MUSEUMS DISCOVERY CENTRE EXPANSION
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX J
ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

Curio Projects

NSW GOVERNMENT

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PROJECTS

Aboriginal Cultural Heritage Assessment Report

Museum Discovery Centre Expansion, Castle Hill,
Final Report, 17 September 2020

Prepared for Create NSW

Document Information

Citation

Curio Projects 2020, *Aboriginal Cultural Heritage Assessment Report - Museum Discovery Centre (MDC) Expansion* prepared for Create NSW.

Local Government Area

Hills Shire Council

Cover Image

MDC Site, Approximate Location of Proposed Building J (Source: MAAS)

ISSUE No.	ISSUE DATE	VERSION	NOTES/COMMENTS	AUTHOR	REVIEWED
1	17 September 2020	Draft Report	For client review	Mikhaila Chaplin	Sam Cooling
2	21 September 2020	Final Report	With all appendices	Mikhaila Chaplin	Sam Cooling
3	21 September 2020	Final Report	For Public Exhibition	Mikhaila Chaplin	Sam Cooling

This report has been prepared based on research by Curio Projects specialists. Historical sources and reference material used in the preparation of this report are acknowledged and referenced at the end of each section and/or in figure captions.

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Contents

Relevant Abbreviations

ABBREVIATION/ TERM	DEFINITION
ACHAR	Aboriginal Cultural Heritage Assessment Report
ATR	Archaeological Technical Report
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ASIRF	Aboriginal Site Impact Recording Form
'Code of Practice'	DECCW 2010, Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales.
'Consultation Guidelines'	DECCW 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.
DECCW	Department of Environment, Climate Change and Water (now Office of Environment and Heritage—OEH).
'Due Diligence Code of Practice'	DECCW 2010, Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW.
EP&A Act	Environmental Planning and Assessment Act 1979
'Guide to Investigating'	OEH 2011, Guide to Investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW.
Heritage Act	NSW Heritage Act 1977
ICOMOS	International Council of Monuments and Sites
LALC	Local Aboriginal Land Council
LGA	Local Government Area
NPW Act	NSW National Parks and Wildlife Act 1974
OEH	NSW Office of Environment and Heritage (formerly DECCW)
PAD	Potential Archaeological Deposit
RAPs	Registered Aboriginal Parties
SHR	NSW State Heritage Register

Executive Summary

Curio Projects Pty Ltd was commissioned by Create NSW (the proponent) to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the development of Museum of Applied Arts & Sciences (MAAS) at the Museums Discovery Centre (MDC), 2 Green Road, Castle Hill (the study area).

This ACHAR documents the process of investigation, consultation and assessment with regards to Aboriginal cultural heritage and Aboriginal archaeology, as undertaken for the Museum Discovery Centre Expansion development project and study area, specific to the proposed development works. This includes background research and assessment of evidence and information about material traces of Aboriginal sites, places, landscapes, and/or other values, as well as an impact assessment and management recommendation to assist Create NSW with their future responsibilities for Aboriginal cultural heritage within the study area.

This ACHAR documents the process of investigation, consultation and assessment with regards to Aboriginal cultural heritage and Aboriginal archaeology, as undertaken for the MDC Expansion study area and proposed development works.

Environmental and Archaeological Context

No registered Aboriginal sites are located within, nor in close proximity to, the study area. Based on landform positioning, environmental context and knowledge of previous archaeological excavations, Aboriginal site types most likely to be located in the study area would be isolated or low density artefact sites

The MDC study area is located on a slope landform near the north-eastern edge of the Cumberland Plain. The study area is located on the shallow soils of the Luddenham soil landscape which are particularly prone to erosion, particularly on crest and slope landforms that have been subject to previous historical land clearance.

The MDC study area is located at the upper limit of the headwaters of Smalls Creek, and >500m from the permanent water sources of Cattai/Strangers Creeks. While fresh water would have been moderately accessible from the study area landscape, this would have involved localised travel to access, and would not have been consistently available from the study area to sustain an Aboriginal population all year round.

The study area has been completely cleared of native vegetation, but was replanted with dense grids of eucalypt plantation progressively from the 1940s for MAAS research into essential oils.

Historical activities at the site have resulted in moderate to high levels of ground disturbance, including significant impacts such as construction of buildings for the MDC and TAFE sites, as well as landscape activities such as land clearance and establishment of the dense eucalypt plantations that would have resulted in significant disturbance, removal and erosion of natural topsoils, as well as other associated activities such as land grading and leveling etc.

While numerous Aboriginal archaeological excavations have taken place across this area of the Cumberland Plain that have encountered significant Aboriginal archaeological deposits, these investigations have also demonstrated that:

- locations of Aboriginal sites across the Cumberland Plain are highly influenced by stream order, and
- due to the shallow and erosional nature of soils in this region, historical ground disturbance of the top 30cm of natural soil profiles causes significant impact to the potential for Aboriginal archaeological deposits to be retained in a location.

The location of the MDC across a slope landform on shallow soils, not in close association with a permanent or larger water course, and subject to moderate levels historical ground disturbance, suggests that the study area lacks the natural features that would have encouraged preferential or intensive Aboriginal occupation of this location in the past, nor potential to retain an archaeological signature.

Therefore, the MDC study area is considered to have **low potential for Aboriginal archaeological deposits to be present**.

Heritage Significance and Impact Assessment

The study area does not meet the criteria for historical, scientific, nor aesthetic significance.

Previous archaeological and cultural assessments undertaken in the Castle Hill/Cumberland Plain region have consistently demonstrated that Dharug people consider all their sites to be connected as part of a wider cultural landscape. Viewed as a whole, Dharug sites across the Cumberland Plain form a complex that embodies all aspects of Dharug history and life.

At the time of writing, no cultural or social values have been expressed as being connected to/associated with the MDC site specifically. Should ongoing Aboriginal community consultation identify cultural and social values association with the study area, these values are likely to relate to the location of the MDC study area within the wider cultural landscape of the Cumberland Plain, rather than any specific values inherent within the land of the MDC study area itself, and are therefore unlikely to be impacted by the nature of the proposed development (i.e. construction of Building J).

Overall, the proposed development works (including bulk excavation works, trenching, piling, and landscaping works) are assessed to have **low potential to encounter or impact Aboriginal sites or objects**, or to significantly impact on any Aboriginal social or cultural heritage values (TBC through ongoing consultation with the Aboriginal community)**.**

Conclusions and Recommendations

Overall, the proposed development works (including bulk excavation works, trenching, piling, and landscaping works) are assessed to have **low potential to encounter or impact Aboriginal sites or objects**, or to significantly impact on any Aboriginal social or cultural heritage values (TBC through ongoing consultation with the Aboriginal community)**.**

Therefore, no further archaeological assessment nor physical investigation is required for the MDC Expansion project either prior to or in association with the development works.

Should any unexpected Aboriginal Finds be encountered during development works, works should cease in the immediate vicinity of the find, and the Unexpected Finds Policy (presented in Section 6.3 of this ACHAR) should be followed.

At the time of writing, Aboriginal community consultation in accordance with OEH guidelines remains in progress. Following the conclusion of the consultation process, the relevant sections of this ACHAR—particularly relating to the assessment of social significance and potential impact of the development to Aboriginal cultural heritage values—may require revision, depending on the nature of comments received by project RAPs on their review of this ACHAR.

With respect to Aboriginal intangible heritage values (social and cultural), the MDC Expansion project presents an opportunity to have a minor positive impact in the context of the MDC site location in the northeastern extent of the Cumberland Plain, particularly through the integration of native plantings and acknowledgement of Dharug culture through the landscaping plan. The development should consider Aboriginal cultural heritage interpretation elements within the site to celebrate and communicate the significance of the site and landscape to the Dharug people, and local Aboriginal community. The commissioning of artwork or interpretation will not have a permanent footprint on the site, but rather form part of a programmatic response to heritage interpretation, in line with the MAAS Heritage Interpretation approach.

1. Introduction

Curio Projects Pty Ltd was commissioned by Create NSW (the proponent) to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the expansion of the Museum of Applied Arts & Sciences (MAAS) Museums Discovery Centre (MDC), located at 2 Green Road, Castle Hill (the study area).

The MDC Expansion is a museum (information and education facility) that has a capital investment value in excess of $30 million and as such the DA is submitted to the Minister for Planning pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The State Significant Development Application (SSDA) that this ACHAR supports, is for the proposed construction and use of a new building to facilitate the expansion of MDC site (Building J).

This ACHAR documents the process of investigation, consultation and assessment with regards to Aboriginal cultural heritage and Aboriginal archaeology, as undertaken for the MDC Expansion, specific to the proposed development works. This includes background research, assessment of evidence and information about material traces of Aboriginal land use in the study area and surrounds, significance assessment of potential Aboriginal sites, places, landscapes and/or other values, as well as an impact assessment and management recommendations to assist Create NSW with their future responsibilities for Aboriginal cultural heritage within the study area.

This report has been prepared following the requirements for reporting as established in DECCW 2010 *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South* (Code of Practice); and OEH 2011a *Guide to Investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (Guide to Investigating).

1.1. Background

The MDC is owned and operated by the Museum of Applied Arts and Sciences (MAAS) and features exhibitions and displays in collaboration Australian Museum and Sydney Living Museums, who also maintain collection storage and conservation facilities on the site. There are six buildings primarily providing collection storage as well as areas for displays, education and public programs, accessible to visitors (Building E). During 2017-2019 a total of 17,481 persons visited the MDC site.

The MDC Expansion is part of the renewal of the Museum of Applied Arts and Sciences, known as the Powerhouse Program, that includes:

- **Powerhouse Parramatta**: A new benchmark in cultural placemarking for Greater Sydney that will be a symbol of a new approach to creative activity and engagement.
- **Powerhouse Ultimo**: The NSW Government recently announced that the Museum's Ultimo site will be retained, and the Museum will operate over four sites across the Greater Sydney area.

- **Powerhouse Collection Relocation and Digitisation Project**: The relocation of the Powerhouse collection and digitization of around 338,000 objects, enhancing the collection's accessibility for local, national and international audiences.

The MDC expansion is an integral component of the Powerhouse Program and will provide the opportunity to increase visitation to the site, forming an important and significant cultural institution within The Hills Shire. In addition to the storage component of the proposal, the expansion will increase access to the Powerhouse collection through a range of spaces for visible storage, research and viewing of the collection, as well as flexible spaces for education and public program, workshop, talks, exhibitions and events.

1.2. Site Description

This MDC is located at the north-western edge of Castle Hill and occupies an area of approximately 3.5 hectares with extensive frontages to Windsor Road and Showground Road. The MDC has a primary frontage of approximately 183m to Windsor Road, and secondary frontage of approximately 186m to Showground Road. The study area boundary is identified in Figure 1.1, with the existing MDC site outlined in red, with the location of proposed Building J indicated by the yellow dashed line. The site for the proposed new building (Building J) is currently owned by TAFE NSW, located east of the MDC on the western side of the existing TAFE site.

Existing structures and features within the overall study area include car parking, TAFE buildings, vegetated open space areas and a dam located in the north eastern side of the site.

The total site area of the proposed Building J site is 6,552m^2. This area is currently covered by densely planted trees and vegetation, as well as an internal driveway and car parking in the south. The immediate surrounding developmental context of the study area comprises a range of land uses including residential, public recreation, warehouses, industrial units.

Figure 1.1: TAFE site (green), MDC site (red), proposed Building J site (yellow)
(Source: Six Maps)

1.3. Overview of the Proposed Development

The SSDA seeks approval for the development and expansion of the MDC facility by the construction of a new building, "Building J", to provide permanent additional storage, production and operational facilities suitable to the needs and specifications of MAAS.

The proposed Building J will offer many opportunities for public engagement as part of a desire to increase public access to the Powerhouse collection. The renewal of the site offers a range of opportunities to increase public access including visible storage facilities, booked tours, Open Days, public and education programs, workshops, talks and other events. The facilities in Building J will serve the needs of a variety of user groups including staff, volunteers, education groups, researchers, artists, scientists, industry partners, and the general public.

The construction of Building J will expand the MDC facilities to accommodate the Powerhouse collections storage (in particular for Very Large Objects), workshops, offices, conservation and treatment facilities. Valuable State heritage and cultural assets and collections will be protected in a secure, controlled and environmentally sustainable location within the MDC Expansion. The facilities will support the growth and development of the arts and cultural employment and skills sector in Western Sydney.

The proposed Building J will cater for the following uses:

- *Storage for the Powerhouse collection and archives (collected archives and institutional arcives)*
- *Flexible spaces for education and public programs, workshops, talks, exhibitions and events*
- *Suites of conservation laboratories and collection work spaces*
- *Photography, digitisation and collection documentation facilities*
- *Work space for staff, researchers, industry partners and other collaborators. This will include amenitites, meeting and storage rooms, collection research and study areas as well as other ancillary facilities.*

A total of 337 existing trees will require removal to accommodate the proposed Building J. Of these tree to be removed, 330 were planted progressively since the 1940s as plantation trees for researching essential oils.

1.4. Relevant Statutory Context

Aboriginal cultural heritage is governed in NSW by two principles pieces of legislation:

- *National Parks and Wildlife Act 1974 (NSW)* (NPW Act); and
- *Environmental Planning and Assessment Act 1979* (NSW) (EPA Act)

1.4.1. National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974 (NSW)* (NPW Act), administered by the Aboriginal Heritage Regulation Section, Heritage NSW, of the NSW Department of Premier and Cabinet (DPC) (formerly known as the Office of Environment and Heritage (OEH)), is the primary legislation that provides statutory protection for all 'Aboriginal objects' (Part 6, Section 90) and 'Aboriginal places' (Part 6, Section 84) within NSW.

An Aboriginal object is defined through the NPW Act 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."*

The NPW Act provides the definition of 'harm' to Aboriginal objects and places as:

> *"…any act or omission that:*
>
> *(a) destroys, defaces or damages the object or place, or*
>
> *(b) in relation to an object-moves the object from the land on which it had been situated, or*
>
> *(c) is specified by the regulations, or*
>
> *(d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c), (NPW Act 1974).*

The NPW Act also establishes penalties for 'harm' to Aboriginal objects and declared Aboriginal places, as well as defences and exemptions for harm. One of the main defences against the

harming of Aboriginal objects and cultural material is to seek an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act, under which disturbance to Aboriginal objects could be undertaken, in accordance with the requirements of an approved AHIP.

1.4.2. Environmental Planning and Assessment Act 1979

The EP&A Act is an 'Act to institute a system of environmental planning and assessment for the state of NSW'. Dependent upon which Part of the EP&A Act a project is to be assessed under, differing requirements and protocols for the assessment of associated Aboriginal cultural heritage may apply.

Part 4, Division 4.1 of the EP&A Act identifies and defines State Significant Development projects (SSD) as those declared under Section 89C of the EP&A Act. SSD and State Significant Infrastructure projects (SSI), replace 'Concept Plan' project approvals, in accordance with Part 3A of this Act, which was repealed in 2011.

Where a project is assessed to be an SSD, the process of development approval differs, with certain approvals and legislation no longer applicable to the project. Of relevance to the assessment of Aboriginal heritage for a development, the requirement for an AHIP in accordance with Section 90 of the NPW Act is removed for SSD projects (EP&A Act, Section 89J).

The project will meet the criteria for SSDA, and therefore will be exempt from the requirement for an AHIP under Section 90 of the NPW Act.

1.4.3. Native Title Act 1993

The *Native Title Act 1993* provides the legislative framework to recognise and protect native title, which recognises the traditional rights and interests to land and waters of Aboriginal and Torres Strait Islander people. Under the Native Title Act, native title claimants can make an application to the Federal Court to have their native title recognised by Australian law.

There are currently no native title claims or determinations in place for the MDC Expansion study area.

1.4.4. NSW Aboriginal Heritage Statutory Guidelines

In order to best implement and administer the protection afforded to Aboriginal objects and places as through the NPW Act, and EP&A Act, the former OEH (now part of Heritage NSW under the DPC) have prepared a series of best practice statutory guidelines with regards to Aboriginal heritage. These guidelines are designed to assist developers, landowners and archaeologists to better understand their statutory obligations with regards to Aboriginal heritage in NSW and implement best practice policies into their investigation of Aboriginal heritage values and archaeology in relation to their land and/or development. This report has been prepared in accordance with these guidelines, including:

- DECCW 2010a, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. (the Due Diligence Code of Practice)

- OEH 2011a, *Guide to Investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW*. (the Guide to Investigating)
- DECCW 2010b, *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales.* (the Code of Practice)
- DECCW 2010c, *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.* (the Consultation Guidelines)
- OEH 2011b, *Aboriginal Heritage Impact Permits, a Guide for Applicants*.

1.5. Assessment Requirements

The Department of Planning, Industry and Environment (DPIE) have issued Secretary's Environmental Assessment Requirements (SEARs) to the applicant for the preparation of an Environmental Impact Statement (EIS) for the proposed development. This report has been prepared having regard to the SEARs as follows:

SEAR	WHERE ADDRESSED
10. Aboriginal cultural heritage The EIS shall: • include an Aboriginal Cultural Heritage Assessment Report (ACHAR) which: o identifies and describes the Aboriginal cultural heritage values that exist across the whole area that would be affected by the development	This report.
o assesses impacts on Aboriginal cultural heritage values and demonstrate attempts to avoid impacts, identify any conservation outcomes and measures to mitigate impacts.	
• ensure consultation has taken place with Aboriginal people and is documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW).	

This report also addresses the following Strategic Policy and Technical Guidelines:

POLICY OR GUIDELINE	WHERE ADDRESSED
• Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011)	Entire report. See notes in Section 1.1.4
• Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010	Section 2
• Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW 2010	Entire report. See notes in Section 1.1.4

1.6. Objectives of Aboriginal Heritage Assessment

The objectives of the Aboriginal cultural heritage assessment for the MAAS Castle Hill project, were to:

- identify Aboriginal community members who can speak for the Country within which the project is located;
- involve the Aboriginal community in the cultural heritage assessment process, including consultation to determine their opinions with respect to the project and its potential 'harm' to their cultural heritage;
- understand the number, extent, type, condition, integrity and archaeological potential of any potential Aboriginal heritage sites and places that may be located within the study area;
- determine whether the potential Aboriginal sites and places are a component of a wider Aboriginal cultural landscape;
- understand how the any potential physical Aboriginal sites relate to Aboriginal tradition within the wider area;
- prepare a cultural and scientific values assessment for all identified aspects of Aboriginal cultural heritage associated with the study area;
- determine how the proposed project may impact any identified Aboriginal cultural heritage;
- determine where impacts are unavailable and develop a series of impact mitigation strategies that benefit Aboriginal cultural heritage and the proponent (in close consultation and discussion with the local Aboriginal community); and
- provide clear recommendations for the conservation for Aboriginal heritage and archaeological values and mitigation of any potential impacts to these values.

1.7. Limitations and Constraints

This report has been prepared using the available historical data and documentation available for the study area and surrounds, including relevant archaeological reports and assessments.

This report does not include assessment of non-Aboriginal heritage values or archaeology, nor any non-heritage related planning controls or requirements.

At the time of writing (September 2020), while the process of Aboriginal community consultation for the project is underway, it is yet to be completed, and therefore recommendations included within this ACHAR with respect to Aboriginal cultural heritage values as stated by project RAPs, should be considered preliminary, to be further refined and updated once the consultation process has progressed further.

1.8. Investigators, Contributors and Acknowledgements

This report has been prepared by Sam Cooling, Cultural Heritage Manager, and Mikhaila Chaplin, Graduate Archaeologist, both of Curio Projects. Table 1.1 presents a complete list of the project

team, including qualifications, affiliation and role in the project. Details of all project RAPs are presented in Section 2.

Table 1.1: Investigators and Contributors

PERSON (QUALIFICATION)	AFFILIATION	ROLE
Mikhaila Chaplin, Graduate Archaeologist (BA Archaeology & Ancient History)	Curio Projects	Report Co-Author
Sam Cooling, Cultural Heritage Manager (BA, M Archaeological Science)	Curio Projects	Report Co-Author and Senior Review
Andre Fleury, Archaeologist (B. Hist, M Archaeological Science)	Curio Projects	GIS and Mapping

2. Aboriginal Community Consultation

Aboriginal community consultation is required for assessment of Aboriginal cultural heritage, and should be undertaken in the early stages of project planning in order to best guide the development process. This section documents the process of Aboriginal community consultation that has been undertaken for the Aboriginal cultural heritage assessment of the MDC Expansion, Castle Hill, project. Aboriginal community consultation in accordance with OEH statutory guidelines *Aboriginal cultural heritage consultation requirements for proponents 2010*, was initiated for the project in July 2020.

Aboriginal people are recognised as the determinants of their own heritage. Therefore, the process of Aboriginal community consultation for the MDC Expansion project seeks to identify social and cultural values of the study area and its surrounds to the local Aboriginal community, in order to identify appropriate and respectful mitigation strategies for any identified impacts to Aboriginal heritage presented by the project.

The objectives of Aboriginal Community Consultation, as stated in the OEH Consultation guidelines is to:

> *'ensure that Aboriginal people have the opportunity to improve assessment outcomes by:*
>
> - *Providing relevant information about the cultural significance and values of the Aboriginal object(s) and/or place(s)*
> - *Influencing the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s)*
> - *Actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or place(s) within the proposed project area*
> - *Commenting on draft assessment reports before they are submitted by the proponent to the OEH.' (DECCW 2010a)*

A complete log of all communications between Curio Projects and Registered Aboriginal Parties (RAPs) for the project has been provided as Appendix A, while copies of meeting minutes, written correspondence to and responses from RAPs etc are attached as Appendix B.

Cultural protocols with regards to RAP requests to censor, redact or omit sensitive cultural information from reports and correspondence have been observed throughout the consultation process. Therefore, some correspondence may be excluded from direct reproduction within this report where requested by project RAPs.

The Aboriginal Community Consultation process in accordance with OEH Guidelines consists of four main stages:

> **Stage 1**—Notification of project proposal and registration of interest
>
> **Stage 2**—Presentation of Information about the Proposal Project

Stage 3—Gathering Information about Cultural Significance

Stage 4—Review of Draft Cultural Heritage Assessment Report

2.1. Aboriginal Consultation to Date (September 2020)

2.1.1. Stage 1—Notification of project proposal and registration of interest

The first step in undertaking the Aboriginal Cultural Heritage Assessment process for the study area, is the identification of the Aboriginal community members who can speak for Country in the area of the project (Stage 1).

On behalf of Create NSW, Curio Projects initiated a new process of Aboriginal Community Consultation for the Create NSW study area in accordance with OEH consultation guidelines in July 2020. Stage 1 notifications identified the nature and location of the MDC Expansion, Castle Hill, project. In accordance with Stage 1.2 of the consultation guidelines, letters were sent to the relevant statutory bodies on 11 August 2020 (Aboriginal Cultural Heritage Regulation- Heritage NSW, Deerubbin Local Aboriginal Land Council (DLALC), the Registrar- Aboriginal Land Rights Act 1983, the National Native Title Tribunal (NNTT), Native Title Services Corporation Limited (NTS Corp), The Hills Shire Council, and the Local Land Services (LLS)), requesting names of Aboriginal people who may have an interest in the proposed project area and hold knowledge relevant to determining the cultural significance of Aboriginal objects and places relevant to the study area.

