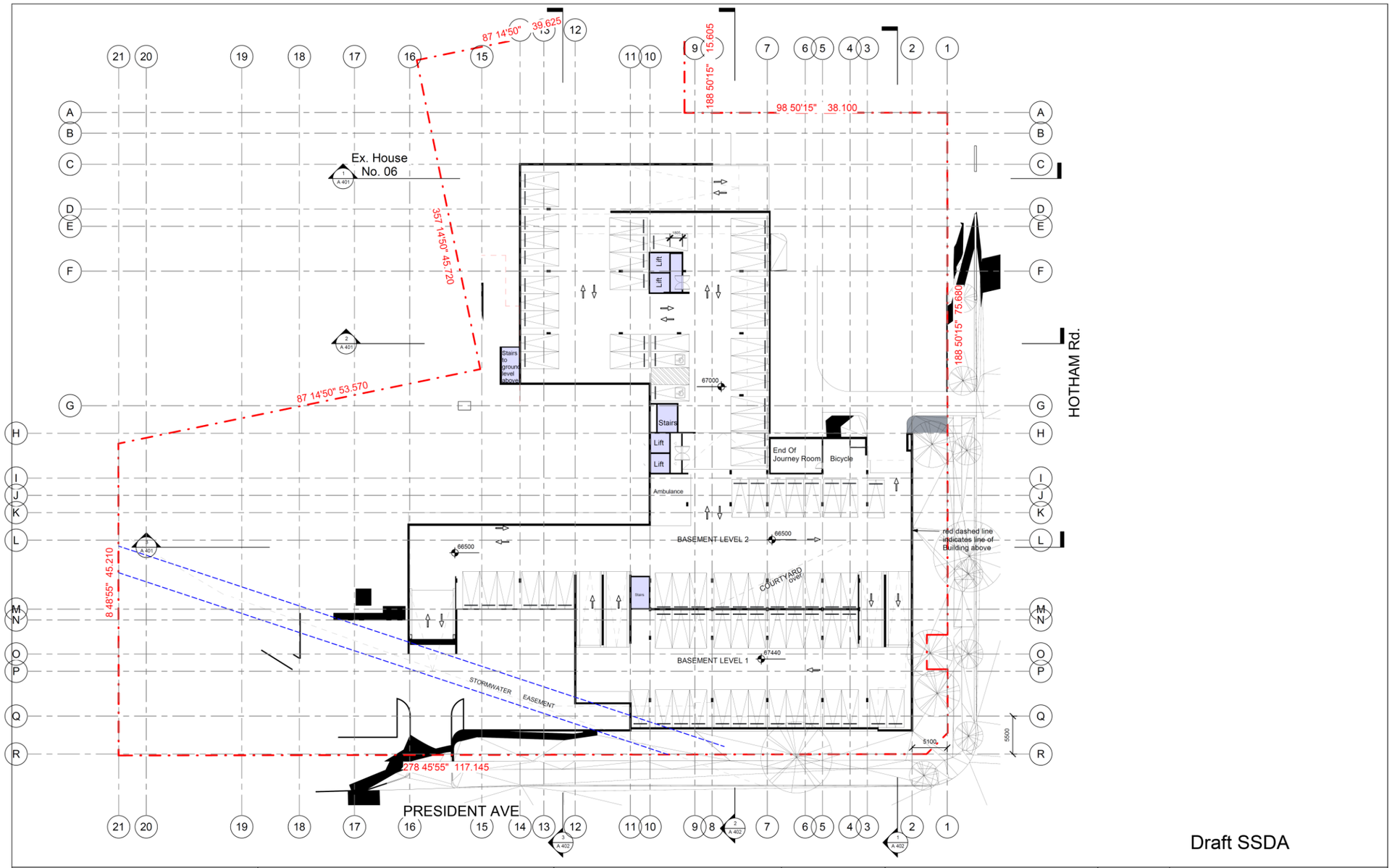


Figure 8.7 **Basement Plan LVL 3 & 4.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 102.



Consultant Team:

Traffic Engineer:	ML Traffic Engineers	- Ph. 02 8004 2434
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Amendment Issue:

No.	Description	Date
51	Updated Dwg	17/12/2019
53	For client approval	20/04/2020
54	For SSDA draft for review	20/04/2020

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Macquarie HEALTH CORPORATION

Redevelopment of President Private Hospital

Macquarie Health Corporation

369-381 President Ave, 61-65 Hotham Rd, 2-4 Bidurgal Ave Kirrawee NSW

NORTH POINT

Basement Plan LVL 1 & 2

Project number	MacHealth-06	A 103	
Date	20/08/2019		
Drawn by	Author	Scale @ A1	Plot stamp: 16/06/2020 7:37:10 PM
Checked by	Checker	1 : 250	Version: 54

