Appendix A: Archaeological Research Design & Excavation Methodology

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General

An Archaeological Research Design identifies and establishes the rationale, context, questions and methodology for the archaeological investigation of a site. The rationale is established through the assessment process (i.e., the 2025 HAA) which identifies the past occupation of the study area and the heritage values and research potential of the likely archaeological resource. The questions focus on recovering the values or 'unknown' information or gaps in information about the past that may be recoverable, and which may be lost if the archaeological resource is disturbed or destroyed. In turn, research questions focus the development of excavation and recording methods to recover the information or values of the study area.

To mitigate impacts to the potential historical archaeological resources within study area the following archaeological works are proposed:

- Targeted historical archaeological test trenching.
- Possible salvage excavation based on the results of testing.
- General project archaeological monitoring.
- An Unexpected Finds Procedure.

In addition, an archaeological work should be guided by research questions which place the work within an established research framework. The research questions which will guide any archaeological work are also included here.

Heritage Induction

Prior to any work commencing on site the Excavation Director (ED), with assistance from Curio Projects personnel, and the Site Contractor, will prepare a heritage induction document/presentation that will be presented to all relevant on-site personnel. A heritage induction will be approved and presented by the nominated ED. The induction would include information to clarify the heritage significance of the site's potential archaeological resource including:

- The nature of archaeological resources.
- An outline of the archaeological process on site and introduction of the relevant personnel.
- Explanation of the Unexpected Finds Procedure.
- Plan showing the location of potential archaeological features.
- Images to assist understanding for on-site personnel of the types of archaeological features that may be present.
- Repercussions of any breaches to the approved archaeological strategy.

Excavation Methodology

Nominated Team

Archaeological investigation works would be directed by Ian Stuart, who would be nominated as the Primary Excavation Director and Rebecca Agius, who would be the Secondary Excavation Director. Ian has worked extensively within the Sydney metropolitan area and is approved by the NSW Heritage Division to direct excavations of local and State Heritage listed sites and places.

The remaining team would comprise assistant archaeologists and a site planner, who would be drawn from Curio's pool of permanent staff and sub-consultants. On-site planning would be carried out by an experienced archaeologist, who would also be responsible for the collation of site drawings. Guy Hazel, who has experience of previous excavation recording at numerous sites around NSW, would provide specialist surveying and orthophoto services, should any significant features be identified. Curio also has access to drone photography if required.

The details of additional team members will be confirmed in writing to the archaeologists at Heritage NSW once the timing of the excavation has been finalised.

Site Preparation and Timing

WSU wishes that the archaeological testing program to take place prior to the complete demolition of the extant P1 car park. Selected areas of archaeological investigation will be demolished and overseen by an archaeologist. Dependent on the results of both Aboriginal and historical excavations, the remainder of the proposed works may or may not require monitoring.

Should test excavation occur after SSDA approval, the removal of hardstand surfaces should be monitored by an archaeologist.

Monitoring proposed for the eastern and western temporary car park locations will occur as these works take place.

Test Trench Excavation

It is proposed that an initial excavation program of test trenches across the proposed ICoE footprint to be undertaken. These will investigate the potential for archaeological remains of features, deposits and any unexpected structures of the occupation identified in the overlay (Figure 1). The test trenches are indicated in blue.

Should the test trenches indicate that no significant archaeological deposits or features remain, then the archaeologist will record the deposits exposed in the trenches to indicate the nature of the remains beneath the existing surface and complete a short report. No further archaeological involvement is proposed based on the conclusion of this short report that no 'relics' are present.

However, should the test trenches indicate a general level of integrity and survival of significant archaeological deposits and features then a program of open area salvage excavation may be conducted to expose and record those deposits and features within the study area where they are present and likely to suffer physical impact from the development. The final locations and extent of any open area salvage excavation will depend on the results of the test trenches, but they will generally be restricted to areas of impact.