A public notice advertising the project was also placed in the Daily Telegraph online on 11 August 2020 (consistent with Stage 1.3 of the Consultation Guidelines), advising of the project location and proposed development, and inviting registration from local Aboriginal people (Figure 2.1).

All names compiled from Stage 1.2 of the process were then written to via email and/registered post in August 2020, inviting registration in the process of community consultation for the project. Response was requested within 14 days of the date of the letter.

2.1.2. Registered Aboriginal Parties

As a result of Stages 1.2 and 1.3, two Registered Aboriginal Parties (RAPs) were identified for the MDC Expansion project:

- Deerubbin LALC; and
- Corroboree Aboriginal Corporation.

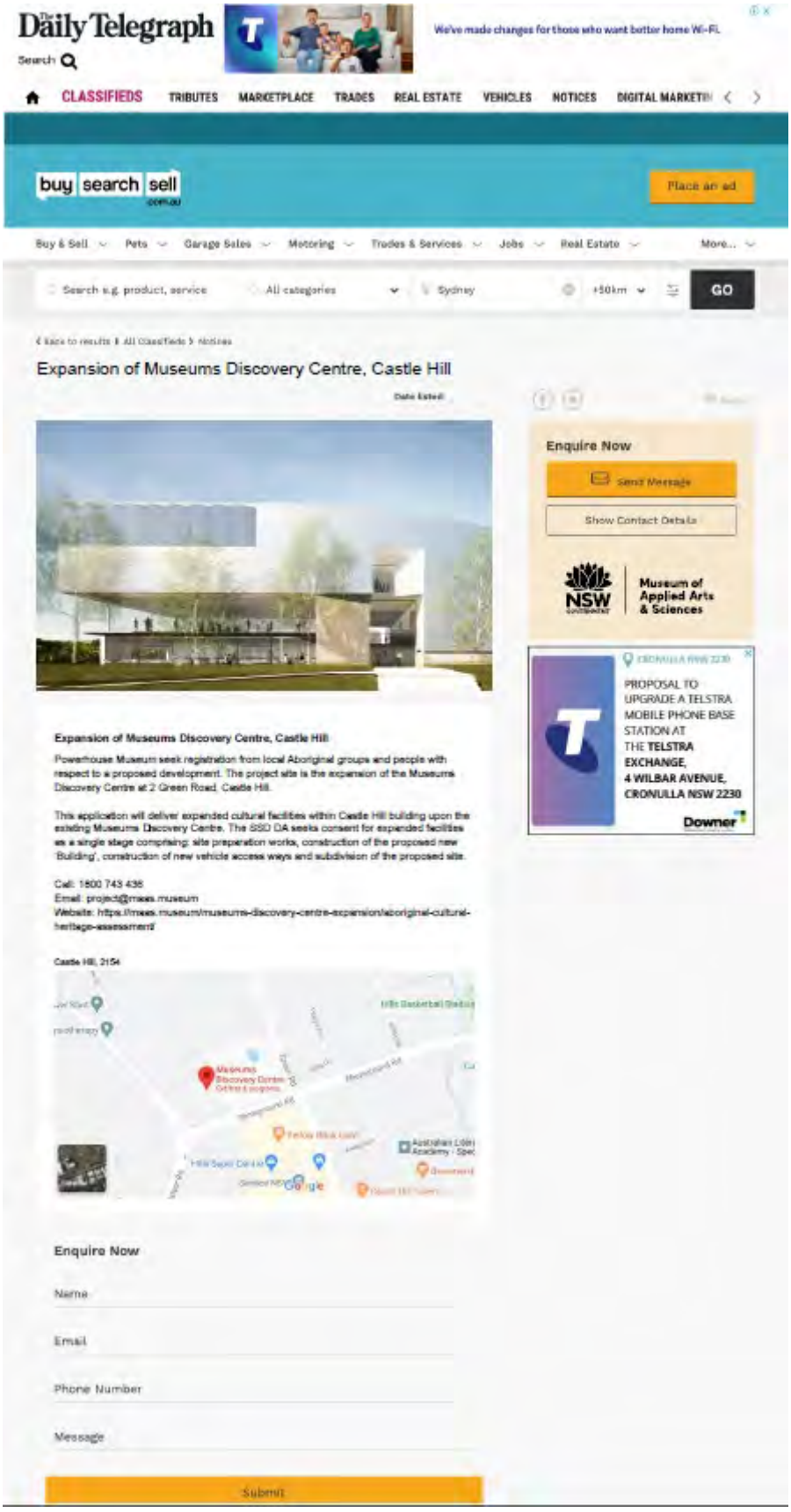

Figure 2.1: Daily Telegraph online 11 Aug 2020

2.2. Ongoing Aboriginal Community Consultation

At the time of writing, Stage 2 of the Consultation process was about to commence (i.e. presentation of information about proposed project to project RAPs). Stage 2 of the Consultation process usually includes a site inspection/initial meeting with project RAPs to discuss the project, and an opportunity to visit the project site. MAAS met with Deerubbin LALC onsite at MDC on 11 September (as part of ongoing organisational engagement). As part of the agenda, a briefing was given on the MDC Expansion Project.

An Aboriginal cultural heritage assessment methodology is currently in preparation, and will be provided to and discussed with the project RAPs through Stages 2 and 3 (Gather Information about Cultural Significance) of the consultation process. Once the draft Aboriginal cultural heritage assessment methodology has been finalised, project RAPs will be provided 28 days to review and provide comment.

Following RAP review and approval of the cultural heritage assessment methodology (the results of which will be incorporated into this section of the final ACHAR), the draft ACHAR will be provided to all project RAPs for review and comment. Project RAPs will be provided minimum 28 days to review and provide comment on the draft ACHAR (Stage 4 of the Consultation guidelines). Following RAP review, the ACHAR will be finalised to incorporate all RAP comment, feedback and discussion of cultural values provided.

All Aboriginal community consultation has been comprehensively documented (and will continue to be throughout the process), to be presented in full within the final ACHAR.

A summary of the consultation process undertaken to date, and detailed description of the future stages that will be undertaken on an ongoing basis throughout the Powerhouse Parramatta project (in accordance with Consultation Guidelines) is summarised in Table 3.1.

Table 2.1: Summary of Aboriginal Cultural Heritage Assessment Process for MDC Expansion

STAGE	DESCRIPTION	DATE UNDERTAKEN/ STATUS	COMMENT
Stage 1—Notification of project proposal and registration of interest			
Stage 1.2	Write to relevant statutory bodies requesting names of Aboriginal people	11.08.2020 Requested response by: 25.08.2020 Complete	N/A
Stage 1.3	Write to all names compiled from Stage 1.2	28.08.2020 Requested response by: 10.09.2020 Complete	
Stage 1.4	Identification of RAPs	Complete	
Stage 2—Presentation of Information about the Proposed Project			

STAGE	DESCRIPTION	DATE UNDERTAKEN/ STATUS	COMMENT
Stage 2.1–2.2	Preparation of proposed project information and initiate arrangements for presenting proposed project information	Following completion of Stage 1	Anticipated early October 2020
Stage 2.3	Presentation of Proposed project information to RAPs (record and document)	Following completion of Stage 1	Minimum 28 days will be provided for RAP review. Anticipated provision October 2020, 28 day review end c. November 2020.
Stage 2.4	Create opportunity for RAPs to visit site	Following completion of Stage 1	TBC, depending on COVID-19 restrictions/availability
Stage 3—Gathering of Information about Cultural Significance			
Stage 3.1	Present/provide proposed cultural heritage assessment methodology to RAPs	Stage 2 and 3 documentation will be provided to RAPs for review at same time- as one consolidated document	Anticipated early October 2020
Stage 3.2	Opportunity for RAPs to review and provide feedback on cultural heritage assessment methodology		Minimum 28 days will be provided for RAP review. Anticipated provision October 2020, 28 day review end c. November 2020.
Stage 3.3–3.6	Seek cultural information from RAPs regarding Aboriginal objects/places, social, spiritual and cultural values relating to the subject site, management options etc	Through Stage 3.2	
Stage 3.7	Document all feedback received from Stage 3	At completion of Stage 3	Anticipated c. November 2020
Stage 4—Review of Draft Cultural Heritage Assessment Report (ACHAR)			
Stage 4.1	Prepare draft ACHAR	This report	This report
Stage 4.2–4.3	Provide copy of draft ACHAR to project RAPs	Following completion of Stage 3.	Minimum 28 days will be provided for RAP review. Anticipated provision November 2020, 28 day review

STAGE	DESCRIPTION	DATE UNDERTAKEN/ STATUS	COMMENT
			end c. Early December 2020.
Stage 4.4	Incorporate RAP comments and feedback and finalise ACHAR	Following completion of Stage 4.2-4.3	c. Early December 2020
Stage 4.5	Provide copy of final ACHAR to RAPs	At completion of Stage 4.4	c. Early December 2020

3. Summary and Analysis of Background Information

This section summarises the environmental, historical and archaeological background and context for the MDC Expansion study area. This summary serves to place the study area and proposed development into an appropriate regional context. This background assessment has been undertaken in order to provide a holistic understanding of the cultural landscape within which the study area is located. This analysis has been prepared to focus on both the tangible, as well as intangible cultural heritage and Aboriginal history of the region, and will assist with the development of appropriate mitigation measures, prior to any non-reversible impact to the site, Aboriginal archaeology and cultural values and significance.

3.1. Aboriginal Ethnohistory

Prior to European occupation of the area Aboriginal people had inhabited the wider region of the Sydney basin for thousands of years. The Dharug, the traditional owners of the Cumberland Plain, are part of a language group that originally extended from the eastern suburbs of Sydney as far south as La Perouse, west as far as Bathurst and north as far as the Hawkesbury River. The wider Dharug language group comprised a number of sub-groups often referred to as 'clans'. The Bediagal clan were likely to have occupied the space between north-west Parramatta and the Hawkesbury River, around the area now known as Castle Hill (Attenbrow 2010).

Much of the evidence of traditional Aboriginal lifestyle and economy was disturbed in the early years of European settlement and much of our information on the local people is based on ethnohistorical sources.

The Dharug people of the Cumberland Plain were also known as 'woods' people by the British colonists (Attenbrow 2010). The Cumberland Plain is made up of woodlands, grasslands, forests, and dry sclerophyll. The area had a range of natural environments and resources accessible from the Castle Hill region and supported a diverse ecosystem of plants and animals, creating an attractive and productive location for Aboriginal occupation and life. Underground vegetables like tubers and roots of orchids, lilies, yams and native carrots where heavily relied on in the Cumberland Plain (Turbin 1986). The closest raw materials for stone tool manufacture would have been the silcrete of the St. Mary's formation at Plumpton Ridge, Eastern Creek and Marsden Park (GML 2015).

The Dharug people usually camped within 100m of permanent water sources which they would use as their home base. Some camps have been recorded further away although very few have been documented further than 500m from water (Attenbrow 2010). Other resources used were timber from the forests for water and storage containers, spears, clubs, digging sticks, boomerangs as well as bark for canoes and shelters. As the Cumberland Plains landscape offered no sandstone cliffs or outcrops for shelter, bark huts were the only form of shelter for the Dharug people (Attenbrow 2010).

3.2. Early Contact Period

The traditional lifestyle of the Dharug Aboriginal people of the Castle Hill area was significantly impacted by the European colonial settlement, with the local people being some of Australia's first Traditional Owners to experience detrimental impacts, social dislocation and disturbance as a result of European arrival. The population in the area decreased as the community came into conflict with the settlers and were displaced from their traditional lands, being forced to move into territories of other Aboriginal clans to access resources (Attenbrow 2010).

Soon after the First Fleet reached Sydney Cove in January 1788 it became apparent that the surrounding land was not suitable for Western agricultural approaches. In addition, the Colonial Marines and convicts were largely untrained in farming, which exacerbated the shortage of both necessary skills and supplies for maintaining the colony. As a result, Governor Philip ordered explorations to be made further inland to locate arable land (Karskens 2010). These inland explorations resulted in European incursion and eventual settlement in the Castle Hill area and surrounds.

Riverbanks and creek areas were preferentially occupied by the colonists, and the surrounding forests were cleared for farmland, which meant animals were driven away and the Dharug people became displaced in their own country (Perkins & Langton 2010). In April 1788, the Castle Hill area was identified by an exploration party as a suitable location for settlement and farming. Land clearing for farming began quickly.

After years of conflict between the Europeans and clans in the area, rebellions were put down by British soldiers after Pemulwuy, who was leading the clan resistance, was shot and killed in 1802 (Perkins & Langton 2010). After this, the Dharug people either lived within European society or on the fringes of it. Within the first three years of European settlement, an estimated fifty to ninety percent of Aboriginal people in the Sydney area died from smallpox. Most of the clans around Port Jackson were completely wiped out and the disease reached and killed many inland Dharug people (Attenbrow 2010). By 1820 over 24,000 colonists heavily occupied the Cumberland Plain and the pattern of life created and developed over thousands of years by the Dharug people had been detrimentally impacted and disrupted (Attenbrow 2010).

3.3. Early History of the Hills Shire

Early European settlement within what is now the Hills Shire LGA was centred on the development of two main roads constructed by convict labour, one that led to Windsor and Wisemans Ferry, and the other to the Hawkesbury River. A later addition provided access to Pennant Hills. Majority of initial land grants within the area were made along these road connections (3).

In 1794, Hawkesbury Road, now known as Windsor Road, became the second road built in the colony, connecting Parramatta and Windsor. In the same year William Joyce, a pardoned convict, received a land grant on the Hawkesbury Road at Baulkham Hills and became the first settler of the hills.

Bordering Old Northern Road and Gilbert Road, the Third Government Farm was established as a convict farm settlement in 1801 in north-east Castle Hill (3). It provided convicts with jobs, as well as providing enough food and stock for the growing colony. After the 1810 harvest, Third Government Farm was abandoned as a farm and the barracks were turned into an asylum (Karskens 2010).

In 1801, John Macarthur purchased a farm from Joseph Foveaux between areas of Toongabbie and Castle Hill. This farm was called Seven Hills Farm, known today as Bella Vista Farm, and was over 2,000 acres. John and Elizabeth Macarthur farmed sheep and citrus crops on this property and it became one of the first major Australian sheep breeding farms (OEH 2020).

The Hills District soon became well known for its agricultural produce, with crops such as citrus and stone fruit orchards, poultry, eggs and milk increasing in popularity. Market gardening, especially growing vegetables, mushrooms and flowers became an important aspect for the area's economy, particularly in the 1930s and after the Second World War with the arrival of European migrants.

Figure 3.1: A new plan of the settlements in New South Wales taken by order of Government, July 20th 1810 [cartographic material]/ William Dymock. (Source: Trove, available from https://trove.nla.gov.au/work/5880943/version/6825846)

Figure 3.2: [Convict uprising at Castle Hill, 1804]
(Source: Trove, available from https://trove.nla.gov.au/work/13325681)

Figure 3.3: Baker, W & Mitchell, Thomas. 1843, Baker's map of the County of Cumberland dedicated by permission to Sir T.L. Mitchell, Knt., Surveyor General of New South Wales Printed and published by W. Baker, [Sydney viewed 21 August 2020]. George Acres land (yellow), current MAAS site & TAFE site (orange).
(Source: Trove, available from https://nla.gov.au/nla.obj-2236340850/view)

Figure 3.4: Castle Hill Parish Map 1924. Study area where Public School was established outlined (orange) (Source: NSW Land Registry Services available from https://hlrv.nswlrs.com.au/)

3.4. MDC Historical Summary

The MDC study area likely formed part of the property owned by William Joyce, one of the earliest European settlers of the Hills region, then part of John and Elizabeth Macarthur's Seven Hills Farm. By the 1840s the study area was bought by George Acres who owned 500 acres of land spread across both sides of Windsor Road most likely purchased and used for farming purposes (Figure 3.3). There is limited evidence for any substantial structures being built on the study area land until acquisition by the Museum in the 1940s.

By the 1940s, the MAAS sought to acquire land in NSW to establish an experimental plantation for researching essential oils. The nine hectares of the MDC land was acquired by the Museum (now MAAS) in 1947 specifically for the purposes of growing several different species of eucalypts for scientific research into the potential of eucalyptus oil for commercial applications. Museum research into the use of essential oils at the Castle Hill property commenced in 1948 with the strategic plantation of dense grids of a range of eucalypts and other shrubs, along with the establishment and construction of associated research facilities including a laboratory, residence for on-site manager, still house, and a range of other sheds and glasshouse (Figure 3.5 to Figure 3.8). This research was completed in 1979, when the MAAS chemical and botanical departments were transferred to the Department of Agriculture (MAAS 2020a).

When the Museum (MAAS) initially acquired the land for research in the 1940s, it was technically a part of the Department of Public Instruction. Therefore, it appears the MDC land was originally acquired by the Government in 1947 under the *Public Works Act 1912*, as land 'for a public school' (Figure 3.43), with the Land Title to the whole MDC Castle Hill property being initially held by the

NSW Department of Public Instruction. Due to this technicality, in 1974 the Department of Technical Education (now TAFE NSW) decided they wanted to erect a technical college on the lot. This resulted in the Museum, no longer part of that Department, having to argue strongly to retain part of the land for research purposes (MAAS 2020b). At this time, the western part of the land was able to be retained for MAAS usage, while the eastern part was developed into what is now TAFE Castle Hill. The Land Title for the portion of the site (on which the MDC now sits) was eventually transferred to MAAS on 27 April 1994, and the remainder was retained by the Department of Education (now TAFE Castle Hill).

Following the closure of the scientific research program at the site in 1979, the MDC study area was converted to a storage facility for the growing MAAS museum collection, with early storage buildings (Stores A & B) constructed on the site at this time. By 1994, the MDC study area housed four object stores, a caretaker's residence, maintenance and propagation sheds, an office, and conservation laboratories. Early design of the MDC site sought to take into account the Museum's storage requirements while seeking to retain the site's plantation trees where possible (MAAS 2002b) (Figure 3.9).

The Museums Discovery Centre was officially opened in 2007, providing public access to the Museum's collection stores. The MDC underwent further development and major expansion in 2014, reopening to the public in its current form in 2016.

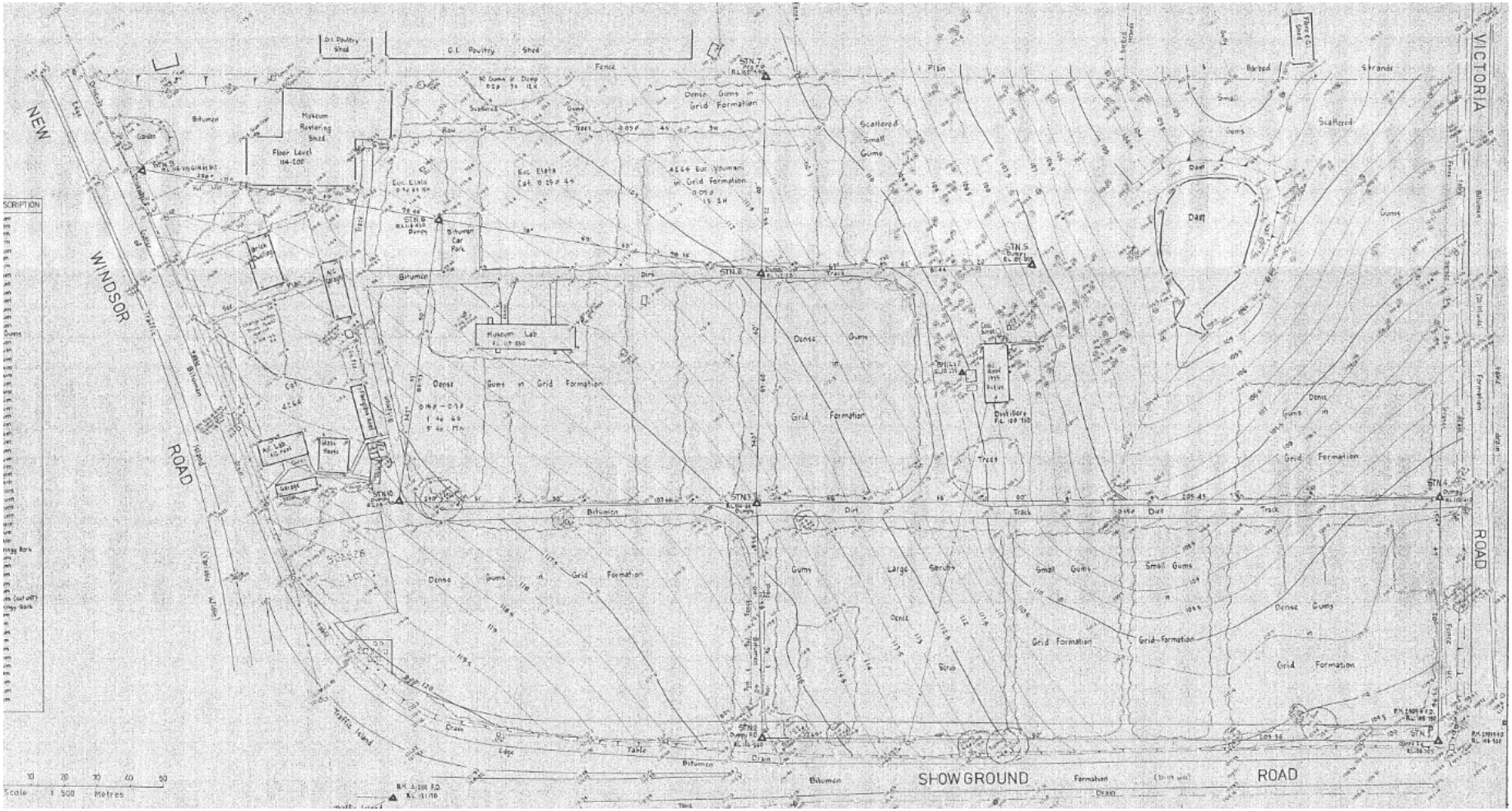

Figure 3.5: MAAS Plantation Plan, prior to MDC and TAFE development (undated) (Source: MAAS)

Figure 3.6: Field assistants at eucalyptus plantation, Castle Hill, c.1955 (Source: MAAS Archives MRS 299/64)

Figure 3.7: Eucalyptus plantation grid, undated. Physical intervention to land evident in the establishment of rigid and dense plantation grids (Source: MAAS Archives Identifier 00q00231.jpg)

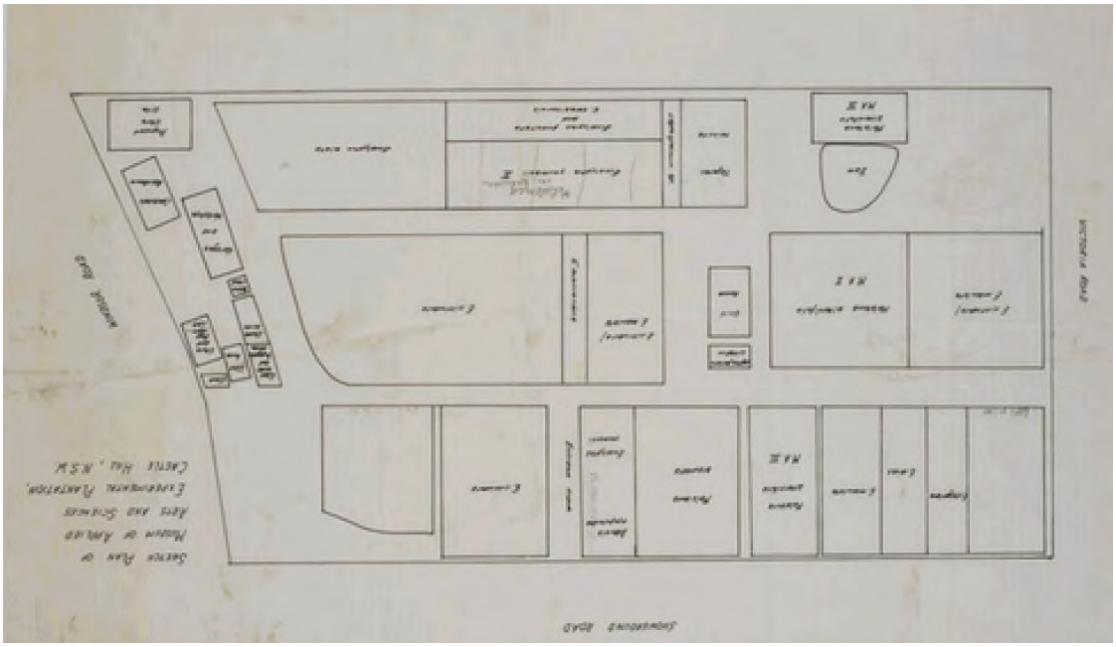

Figure 3.8: Castle Hill MAAS Building Plan, undated. Oriented north (MAAS Archives MRS 279/83)

Figure 3.9: 3D Model of the Museum lands and building at Castle Hill, 2005 (Source: MAAS, https://collection.maas.museum/object/373318)

3.5. Physical Setting and Landscape Context

The physical setting of the study area, its natural resources, landforms, and wider landscape setting has a significant influence over the nature, location, and form of Aboriginal occupation and use patterns through their interactions with the land (tangible values and site), while also providing meaningful landscape context for intangible heritage and connection to Country.