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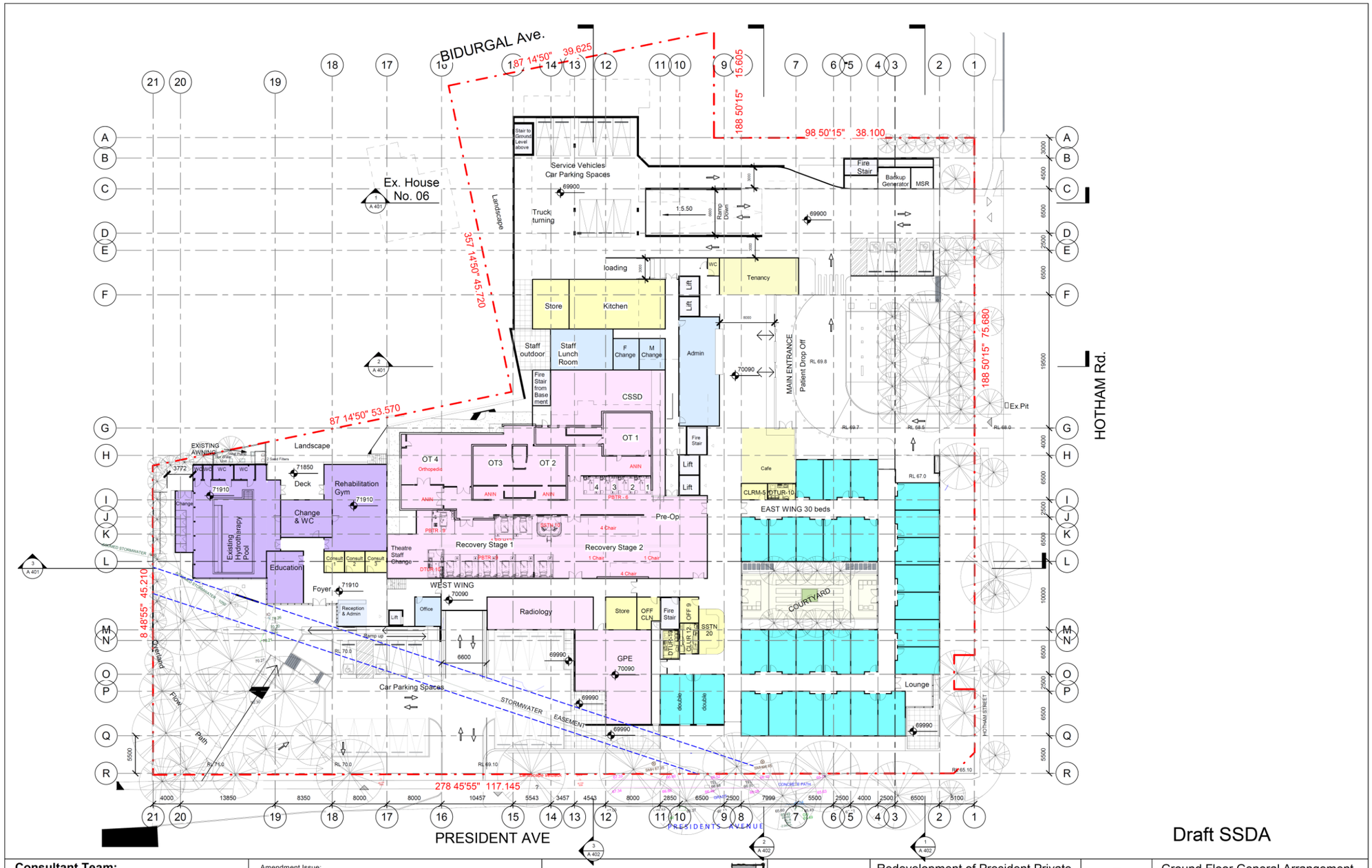
Figure 8.8 **Basement Plan LVL 1 & 2.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 103.



Consultant Team:

Traffic Engineer:	ML Traffic Engineers	- Ph. 02 8004 2434
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Electrical Consultant:	Erbas and Associates	- Ph. 02 9437 1022
Hydraulic Consultant:	Erbas and Associates	- Ph. 02 9437 1022
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Amendment Issue:

No.	Description	Date
44	Final for Sears Request	24/04/2019
45	Add Cafe Area	29/04/2019
47	Additional alterations	20/08/2019
51	Updated Dwg	17/12/2019
53	For client approval	20/04/2020
54	For SSDA draft for review	20/04/2020

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Macquarie HEALTH CORPORATION

Redevelopment of President Private Hospital

Macquarie Health Corporation

369-381 President Ave, 61-65 Hotham Rd, 2-4 Bidurgal Ave Kirrawee NSW

NORTH POINT

Ground Floor General Arrangement Plan

Project number	MacHealth-06	A 104	
Date	20/08/2019		
Drawn by	NA	Scale @ A1	Plot stamp: 18/08/2020 7:37:40 PM
Checked by	SP	1 : 250	Version: 54

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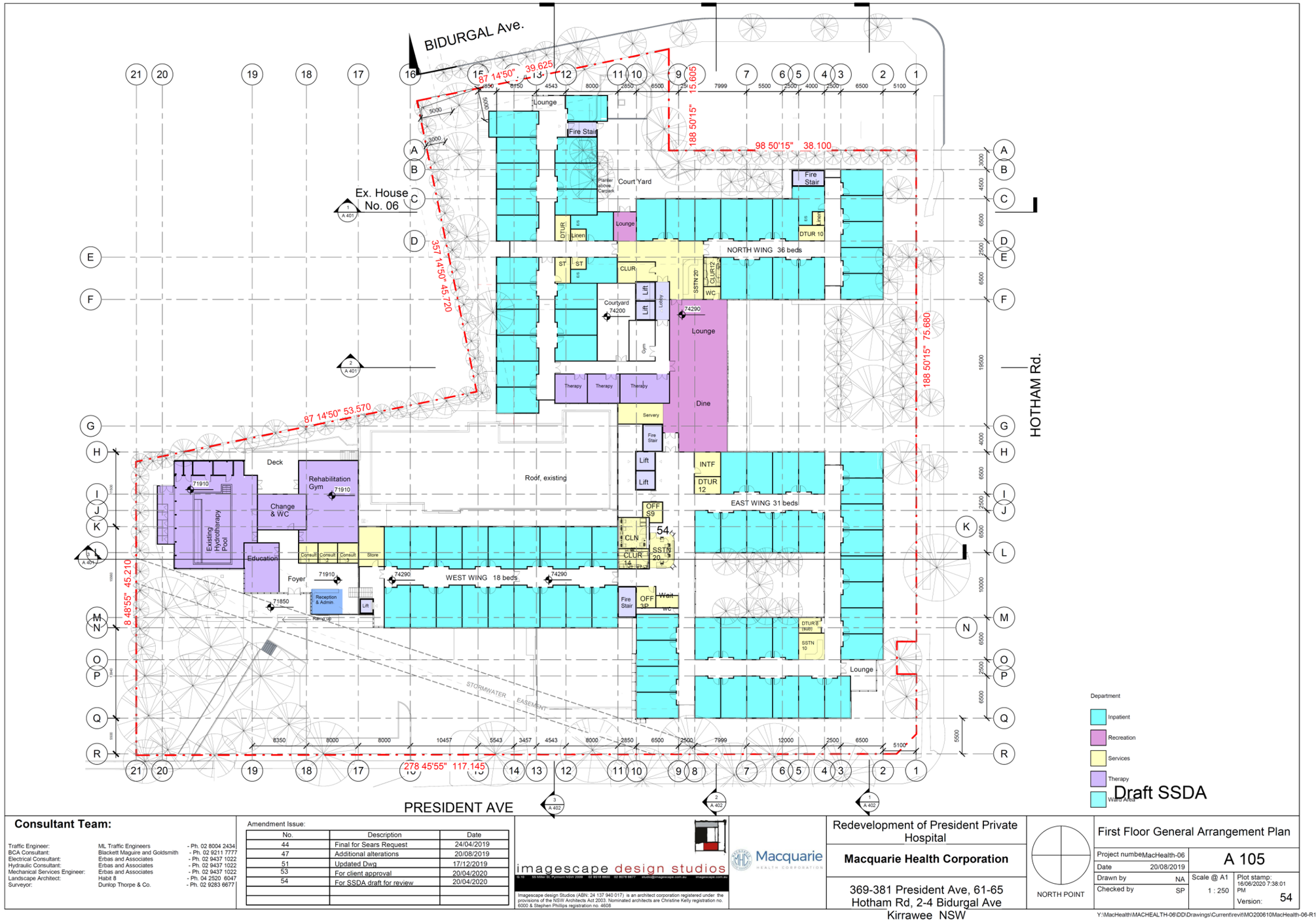
Figure 8.9 **Ground Floor General Arrangement Plan.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 104.