The initial test trenches have been sited to investigate the presence of specific land-use elements that may contain significant deposits. They will also provide a snapshot of the general level of survival of archaeological relics across the entire study area. All test trenches are proposed to be 4m x 2m and are set to capture and investigate the potential for remnant features from the late nineteenth and twentieth centuries.

- Trench 1 (4mx2m) has been placed to investigate the potential for evidence of archaeological features/deposits associated with the Phase 4 late 19thC/early 20thC (purple) fence line and Phase 5 20thC (green) pathway.

- Trench 2 (4mx2m) has been placed to investigate the potential for evidence of archaeological features/deposits associated with Phase 4 late 19thC/early 20thC (purple) culvert and pond and Phase 4 late 19thC/early 20thC (yellow) drainage line.

- Trench 3 (4mx2m) has been placed to investigate the potential for evidence of archaeological features/deposits associated with Phase 4 late 19thC/early 20thC (purple) culvert and pond.

- Trench 4 (4mx2m) has been placed to investigate the potential for evidence of archaeological features/deposits associated with the Phase 4 late 19thC/early 20thC (purple) and Phase 5 20thC (green) drainage lines.

- Trench 5 (4mx2m) has been placed to investigate the potential for evidence of archaeological features/deposits associated with Phase 4 late 19thC/early 20thC (yellow) drainage line.

The test trenches will be excavated to a depth where historical archaeological deposits and/or features are identified. Should they not be present the excavation would also cease when any natural profile was identified, or Aboriginal cultural material was exposed. Should Aboriginal cultural material be identified in historical archaeological deposits excavation would also cease and the area identified for further investigation by Aboriginal archaeologists.

Targeted Machine Scrapes

It is proposed that an additional 3 sample test trenches using machine excavation, should test the integrity, intactness and extent of any potential early phases of site use prior to bulk excavation works in areas identified as having potential to contain relics of local or State significance, in order to confirm the predicted intactness of the archaeological resource.

The study area is located within the mapped area of potential for surrounding farmlands associated with the Schools and Hospital are likely to contain remains such as cultivated/ploughed soils, field drains/ditches/gullies, field boundaries and pathways. It is proposed that these trenches would be 6mx2m to aim to get as much of a profile as possible. The machine scrapes will be used to identify any potential cuts or ground disturbing features that may have been associated with this land use. If relics are present, these may be of State significance. Machine scrapes are indicated in orange below.