3.5.1. Soils and Geology

Castle Hill is located towards the north-eastern edge of the Cumberland Plain, which is a low-lying plain located in the west of the greater Sydney Basin. The geology of the region surrounding the study area is mostly made up of shales and sandstones of the Wianamatta Group, which overlay Hawkesbury Sandstone and contribute to the observed rolling topography of the region (Bannerman & Hazelton, 2011). Hydrology and water flow across the Cumberland Plain has been shaped over time by the interface between the underlying sandstone and shale.

The study area is underlain entirely by Middle Triassic Ashfield Shale (Rwa). Ashfield Shale is the basal unit of the Wianamatta Group and comprises of dark grey to black claystone-siltstone and fine sandstone-siltstone laminate (Clark & Jones, 1991). This Ashfield shale geology is overlain across the MDC study area by the erosional Luddenham (ERlu) Soil Landscape. Luddenham soils are associated with undulating to rolling low hills on Wianamatta Group Shales with local reliefs of 50-80m (Bannerman & Hazelton, 2011). Soil presentations of the Luddenham Soil Landscape are described further in the sub-section below.

Major potential sources for stone artefact production would have been available to Dharug people via a number of geological formations across the Cumberland Plain, including the St Marys formation at Plumpton Ridge, and river gravels available within the Rickabys Creek, Cranbrook, and Angus Bank formations. No known sources for stone tool materials are located directly within the bounds of Castle Hill itself, therefore it is assumed that raw materials used by local people for manufacture of stone tools would have been imported from the surrounding area..

Erosional Luddenham (ERlu) Soil Landscape

The study area falls within the ERlu soil landscape zone as seen in Figure 3.10. The ERlu soil landscape has been typically described as (Bannerman & Hazelton, 2011):

- Undulating to rolling low hills on Wianamatta Group shales, often associated with Minchinbury Sandstone. Local relief 50-80m, slopes 5-20%. Narrow ridges, hillcrests and valleys. Extensively cleared tall open-forest (wet sclerophyll forest).
- Soils are shallow (<100cm) dark Podzolic Soils or massive earthy clays on crests; moderately deep (70-150cm) Red Podzolic Soils and Prairie Soils on lowers slopes and drainage lines.
- Highly erodible soils, moderately impermeable and highly plastic subsoil, moderately reactive (Bannerman & Hazelton, 2011)

Previous work has found subsoils formed *in situ* and topsoils are usually formed from materials washed from further up-slope. The Luddenham soil landscape is subject to gully erosion and moderate sheet erosion in places stripped of vegetation.

The Luddenham soils are made up of the following soils (from Bannerman & Hazelton 2011):

- A friable dark brown loam (**lu1**) with a few small shale fragments. Roots are common in the top 100 millimetres and charcoal fragments are rare. This material occurs as a topsoil. (A1 Horizon)
- A brown, clay loam (**lu2**) with consistent shale rock fragments, charcoal fragments and roots. (A2 Horizon)
- Whole coloured, strongly pedal clay (**lu3**) varying in colour from brownish black to dark reddish brown. Roots are rare and shale rock fragments are common. (B Horizon)
- Mottled grey plastic clay (**lu4**), shale rock fragments and gravels are common and occurs as a deep subsoil. Roots are rare.
- Apedal brown sandy clay (**lu5**) contains up to 10% inclusions of small, well-weathered shale fragments. (B Horizon)

Previous archaeological excavations in the area suggests that Aboriginal archaeological deposits are likely to only be present within the top 25-30cm of Luddenham soils, i.e. within the loam and clay loams of A-horizon soils only, while deeper B horizon clays are usually culturally sterile. Luddenham soils are particularly prone to erosion, particularly on crest and slope landforms that have been subject to previous historical land clearance. Therefore any Aboriginal sites and deposits that may once have been present on these landforms, are likely to be have been subject to significant levels of disturbance and/or relocation due to soil movement and erosion.

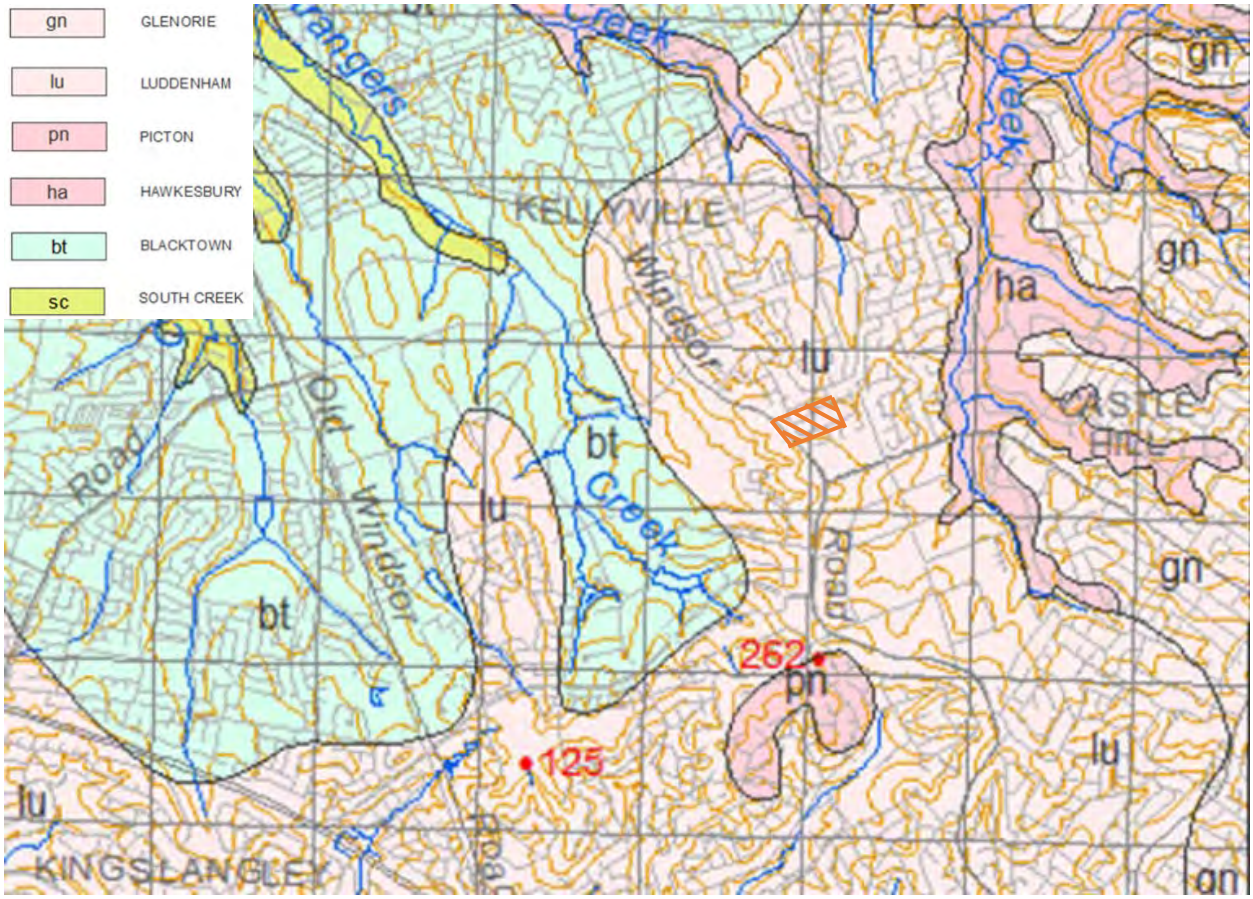

Figure 3.10: Soil Landscapes of the Penrith 1:100,000 sheet (MDC study area hatched in dark orange) (Source: Data. NSW Soil Landscape Sheet https://data.nsw.gov.au/data/dataset/soil-landscapes-of-the-penrith-1-100000-sheet0cca7/resource/d1600d82-511c-47fc-bbda-bf14e73386a8?inner_span=True)

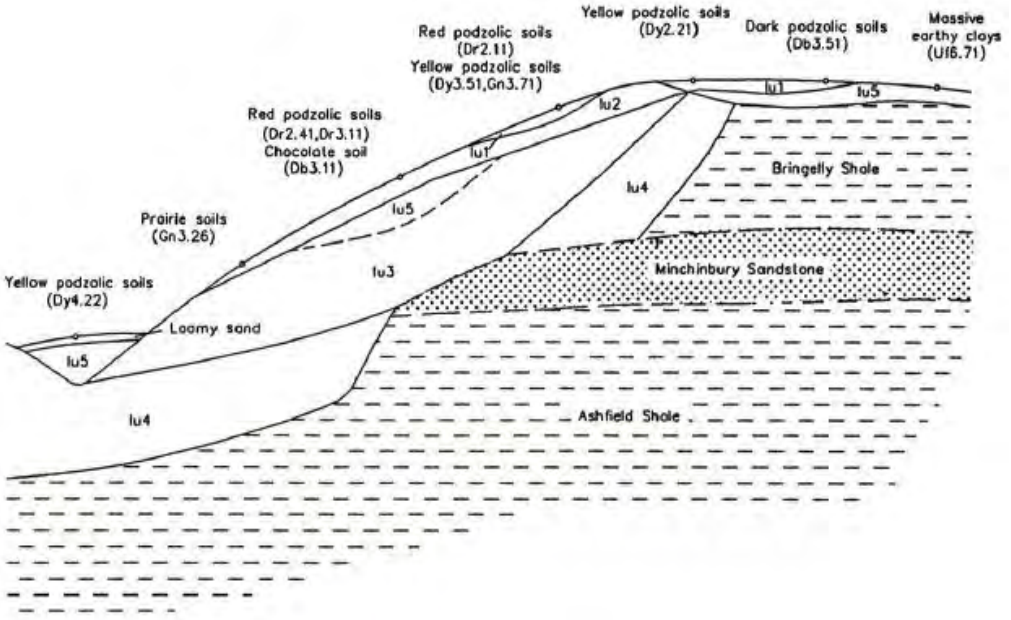

Figure 3.11: Distribution diagram of the Luddenham soil landscape showing the occurrence and relationship of dominant soil materials (Source: Data. NSW, 2020, Penrith Soil Report, https://data.nsw.gov.au/data/dataset/0ddd4d3d- fec6-4131-bc41-978df55113a9)

3.5.2. Hydrology

The hydrology of an area plays an important role in identifying not only areas of occupational, environmental, and archaeological potential, but also in understanding how deposits at a site are formed and/or impacted by hydrology. The effects of hydrology range from the availability of water, to flooding, which impacts both occupation and deposition.

Located in the north-east of the TAFE site is a dam roughly 1586m^2. As the dam is located at the top of a sloping landscape, it is likely a reflection of intentional damming by previous farmers of the headwaters of an ephemeral drainage line draining to Smalls Creek to the north, to manage water flow and use within the property.

The nearest major watercourses are found less than 1km away to the north, east and west of the study area, including Cattai Creek 540m east of the site, which past archaeological investigations have identified as being significant for Aboriginal occupation in the area, with a high density of archaeological sites associated with it. A perennial first order tributary of Smalls Creek is located 880m north of study area and two dams both under 500m west and south-east of the site.

Geographically, the study area is located between Cattai Creek and Strangers Creek which are two major creek lines in the area that would have supplied water for Aboriginal people all year round. A number of other minor creeks and tributaries are located in the vicinity of the MDC study area, however none are particularly close.

While the surrounding region has numerous rivers, creeks and smaller unnamed tributaries present, none are located directly within, nor in particular proximity to the MDC study area. Therefore, while fresh water would have been moderately accessible from the study area landscape, this would have involved localised travel to access, and would not have been consistently available to support an Aboriginal population all year round.

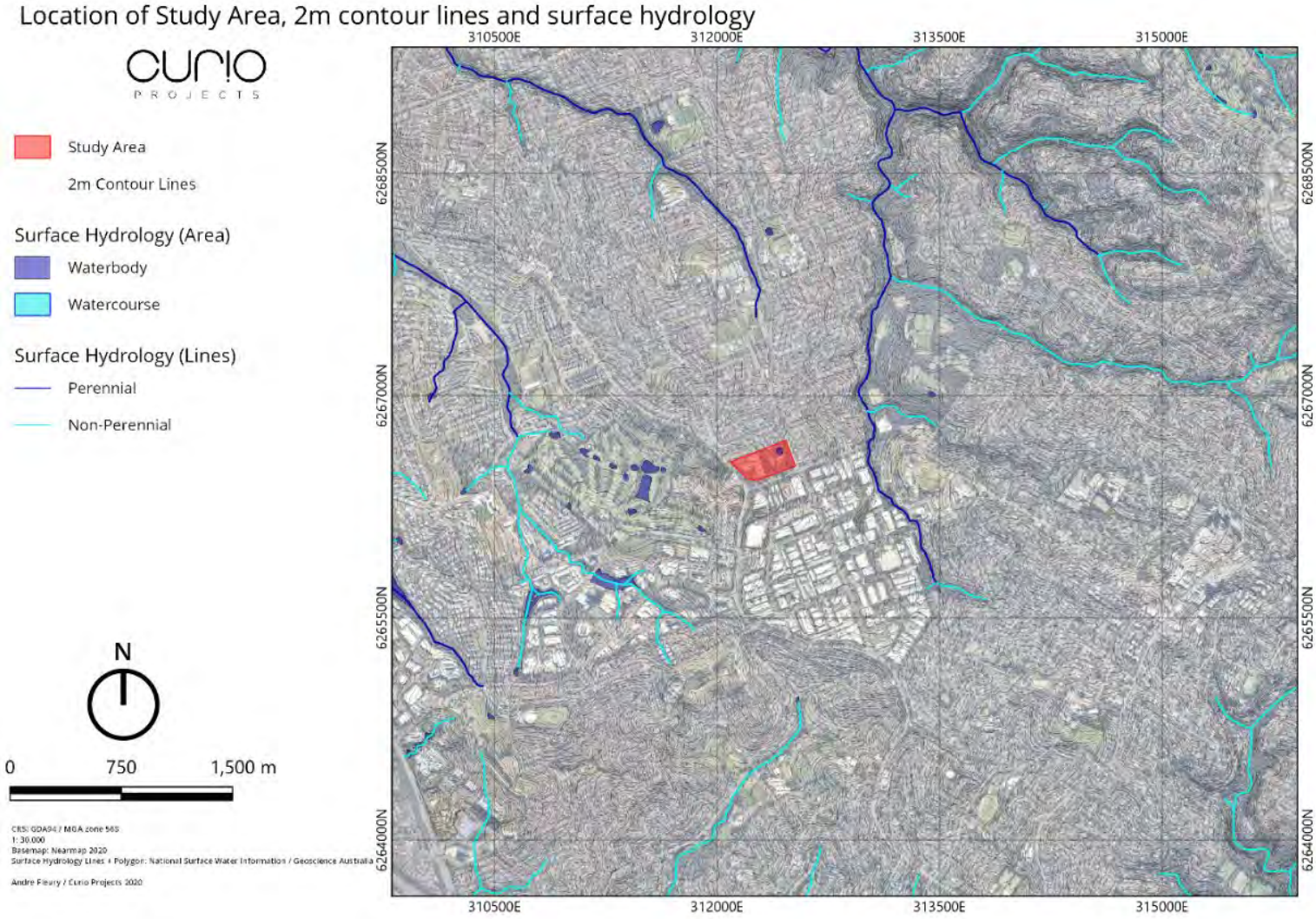

Figure 3.12: Hydrology surrounding study area (red) (Source: Curio 2020)

3.5.3. Landscapes and Landforms

The MDC is located at the northern edge of the Cumberland Plain. The topography surrounding the MDC study area is typical of the Cumberland Lowlands and is broadly characterised as flat to undulating landforms, with floodplains, ridges and flat-topped terraces dissected by drainage depressions of larger watercourses and their tributaries (Bannerman &Hazelton, 1990).

The study area is in north-west Castle Hill abutting Windsor Road along its western boundary. Windsor Road follows along a ridgeline that extend northwest between the lower lying creeklines of Strangers and Smalls Creeks to the west and east of the ridgeline respectively.The MDC study area is located on the northern upper slope of an elevated flat/low hill top landform (from which the Windsor Road ridgeline extends northwest) which gently slopes down to the east towards Green Road, with steeper slopes to the south and southwest towards the lower lying headwaters of Strangers Creek (now located and accentuated within the Castle Hill Country Club Golf Course) (Figure 3.13).

There is a 6m fall across the study area, from the highest point in the southwest of the land at 118m AHD, to 102mAHD in the lowest lying area of the dam in the northeast of the study area (TAFE site).

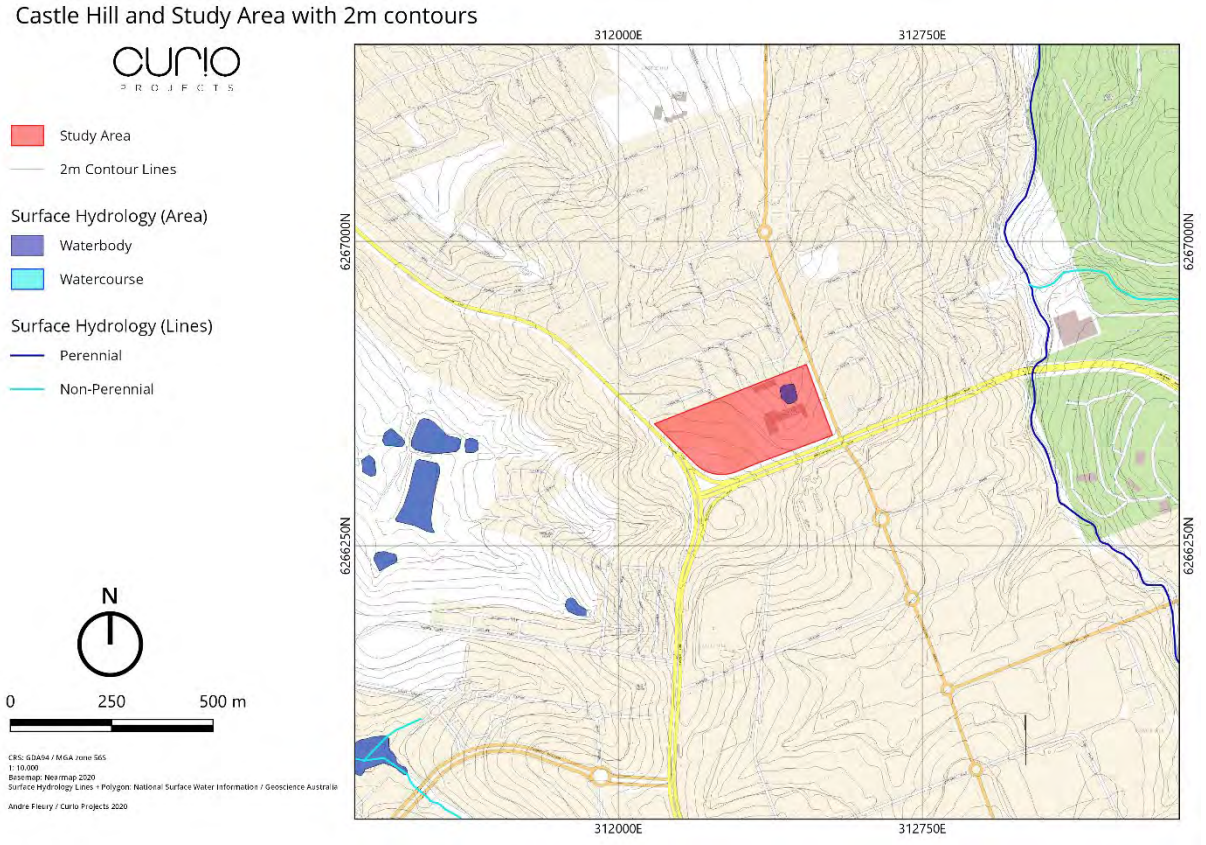

Figure 3.13: Overall area of MDC & TAFE site in red (Source: Curio Projects 2020)

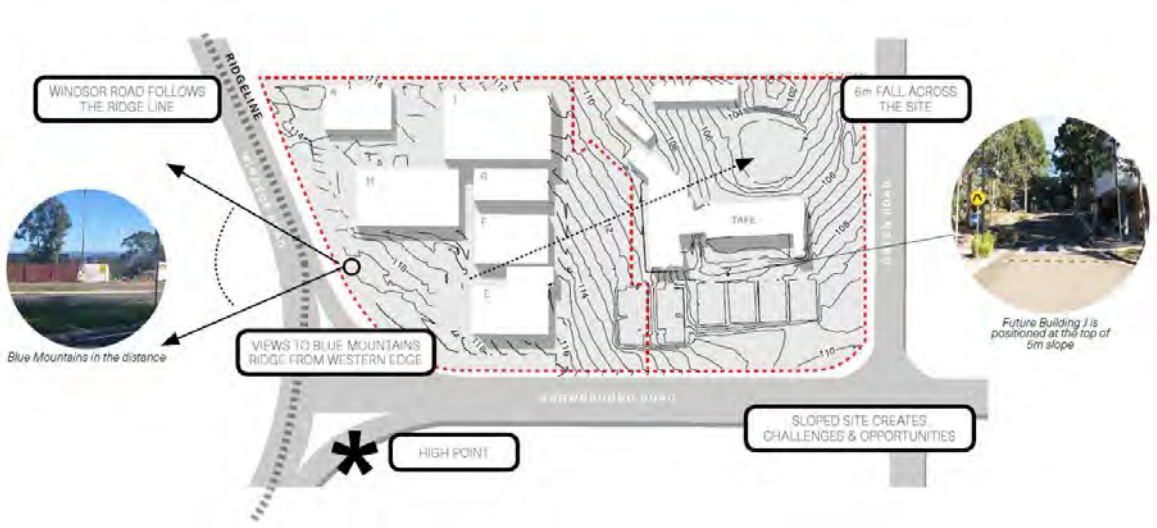

Figure 3.14: Site Topography Context (Source: Lahznimmo Architects, MDC SSDA Design Report, 7.8.2020)

3.5.4. Vegetation

An understanding of the original vegetation of an area provides information about the resources that such vegetation would have provided to Aboriginal people in the study area, and would have influenced how different locations were accessed, used and visited. Vegetation can itself be a direct resource- such as tree bark for canoes, shield etc, or edible plants- or it can be an indirect resource, creating habitats for different animals such as possums, birds etc, available for hunting. An outcome of the historic European land use practices and contemporary land management within the study area is that native vegetation has been modified and remnant vegetation is predominately densely planted eucalyptus trees.