Consultant Team:

Traffic Engineer:	ML Traffic Engineers	- Ph. 02 8004 2434
BCA Consultant:	Blackett Maguire and Goldsmith	- Ph. 02 9211 7777
Electrical Consultant:	Erbas and Associates	- Ph. 02 9437 1022
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Mechanical Services Engineer:	Erbas and Associates	- Ph. 02 9437 1022
Landscape Architect:	Habit 8	- Ph. 04 2520 6047
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Amendment Issue:

No.	Description	Date
44	Final for Sears Request	24/04/2019
47	Additional alterations	20/08/2019
51	Updated Dwg	17/12/2019
53	For client approval	20/04/2020
54	For SSDA draft for review	20/04/2020

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Macquarie HEALTH CORPORATION

Redevelopment of President Private Hospital

Macquarie Health Corporation

369-381 President Ave, 61-65 Hotham Rd, 2-4 Bidurgal Ave Kirrawee NSW

NORTH POINT

First Floor General Arrangement Plan

Project number	MacHealth-06	A 105	
Date	20/08/2019		
Drawn by	NA	Scale @ A1	Plot stamp: 16/06/2020 7:38:01 PM
Checked by	SP	1 : 250	Version: 54

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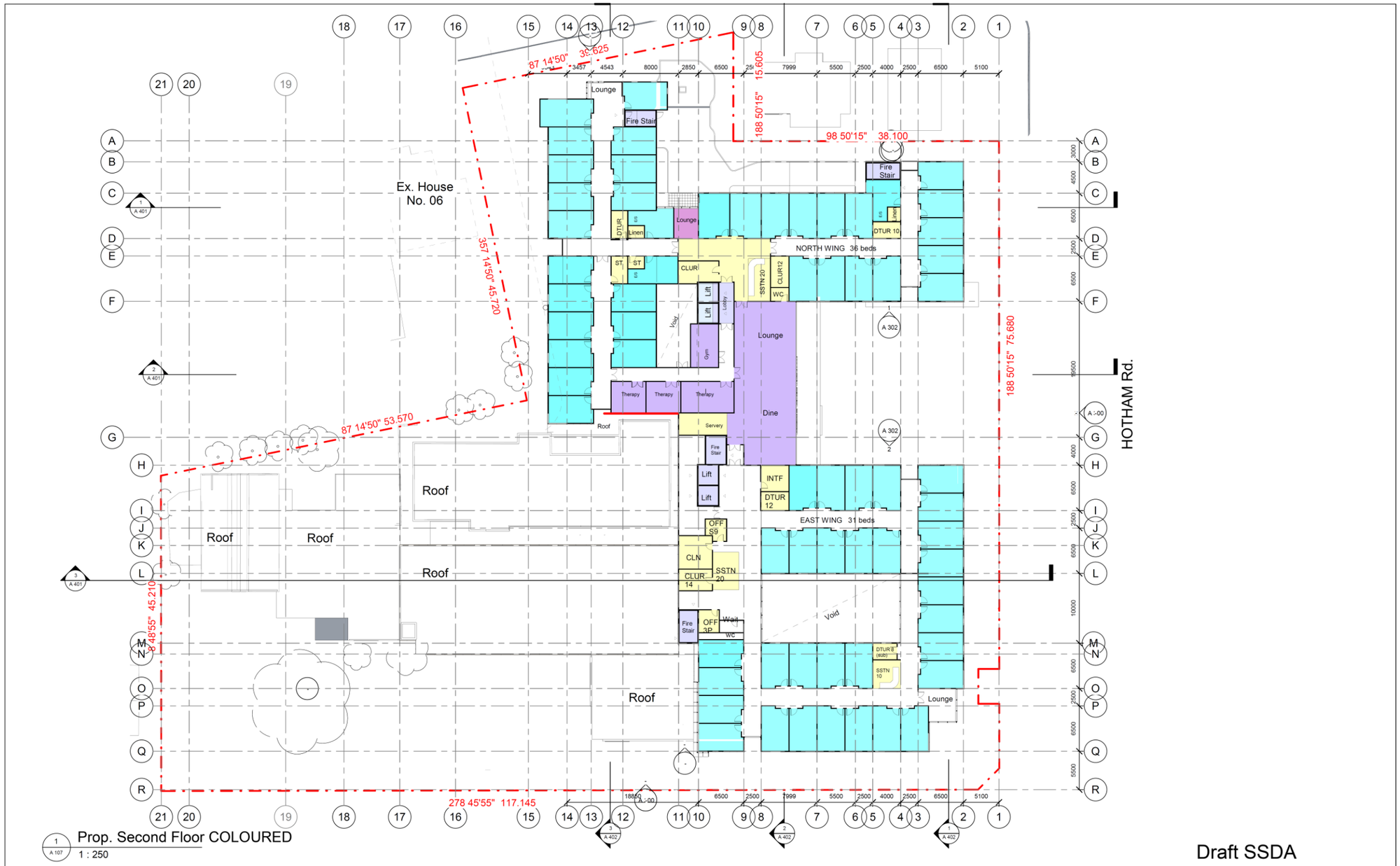
Figure 8.10 **First Floor General Arrangement Plan.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 105.



