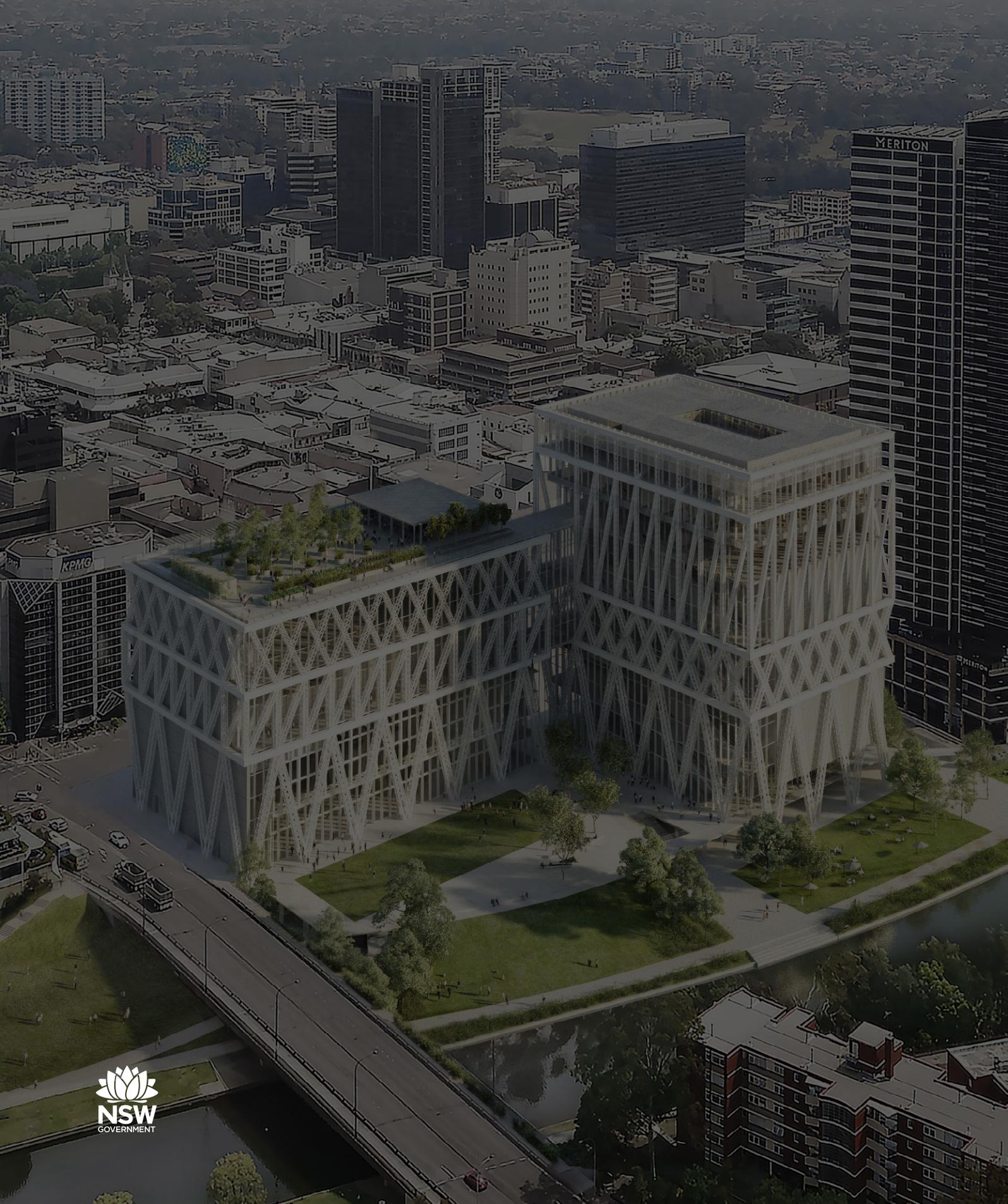


APPENDIX H ADDENDUM HISTORICAL ARCHAEOLOGICAL IMPACT ASSESSMENT REPORT

Curio Projects





Addendum Historical Archaeology Impact Assessment Report

Powerhouse Parramatta

Client: Infrastructure NSW

Final Report, 15 September 2020



Document Information

Citation

Curio Projects 2020, *Addendum Historical Archaeology Impact Assessment Report—Powerhouse Parramatta*, prepared for Infrastructure NSW.

Local Government Area

City of Parramatta Council

Cover Image

Powerhouse Parramatta Aerial View- Competition Image (Moreau Kusunoki-Genton)

ISSUE No.	ISSUE DATE	VERSION	NOTES/COMMENTS	AUTHOR	REVIEWED
1	4-09-2020	Draft Report	For client review	Matthew Kelly	
2	10-09-2020	Final Report	For issue	Matthew Kelly	
3	15-09-2020	Final Report	For issue	Matthew Kelly	

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.