The study area likely once contained the Turpentine Ironbark Forest community, which is located along the eastern edge of the Cumberland Plain. The Turpentine Ironbark Forest of the Cumberland Plain was once dominated with turpentine trees (*Syncarpia glomulifera*), including other species such as thin-leaved stringbark (*E.eugenioides*) and grey ironbark (*Eurcalyputs paniculate*). In areas where shale soils are fairly shallow the Grey gum (*E.puctata*) also appears infrequently. A stratum of small trees is common within the Cumberland Plain vegetation communities, including specifes such as sweet pittosporum (*Pittosporum undulatum*), poison peach (*Trema aspera*) and Parramatta wattle (*Acacia parramattensis*). The shrub stratum contains predominantly moisture-dependent species such as coffee bush (*Breynia oblongifolia*), narrow leaved orangebark (*Maytenus sylvestris*), and yellow pittosporum (*Pittosporum revolutum*). The ground cover consists of dense herb and grass species dominated by Australian basket grass (*Oplismenus aemulus*), rough-bearded grass (*Echinopogon ovatus*) and pastel flower (*Pseuderanthemum variabile*) (Tozer, 2003).

The ways vegetation may have been used by Aboriginal people in the past include the use of basket grass for weaving nets and bags, and for tool manufacture the use of the resin and bark of the thin-leaved stringybark (Clarke, 2012). The natural vegetation of the Cumberland Plain would also have provided habitats for a diverse range of fauna for hunting, and other food resources such as native berries, fruits, roots and tubers etc for food.

3.5.5. Description of Project Area

The MDC study area is located at the north western edge of Castle Hill on the eastern side of Windsor Road. The immediate context of the study area comprises a range of land uses including residential neighbourhoods, retail premises, warehouses, public recreation and industrial areas. The location of the proposed new MDC building (Building J) is in the south-western side of the existing TAFE site (marked with a dashed yellow line in Figure 1.1). The proposed Building J site is located within the property known as 2 Green Road which comprises a single lot. The existing MAAS MDC Site is located at 172 Showground Road and abuts the western boundary of the proposed Building J area.

At the time of writing, the TAFE site includes the TAFE campus buildings (Figure 3.18, Figure 3.20), car parking, vegetated open spaces of the site and a dam situated in the north eastern side of the site. The proposed Building J study area is currently covered by 337 Eucalyptus trees (a remaining area of the 1940s MAAS scientific plantation) (Figure 3.19), an extension of the carpark in the south east of the study area (Figure 3.21), and an access driveway connecting the TAFE site to the MAAS site (Figure 3.20). The Showground Road MDC driveway entry abuts the current boundary line between the MDC and TAFE site (Figure 3.17, Figure 3.16).

There is no remnant Cumberland Plain woodland vegetation on the proposed Building J site (from MDC project Biodiversity Development Assessment Report, prepared by WSP 2020).

Figure 3.15: View west to the current MDC from Building J study area

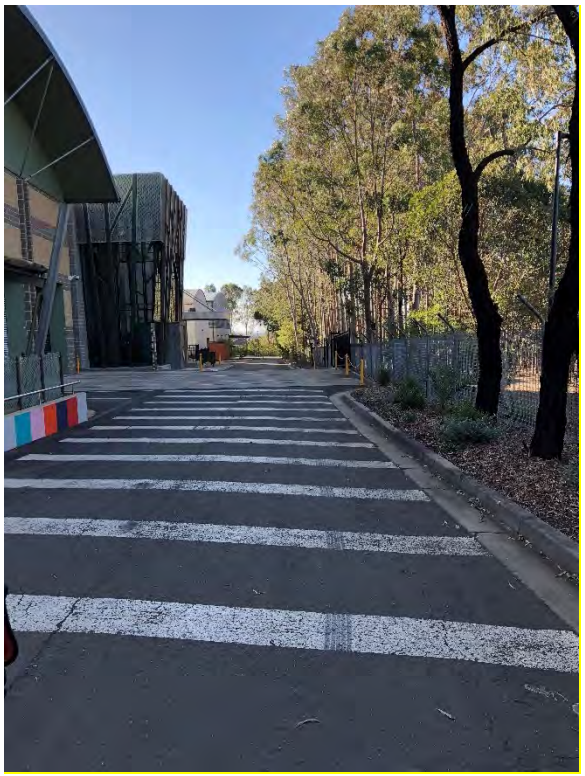

Figure 3.16: Northern view along current MDC driveway from Showground Road, Building J to be located to the east

Figure 3.17: Eastern view along Showground Road, existing MDC driveway, with Building J study area beyond fence line

Figure 3.18: North-western view of existing carpark within Building J study area, with Eucalyptus trees and TAFE building to its east.

Figure 3.19: Northern view across Building J study area with existing Eucalyptus Trees plantation

Figure 3.20: Eastern view of TAFE building east of Building J study area and driveway orientated East to West connecting TAFE site to current MAAS site.

Figure 3.21: Western view of south-east carpark spaces within proposed Building J study area, existing MDC building in background,

Figure 3.22: Eastern View of TAFE carpark from proposed Building J site and Green Road in the background.

3.5.6. Modern Land Use History and Disturbance

While vegetation clearance is generally considered to only present a minor impact to archaeological potential, subsequent processes following vegetation removal such as sheet erosion of soils increase the likely impact to archaeological potential of a site. Soil disturbance at a site directly influences Aboriginal archaeological potential, as intact Aboriginal archaeological deposits of high integrity are located within undisturbed topsoils.

The main historical activities specific to the study area that would have the greatest impact to and/or removed natural soil profiles include:

- Initial European vegetation and land clearance associated with early farming/agricultural activities in the early 19th Century.
- Agricultural ploughing was a common historical activity across the Cumberland Plain. However, previous archaeological investigations in the region have determined that ploughing generally only affects soils up to c.30cm in depth
- Eucalyptus plantation establishment works (1940s-70s), including creation of dense plantation grids, construction of laboratories and other associated buildings, land grading, leveling and general preparation works required, likely to have included soil excavation and intervention to establish the dense eucalypt forest grids for scientific research.
- Construction of buildings for the MDC and TAFE sites (1970s onwards).

- Levelling and grading activities for construction of site features including carpark and dam- which would have required some cut and fill to establish the carpark surface, including some cutting of the natural topsoil (likely disturbing soil profiles up to 400mm below ground surface within Building J proposed footprint).
- Installation of utilities and services across site (trenching for sewer and water mains, electric easements etc).

Geotechnical Investigation

Geotechnical investigations undertaken within the study area provides ground truthing and further clarification of the nature of the sub- surface soil and disturbance present within the study area. A geotechnical investigation was undertaken within the study area in 2019, consisting of six geotechnical boreholes (Alliance Geotechnical 2019), from which an inferred subsurface soil and geological profile has been developed for MDC study area (Table 3.1). Generally, Ashfield Shale bedrock is located across the study area at depths between 1.3m-6.9m below the current ground level. Investigation works concluded no groundwater seepage was present during auguring.

The soil stratigraphy within the study area as identified by geotechnical investigations consists of a silty/sand clay fill topsoil (up to 30-60cm in depth), overlying stiff to very stiff silty clay residual soils (up to 1.3-1.7m in depth), over a layer of hard residual gravelly clay overlying shale bedrock. Contact was made with the shale bedrock at a 1.3m depth in the northern side, dipping to 1.9m at the southern side.

The geotechnical description of 'topsoil' is likely to be consistent with Luddenham soils.

Borehole	BH101	BH102	BH103	BH104	BH105	BH106
Surface level (m) *	RL 113	RL 112	RL 111	RL 114	RL 115	RL 112
Geotechnical Units	Depth below the ground surface (m)					
Topsoil/ Fill: Clayey Silt/Sandy Clay	0.0 – 0.6	0.0 – 0.4	0.0 – 0.5	0.0 - 0.6	0.0 – 0.6	0.0 – 0.3
Residual Soil: Silty/gravelly clay, high plasticity, stiff to very stiff	0.6 – 1.7	0.4 – 1.4	0.5 – 1.3	0.6 – 1.9	0.6 – 1.9	0.3 – 1.6
Bedrock: Shale, very low to low strength, extremely to highly weathered	1.7 – 5.4[a]	1.4 – 6.6 [b]	1.3 – 2.5	1.9 – 3.8	1.9 – 4.0	1.6 – 3.0
Bedrock: Shale, medium strength, moderately weathered	5.4 – 6.7	6.6 – 6.9	-	-	-	-
Termination depth (m)	6.7	6.9	2.5	3.8	4.0	3.0
(a): Several clayey seams with a maximum thickness of 70mm between 2.3m and 6m; (b): Clayey seams with a maximum thickness of 90mm between 5.3m and 6.6m.						
* The levels are estimated based on the site levels indicated on Ground Floor Plan and the site's condition at the time of this investigation.						

Figure 3.23: Summary of inferred subsurface conditions encountered in Alliance Geotechnical Boreholes (Source: AG 2019: Table 1)

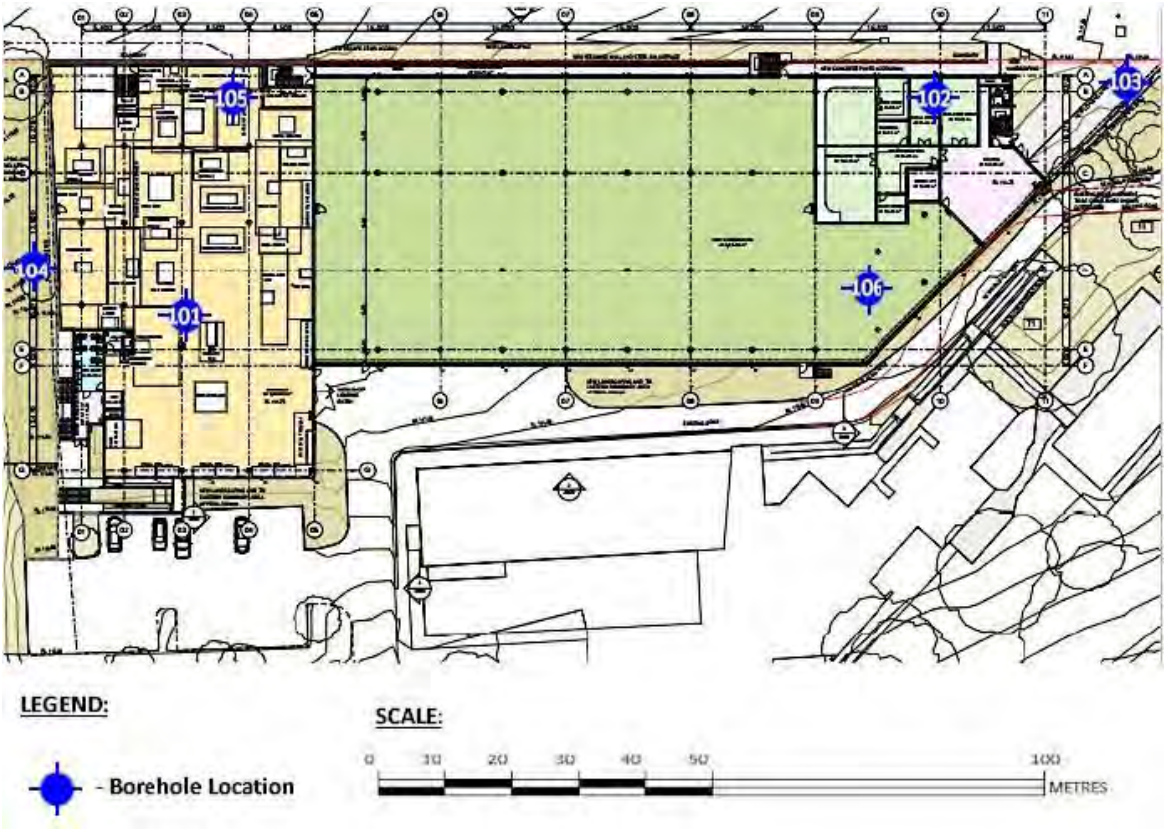

Figure 3.24: 2019 Geotechnical Borehole Plan (Source: Alliance Geotechnical: Appendix B)

3.5.7. Summary of Physical Setting and Landscape Context

The MDC study area is located on a slope landform near the north-eastern edge of the Cumberland Plain. The study area is located on the erosional Luddenham soil landscape, which is typically characterised by shallow A-horizon loamy topsoils (generally only up to 30cm in depth), overlying deeper B-horizon clays. Due to the shallow and erosional nature of Luddenham soils, Aboriginal archaeological deposits are only likely to be present within the loam and clay loam A-horizon topsoils (i.e. top 25-30cm). Deeper B horizon Luddenham clays are usually culturally sterile. Luddenham soils are particularly prone to erosion, particularly on crest and slope landforms that have been subject to previous historical land clearance. Any Aboriginal sites and deposits that may once have been present on these landforms, are likely to be have been subject to significant levels of disturbance and/or relocation due to soil movement and erosion.

Therefore, it would be expected that any remnant intact topsoil at the MDC study area capable of bearing an Aboriginal archaeological deposit (should one be present) would be quite shallow, only up to a depth of 15-20cm deep.

The study area has been completely cleared of native vegetation, but was replanted with dense grids of eucalypt forests in the 1940s for MAAS research into essential oils. Some of these plantation areas remain within the study area.

While the surrounding region has numerous rivers, creeks and smaller unnamed tributaries present, none are located directly within, nor in particular proximity to the MDC study area.

Therefore, while fresh water would have been moderately accessible from the study area landscape, this would have involved localised travel to access, and would not have been consistently available all year round.

Historical ground disturbance within the MDC study area has been moderate to high, ranging from earlier ephemeral (presumably low impact) farming and grazing activities in the mid 1800s, through to extensive land clearing and planting for the MAAS research facilities, and progressive construction of buildings and structures associated with the MAAS research program, TAFE Castle Hill, and the MDC itself.

3.6. Material Evidence of Aboriginal Land Use

Over the past 20 years the Cumberland Plain has seen hundreds of Aboriginal archaeological excavations undertaken across many locations and landforms. The following section presents the results of a literature review of the NSW AHIMS library and other relevant reports for the Castle Hill region and surrounds. The nature, location and extent of archaeological evidence of Aboriginal occupation as it presents in the Castle Hill region is further described in the following subsections.

3.6.1. Archaeological Evidence of Aboriginal Occupation

The earliest accepted scientific date from archaeological sites on the Cumberland Plain are, like those across the rest of Australia, unlikely to accurately reflect earliest occupation of Aboriginal people. This discrepancy between scientific dating and likely occupation relates largely to changes in sea levels, which impacted both occupation patterns of Aboriginal people between the Last Glacial Maximum (LGM) and present, as well as inundating sites along the coasts and rivers, making them inaccessible to today's archaeological investigations.

The most recent period of maximum glaciation in Sydney was 15,000-18,000BP, at which time sea levels would have been up to 140m below current, pushing the coastline further to the east. Around 10,000 years ago at the end of the Pleistocene epoch (LGM), the polar ice caps melted and sea levels began to rise, which would have forced Aboriginal people to abandon coastal sites and moved inland, causing significant impact both to physical occupation patterns, as well as to economic and social habits. By around 6,000 years ago, rising sea levels had flooded what was once a coastal plain along Sydney's east coast, forming the landscape of Sydney harbour and its river valleys that we recognise today. Therefore, the majority of archaeological sites in Sydney that have been scientifically dated, recovering dates of 5,000BP and later, after sea levels had stabilised. Few archaeological sites in Sydney have been dated to before 10,000BP, with a few exceptions- summarised as followed.

The oldest widely accepted date for Aboriginal occupation in the Greater Sydney region is 25,000-30,000 years ago, recovered from the George & Charles St site in Parramatta (JMcDCHM 2005), a basal date of 30,735±407BP, recovered from the Pleistocene geomorphological formation known as the Parramatta Sand Body (PSB). This geomorphological formation has been encountered during several excavations in Parramatta, although it has not always been found to contain evidence of Aboriginal occupation.

Other Aboriginal archaeological sites on or around the Cumberland Plain that have been scientifically dated to the Pleistocene epoch include a date of 41,700 ±3000 BP from Aboriginal artefacts recovered from gravels within the Cranebrook Terrace on the Nepean River (Stockton & Holland 1974) (although there is some debate and dispute over the veracity of this date), and the more widely accepted date of 14,700± 250BP from a rock shelter site known as 'Shaws Creek K2' on the Nepean River, north of Penrith, at the most western extent of the Cumberland Plain (Attenbrow 2010). More recently, a site on the banks of the Hawkesbury River at Pitt Town has had the lowest deposits of an archaeological salvage excavation dated to 15,000BP (Williams et al, 2012).

3.6.2. AHIMS Search

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) database was undertaken on 22 July 2020, across The Hills Shire centred on the study area (with a buffer of 1km) and returned 93 results. The extensive AHIMS search is attached as Appendix B to this report.

Summary descriptions of Aboriginal site features registered on AHIMS, as relevant to the study area, are presented in Table 3.2. The 93 registered sites from the AHIMS search included ten different site types, some located in combination with each other, as summarised in Table 3.1. No registered sites are located within the study area.

The most common site types in the area are artefact sites (n=35), followed by Potential Archaeological Deposits (PADs) (n=9), and Potential Archaeological Deposits (PADs) in relation to a number of other site types (n=7). While two modified trees and one grinding groove were located by this AHIMS search, neither of these sites are in close proximity to the current study area.

The closest registered sites are surface artefact sites, located >500m north and northeast of the study area. The general landform patterning of registered Aboriginal sites in the region is clearly related to creeklines and hydrology, with the majority of sites clearly visible as being clustered around larger creeklines and confluences (such as Cattai Creek to the east) (Figure 3.25).

It should be noted that AHIMS database is a record of archaeological work that has been undertaken and registered in the region, the need for which has likely been predominantly triggered by development, and not a representation of the actual archaeological potential of the search area. AHIMS searches should be used as a starting point for further research and not as a definitive, final set of data.

Table 3.1: AHIMS Sites in the Vicinity of the Study Area

SITE TYPE	NUMBER OF SITES	% OF SITES
Art (Shelter with Art)	1	1.08
Grinding Groove	4	4.3
Potential Archaeological Deposit (PAD)	9	9.68
Aboriginal Resource and Gathering	3	3.23
Burial	1	1.08
Artefact and Grinding Groove	4	4.3
Grinding Groove and Art (Shelter with Art)	1	1.08
Artefact and PAD	7	7.53
Artefact and Art	1	1.08
Artefact	62	66.67
TOTAL	**93**	**100**

Table 3.2: Aboriginal site features referred to in this report

SITE FEATURE	DESCRIPTION/DEFINITION BY OEH 2012
Artefact Site (Open Camp Sites, Artefact Scatters, Isolated Finds)	Artefact sites consist of objects such as stone tools, and associated flaked material, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating physical evidence of use of the area by Aboriginal people. Registered artefact sites can range from isolated finds, to large extensive open camp sites and artefact scatters. Artefacts can be located either on the ground surface or in a subsurface archaeological context.
Potential Archaeological Deposit (PAD)	An area where Aboriginal cultural material such as stone artefacts, hearths, middens etc, may be present in a subsurface capacity.
Grinding Grooves	Grinding grooves are a groove in a rock surface resulting from manufacture of stone tools such as ground edge hatchets and spears, may also include rounded depressions resulting from grinding of seeds and grains
Art Site	Art is found in shelters, overhangs and across rock formations. Techniques include painting, drawing, scratching, carving, engraving, pitting, conjoining, abrading and the use of a range of binding agents and the use of natural pigments obtained from clays, charcoal and plants.
Aboriginal Resource and Gathering	Related to everyday activities such as food gathering, hunting, or collection and manufacture of materials and goods for use or trade.

Figure 3.25: AHIMS Sites. Study Area in Red. Dominant site patterning focused around larger creeks and confluences (Source: Curio 2020

3.6.3. Previous Archaeological Investigations and Assessment

Numerous Aboriginal archaeological excavations have taken place within the Cumberland Plain and Hills Shire region. The most commonly found Aboriginal archaeological excavations within the Cumberland Plain is the stone artefact scatter or 'open camp site'. These sites include shallow surface scatters, usually without associated stratified sub-surface deposits. The following section presents the results of a literature review of the NSW AHIMS library and other relevant reports, to better understand the broader archaeological patterning of the Hills Shire region.

No previous Aboriginal excavation or investigation has been undertaken within the study area.

Pevensey Street, Castle Hill Aboriginal Archaeological Heritage Due Diligence Assessment (AECOM 2020)

In April 2020, AECOM prepared an Aboriginal Archaeological Heritage Due Diligence Assessment for Pevensey Street, Kellyville, which is c.800m northwest of the MDC site. They concluded that the site would have not have had sufficient fresh water available to support occupation all year round and repeated occupation activities. Combined with the moderate to high levels of historical disturbance undertaken at the site, AECOM concluded that the site would have a low Aboriginal archaeological potential.

Kellyville Excavation, Balfour Drive (JMcDCHM Pty Ltd 2002)

A number of Aboriginal archaeological salvage excavations were undertaken in Kellyville in 2002 by Jo McDonald Cultural Heritage Management Pty Ltd (JMcDCHM). The area investigated was situated along the lower slopes of the western bank of Smalls Creek ('PAD12' and 'PAD 13') within the Rouse Hill Development Area (RHDA).

An open artefact scatter site RH/SC5 (PAD12), recovered a total of 1,099 artefacts. In 1993, work involved dispersed test pits totalling 4.5m^2 in the area with the average density of 30 artefact/m^2. A total of 21 dispersed test pits and 34 squares of open excavation were completed in 2002, over 55 square metres, with low to moderate densities of 14 artefacts/m^2. The site was occupied during the Pre- Bondaian to Late Bondaian period.