Consultant Team:

Traffic Engineer:	ML Traffic Engineers	- Ph. 02 8004 2434
BCA Consultant:	Blackett Maguire and Goldsmith	- Ph. 02 9211 7777
Electrical Consultant:	Erbas and Associates	- Ph. 02 9437 1022
Hydraulic Consultant:	Erbas and Associates	- Ph. 02 9437 1022
Mechanical Services Engineer:	Erbas and Associates	- Ph. 02 9437 1022
Landscape Architect:	Habit 8	- Ph. 04 2520 6047
Surveyor:	Dunlop Thorpe & Co.	- Ph. 02 9283 6677

Amendment Issue:

No.	Description	Date
44	Final for Sears Request	24/04/2019
53	For client approval	20/04/2020
54	For SSDA draft for review	20/04/2020

54

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Macquarie HEALTH CORPORATION

Redevelopment of President Private Hospital

Macquarie Health Corporation

369-381 President Ave, 61-65 Hotham Rd, 2-4 Bidurgal Ave Kirrawee NSW

NORTH POINT

Second Floor General Arragement Plan

Project number	MacHealth-06	A 107	
Date	20/08/2019		
Drawn by	NA	Scale @ A1	Plot stamp: 16/06/2020 7:38:26 PM
Checked by	SP	1 : 250	Version: 54

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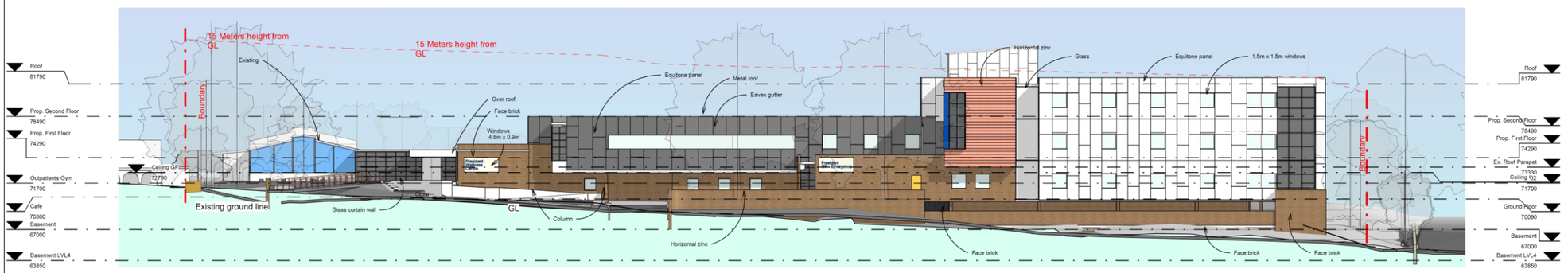
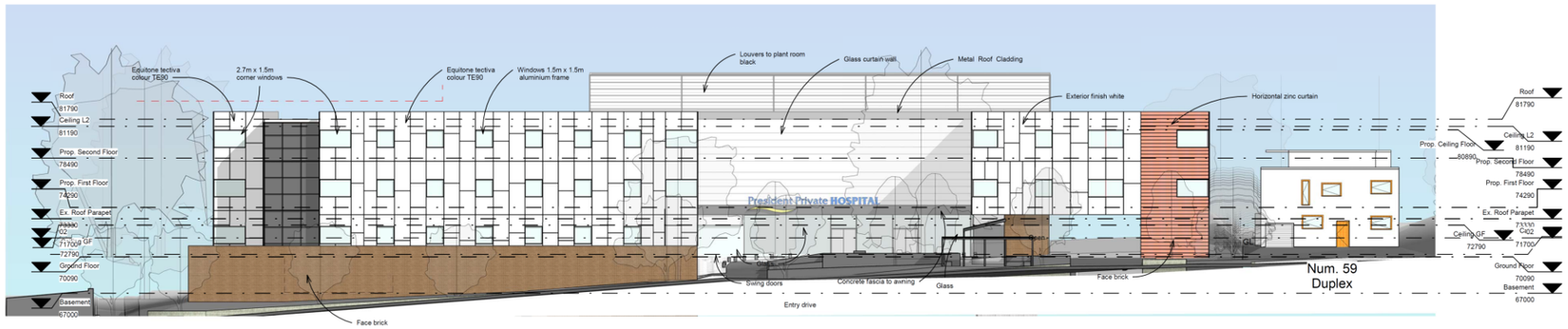
Figure 8.11 **Second Floor General Arrangement Plan.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 107.



1 / A 300 Stage 5 - SOUTH Elevation
1 : 200



2 / A 300 Stage 5 - EAST Elevation
1 : 200

Draft SSDA

Consultant Team:

Traffic Engineer:	ML Traffic Engineers	- Ph. 02 8004 2434
BCA Consultant:	Blackett Maguire and Goldsmith	- Ph. 02 9211 7777
Electrical Consultant:	Erbas and Associates	- Ph. 02 9437 1022
Hydraulic Consultant:	Erbas and Associates	- Ph. 02 9437 1022
Mechanical Services Engineer:	Erbas and Associates	- Ph. 02 9437 1022
Landscape Architect:	Habit 8	- Ph. 04 2520 6047
Surveyor:	Dunlop Thorpe & Co.	- Ph. 02 9283 6677

Amendment Issue:

No.	Description	Date
44	Final for Sears Request	24/04/2019
51	Updated Dwg	17/12/2019
53	For client approval	20/04/2020
54	For SSDA draft for review	20/04/2020

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Macquarie HEALTH CORPORATION

Redevelopment of President Private Hospital
Macquarie Health Corporation
369-381 President Ave, 61-65 Hotham Rd, 2-4 Bidurgal Ave
Kirrawee NSW

NORTH POINT

South & East Elevations

Project numbe	MacHealth-06	A 300	
Date	20/08/2019		
Drawn by	NA	Scale @ A1	Plot stamp: 16/06/2020 7:42:02 PM
Checked by	SP	1 : 200	Version: 54