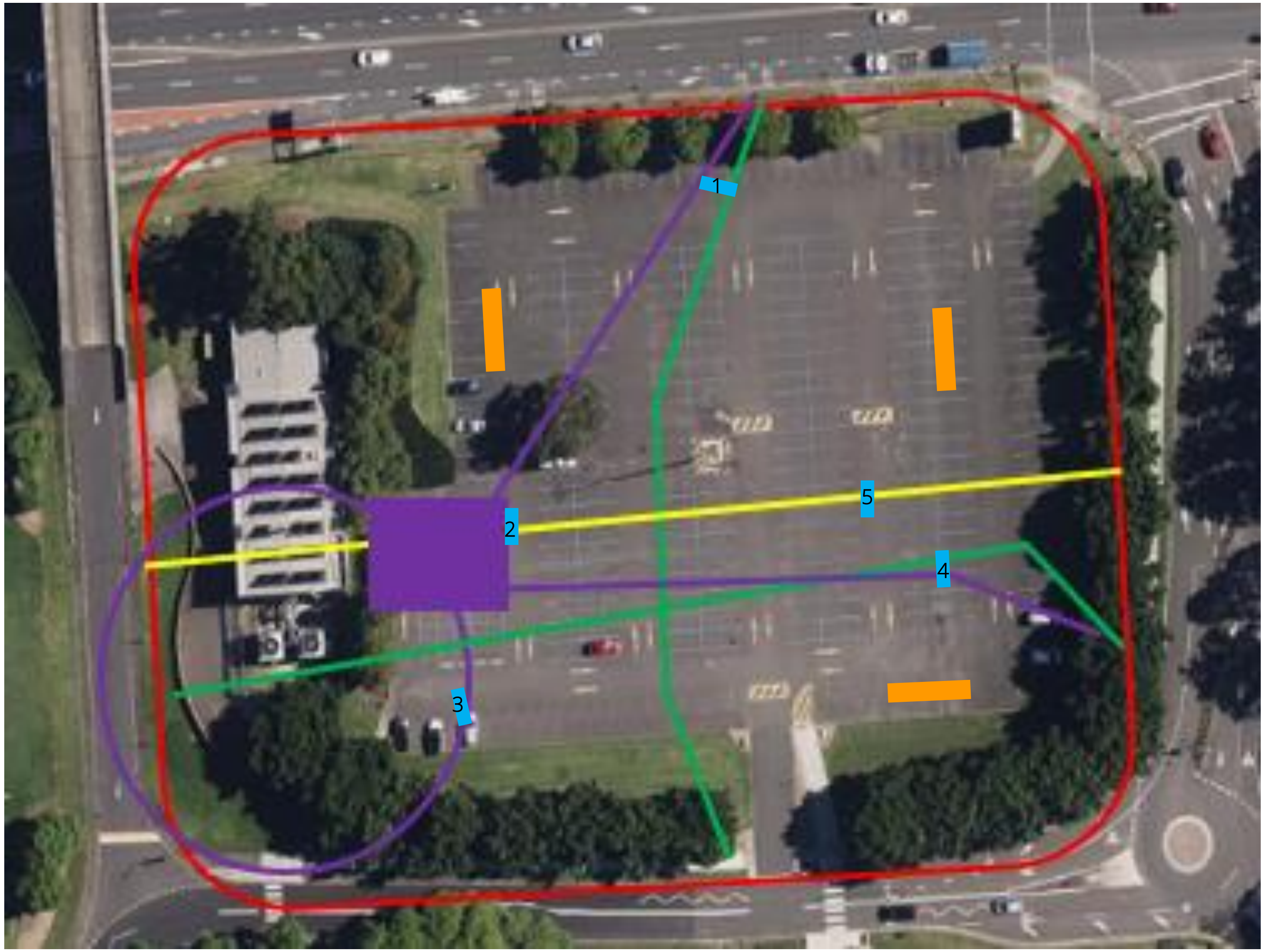

Figure 1: Compilation overlay showing phased developments within the study area based on archived maps. Red boundary represents study area, yellow indicates drainage line as shown on late 19th/early 20th Century plan of the Hospital grounds, purple represents drainage line, fence line, pond and culvert as shown on a late 19th/early 20th Century plan and green represents drainage and pathway as shown on 1943 aerial.

Source: Curio 2025

Interaction with Aboriginal Heritage

Should the historical test pits identify the presence of any Aboriginal archaeological deposits within a disturbed context, the project RAPs will be notified and brought on site to continue with a strategic expansion of the test pits to further confirm the nature and extent of the deposit.

The Aboriginal cultural heritage investigation would work either in tandem or as a coordinated effort of alternating excavation with the historical archaeological investigation. As such, the methodology would have to be amended to permit the changed circumstances in accordance with the points as follows:

- All changes to the excavation methodology on site would reach agreed consensus between the Aboriginal and historic excavation directors and the on-site project RAPs.
- The historical excavation would not disturb the natural soil contexts beyond the depths of identified historical deposits.
- Excavation of the interface of historic and natural soil deposits would be monitored by the Aboriginal Excavation Director and /or a project RAP.
- All sieved historic contexts would be monitored for and examined for Aboriginal objects.
- Should historical archaeological excavation encounter any displaced Aboriginal objects within historical archaeological deposits, the Aboriginal archaeology Excavation Director, and project RAPs would be informed. Any displaced Aboriginal objects within historical contexts would be recorded in their location, and removed, to be catalogued and analysed in accordance with the Aboriginal archaeological methodology outlined within the ACHAR.