Caddies Creek Precinct (JMcDCHM Pty Ltd 2007)

In 2006, a salvage excavation with over four archaeological landscapes were conducted within the Caddies Creek precinct of the Rouse Hill Development Area. A total of 545m^2 were excavated during this project from the excavation of 145 dispersed 1m^2 test pits and 400m^2 of open area excavation. 22,000 lithic items were recovered and 18,000 of these lithics had technical attributes denoting them as artefacts. Silcrete was the most common lithic source. Grinding grooves were also recorded during this time as several were found along Caddies Creek. JMcDCHM compared the findings of Caddies Creek Precinct and Mungerie Park study (AMBS 2000) and discovered that site and artefact density varied with stream order and proximity to stone sources. Artefact density declined with distances over 200m from the creek.

Second Ponds Creek Excavation (JMcDCHM Pty Ltd 2005)

In 2005, eight landscapes were excavated in the Rouse Hill Development Area (RHDA) as a range of new developments, one of them being Rouse Hill Infrastructure (RHI) programme, would affect the sites including water and sewage pipelines and storm water drainage basins. Seven of the sites were in Rouse Hill in Second Ponds Creek (RH/SP12-21) and the eighth site on Old Windsor Road (OWR2). More than 1,310m^2 was excavated with over 32,987 lithics recovered. Subsurface archaeological deposits were found, even when no surface artefacts were in that area. A common occurrence that disturbed most sites was ploughing, although it only affected generally the top 30cm of soil. Evidence of occupation across the landscape was Pre- Bondaian to Late Bondaian.

Area 20 Precinct, Second Ponds Creek (Kelleher Nightingale 2010)

The Area 20 Precinct is situated west of Windsor Road and north of Schofields Road with Second Ponds Creek running through the middle. An Aboriginal Heritage Assessment of the Area 20 Precinct was undertaken by Kelleher and Nightingale in 2010 to inform the Department of Planning on the opportunities and constraints for land and delivery of infrastructure in the precinct. A field survey was undertaken and recorded 19 new Aboriginal archaeological sites and eight new PADs. A total of 29 surface artefacts, most were made of silcrete, were located on the lower slope landform. The mid slopes had five isolated silcrete artefacts and the ridge crest contained two scatters and one isolated find with seven silcrete artefacts in total. A scatter along the creek flat contained five silcrete artefacts and one isolated quartz artefact. The lower slopes surfaces therefore have the highest artefact numbers and densities.

Kelleher and Nightingale (2010) state the implications of the results of previous archaeological surveys in the Rouse Hill area and the excavations for Area 20:

- *'Stone artefacts are likely to occur across the entire study area;*
- *The highest artefact numbers and densities will be associated with the margins of Second Ponds Creek;*
- *Artefact densities are likely to be quite low on the higher upperslope and crest landforms within Area 20. Although artefacts may not be observed on the surface during field survey they are likely to be present in a sub surface context; and*
- *The subsurface archaeological context across Area 20 would not necessarily have been heavily disturbed by ploughing and/or vegetation clearance.'*

Showground Station Precinct (GML Heritage 2015)

In 2015, GML Heritage prepared an Aboriginal heritage assessment for the Showground Station Precinct. The northern boundary of this Precinct study area is along Showground Road, immediately south of the MDC study area (Figure 3.26).

GML concluded that while the Precinct had been subject to moderate to high levels of historical ground disturbance, including soil erosion processes, the Precinct still retained potential to contain as yet unrecorded Aboriginal heritage sites, likely in the form of open camp sites/artefact concentrations, and/or isolated finds, particularly in areas within 100-200m of a watercourse.

Figure 3.26: GML 2015 Showground Station Precinct, MDC study area circled in blue (Source: GML 2015)

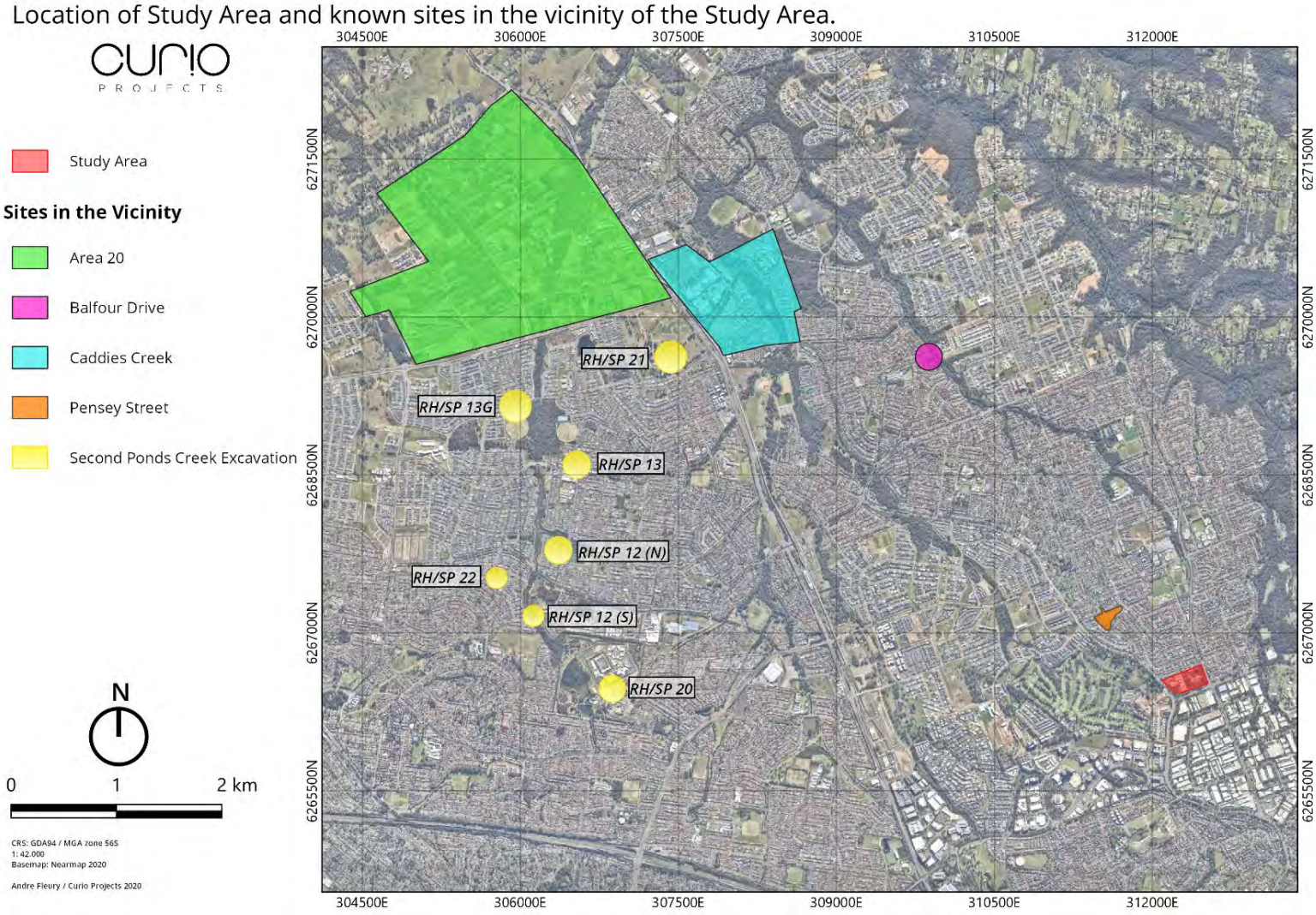

Figure 3.27: Location of Sites referenced Above (Source: Curio 2020)

3.6.4. Summary of Previous Archaeological Investigation

Previous Aboriginal archaeological excavations within the Cumberland Plain have identified the presence of occupation by Aboriginal people in the region- dating from the Pre-Bondaian phase (c.30,000 BP) through until late Bondaian (c.1000BP to European contact). Excavations have demonstrated the ability for Aboriginal archaeological deposits to be retained within a site area regardless of historical disturbance.

While numerous Aboriginal archaeological excavations have taken place across this area of the Cumberland Plain that have encountered significant Aboriginal archaeological deposits, these investigations have also demonstrated that:

- locations of Aboriginal sites across the Cumberland Plain are highly influenced by stream order, and
- due to the shallow and erosional nature of soils in this region, historical ground disturbance of the top 30cm of natural soil profiles causes significant impact to the potential for Aboriginal archaeological deposits to be retained in a location.

The location of the MDC across a slope landform on shallow soils, not in close association with a permanent or larger water course, and subject to moderate levels of historical ground disturbance, suggests that the study area lacks the natural features that would have encouraged preferential or intensive Aboriginal occupation of this location in the past, nor potential to retain an archaeological signature.

3.7. Regional Character and Archaeological Predictive Model

Predictive modelling plays an important role in understanding the remnant archaeological potential of a site, and thus factors into development of appropriate management recommendations and mitigation strategies. Archaeological predictive modelling integrates information about environmental context, previous historical activities and ground disturbance, and known location of surrounding sites (excavations and registered AHIMS sites), to assess and predict the nature of archaeology that may present within the study area.

Regionally, Aboriginal people have occupied the Cumberland Plain area since at least Pre-Bondaian phase (c.30,000 BP), possibly even earlier. The Cumberland Plain is one of Australia's most archaeologically excavated landscapes with hundreds of excavations taking place over the past 20 years. Predictive models for the Cumberland Plain indicate that whilst Aboriginal sites may be discovered on all landforms, gently undulating topography is favoured over steep slopes, higher ground or ridge crests were possibly used as vantage points or travel routes, and lasting water sources are expected to have attracted reoccurring visits of longer periods in an area.

Across the Caddies Creek landscape, previous studies suggest the following trends with regards to Aboriginal archaeological site locations and densities:

- Artefact distribution and density appears to vary significantly by landform
- Within 100m of the creek, average artefact densities are highest

- Higher artefact densities are found in clusters relating to knapping floors with lower density background artefact scatter
- 200m from the creek and onwards, artefact densities decline and in all low lying areas abutting the creek are mainly only low average artefact densities
- The majority of stone artefacts are made of silcrete
- Potential to discover isolated finds anywhere as part of the background scatter throughout landscape.

A similarity between the Caddies Creek landscape and Cattai Creek landscape are the discrete artefact assemblages that are found in both landscapes suggesting reoccurring visits over a long period of time in a concentrated area.

Previous Aboriginal archaeological investigations and assessments in the area have identified that the resources available in the general Castle Hill area that would have been more attractive to Aboriginal occupation and use of the area would have included reliable freshwater (and associated freshwater vegetation and animals), hinterland resources including tall open forest, woodland, and sheltered gully plants and animals, timber/bark resources for fuel and shelter, availability of local stone materials for manufacture of tools, and other natural features such as sandstone overhands and platforms for shelter and axe grinding, where present.

Aboriginal sites on the Cumberland Plain have potential to have originally occurred on any landform, however are more commonly focused towards the margins of more major creeks and creek confluences.

The MDC study area is located on a mid to upper slope landform, at the headwaters of a tributary of Smalls Creek, >500m from a major creekline, and has been subject to significant historical disturbance including land clearance and farming use, intensive planting of dense eucalypt plantations and associated structures for scientific research, and then by activities to construct and establish the site as the MDC and TAFE Castle Hill.

The location of the study area on erosional Luddenham soils on a slope, previously subject to vegetation clearance and subsequent intensive planting of the eucalyptus trees in the 1940s, means the study area would have been subject to significant soil erosion since the mid-1800s.

Overall, the predictions for Aboriginal archaeological potential specific to the proposed Building J study area are as follows:

- Access to water is an important feature on the Cumberland Plain that would have influenced the location and nature of Aboriginal occupation and land use;
- Most areas across the Cumberland Plain, even those with sparse or no surface manifestations of Aboriginal cultural material, have potential to contain sub-surface archaeological deposits;
- While agricultural ploughing is a common historical activity undertaken across the Cumberland Plain, archaeological excavations have demonstrated that ploughing generally

only affects soils up to c.30cm deep. Therefore, the presence of ploughing is not necessarily sufficient to have removed all archaeological deposits.

    - However, previous excavations in the region, particularly on Luddenham soils, have identified that Aboriginal archaeological deposits are likely only to be within the A-horizon, that is, rarely deeper than 30cm below the ground surface.

- The most likely Aboriginal site types in the Castle Hill area are open camp sites or artefact concentrations and isolated finds, either surface isolated artefacts or scatters within disturbed contexts, and PADs, either disturbed and/or in situ.

- As the vegetation within the study area is regrowth, there is no potential for any scarred or modified trees.

- While artefact sites across the Cumberland Plain have potential to be present on any landforms, sites are generally concentrated around major creeklines and creek confluences, with the potential for and density of sites significantly decreasing at >200m of a permanent water source.

- The MDC study area is located at the upper limit of the headwaters of Smalls Creek, and >500m from the permanent water sources of Cattai/Strangers Creeks.

    - Therefore, it is unlikely that the study area would have been a suitable location for concentrated camp sites or occupation, and would therefore only have potential for isolated/low density artefact sites associated with ephemeral movement of Aboriginal people across the wider landscape.

- Historical activities at the site have resulted in moderate levels of ground disturbance, including significant impacts such as construction of buildings for the MDC and TAFE sites, as well as landscape activities such as land clearance and establishment of the dense eucalypt plantations that would have resulted in significant disturbance, removal and erosion of natural topsoils, as well as other associated activities such as land grading and leveling etc.

Overall, the MDC study area is considered to have low potential for Aboriginal archaeological deposits to be present.

4. Cultural Heritage Values and Significance Assessment

The Burra Charter (Australia ICOMOS 2013) defines cultural significance as:

> *…aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups.* (Australia ICOMOS 2013: 2)

The five types of cultural heritage value, as presented in The Burra Charter (2013) form the basis of assessing the Aboriginal heritage values and significance of a site or area. Each of these cultural heritage values, as specifically relevant to Aboriginal cultural heritage, are summarised as follows (after OEH 2011a).

Social (Cultural) and Spiritual Value—spiritual, traditional, historical or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural value is how people express their connection with a place and the meaning that place has for them.

Historic Value—associations of a place with a historically important person, event, phase or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities.

Scientific Value—the importance of a landscape, area, place or object because of its rarity, representativeness and the extent to which it may contribute to further understanding and information.

- Assessment of Scientific Value also includes assessment in terms of Research Potential, Integrity, Condition, Complexity, Archaeological Potential, Connectedness, Representativeness, Rarity, Education Potential, and Archaeological Landscapes.

Aesthetic Value—sensory, scenic, architectural and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use.

Assessment of each of the above criteria has been undertaken in consideration of the landscape and environmental context of the study area, Aboriginal history, previous archaeological work, and the field survey. The assessment of each criteria has then been graded (as per OEH 2011a Guide to Investigating) in terms of high, medium and low, in order to allow significance to be described and compared. The application of the cultural values criteria to the Aboriginal cultural heritage of the study area has also included consideration of research potential, representativeness, rarity and education potential for each criterion (as relevant).

4.1. Assessment of Aboriginal Cultural Heritage Values

4.1.1. Social (Cultural) and Spiritual Value

At the time of writing, no specific cultural or social values have been expressed as being connected to/associated with the MDC site. However, Aboriginal community consultation for the MDC expansion project is ongoing at the time of writing, and project RAPs are therefore yet to provide comment on any social or spiritual values associated with the MDC study area.

However, previous archaeological and cultural assessments undertaken in the Castle Hill/Cumberland Plain region have consistently demonstrated that Dharug people consider all their sites to be connected as part of a wider cultural landscape. Viewed as a whole, Dharug sites across the Cumberland Plain form a complex that embodies all aspects of Dharug history and life.

Should archaeological deposits be present within the study area, for the local Dharug community, this may represent a tangible and meaningful connection to their ancestors. However, it is acknowledged that the potential for such deposits to remain within the study area is low, both a result of site erosional and disturbance processes, as well as landform positioning of the study area.

Therefore, at the time of writing, it is only able to be stated that the study area may be considered by Dharug people to have some social and spiritual significance for its association with the wider Castle Hill/Cumberland Plain landscape, however this would require further investigation and confirmation following the conclusion of the Aboriginal community consultation process (i.e. following RAP review of this ACHAR).

4.1.2. Historical Value

Historical research has not identified any information regarding specific historical events, activities or significance of the MDC study area to Aboriginal people. No known Aboriginal sites are located directly within, nor in close proximity to the study area. No specific historical significance for the study area has been provided by project RAPs to date.

4.1.3. Scientific (Archaeological) Value

OEH states the scientific (archaeological) value of an Aboriginal site or place to:

> *Refer to the importance of a landscape, area, place or object because of its rarity, representativeness, and the extent to which it may contribute to further understanding and information.* (OEH 2011: 9)

Following OEH guidelines for assessing scientific value (OEH 2011), five key criteria have been considered with regards to the scientific and archaeological context of the study area in order to determine its level of scientific significance, including:

- **Research Potential** (how much potential a site has to contribute to a further scientific or archaeological understanding of a site/area/region).
- **Rarity** (frequency of similar site types in a local or regional area/landscape).

- **Representativeness** (the level of variability between or within Aboriginal sites in an area or region);
- **Education Potential** (the ability of a site to contribute to the public record and provide teaching resources in order to further understanding of Aboriginal cultural heritage and archaeology); and
- **Archaeological Landscapes** (Aboriginal cultural heritage and archaeological study in the context of the wider landscape (geographical and cultural/social) in which they exist).

High scientific significance is usually attributed to sites which are so rare or unique that the loss of the site (particularly without investigation or appropriate mitigation) would be likely to affect the ability to understand an aspect of past Aboriginal life/occupation of an area.

Following the criteria above, an assessment of the potential scientific significance of the MAAS Castle Hill study area has been undertaken. No known Aboriginal sites are located directly within, nor in close proximity to the MDC study area, and the study area has been assessed as having **low potential** to contain Aboriginal sites in the form of subsurface artefact deposits. Further, even if Aboriginal sites such as a low density artefact scatter or isolated artefacts were to be located within the study areas, this kind of archaeological evidence would not be rare nor representative in the context of the extensive understanding of Aboriginal archaeological sites across the Cumberland Plain, and would be unlikely to contribute to the archaeological record. The MDC study area is unlikely to contribute any new information about past Aboriginal use/occupation of the Castle Hill area, both due to site disturbance, as well as landform location with respect to the Cumberland Plain predictive model.

Therefore, the study area is unlikely to contain archaeological potential or sites that would have any research potential nor meet the criteria for scientific significance.

4.1.4. Aesthetic Value

At the time of writing, no specific associated aesthetic values have been identified by project RAPs that would indicate that the study area has specific aesthetic value to the local community. Archaeologically, the study area does not meet the criteria for aesthetic significance.

4.2. Statement of Significance

The study area does not meet the criteria for historical, scientific, nor aesthetic significance.

Therefore, at the time of writing, while no specific cultural or social values have been expressed as being connected to/associated with the MDC study area, ongoing consultation with project RAPs (i.e. review of this ACHAR) will be required to confirm whether the study area specifically holds social and spiritual significance for to Dharug people for its association with the wider Castle Hill/Cumberland Plain landscape.

Previous archaeological and cultural assessments undertaken in the Castle Hill/Cumberland Plain region have consistently demonstrated that Dharug people consider all their sites to be

connected as part of a wider cultural landscape. Viewed as a whole, Dharug sites across the Cumberland Plain form a complex that embodies all aspects of Dharug history and life.

However, it is acknowledged that the potential for such Aboriginal archaeological deposits or physical sites to remain within the study area is low, both a result of site erosional and disturbance processes, as well as landform positioning of the study area.

5. Conservation and Impact Assessment

It is important that an impact assessment directly addresses the potential harm that an activity may pose, specific to an Aboriginal place, objects, site or archaeological deposit (OEH 2011: 12).

5.1. Proposed Activity

The SSDA seeks consent for the delivery of the MDC expansion as a single stage, comprising:

- Site preparation works, including the termination/relocation and installation of site services and infrastructure, tree removal (337 trees), earthworks and erection of site protection hoardings and fencing.
- Demolition of existing car park and vehicle accessway along the eastern and north eastern parts of the site. A new at-grade car park is proposed to be constructed on the eastern side of the TAFE site and will accommodate 24 car parking spaces removed from the Building J site.
- Construction of the proposed Building J, including associated excavation up to 4.3m in depth to accommodate new building basement and services and construction preparation . The proposed new Building J will cater for the following uses:
    - Storage for the Powerhouse collection and archives (both collected archives and institutional archives)
    - Flexible spaces for education and public programs, workshops, talks, exhibitions and events.
    - Suites of conservation laboratories and collection work spaces
    - Photography, digitisation and collection documentation facilities.
    - Work space for staff, researchers, industry partners and other collaborators. This will include amenities, meeting and storage rooms, collection research and study areas as well as other ancillary facilities.
    - Components of the image and research library.
    - Object and exhibition preparation, packing, quarantine and holding areas.
- Construction of new vehicle accessways to maintain connectivity to the MDC and TAFE sites.
- Subdivision of the proposed Building J site from the TAFE site and consolidation to form a single lot with the existing MDC site.
- Installation of required services infrastructure including electricity, sewer, stormwater and telecommunications.
- Installation of a roof mounted photovoltaic system.

The SSD Application also includes a landscape design and Tree Replacement Strategy that will involve planting new trees at a ratio of two new trees to be planted for every tree removed from the site.

Further detail is provided below about development activities that have potential to impact Aboriginal archaeological deposits and values. That is, proposed development activities that will disturb the ground surface.

Figure 5.1 to 5.16 below present the relevant plans for the development, relevant to understanding below ground impacts that may present archaeological impact.

5.1.1. Bulk Earthworks (Cut and Fill)

Building J has been designed to ensure consistency in massing with the existing buildings on the MDC site, as well as in consideration of the sloping nature of the land from southwest to northeast. This has resulted the proposed Building J having a maximum height limit of 15m in order to retain a consistent bulk and scale to the adjacent Building E, and as the new building will present from Showground Road. Therefore, to accommodate the floor space required for storage and associated facilities required for the building, the design proposes a basement level, construction of which will require bulk excavation within the building footprint (Figure 5.1).

Bulk excavation works beneath Building J will also be required to accommodate services including sewer and stormwater pumps, lift pits (Figure 5.5), localised excavation for foundation piles (see Section 5.2.2), and rainwater/waste tank. Due to the below ground staff facilities in the southern half of the building and the fall of the land within the study area (i.e. sloping to the east towards the creek), excavation depths range from approximately 4m below ground level in the south west of the building, to approximately 0.5m gradually moving north east below ground level. A maximum 1m of fill is proposed to cover the north eastern corner of the building to accommodate for the slope of the land. The bulk earthworks plan (cut and fill) for Building J is presented in Figure 5.2.