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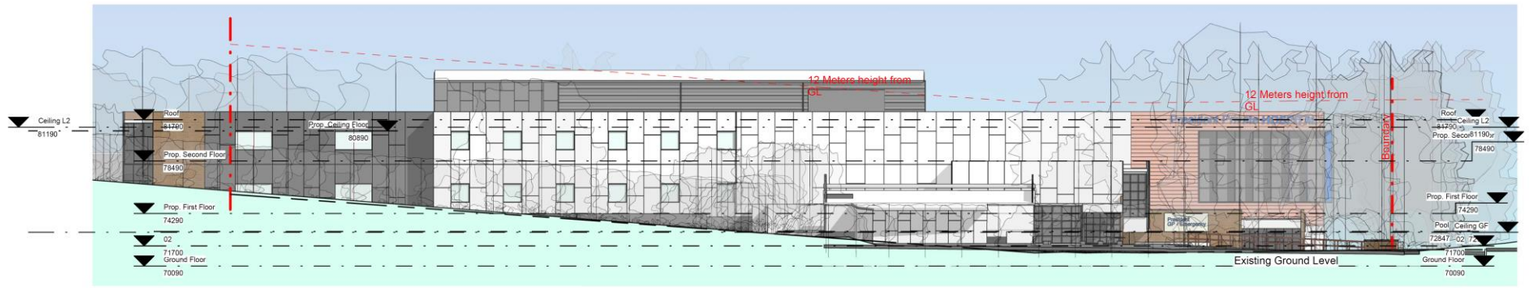
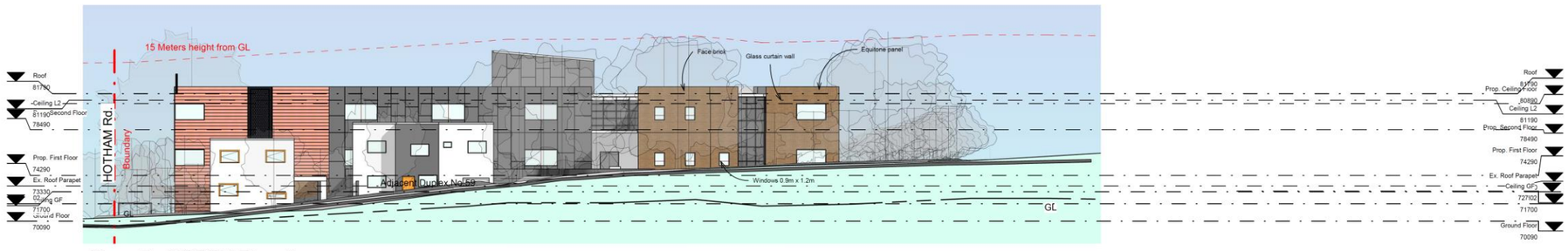
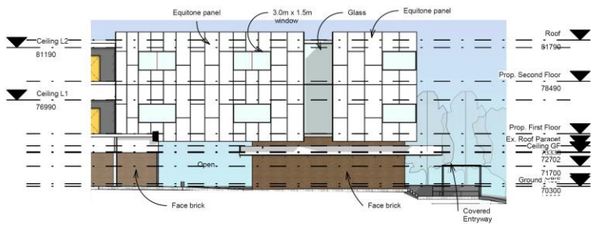
Figure 8.12 South & East Elevations.
Imagescape Design Studios (Jun. 2020), Drawing No. A 300.



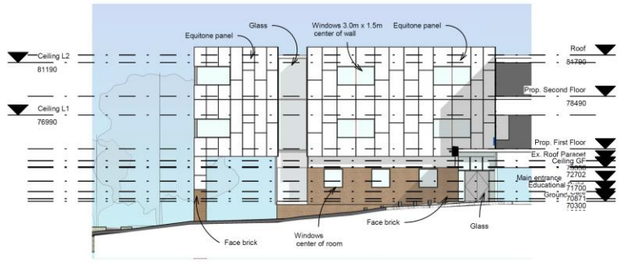
4 / A 302 Stage 5 - WEST Elevation
1 : 200



3 / A 302 Stage 5 - NORTH Elevation - Bidurgal St Frontage
1 : 200



1 / A 302 Entry looking North
1 : 200



2 / A 302 Entry looking South
1 : 200

Finishes Legend

Face Brick

Equitone Facade Panel

Bronze Horizontal Panel

Draft SSDA

Consultant Team:

Traffic Engineer:	ML Traffic Engineers	- Ph. 02 8004 2434
BCA Consultant:	Blackett Maguire and Goldsmith	- Ph. 02 9211 7777
Electrical Consultant:	Erbas and Associates	- Ph. 02 9437 1022
Hydraulic Consultant:	Erbas and Associates	- Ph. 02 9437 1022
Mechanical Services Engineer:	Erbas and Associates	- Ph. 02 9437 1022
Landscape Architect:	Habit 8	- Ph. 04 2520 6047
Surveyor:	Dunlop Thorpe & Co.	- Ph. 02 9283 6677

Amendment Issue:

No.	Description	Date
53	For client approval	20/04/2020
54	For SSDA draft for review	20/04/2020

imagescape design studios

Imagescape design Studios (ABN: 24 137 940 017) is an architect corporation registered under the provisions of the NSW Architects Act 2003. Nominated architects are Christine Kelly registration no. 6000 & Stephen Phillips registration no. 4608

Macquarie HEALTH CORPORATION

Redevelopment of President Private Hospital

Macquarie Health Corporation

369-381 President Ave, 61-65 Hotham Rd, 2-4 Bidurgal Ave Kirrawee NSW

NORTH POINT

North & West Elevations

Project number	MacHealth-06	A 302	
Date	20/08/2019		
Drawn by	NA	Scale @ A1	Plot stamp: 16/06/2020 7:45:19 PM
Checked by	SP	1 : 200	Version: 54

Y:\MacHealth\MACHEALTH-06\DD\Drawings\Current\revit\MO200610MacHealth-06-R18.rvt

Figure 8.13 **North & West Elevations.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 302.