Archaeological Monitoring

The monitoring program will ensure that all ground-disturbing works outside of the designated test excavation zones, particularly in areas assessed as having low archaeological potential due to prior disturbance, are subject to appropriate archaeological oversight. Monitoring will be undertaken by a qualified archaeologist.

The monitoring will involve:

- Continuous or periodic observation of excavation activities within the monitored footprint.
- Visual inspection of exposed profiles, soil matrices, and excavation spoil during the course of works.
- The capacity to temporarily halt works should any potential archaeological material be identified, further investigated, enabling appropriate recording, assessment, and (if required) salvage.

ICoE Footprint

Dependent on the nature of the test excavation findings, remedial and/or bulk excavation works may be subject to archaeological monitoring periodically throughout the project to identify any potential undocumented or ephemeral archaeological features not located during the test excavation. Curio will monitor all machine excavation and stop works to investigate any potential archaeological resources, should any be detected.

Temporary Car Parks

Additionally, all ground disturbing works in the location of the proposed eastern car park will be subject to archaeological monitoring. This will be implemented specifically to identify any potential structural remains of the ha-ha of the Rydalmere Psychiatric Hospital.

Monitoring of the proposed western car park will be subject to initial ground clearance and works associated with the excavation of electrical and stormwater services. All other works in this location will be subject to the unexpected finds protocol.

Triggers to Halt Work

Archaeological monitoring personnel will have the authority to temporarily stop works if any of the following are encountered:

- Structural remains (e.g. sandstone footings, brick walls, paved surfaces)
- Artefact-rich deposits or layers (e.g. cesspits, wells, refuse deposits)
- Other features (e.g. drains, culverts)

Response to Triggers

- Immediate cessation of work in the vicinity of the find.
- Preliminary recording and assessment by the archaeologist.
- Notification to the proponent, Heritage NSW (where relevant), and RAPs (for suspected Aboriginal objects).
- Formulation of a site-specific mitigation or management plan, such as detailed recording, sampling, salvage excavation, or avoidance measures.
- Works to recommence only following archaeological clearance and approval of the management response.

This monitoring program provides a framework that ensures compliance with statutory obligations, reduces the risk of inadvertent harm, and enables the proper identification, recording, and management of archaeological resources across the redevelopment site. While primary investigative efforts are focused on areas of higher archaeological potential, this approach ensures that the project remains responsive to the possibility of uncovering significant evidence, including isolated deposits or structural features, in zones previously assessed as disturbed or of lower potential.

Open Area Salvage Excavation

Should the test trenches and/or monitoring indicate that no significant archaeological deposits or features remain in the study area, then the archaeologist will record the deposits exposed in the trenches to indicate the nature of the remains beneath the existing surface, and complete a short report. No further archaeological involvement will be proposed based on the conclusion of this short report, owing to the fact that that no 'relics' are present. Results that would not require further investigation includes (but not limited to):

- Isolated artefacts or highly disturbed deposits
- Features that extend outside of the study area or impact zones
- Fill layers or truncated contexts with limited interpretive value
- Structures or materials assessed as below the significance threshold

However, should it be identified that open area salvage excavation be needed, this process will focus on expanding test trenches where clear, stratified, or mappable features are identified including:

- Structural remains of buildings, outbuildings etc.
- Deeper sub-surface features (cesspits, wells, cisterns etc.)
- Underfloor and exterior deposits, or yard features

This section pre-emptively outlines the potential need for salvage to occur, should the test excavations demonstrate extensive archaeological resources. A more detailed ARD can be produced after the results of test excavation to tailor an open area salvage methodology.

The archaeological salvage and recording program, should it proceed, will focus on the areas identified as containing archaeological relics of local and/or State significance that will be disturbed or removed by works during development.