Unless otherwise specified or agreed, copyright in the intellectual property of this report vests jointly in Curio Projects Pty Ltd.

Curio Projects Pty Ltd
 5 Blackfriars Street
 Chippendale NSW 2008
 Australia

Contents

Document Information.....	2
1. Background	5
1.1. Introduction.....	5
1.2. Author.....	5
1.3. Acknowledgements.....	5
2. Revised Impact Assessment of Revised Design	6
2.1. General	6
2.2. Demolition, Decommissioning and Decontamination	6
2.3. Bulk Excavation Works	7
2.4. Foundation Piling.....	7
2.5. Service Trenching.....	7
2.6. Landscaping and Other Minor Activities	8
3. Potential Impacts on Archaeology	13
3.1. Introduction.....	13
3.2. Specific Areas of Impact.....	13
3.3. Mitigation Measures	13
3.3.1. Avoidance	13
3.3.2. Archaeological Excavation/Recording	14
4. MITIGATIVE STRATEGY AND EXCAVATION METHODS	17
4.1. Archaeological Investigation Methods.....	17
4.1.1. General.....	17
4.1.2. Nominated Team	17
4.1.3. Demolition Plan	17
4.1.4. Test Trenching.....	17
4.1.5. Open Area Salvage Excavation.....	18
4.1.6. Archaeological Monitoring	19
4.1.7. Recording.....	19
4.2. Post Excavation Reporting/Analysis	19
4.3. Artefact and Excavation Records Repository	20
4.4. Unexpected Finds Procedure	20
5. Summary.....	22

Figures

Figure 2-1 Plan of proposed cut and fill across the study area. Note the dark red excavation for the undercroft. (Source: ARUP).....	9
Figure 2-2 Plan of existing electrical services on the study area. (Source: ARUP).....	10
Figure 2-3 Plan of stormwater, sewer and potable water supply at the study area. (Source: ARUP).....	11
Figure 2-4 Plan of identified construction impacts. (Source: Curio projects).....	12
Figure 3-1 Areas of archaeological potential on the study area. (Source: Curio 2020 based on AHMS 2015).....	15
Figure 3-2 Plan of mapped impacts on archaeological potential. (Source: Curio 2020).	16
Figure 4-1 Proposed Historical Archaeological Test Trenches. Test trenches not to scale. (Source: Curio ARD 2020)	21

1. Background

1.1. Introduction

Curio Project Pty Ltd has been commissioned by Infrastructure NSW (INSW) to prepare an Addendum Historical Archaeological Impact Assessment to support a State Significant Development (SSD) Development Application (DA) for the development of the Powerhouse Parramatta at 34-54 & 30B Philip Street and 338 Church Street, Parramatta (study area).

This Addendum Historical Archaeology Impact Assessment (HAIA) has been completed in response to the revised construction impacts which include the relocation of the plant, additional piles across the footprint of each building, the undercroft and service impacts within the study area. Therefore, an Addendum HAIA is to be prepared to assess any potential impacts these additional ground works may have on the historical archaeological potential and provide a revised excavation methodology based on the new impacts.

This report functions as an addendum to the 2020 report prepared by Curio Projects and should be read in conjunction with that document.¹ This HAIA does not reproduce all the details and context provided in that report. Should additional detail be required, reference should be made to the ARD report as required.

The following Addendum report had been written on the assumption that the existing heritage structures are demolished, and the site will effectively be clear of structures.

1.2. Author

This addendum has been completed by Matthew Kelly, Senior Archaeologist, Curio projects. The diagrams and overlays have been completed by Andre Fleury, Archaeologist, Curio projects.

1.3. Acknowledgements

Curio would like to acknowledge the assistance of Tom Kennedy, GTK Consulting, George Cunha, Terence Tang, Kimberley Blackburn and Euan Mitchell at ARUP.

¹ Curio Projects, 2020, Powerhouse Site, Parramatta, Final Archaeological Research Design for Infrastructure NSW.

2. Revised Impact Assessment of Revised Design

2.1. General

The proposed activity is the redevelopment of the study area for the construction of the Powerhouse Parramatta, and comprises:

- site preparation works, including the termination or relocation of site services and infrastructure, tree removal and the erection of site protection hoardings and fencing;
- demolition of existing buildings including the existing Riverbank Car Park and 'Willow Grove' (with 'Willow Grove' to be relocated to another site);
- construction of the Powerhouse Parramatta—two main buildings (west and east);
- operation and use of the Powerhouse Parramatta including use of the public domain provided on the site to support programs and functions;
- maintenance of the existing vehicular access easement via Dirrabarri Lane, the removal of Oyster Lane and termination of George Khattar Lane, and the provision of a new vehicular access point to Wilde Avenue for loading;
- public domain within the site including new public open space areas, landscaping and tree planting across the site; and
- building identification signage.