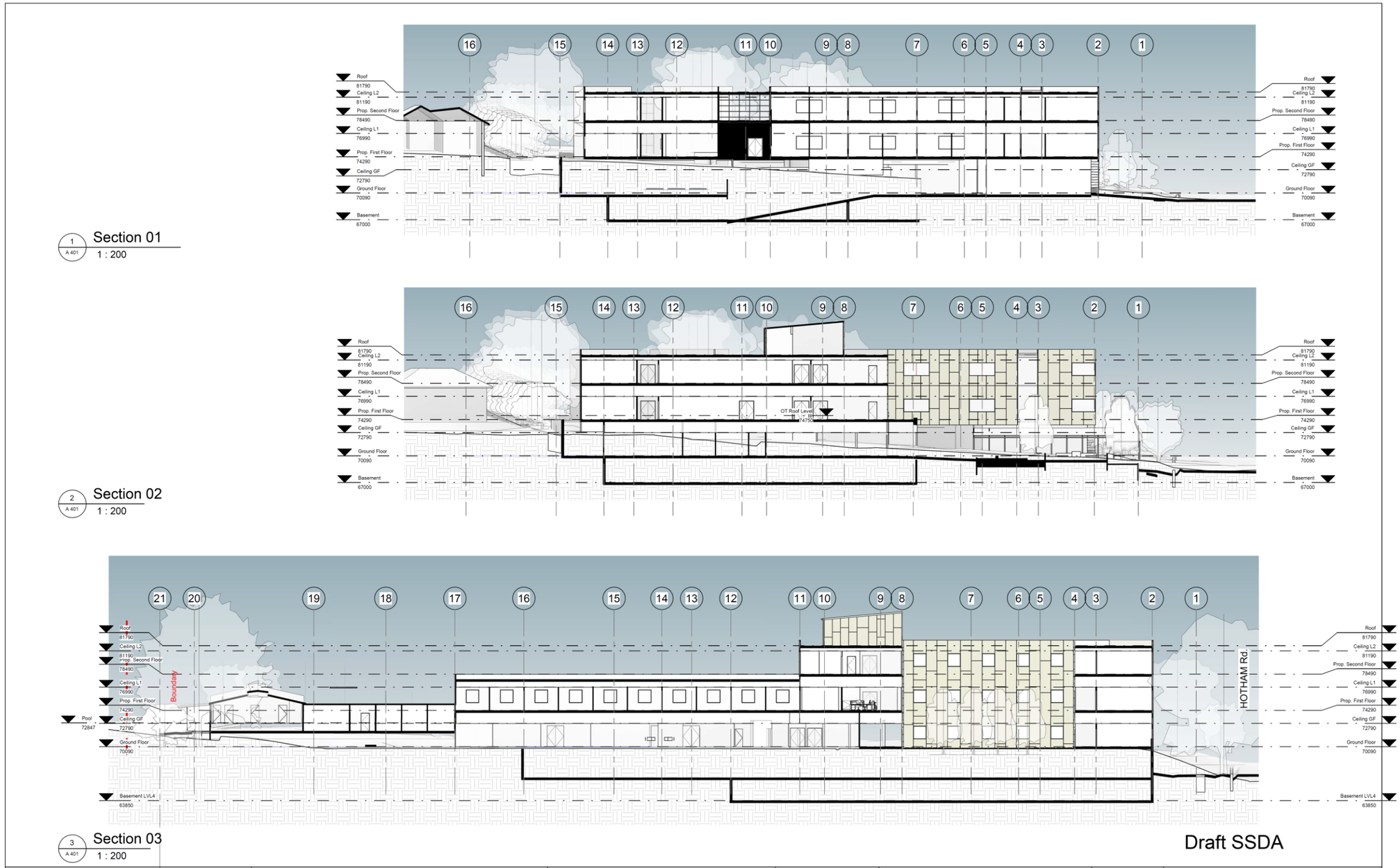


Figure 8.14 **East & West Sections.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 401.

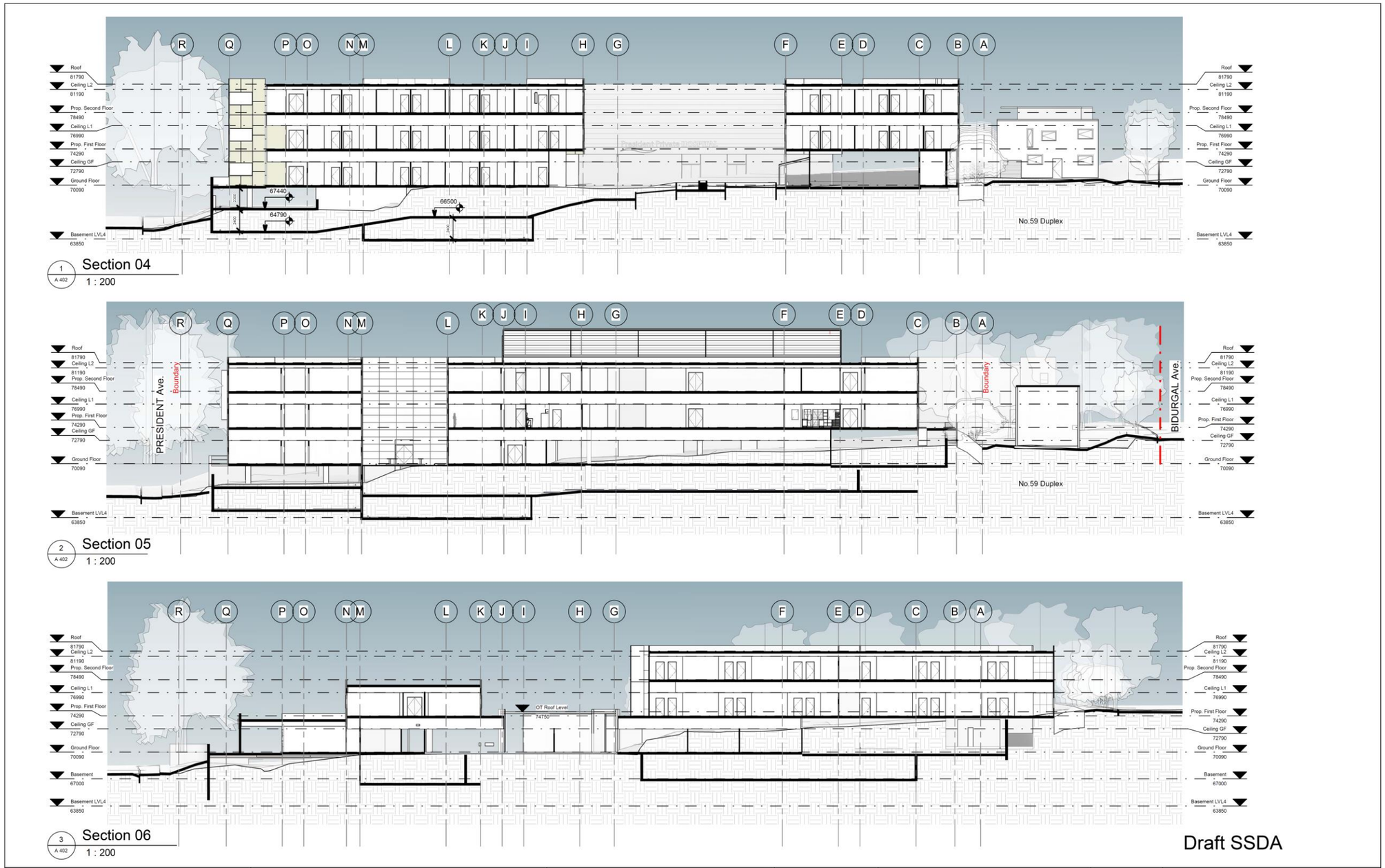


Figure 8.15 **North & South Sections.**
Imagescape Design Studios (Jun. 2020), Drawing No. A 402.

9.0 MANAGEMENT AND MITIGATION

The management recommendations presented in the following section of the report take into account the following:

- Legislation outlined in this report which protects Aboriginal cultural and archaeological objects and places in New South Wales;
- Research and assessment carried out by the author/s of this report;
- Results of previous archaeological assessment and excavation in the vicinity of the study area;
- The concerns and views of the Aboriginal stakeholders listed in this report;
- The impact of the proposed development on any Aboriginal archaeological material that may be present;
- The requirements of the consent authority (Sutherland Shire Council).