These areas/deposits, with potential 'relics' will be excavated in their entirety, recording any significant deposits, collecting artefacts from these deposits, and recording the remains of former structures, yard spaces and surfaces in these areas. The deposits will be removed by hand until sterile natural or deposits of no significance are exposed. Given the period of erection and use of the anticipated structures, occupation deposits may not be present, and structural elements may be the only remnants extant. In that case the building elements will be completely exposed, their footprints and individual elements recorded, and they will be removed.

Where the test trenches indicate substantial disturbance or removal of archaeological deposits then these areas will not be subject to comprehensive salvage excavation but may be sampled at the discretion of the ED.

If State significant relics are found during works, the Heritage Council of NSW will be notified in accordance with Section 146 of the Heritage Act 1977. This notification takes place in the form of a completion of the relevant form on the Heritage NSW "Heritage Management System" web interface. The position, extent and condition of the finds will be recorded, and they will remain in-situ during any discussions with Heritage NSW.

Depending on the assessed significance of the find, it may be necessary to undertake additional assessment and management recommendations related to the new information, and the design and planning of the proposed redevelopment may have to be reassessed/redesigned in order to avoid impacts to the State significant archaeological resources.

In the event that excavation works identify archaeological features or deposits of potential State significance, or features requiring in-situ conservation, the Excavation Director will initiate formal liaison with the design and construction teams, in tandem with guidance from Heritage NSW. This will include:

- Immediate notification to the project manager and relevant design leads.

- Provision of a preliminary archaeological assessment of the feature's significance and spatial extent.

- Participation of the Excavation Director in relevant design or construction coordination meetings to advise on heritage constraints, options for avoidance or design modifications, and potential program implications.

- Engage a qualified materials conservator or heritage engineer to assess stabilisation needs and inform the development of a site-specific conservation or management plan.

- All such consultations and decisions will be documented in the site's heritage record and project communications log.

Works may only recommence with the written approval of Heritage NSW.

Unexpected Finds Protocol

The archaeological methodology outlined in this report anticipates recording and sampling of all significant archaeology at the site where possible, focusing on the western boundary of the study area. However, there is potential that unexpected significant physical evidence associated with the phases of occupation may be present in other areas of the site. Such unexpected remains may include, but not be limited to:

- Deep cut wells, reservoirs and pits associated occupation at the site.
- Structural remains and artefacts.
- Rubbish pits containing waste and discarded artefacts disposed of away from surrounding housing.
- Other unexpected remains.

Unexpected finds do not include isolated artefacts, and building remains that may form part of fill deposits. If unexpected finds are exposed or disturbed work should cease in that area and the project Excavation Director notified of the find as soon as practicable. Do not move the item or attempt to further disturb it. Take a photo and forward to the Excavation Director and they will discuss and advise the next step which may include, but not be limited to:

- A site visit by the archaeologist.
- An instruction to move the item.
- No further action required.

The Excavation Director will assess the archaeological research significance of all Unexpected Finds, and this assessment will determine the action to be followed. These may include:

- No further action (i.e., the find is not significant).
- Retention of isolated artefacts, that otherwise are assessed as of low archaeological research potential, as items for possible use in interpreting the site, display, etc.
- Recording of the location of the find.
    - Retaining artefact(s) of research potential for the archaeological collection and further analysis.
    - Further recording and excavation to expose larger features/structural remains.
- Notification of the find(s) to Heritage NSW and further liaison with them.
- Additional research to identify larger features if not previously identified in the historical record.
- Reassessment of the significance of the unexpected find considering this research.

Some of the attributes of any unexpected finds that may determine if further advice is sought from NSW Heritage regarding the find are:

- Larger previously unrecorded features especially structural remains.
- Suspected human remains.[60]
- Evidence for Aboriginal occupation of the site.
- Rare or unusual find.

Recording and Reporting

If relics are exposed in any excavation, they will be archaeologically recorded. The recording process will include the following:

- Establish site grid by survey or use an existing one developed by the client. Detailed digital survey and mapping of the area based on that grid would be undertaken which will record all features.

- Locate extent of test trench excavation areas in relation to existing structures and archaeological remains.