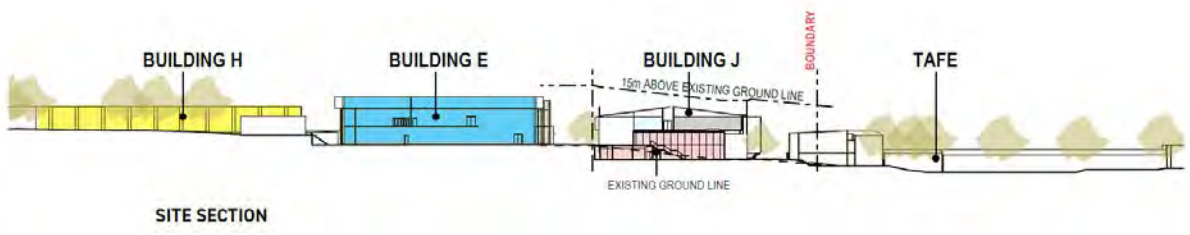

Figure 5.1: Site Section showing overall massing of Building J in context of the existing buildings, and the general extent of basement excavation area (Source: Lahznimmo Architects, MDC SSDA Design Report, 7.8.2020)

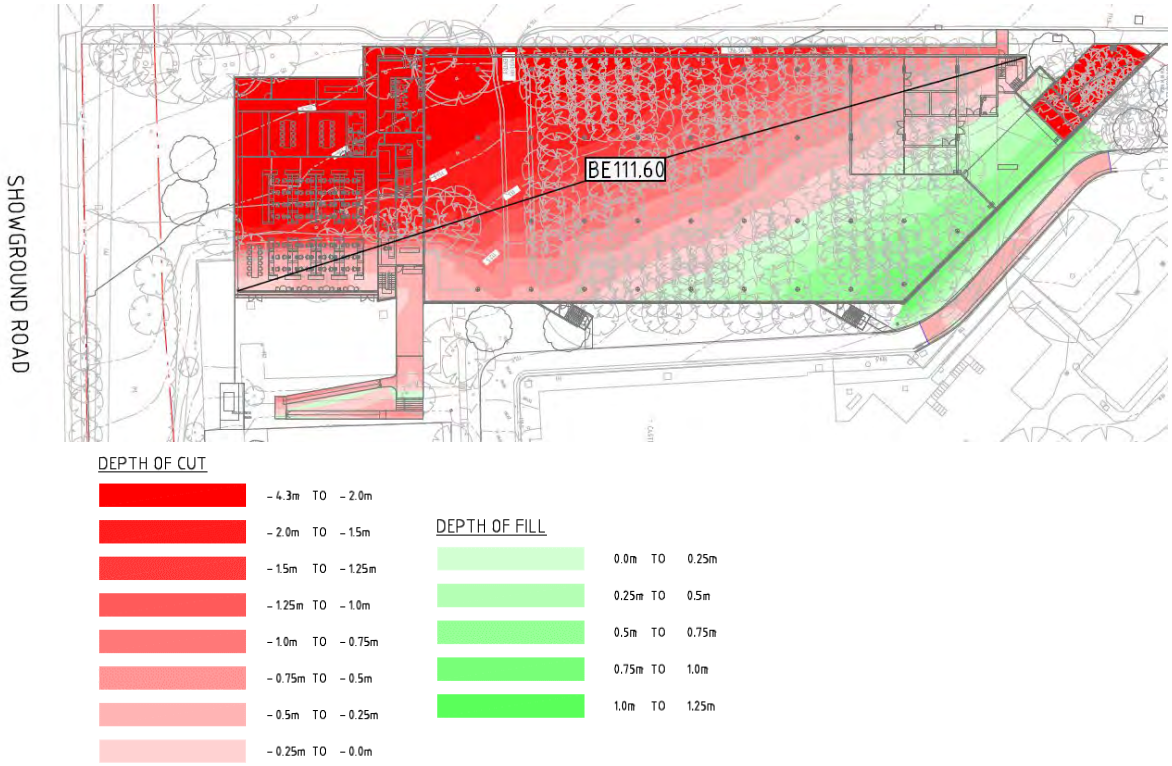

Figure 5.2: Bulk Earthworks Plan, oriented with west at top (Lahznimmo Architects, DA2.21, Rev.03, 22.07.2020)

5.1.2. Service Trenching and OSD

Construction of Building J will also include additional trenching works across the footprint of the building to accommodate new electrical and hydraulic services. Proposed works to facilitate the future use of the building include excavation and construction for a new OSD tank in the northwest of the Building J footprint, a new kiosk substation in the southeast of the Building J footprint (Figure 5.20), and other minor trenching works to connect the new building to existing hydraulic services (Figure 5.21).

5.1.3. Landscaping and Other Minor Activities

The development will include new landscaping works at the site, including a mix of ground covers, shrubs and trees. The landscape design for Building J has been designed to play an important role in connecting the east and west of the TAFE and MDC sites, by creating a new pedestrian route and public domain between Building J and existing Building E. Landscaping works will include the removal of 337 existing trees, and replacement with new native mature trees, as well as other native plantings (Aspect 2020).

Existing mature trees that surround the site, such as along Showground road and the residential northern boundary, will be retained to provide visual screening of the MDC from surrounding roads. The western facade of the proposed Building J will be softened with the use of tree planting, as well as a strategy to include a combination of native grasses and sculptural bush rocks to help set the building into the landscape and connect to its southern and eastern edges along the access road (Figure 5.17 and Figure 5.19).

Figure 5.3: Existing Site Plan (Lahznimmo Architects, DA1100, Rev.07, 7.08.2020)

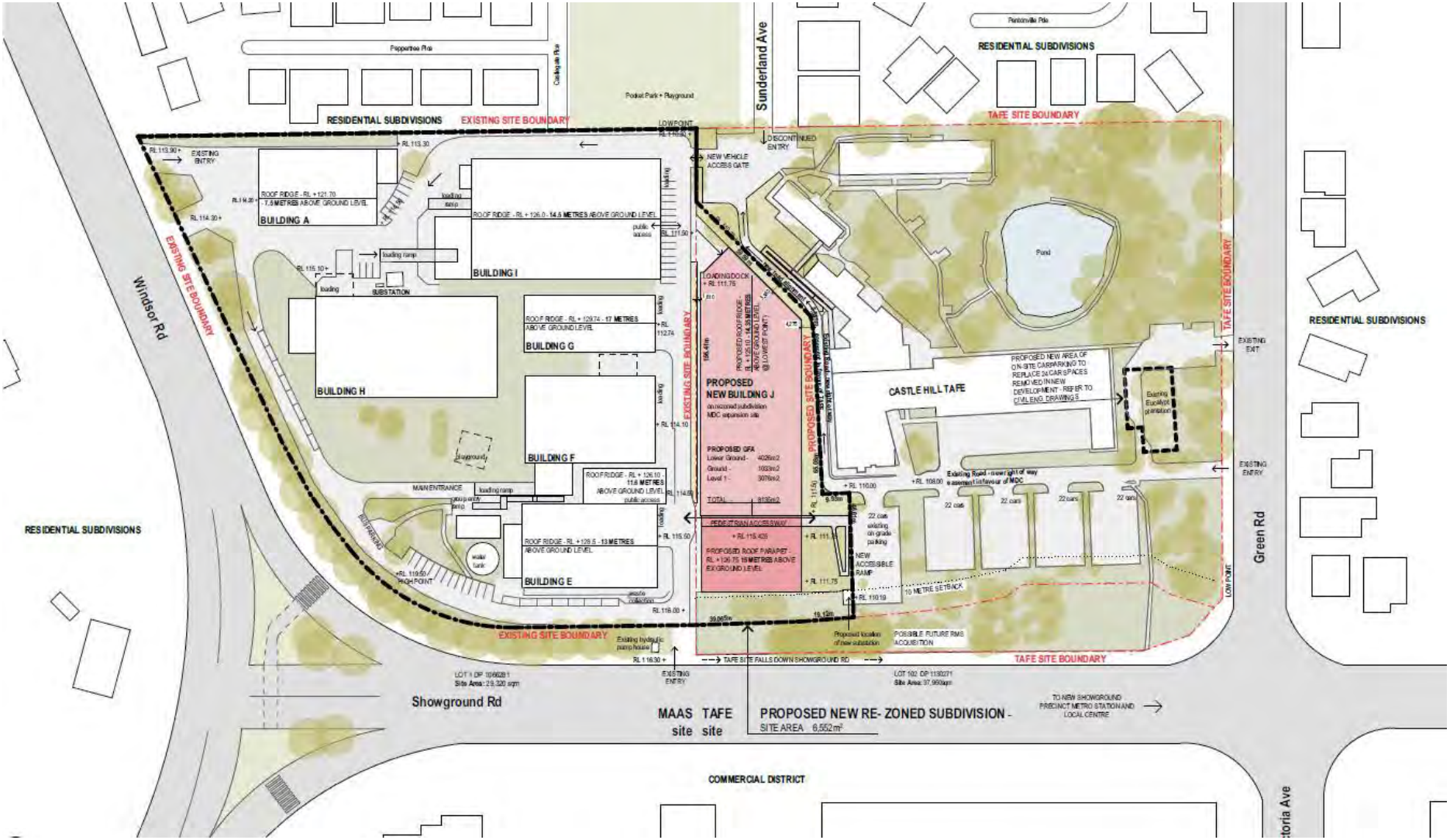

Figure 5.4: Proposed Site Plan (Lahznimmo Architects, DA1101, Rev.12, 7.08.2020)

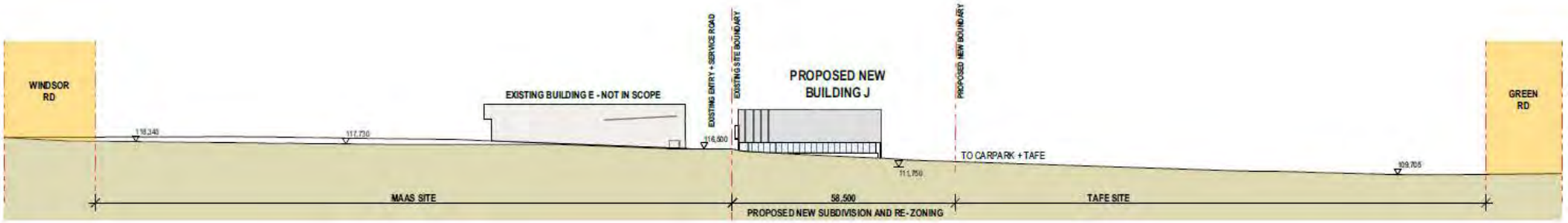

Figure 5.5: Proposed Site Plan Street Elevation (Lahznimmo Architects, DA1101, Rev.12, 7.08.2020)

Figure 5.6: Demolition Plan (Lahznimmo Architects, DA1200, Rev.1, 7.08.2020)

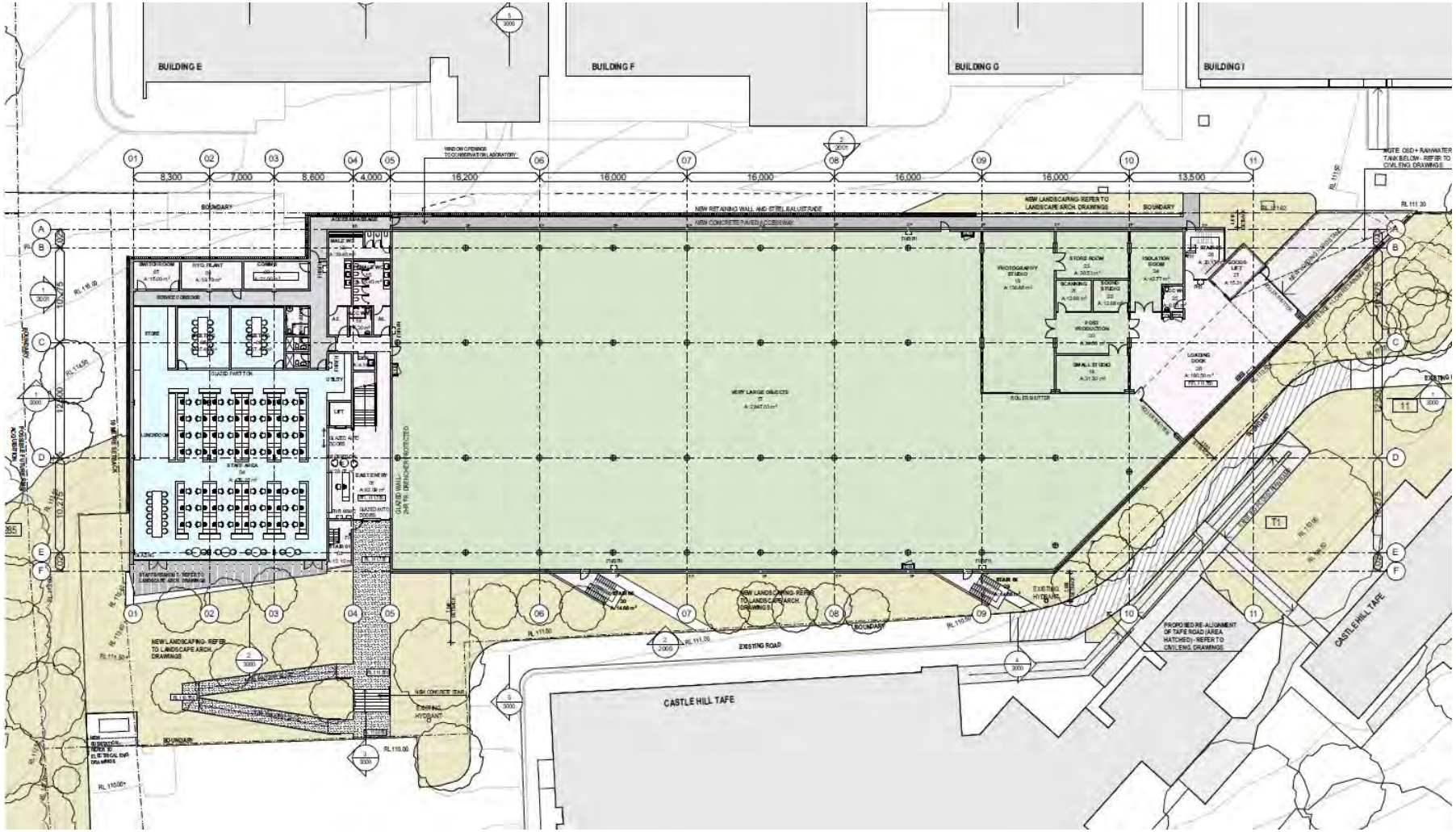

Figure 5.7: Lower Ground Floor Plan (Lahznimmo Architects, DA1400, Rev.12, 7.08.2020)

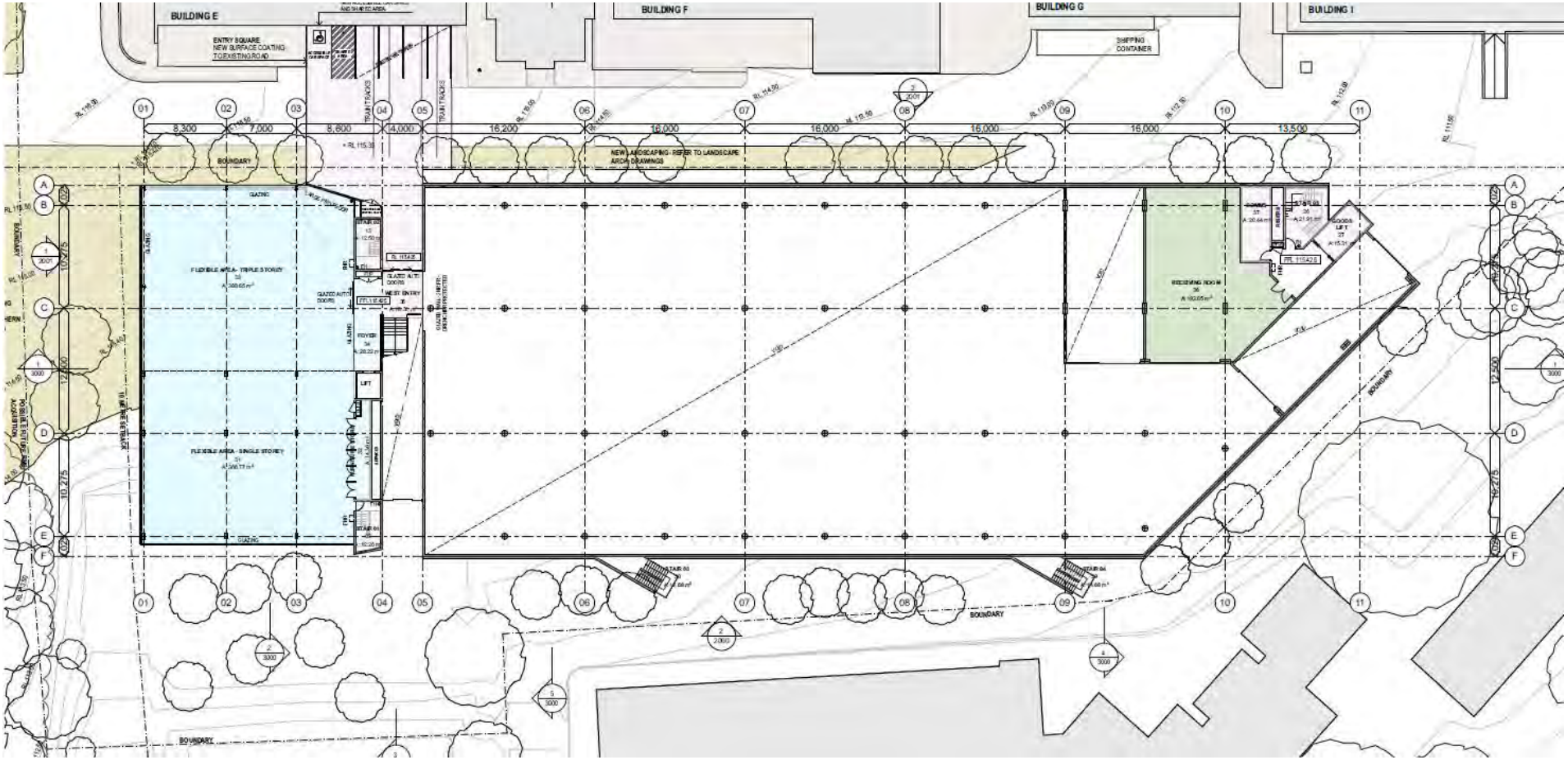

Figure 5.8: Ground Level Plan (Lahznimmo Architects, DA1401, Rev.12, 7.08.2020)

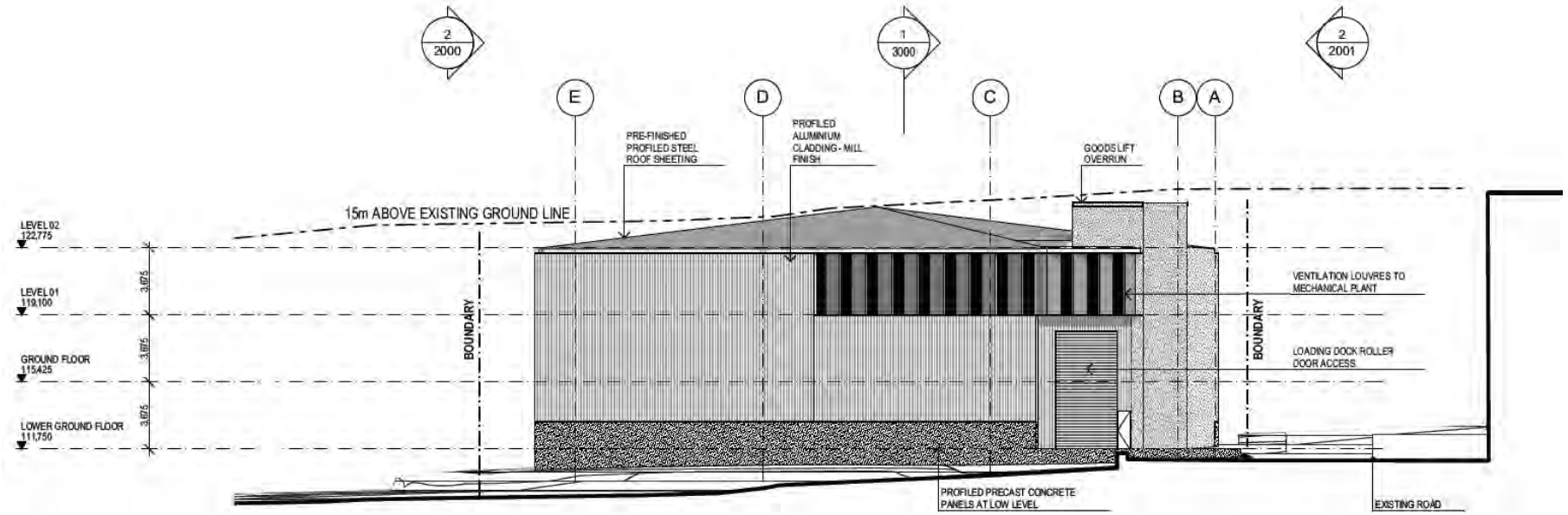

Figure 5.9: North Elevation (Lahznimmo Architects, DA2000, Rev.09, 7.08.2020)

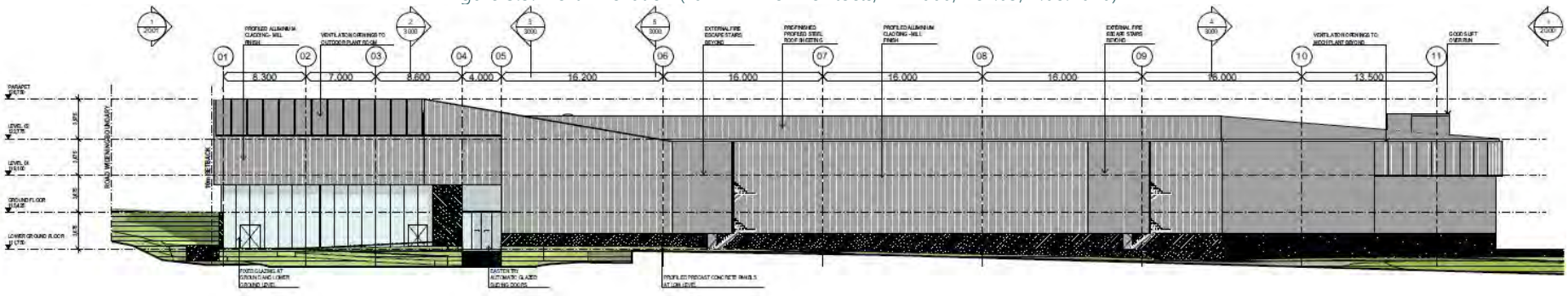

Figure 5.10: East Elevation (Lahznimmo Architects, DA2000, Rev.09, 7.08.2020)