9.1 RECOMMENDATIONS

A background analysis of the environment and archaeological context revealed that the study area has moderate surface disturbances, as a result of filling events and levelling for the development of the hospital. The study area is however likely to contain intact Aboriginal objects and/or deposits of conservation value below fill materials, as intact soils have a chance of being present below the introduced fill.

The surrounding landscape features present do indicate that sub-surface Aboriginal objects and/or deposits are likely in undisturbed areas and are likely to be considered of low to moderate Aboriginal archaeological significance

The proposed activity is not:

- located within a sand dune system, or
- located within 200m below or above a cliff face, or
- within 20m of or in a cave, rock shelter, or a cave mouth
- located on a ridge top, ridge line or headland, or

The study area is:

- located within 200m of waters

Based on the locale of water and major water tributaries such as Gymea Bay as well as unknown tributary north east of the study area and past tributary running southwest - southeast within the study area. Therefore, it is likely that Aboriginal movement and land use would be channelled to this location and as such the site may hold information regarding cultural activities of the area.

In accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974 (DECCW, 2010)*, it is recommended that further archaeological and cultural assessment is required and in accordance with *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974 (DECCW, 2010).*

In review of the Geotechnical Report (see Section 2.3.3), there is an indication that intact natural soils are present within the study area. Natural sand/clayey sand soil have been identified within the soil profile with a depth range between 1.0m – 2.6m. This deposit could be interpreted as an A2 horizon of the Gymea soil profile with the potential for there to be a remnant A horizon (known to be an artefact bearing horizon). The proposed development activity includes basement levels and is to exceed the depth of these soil profiles. It is likely that intact soils with the potential to contain Aboriginal objects and/or features may be impacted as result of this activity.

The following recommendations have been formulated after consultation with the proponent and the Department of Planning, Industry and Environment (DPIE);

- It is recommended that an Aboriginal Cultural Heritage Management Plan (ACHMP) should be in place as part of status of the proposed development as a State Significant Development (SSD-10320). This is to manage and mitigate any potential Aboriginal objects of archaeological and cultural significance that may be present within the study area. Intact soils are likely below fill material therefore there is a potential for intact Aboriginal objects and/or features to be present.
- Consultation with the Registered Aboriginal Parties (RAPs) should continue, as per the requirements detailed in the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010).
- Subsequent to this report and in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974, (DECCW 2010)*, a program of systematic, sub surface archaeological test excavation in accordance with the *Code Of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010*)* or Aboriginal Cultural Heritage Management Plan (depending on status of the development*),* should be undertaken to establish the nature and extent of any archaeological objects and/or deposits that are/may be present.
- In the event archaeological test excavations *reveal Aboriginal archaeological objects or deposits*, the following is recommended; Once the nature and extent of the archaeological site has been established through test excavation, the data will be analysed and synthesised into the Aboriginal Archaeological Technical Report (AATR) or depending on the status of the project will be updated into the ACHMP.
- If test excavation *does not reveal Aboriginal archaeological objects or deposits*, the following is recommended. Depending on the status of the project as an SSD - an ACHMP will need to be in place in order for the development activity to proceed.
- An analysis of artefacts retrieved should be conducted in a framework to allow for comparison with previous relevant results and to be recorded in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010).

Should any human remains be located during the following development:

- All excavation in the immediate vicinity of any objects of deposits shall cease immediately
- The NSW police and DPIE's Enviroline be informed as soon as possible

- Once it has been established that the human remains are Aboriginal ancestral remains, DPIE and the relevant Registered Aboriginal Parties will identify the appropriate course of action.

Should any Aboriginal archaeological deposits or objects be located during the development:

- all excavation in the vicinity of any objects and/or deposits shall cease immediately and the area secured
- DPIE and a suitably qualified archaeologist should be notified so the significance of the said deposits or objects can be evaluated and presented in a report and the study area recorded as an archaeological site
- the archaeological deposits or objects will require the production of an Aboriginal Cultural Heritage Management Plan, of which the way forward will be subject to the recommendations of this report in consultation with DPIE, prior to the development continuing.

REFERENCES

ABORIGINAL HERITAGE AND INFORMATION MANAGEMENT SYSTEM.

2011 & 2012 www.environment.nsw.gov.au/awssapp

ARCHAEOLOGICAL HERITAGE MANAGEMENT SOLUTIONS.

2005 *Emmaus Village, Kemps Creek, NSW; Aboriginal Heritage Assessment of proposed extension of ages-care facilities*. Report prepared for, Catholic Health Care Services.

ATTENBROW, V.

2002 Sydney's *Aboriginal Past: Investigating the archaeological and historical records.* UNSW Press, Sydney.

AUSTRALIA ICOMOS.

1999 *The Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter*. Australia ICOMOS, Canberra.

AUSTRALIAN HERITAGE COMMISSION.

2002 *Ask First: A guide to respecting Indigenous heritage places and values*. Australian Heritage Commission, Canberra.

AUSTRALIAN INSTITUTE OF ABORIGINAL AND TORRES STRAIT ISLANDER STUDIES.

2000 Aboriginal Australia. Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra.

BANNERMAN, S.M. AND HAZELTON P.A.

1990 *Soil Landscapes of the Penrith 1;100 000 Soil Sheet.* Soil and Conservation Service of NSW.

BRANAGAN, D, C. HERBERT, AND T. LANGFORD-SMITH.

1979 *The Sydney Basin: An outline of the Geology and Geomorphology.* University of Sydney, Sydney.

BRAYSHAW, H. & J. McDonald.

1992 *Archaeological Survey of the proposed 33kV transmission line between Bringelly and Rossmore, NSW.* Report prepared for EDAW Australia.

BURKE, H. AND C. SMITH.

2004 *The Archaeologists Field Handbook.* Allen & Unwin, St Leonards, NSW.

CHAPMAN, G. A. AND C. L. MURPHY.

1989 *Soil landscapes of the Sydney 1:100 000 sheet*. Soil Conservation Service of NSW, Sydney.

COLEMAN, J.

1982 *A new look at the North Coast: Fish traps and villages*. In S. Bowdler (ed). Coastal Archaeology in Eastern Australia. Australian National University, Canberra.

COMMONWEALTH HERITAGE LIST.