- Use of a small excavator (1-3 ton) to open areas and remove overburden/fill if required. The extent and depth of this machine work will be at the direction of the archaeological team.

- Manual (hand) excavation of exposed relics using hand tools (shovels and trowels).

- Where deposits are found undertake detailed stratigraphic excavation and recording.

- Use of context recording forms and context numbers to record all archaeological information.

- Use of Harris matrix as part of the recording program.

- Wells and cesspits excavated in 200 mm spits or tip lines (where identifiable and the deposits sieved).

- All structural remains, post holes, and features will be planned at a scale of 1:20 or 1:50.

- Detailed photographic recording.

- All artefacts will be collected except from unstratified fills.

- Samples of bricks and mortar will be collected from features or unexpected structures.

- Collection, labelling, safe storage, washing, sorting and boxing of artefacts by artefact specialists along with palynological analysis and materials conservators as appropriate.

- A final report detailing the excavations, its results and addressing the Research Design questions would be completed within 12 months of the work being completed on the site, The report would include:

    - An introduction and executive summary.

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[60] Should potential human remains be uncovered the processes and procedures contained within the *Skeletal Remains; Guidelines for Management of Human Skeletal Remains* published in 1998 by Heritage NSW would be followed.

- Planning framework.
- Site history supplemented by additional research.
- Archaeological background.
- Archaeological investigation methodology, results and site recordings
- Analysis and catalogue detailing all historical cultural material recovered.
- Maps and site plans.
- Photo catalogue.
- Artefact catalogue.
- Reassessments of significance.
- Interpretation of results and addressing of Research Design questions.
- Conclusions and recommendations.
- Identification of repository for artefacts and site records.

- The artefacts, site records and final report would be presented to the client/site owner for curation.

Artefact Management and Analysis

Recovered artefacts will be sorted, cleaned, separated and bagged on site, ready for cataloguing and analysis off site. The artefact collection will have a Type Series established and the collection will be divided into material types and standard Activity/Function/Sub-function groupings. Artefacts will be bagged and labelled with unique database ID numbers linked through the catalogue to context, Type Series, Images, and historical information. Specialists will be contracted to provide advice, conservation and analysis as required based on the findings.

The client will need to provide a repository for storage, in perpetuity, of any artefacts recovered from the site. This is to be discussed with the client following the conclusion of the archaeological program at the site and would be confirmed in the post excavation report. The final location of this repository, whether on-site or not, would be determined after negotiations with the client.

Research Questions

The following questions provide a contemporary research framework for the proposed archaeological test excavation:

Broad Scope Questions

- What is the nature, extent, intactness and significance of the historical archaeological resource (features, deposits or other items), if any, exposed within the test excavation trenches?

- Does the archaeological resource verify the assessed potential and significance of the site?

- Do the deposits and features contribute new information about the occupation and development of the site?

Site Specific Questions

- Is there any evidence of early farming practices or occupation within the study area?

- Is there evidence of land modification of the study area beyond that of the formalisation of the drainage lines?

- Is there any evidence for the remains of the unidentified structures associated with early occupation of the site (i.e. associated with Arndell's Farm or Female Orphan School)?

- Are there any other unrecorded structures present?
- Are there unrecorded pit and/or well deposits associated with early occupation, should additional structures and features be identified?
- What is the manner of formalisation or construction of the drainage line and pond?
- Is the formalisation of drainage within the study area representative of other known land modification in the Parramatta area?
- Is there evidence that the formalisation of the drainage line and construction of the pond was for aesthetic, as well as practical drainage purposes?
- Have remains of the HA-HA wall survived previous disturbance?
- If so, how do these remains compare to other examples of Ha-Ha wall structures?
- Does the material culture at the site specifically reflect any relevant historical themes?
- Does evidence of material culture, artefacts or archaeological contexts show association with a particular group or behaviour within the study area?

Significance and Conservation:

- Are there any features potentially of State significance?
- Do any features warrant in-situ conservation?
- What elements may lend themselves to interpretation