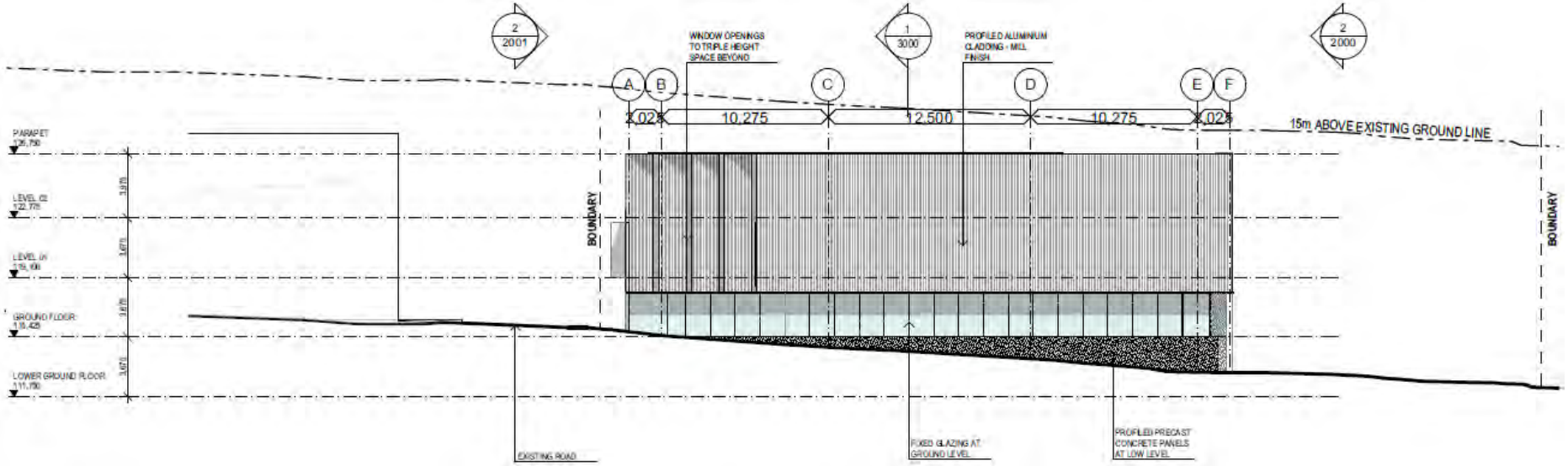

Figure 5.11: South Elevation (Lahznimmo Architects, DA2001, Rev.09, 7.08.2020)

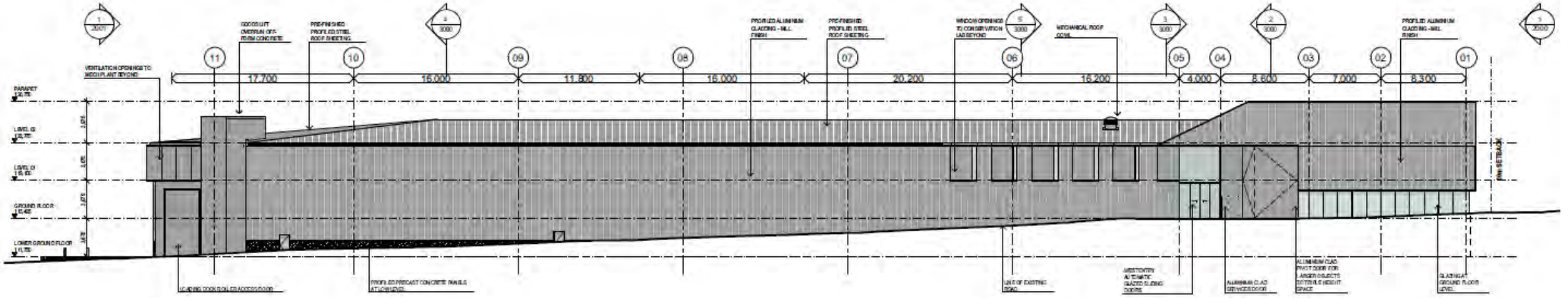

Figure 5.12: West Elevation (Lahznimmo Architects, DA2001, Rev.09, 7.08.2020

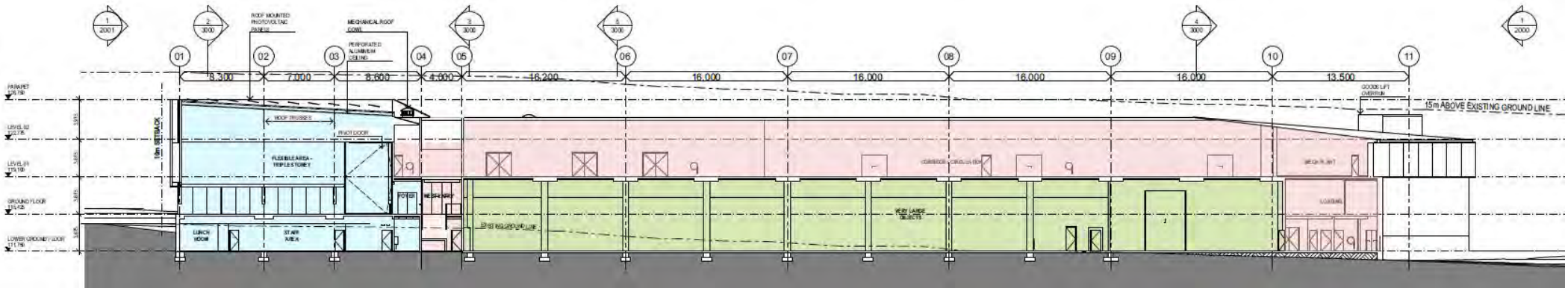

Figure 5.13: Sections (Lahznimmo Architects, DA3000, Rev.11, 7.08.2020)

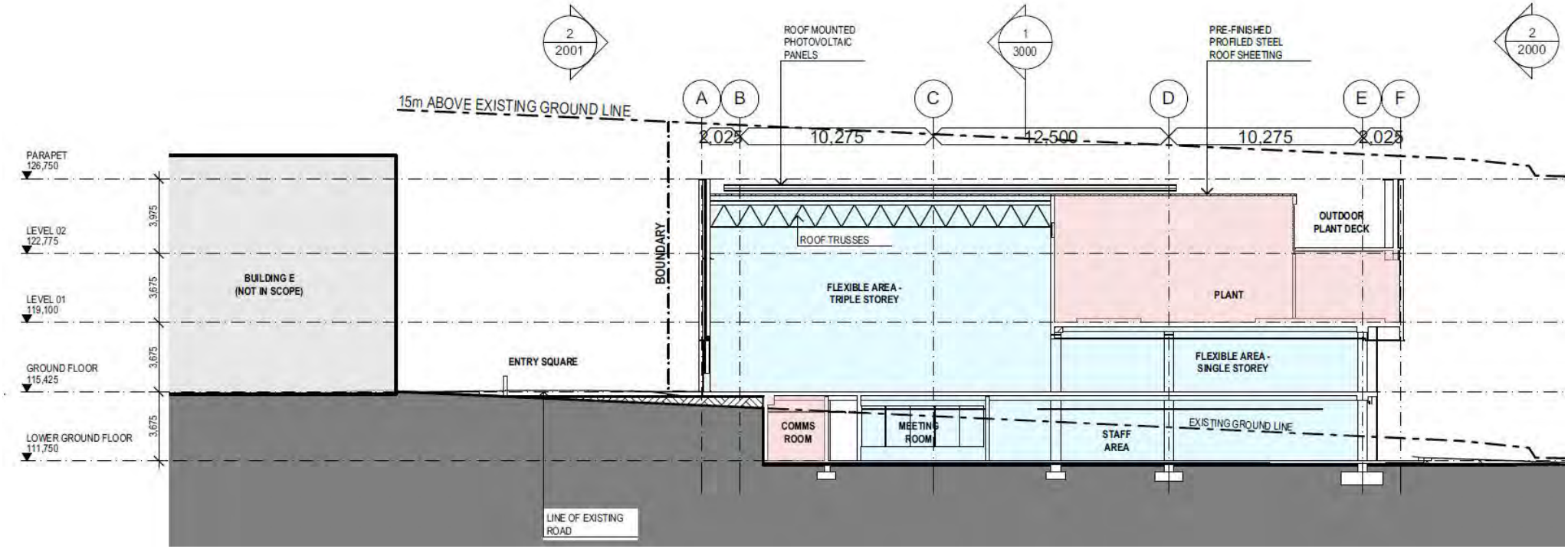

Figure 5.14: Sections (Lahznimmo Architects, DA3000, Rev.11, 7.08.2020)

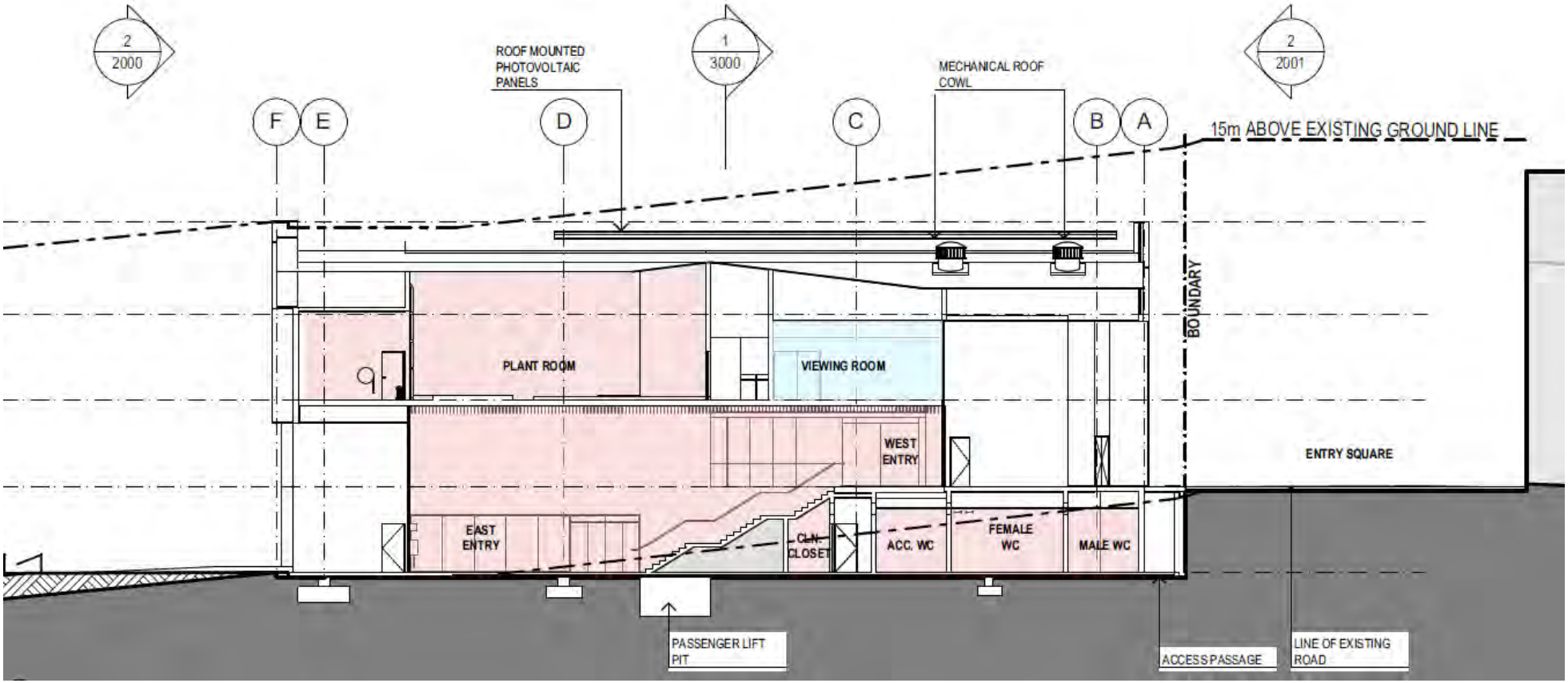

Figure 5.15: Sections (Lahznimmo Architects, DA3000, Rev.11, 7.08.2020)

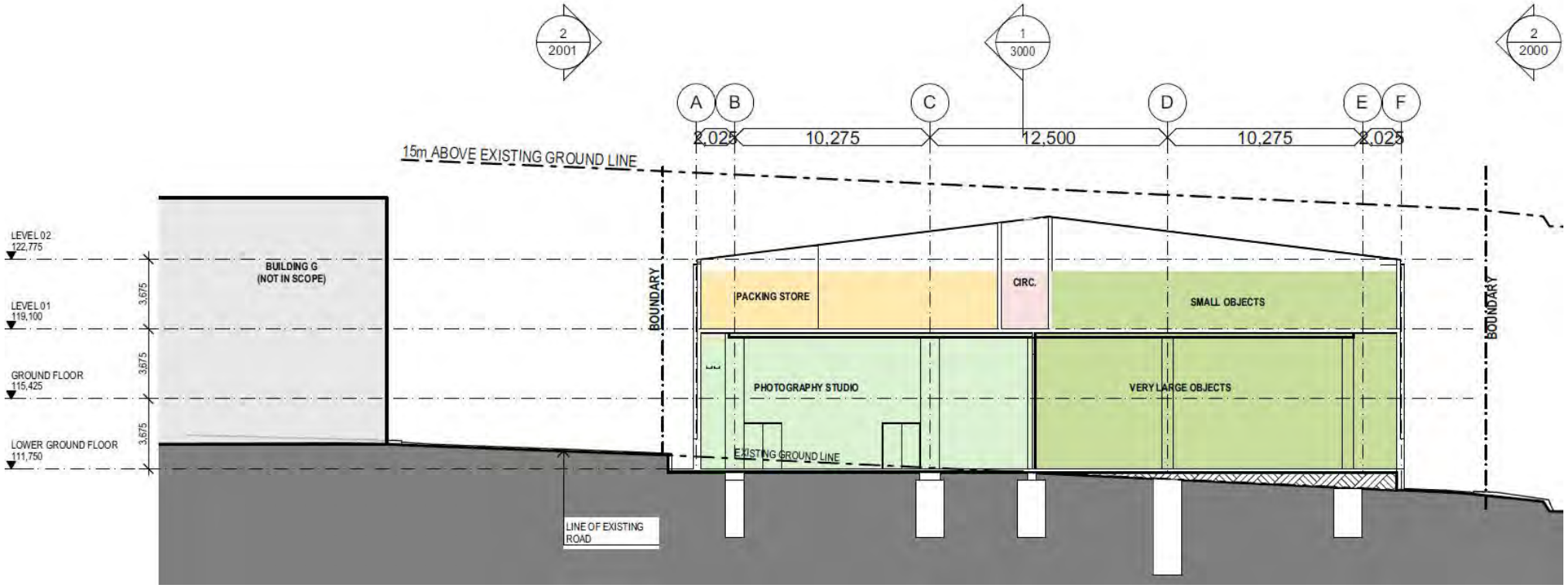

Figure 5.16: Sections (Lahznimmo Architects, DA3000, Rev.11, 7.08.2020)

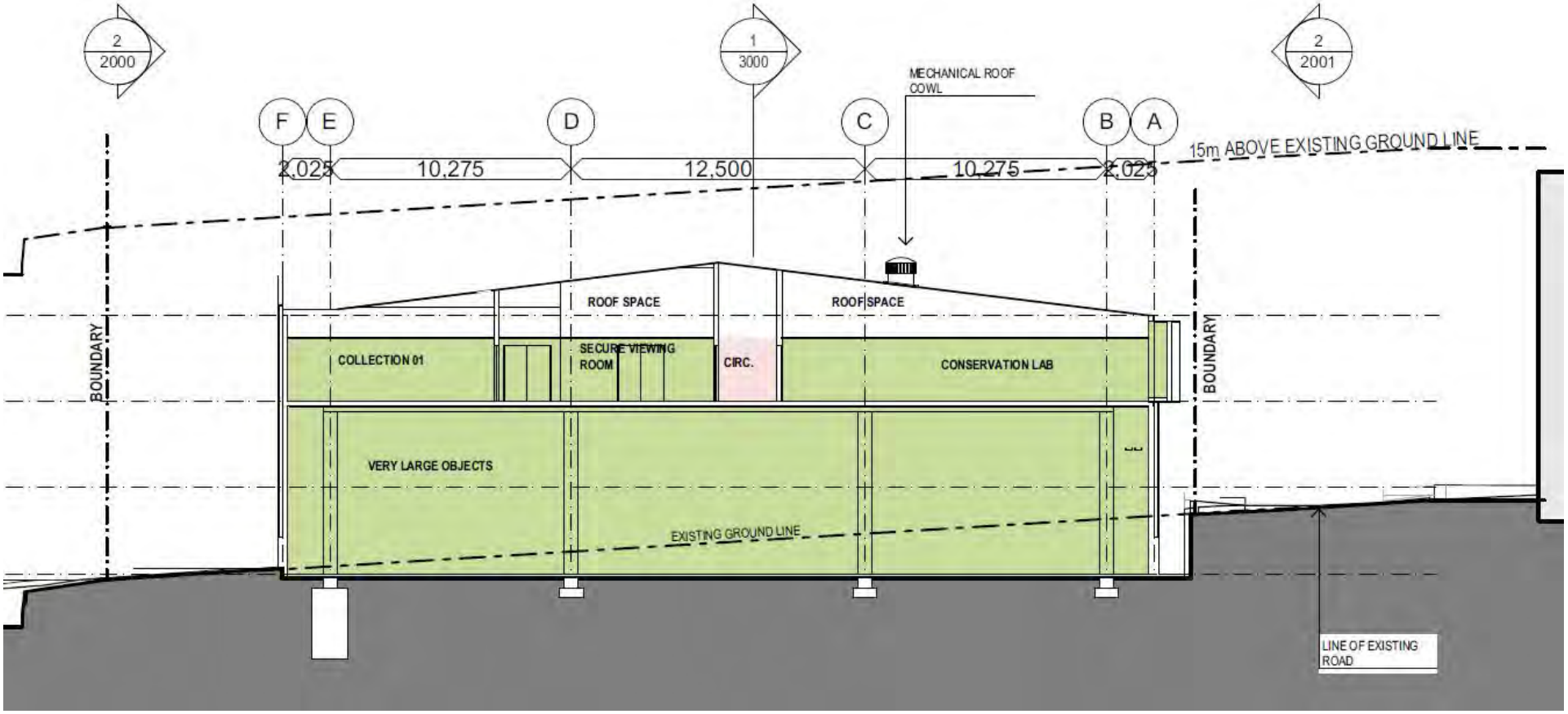

Figure 5.17: Sections (Lahznimmo Architects, DA3000, Rev.11, 7.08.2020)

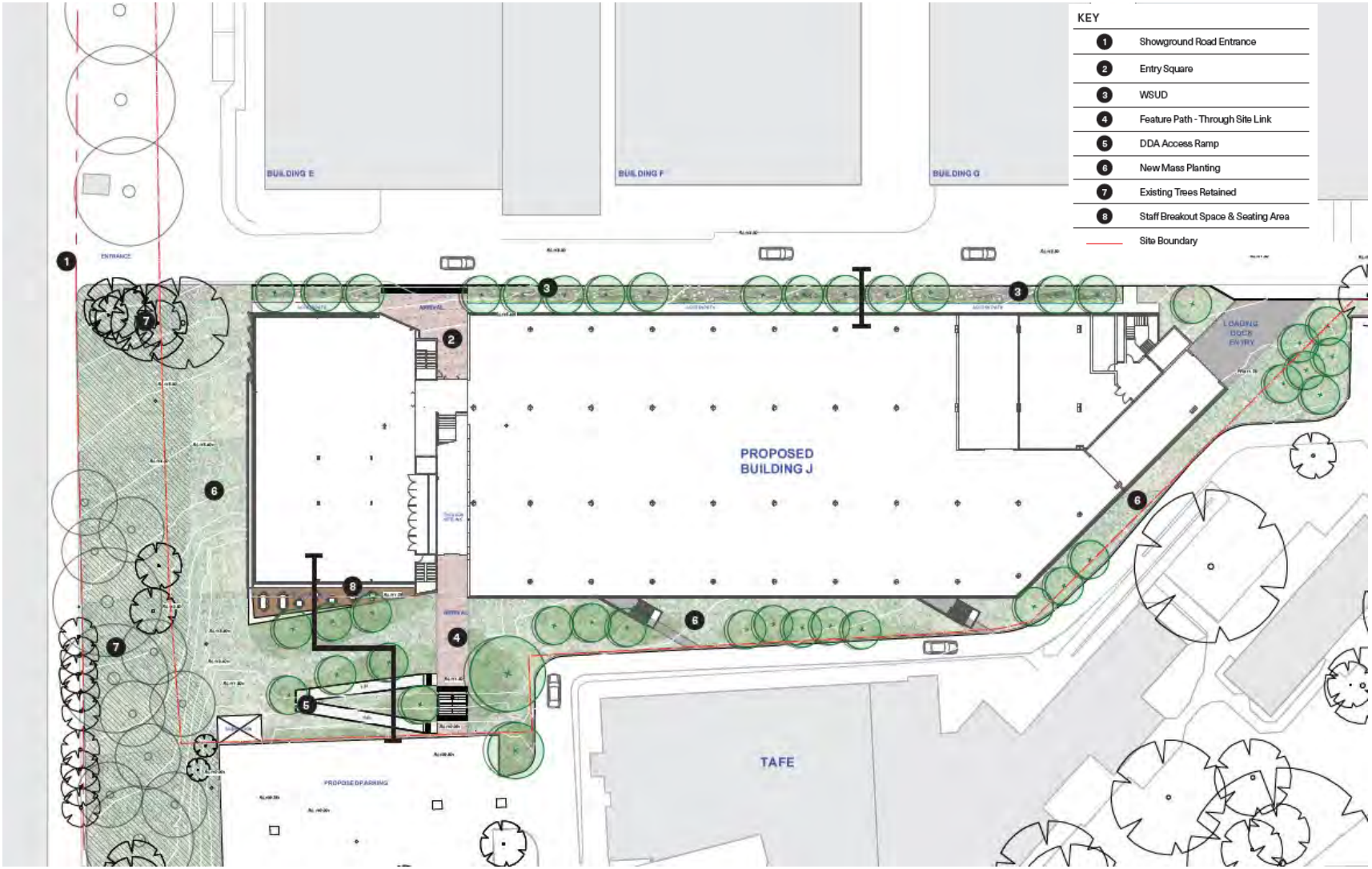

Figure 5.18: Building J Landscape Plan (ASPECT Studios)

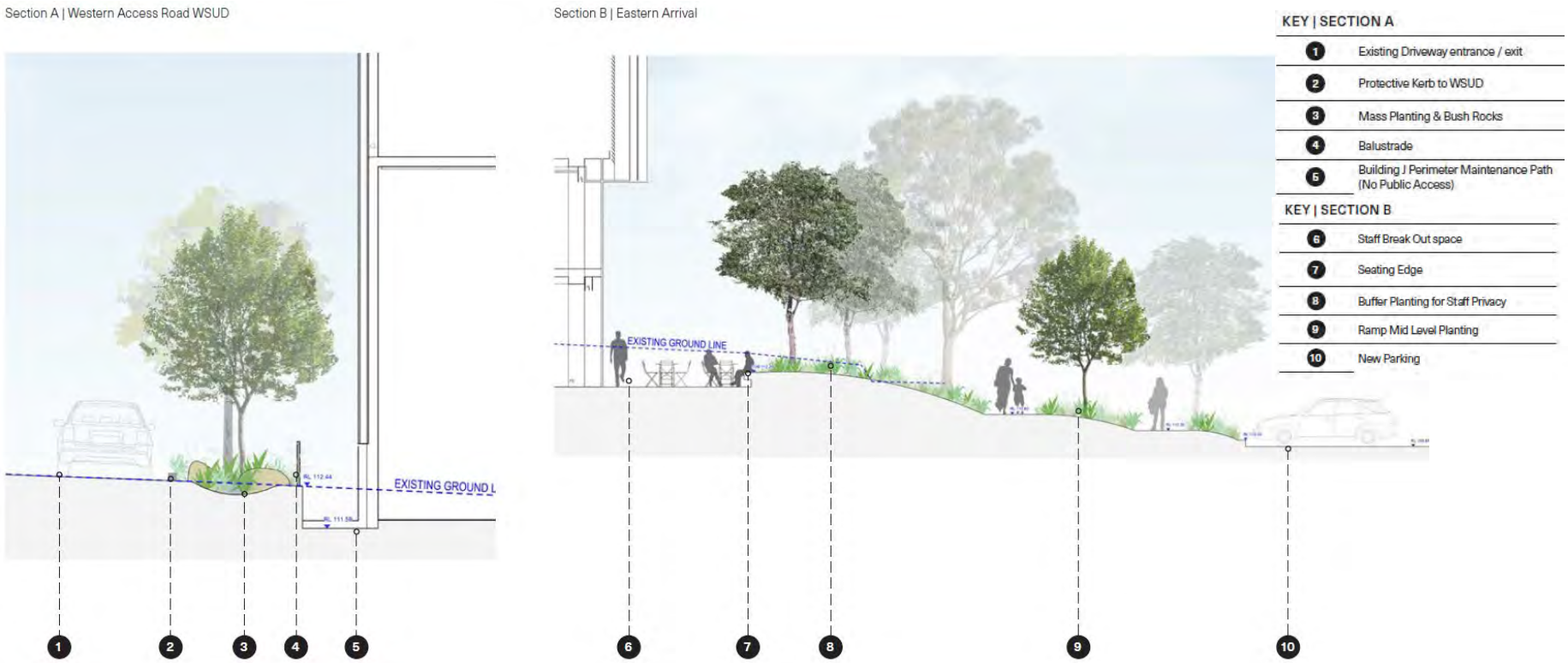

Figure 5.19: Landscape Sections (ASPECT Studios)