2011 www.environment.gov.au/cgibin/ahdb/search.pl?mode=search_results;state=NSW;list_code=CHL;legal_status=35

DALLAS, M.

1996 *Cronulla sewage treatment plant upgrade and additional effluent transfer pipeline archaeological site.* Prepared for Sydney Water.

DALLAS, M. AND A. BICKFORD.

1989 *Archaeological Survey of the route of proposed levee at South Creek, St Marys.* Report to Penrith City Council.

DEC.

2004 Aboriginal *Women's Heritage: Port Stephens*. Department of Environment and Conservation. Sydney.

DECC.

2005 *Aboriginal Scarred Trees in New South Wales: A Field Manual.* Department of Environment and Climate Change, Sydney.

DECCW.

2010 *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974*. Department of Environment, Climate Change and Water, Sydney.

2010 *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974.* Department of Environment, Climate Change and Water, Sydney.

2010 *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974.* Department of Environment, Climate Change and Water, Sydney.

2010 *Part 6; National Parks and Wildlife Act Aboriginal Cultural Heritage Consultation Requirements for Proponents.* Department of Environment, Climate Change and Water, Sydney.

DEPARTMENT OF PLANNING.

2005 *The NSW Comprehensive Coastal Assessment Tool Kit.* NSW Government.

DOMINI STEELE CONSULTING ARCHAEOLOGY.

2016 *Aboriginal archaeological excavation report; St George Sailing Club – Riverside Drive, Sans Souci, NSW; Car park light pole installation project.* Report prepared for Rockdale City Council.

FOLEY, R.A.

1981 A model of Regional Archaeological Structure. *Proceedings of the Prehistoric Society 47: 1-17.*

GOODWIN, L.

1999 Two steps forward, one back. Some thoughts on settlement models for the North Coast of New South Wales. *In Australian Coastal Archaeology,* edited by Jay Hall and Ian J McNiven. ANH Publications, Canberra.

HALL, R. AND K. LOMAX.

1996 A Regional Landscape Approach to the Management of Stone Artefact Sites in Forested Uplands in Eastern Australia. *Australian Archaeology* 42: 35-38.

HARDY, V. AND B. STREAT.

2008 *An Aboriginal Heritage Assessment of SADA Coal Washery, Glenlee New South Wales,* Unpublished Report for SADA Coal submitted to DECCW.

HAZELTON. P. AND TILLIE, P.

1990 *Soil Landscape of the Wollongong – Port Hacking 1:100 000 Sheet Report.* The soil conservation service of NSW.

HERITAGE SEARCH.

1998 *Aboriginal site survey; Lot 8 Robvic Avenue, Sylvania, NSW.* Report prepared for R.B Richards.

HISCOCK, P.

2008 *Archaeology of Ancient Australia*. Routledge, London & New York.

HOLDAWAY, S. AND N. STERN.

2004 *A Record in Stone: The Study of Australia's Flaked Stone Artefacts.* Aboriginal Studies Press, Melbourne.

KAYANDEL.

2010 *The Georges River Estuary; Cultural heritage desktop assessment*. Report prepared for SMEC.

KOHEN, J.

1986 *Prehistoric Settlement in the Western Cumberland Plain: Resources, Environment and Technology*. PhD Thesis, School of Earth Sciences, Macquarie University, Sydney.

1983 *Excavations and Surface Collections in the Western Cumberland Plan*. Report to National Parks and Wildlife Service.

KOHEN, J. E.D. STOCKTON AND M.A. J. WILLIAMS.

1983 *Shaw's Creek Rock shelter: Prehistoric Settlement in the Blue Mountains Piedmont, Eastern New South Wales.*

MCBRYDE, I.

1976 *Subsistence patterns in New England Prehistory.* University of Queensland Occasional Papers in Anthropology. 6:48 – 68.

MCDONALD, J.

1992 Chapter 2: Aboriginal Usage of the Hawkesbury-Nepean In Prehistory. In *Hawkesbury-Nepean Historic Environmental Changes Study.*

2000 *Re: Archaeological assessment of proposed residential development; Corea Street, Sylvania.* Letter to Multiplex Constructions (NSW) Pty Ltd.

2001*Survey for Aboriginal sites 1503 Elizabeth Drive, Kemps Creek, NSW.* Report prepared for Don Fox Planning

2002 (June), Rouse Hill Infrastructure Project (Stage 30 Development Areas 2, 5, 20,22 and 24B, Second Ponds Creek Area, Archaeological Assessment of Indigenous & European Heritage Issues. Report to RHI Pty Ltd.

2005. Archaeological salvage excavation of eight archaeological landscapes in the Second Ponds Creek Valley, Rouse Hill Development Area, NSW. Report prepared for Rouse Hill Infrastructure Pty Ltd and Landcom.

MCINTYRE, S.

1984 *Aboriginal archaeological survey Towra Point Nature Reserve.* Unpublished report for OEH.

MULVANEY, J. AND J. KAMMINGA.

1999 *Prehistory of Australia*. Allen & Unwin, St Leonards, NSW.

NATIONAL HERITAGE LIST.

2011 www.environment.gov.au/heritage/places/national/index.html

NATIONAL NATIVE TITLE TRIBUNAL.

2011 www.nntt.gov.au

NEW SOUTH WALES HERITAGE BRANCH.

2011 *New South Wales Heritage Register.* www.heritage.nsw.gov.au/07_subnav_04.cfm

NEW SOUTH WALES GOVERNMENT.

1974 *National Parks and Wildlife Act.* New South Wales Government, Sydney.

1979 *Environmental Planning and Assessment Act.* New South Wales Government, Sydney.

1983 *Land Rights Act*. New South Wales Government, Sydney.

1993 *Native Title Act*. New South Wales Government, Sydney.

1999 *Environmental Protection and Biodiversity Conservation Act.* New South Wales Government, Sydney.

NEW SOUTH WALES NATIONAL PARKS AND WILDLIFE SERVICE.

1997 *Aboriginal Cultural Heritage: Standards and Guidelines Kit*. NSW National Parks and Wildlife Service.

RICH, E., HEAP, P., AND L. SMITH.

1989 *Aboriginal sites on Kurnell Peninsula; Management study.* Report prepared for NPWS.

ROCKDALE COUNCIL.

2011 Local Environmental Plan. Endorsed by Council

STRAHLER, A. N.

1957 Quantitative analysis of watershed geomorphology. *American Geophysical Union Transaction*, 33: 913-920.

WALKER, P. H.

1975 *A Soil Survey of The Cumberland Plain.* NSW Department of Agriculture.