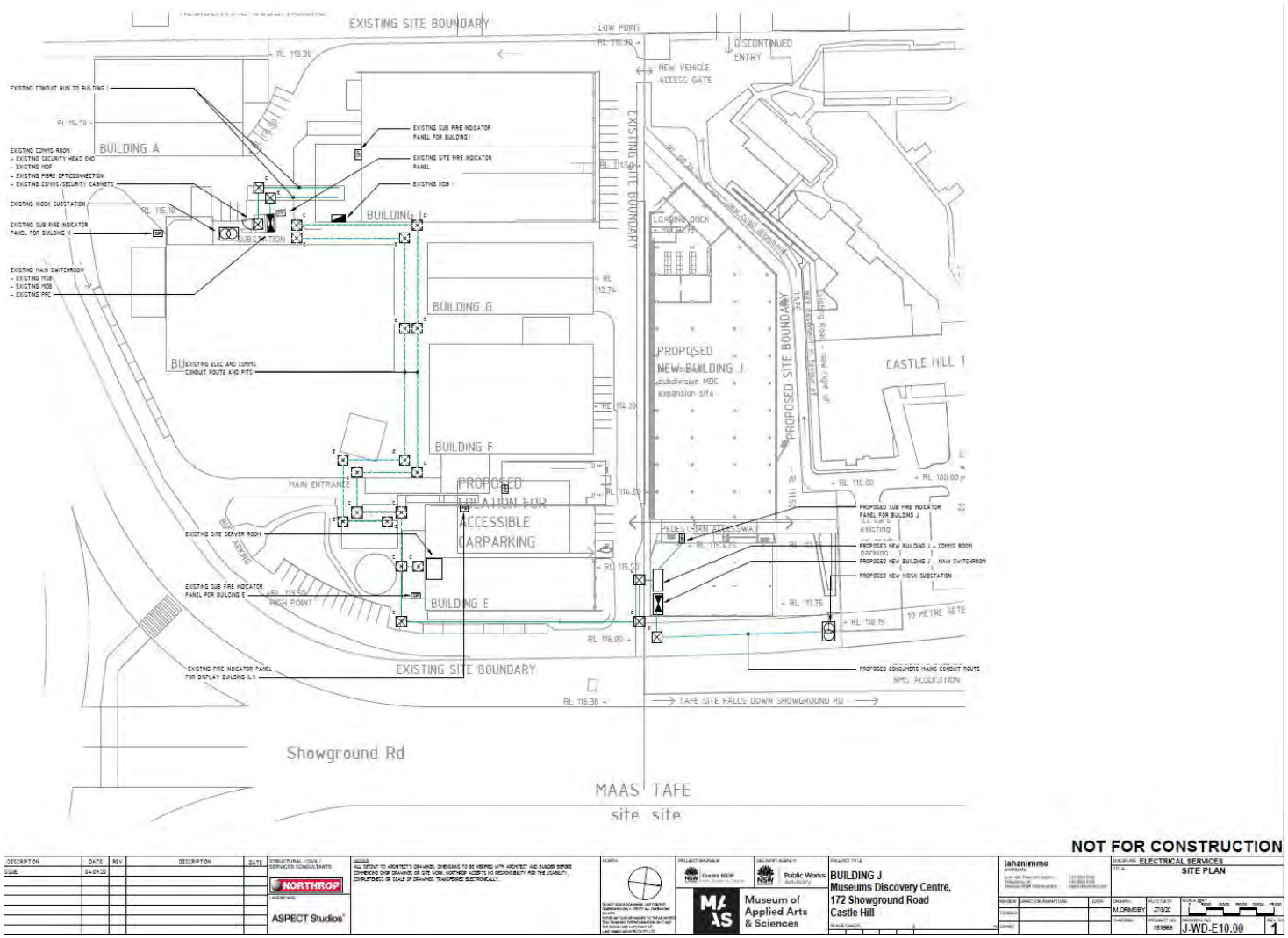

Figure 5.20: Electrical Services Plan (Northrop J-WD-E10.00, Rev. 1, 27.8.2020)

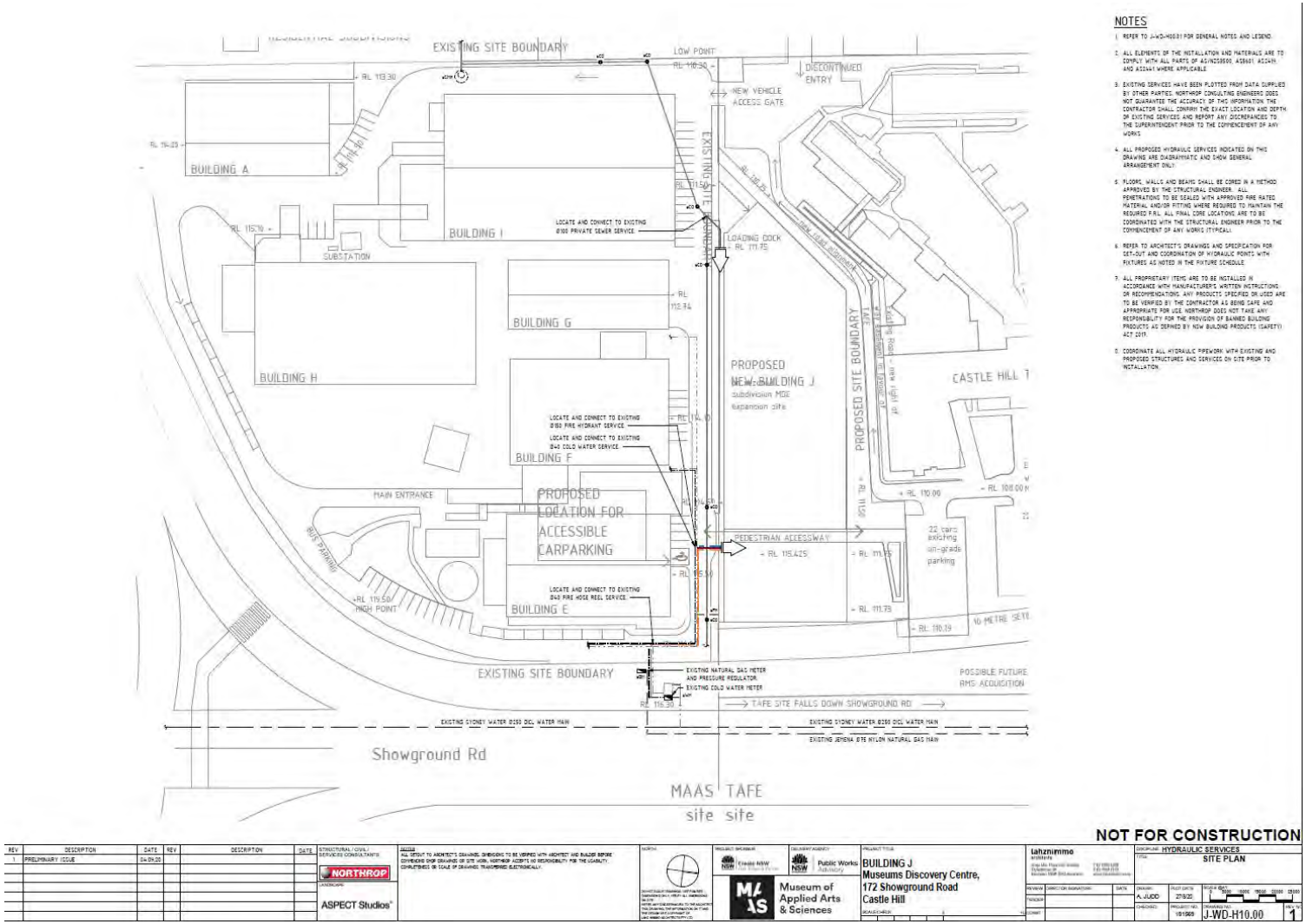

Figure 5.21: Hydraulic Services Plan (Northrop J-WD-H10.00, Rev. 1, 27.8.2020)

5.2. Avoiding and Minimising Harm

While the provisions of the NPW Act hinge predominantly on the presence and protection of physical Aboriginal sites (and AHIP provides a defence against 'harm' to 'Aboriginal objects'), an effective and holistic assessment of potential impact to Aboriginal cultural heritage values as posed by a development is really two-fold:

- the physical and archaeological values of sites (tangible heritage); and
- the wider social and cultural impact of a development within a landscape (often relating to more intangible Aboriginal heritage values, lacking material evidence).

5.2.1. Potential Impact to Aboriginal Objects/Sites/Archaeology

Development activities with the potential to impact Aboriginal sites and/or potential archaeology are those that extend below the ground surface. Bulk excavation works have the highest potential to impact natural soils with the potential to retain Aboriginal archaeology (either partially or wholly).

Excavation works are proposed to be undertaken within the proposed Building J study area for the expansion of the MDC, including bulk excavation for a new building, as well as new services, storm water pumps, lift pits, piles, associated landscaping (as summarised in the relevant sections above). However, as the MDC study area has low potential for Aboriginal archaeological sites and deposits to be present, proposed excavation works are unlikely to encounter (and therefore unlikely to impact) Aboriginal objects, sites or archaeology.

The MDC study area does not contain any registered Aboriginal sites, nor is it in sufficient proximity to any surrounding sites or significant locations in the surrounds, that have potential to be impacted (either directly or indirectly) by the proposed development.

Overall, the proposed development works (including bulk excavation works, trenching, piling, and landscaping works) are assessed to have **low potential to encounter or impact Aboriginal sites or objects.**

5.2.2. Potential Impact to Aboriginal Cultural Heritage Values

As discussed in the introduction to this section above, intangible Aboriginal heritage values of a site or area are as important to the local Aboriginal community, if not more important, as the more tangible and physical evidence of Aboriginal life and culture that remains in the landscape. Therefore, it remains appropriate to consider any potential impact the proposed development may have to wider intangible cultural heritage values, and, should potential impact be identified, appropriate management strategies should be developed to help mitigate this impact.

At the time of writing, no cultural or social values have been expressed as being connected to/associated with the MDC site specifically. Should ongoing Aboriginal community consultation identify cultural and social values association with the study area, these values are likely to relate to the location of the MDC study area within the wider cultural landscape of the Cumberland Plain, rather than any specific values inherent within the land of the MDC study area itself, and

are therefore unlikely to be impacted by the nature of the proposed development (i.e. construction of Building J).

6. Management, Mitigation and Recommendations

This report relates specifically to the proposed development impacts of the MDC Expansion, in relation to potential Aboriginal archaeological and cultural heritage impacts, and provides recommendations for management and mitigation of development impacts, where necessary.

6.1. Summary of Potential Harm

As no registered Aboriginal sites are located within the study area, and the study area has low potential for any previously unknown sites to be present, the proposed development does not present any harm to Aboriginal objects or archaeological sites that would require mitigation or further management through the development process.

Any social and cultural values (intangible) associated with the MDC study area are likely to relate to the general location of the MDC study area within the wider cultural landscape of the Cumberland Plain, as opposed to any cultural values being associated within the land of the MDC study area specifically. However, the application of mitigation strategies such as Aboriginal Heritage Interpretation measures within the MDC development would provide an opportunity for the development to acknowledge and recognise the Dharug people through physical interpretative elements within the site.

While the development have low potential to encounter an Aboriginal archaeological deposit or cultural deposit, an Unexpected Finds Policy has been developed (Section 6.3) to be applied through the course of the development works.

6.2. Aboriginal Heritage Interpretation

Appropriate heritage interpretation can contribute to the conservation and celebration of the history and cultural heritage of the local Dharug people and wider local Aboriginal community, preserving their culture, history and stories within the development for generations to come.

The Landscape Plan for the MDC Expansion (Aspect Studios 2020) includes planting of a variety of native tree species, including understorey and ground cover species, to improve the existing bare ground of the existing site presentation, creating and re-establishing a connection between the MDC site, and its original landscape prior to European intervention.

The materials used in the landscape design take inspiration from the surrounding bushland, blending robust surface finishes with the colour and texture of the landscape (Aspect 2020: 14). The colour and material palette has been designed specifically to:

> *…connects with the MDC vision and principles of being a connected place (connected to Indigenous perspectives, its community, the history of the Museum, the history of the site and its broader context in Castle Hill, and to Powerhouse Parramatta, Sydney Observatory and Powerhouse Ultimo) and an open collaborative place that through visual and physical permeability invites participation and collaboration with the vast and rich resources the MDC has to offer*. (Aspect 2020: 15)

6.3. Unexpected Finds Policy

6.3.1. Unexpected Aboriginal Objects

Should development works encounter a suspected archaeological feature that is suspected to be an Aboriginal Unexpected Find (excluding human remains- see Section 6.4.2 below), the following procedure should be followed:

1. Cease works in the immediate vicinity of the find.
2. Contact the project archaeologist to verify the nature of the find.
3. If Unexpected Find is confirmed as Aboriginal archaeology, project archaeologist will notify project RAPs and Heritage NSW of the find. (If Unexpected Find is confirmed as not Aboriginal in origin, project archaeologist will provide advice for works to recommence).
4. Project Archaeologist/Project RAPs will undertake a preliminary assessment and recording of the find.
5. Formulate archaeological or heritage management plan- specific to nature of the find.
6. Implement archaeological/heritage management plan.
7. Works may commence once archaeological/heritage management plan has been successfully implemented and project archaeologist provides sign off to contractor for works to resume in vicinity of find.

6.3.2. Unexpected Skeletal Remains

While not anticipated to be encountered within the MDC Building J footprint/study area, the unexpected discovery of any potential skeletal remains during development works should be managed in accordance with the approved Heritage NSW protocol for the discovery of human remains which is stated as:

> *If any suspected human remains are discovered and/or harmed the proponent must:*
>
> *a) Not further harm these remains;*
>
> *b) Immediately cease all work at the particular location;*
>
> *c) Secure the area so as to avoid further harm to the remains;*
>
> *d) Notify the local police and Heritage NSW's Environment Line on 131 555 as soon as practicable and provide any available details of the remains and their location; and*
>
> *e) Not recommence any work at the particular location unless authorised in writing by Heritage NSW.*

6.4. Conclusions and Recommendations

This ACHAR has undertaken an assessment of the Aboriginal archaeological and cultural heritage values associated with the MDC Study Area, the potential for archaeological deposits or sites to be present, and whether the proposed development impacts of the MDC Expansion project and construction of Building J would pose any impact or potential to harm any associated values.

The following conclusions and recommendations are made on the basis of:

- Legislation as detailed and adhered to through this ACHAR, including NPW Act, EP&A Act, and relevant OEH statutory guidelines, protecting Aboriginal cultural and archaeological objects and places in NSW;
- Background research and archaeological analysis of the study area in its local and regional contexts;
- Consultation with the local Aboriginal community regarding the cultural significance of the study area and surrounding Hills Shire area, noting their concerns, views and requests; and
- The impact of the proposed development works within the MDC Expansion study area.

6.4.1. Conclusions

This ACHAR documents the process of investigation, consultation and assessment with regards to Aboriginal cultural heritage and Aboriginal archaeology, as undertaken for the MDC Expansion study area and proposed development works, the main conclusions of which are as follows:

- No registered Aboriginal sites are located within the study area
- Aboriginal site types most likely to be located in the Castle Hill region and study area are artefact and PAD sites
- The study area has been completely cleared of native vegetation, but was replanted with dense grids of eucalyptus from the 1940s for MAAS research into essential oils.
- The MDC study area is located at the upper limit of the headwaters of Smalls Creek, and >500m from the permanent water sources of Cattai/Strangers Creeks. While fresh water would have been moderately accessible from the study area landscape, this would have involved localised travel to access, and would not have been consistently available from the study area to sustain an Aboriginal population all year round.
- The MDC study area is located on a slope landform near the north-eastern edge of the Cumberland Plain. The study area is located on the shallow soils of the Luddenham soil landscape which are particularly prone to erosion, particularly on crest and slop landforms that have been subject to previous historical land clearance.
- Historical activities at the site have resulted in moderate to high levels of ground disturbance, including significant impacts such as construction of buildings for the MDC and TAFE sites, as well as landscape activities such as land clearance and establishment of the dense eucalypt plantations that would have resulted in significant disturbance, removal and erosion of natural topsoils, as well as other associated activities such as land grading and leveling etc.
- Based on the environmental context and physical setting of the MDC, it is unlikely that the study area would have been a suitable location for concentrated Aboriginal camp sites or occupation. While the study area may have originally had potential for isolated/low density

artefact sites as a result of ephemeral movement of Aboriginal people across the wider landscape, this potential has been significantly reduced by historical disturbance and erosion.

- Overall, the MDC study area is considered to have **low potential for Aboriginal archaeological deposits to be present.**

- The MDC study area does not contain any registered Aboriginal sites, nor is it in sufficient proximity to any surrounding sites or significant locations in the surrounds, that have potential to be impacted (either directly or indirectly) by the proposed development.

- The study area does not meet the criteria for historical, scientific, nor aesthetic significance.

- Previous archaeological and cultural assessments undertaken in the Castle Hill/Cumberland Plain region have consistently demonstrated that Dharug people consider all their sites to be connected as part of a wider cultural landscape. Viewed as a whole, Dharug sites across the Cumberland Plain form a complex that embodies all aspects of Dharug history and life.

- At the time of writing, no cultural or social values have been expressed as being connected to/associated with the MDC site specifically. Should ongoing Aboriginal community consultation identify cultural and social values association with the study area, these values are likely to relate to the location of the MDC study area within the wider cultural landscape of the Cumberland Plain, rather than any specific values inherent within the land of the MDC study area itself, and are therefore unlikely to be impacted by the nature of the proposed development (i.e. construction of Building J).

- Overall, the proposed development works (including bulk excavation works, trenching, piling, and landscaping works) are assessed to have **low potential to encounter or impact Aboriginal sites or objects**, or to significantly impact on any Aboriginal social or cultural heritage values (TBC through ongoing consultation with the Aboriginal community)**.**

6.4.2. Recommendations

The following recommendations are made in light of the conclusions above, following from the Aboriginal cultural heritage assessment of MDC Expansion concept design and proposed development impacts, including Aboriginal community consultation, ethnohistorical and environmental context, predictive modelling, heritage significance assessment and impact assessment, in accordance with relevant NSW OEH statutory guidelines. It is recommended that:

- The proposed development has low potential to encounter or impact any Aboriginal archaeological deposit, site, nor objects, and therefore does not require any further archaeological investigation prior to or in association with the development works.

- Should any unexpected Aboriginal Finds be encountered during development works, works should cease in the immediate vicinity of the find, and the Unexpected Finds Policy (presented in Section 6.3 of this ACHAR) should be followed.

- At the time of writing, Aboriginal community consultation in accordance with OEH guidelines remains in progress. Following the conclusion of the consultation process, the relevant sections of this ACHAR—particularly relating to the assessment of social significance and potential impact of the development to Aboriginal cultural heritage values—may require revision, depending on the nature of comments received by project RAPs on their review of this ACHAR.
- With respect to Aboriginal intangible heritage values (social and cultural), the MDC Expansion project presents an opportunity to have a minor positive impact in the context of the MDC site location in the northeastern extent of the Cumberland Plain, particularly through the integration of native plantings and acknowledgement of Dharug culture through the landscaping plan. The development should consider Aboriginal cultural heritage interpretation elements within the site to celebrate and communicate the significance of the site and landscape to the Dharug people, and local Aboriginal community. The commissioning of artwork or interpretation will not have a permanent footprint on the site, but rather form part of a programmatic response to heritage interpretation, in line with the MAAS Heritage Interpretation approach.
- Continuing consultation with the identified stakeholders should be undertaken throughout the project.

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APPENDIX A—Aboriginal Community Consultation Log

<THIS APPENDIX CONTAINS SENSITIVE INFORMATION AND HAS BEEN REMOVED FOR PUBLIC EXHIBITION>

APPENDIX B—Aboriginal Consultation Correspondence

<THIS APPENDIX CONTAINS SENSITIVE INFORMATION AND HAS BEEN REMOVED FOR PUBLIC EXHIBITION>

APPENDIX C—Extensive AHIMS Search Results

<THIS APPENDIX CONTAINS SENSITIVE INFORMATION AND HAS BEEN REMOVED FOR PUBLIC EXHIBITION>

APPENDIX D—Glossary of Technical Terms

TERM	DEFINITION
Aboriginal Object	"Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains" (DECCW 2010:18).
Aboriginal Place	"A place declared under s.84 of the NPW Act that, in the opinion of the Minister, is or was of special significance to Aboriginal culture" (DECCW 2010:18). Aboriginal places are gazetted by the minister.
Archaeological survey	A method of data collection for Aboriginal heritage assessment. It involves a survey team walking over the land in a systematic way, recording information about how and where the survey is conducted, recording information about the landscape and recording any archaeological sites or materials that are visible on the land surface. The activities undertaken by a survey team do not involve invasive or destructive procedures, and are limited to note taking, photography and making other records of the landscape and archaeological sites (e.g. sketching maps or archaeological features). (From DECCW 2010: 37)
Exposure	Estimates area with a likelihood of revealing buried artefacts or deposits rather than just an observation of the amount of bare ground. The percentage of land for which erosion and exposure was sufficient to reveal archaeological evidence of the surface of the ground. (From DECCW 2010: 37)
In Situ	Anything in its natural or original position or place is said to be in situ.
Knapping	The process of manufacture of stone tools.
PAD	Potential Archaeological Deposit. Nature of potential site yet unknown, environmental, archaeological and cultural modelling suggests the location has potential for a subsurface archaeological deposit to be present.
Test Unit	Location identified for archaeological test excavation
Study Area	Development/project area to which this report, the information, discussion and assessment presented within, directly refers to.

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