The project does not involve any alterations to the existing edge of the formed concrete edge of the Parramatta River or to the waterway itself.

Further detail is provided below about development activities that have potential to impact historical archaeological deposits. That is, activities that will disturb the ground surface. (see Figure 2-1 to Figure 2-4)

2.2. Demolition, Decommissioning and Decontamination

The structures currently on site include the Riverbank Car Park, 'Willow Grove' (1886), a small electricity substation, modern commercial structures at 36-40 Phillip St and hard surfaces such as pathways and roadways. All will be demolished (in the case of the substation it will also be decommissioned) and removed for construction. 'Willow Grove' will be relocated to another site and a proposal for the relocation is outlined in the Addendum Statement of Heritage Impact included within the Response to Submissions. It is anticipated that the above ground elements of the other structures will be demolished to ground level, slabs and floors removed and subsurface footings pulled out of the ground. It is also possible that existing conduits and cables may be removed. Large amounts of asbestos conduits are present in the Parramatta CBD. They are likely to be present in the area of the substation. The removal of existing cabling and asbestos conduits may necessitate extensive clearance and specialised handling.

The demolition, decommission and removal processes, in the vicinity of areas of archaeological potential, may therefore have physical impacts upon subsurface areas of the site with the potential to disturb or remove archaeological features and deposits.

2.3. Bulk Excavation Works

Bulk excavation will be undertaken beneath the new western and eastern buildings to accommodate required services including grease arrestor, sewer and stormwater pumps, lift pits, plant, foundation piles and rainwater/waste tank. ARUP has advised that the majority of the site is "on grade" with some minor adjustments required according to computer modelling of the study area topography shown as dark yellow in Figure 2-1. More substantial excavations are shown as orange and red in the same figure. The red area reflecting the proposed undercroft to the Powerhouse.

2.4. Foundation Piling

The two new buildings will be supported on large diameter piles into sandstone bedrock, connected to the superstructure via pile caps supporting the main building columns, overlaid with a c.150mm concrete slab on grade (i.e. RL7.5m). The concept for the piling foundations is the installation of piles (for the western and eastern buildings respectively), spanned by horizontal perimeter ground beams (800mm by 1200mm). Perimeter piles are aligned to underlie the buildings perimeter support columns, with use of both single piles, as well as paired piles to support heavily loaded columns. Each perimeter pile would typically be 1800mm in diameter with a 2000mm x 2400mm x 2000mm deep pile cap (single piles), or 2000mm x 5700mm x 2000mm deep pile cap (paired piles).

Additional piles will be required across the footprint of each of the west and east buildings to support architectural and design features that require additional sub-structural support (e.g. features such as educational floors and stairs in the eastern building, and support for concrete core walls and escalator in western building).

The eastern building pile numbers have been reduced by 50% but the piles will be connected by excavated band beams measuring 2400mm wide by 600mm deep. Excavations for these band beams are anticipated to require excavations larger than the finished dimensions to allow for formwork etc.

The concrete slab in both the western and eastern buildings will include subgrades which require the removal of all topsoil, grass roots etc and the additional depth for slabs and band beams with an additional 200mm worth of compressible layer and drainage layer. Piles across the study area would extend between 4-10m into the bedrock (subject to geotechnical advice) with the total pile lengths varying from 14-20m.

Additional piles are also be required in the northern part of the eastern building to support a ground beam to support the exoskeleton, however this would be subject to further geotechnical advice. Other required structural support elements that will impact the ground surface are likely to include excavation of a trench along the northern wall of the western building to accommodate the movable door in this location (minimum 1m depth), and other smaller diameter piles (600mm-1200mm) for additional wall and door support, as well as foundational concrete pads.

Figure 2-4 presents the plan of proposed piling and support beams on the study area.

2.5. Service Trenching

Existing services lines have been identified and located. The larger service lines are shown in Figure 2-2.

The locations and dimensions of proposed service and utility trenching on the study area are shown in, Figure 2-3 and Figure 2-4 (in green). These trenches are likely to require excavation in the range of 1-7m depth and 600mm-3000mm (for each service) in width.

2.6. Landscaping and Other Minor Activities

Landscaping works at lower ground level will be mainly focused on the northern side of the new buildings, fronting the river foreshore. The existing strip of lawn and river path along the river foreshore will both be retained, while new lawn areas will be established fronting the undercroft of the new buildings. A new 'rain garden' is proposed to the west of the western building, integrated with the emergency vehicular access ramp to the river. Landscaping works will also include removal of some existing trees, and replacement with new native mature trees, as well as other native plantings.

These landscaping works have not been mapped in this addendum as the details of that work are yet to be finalised.

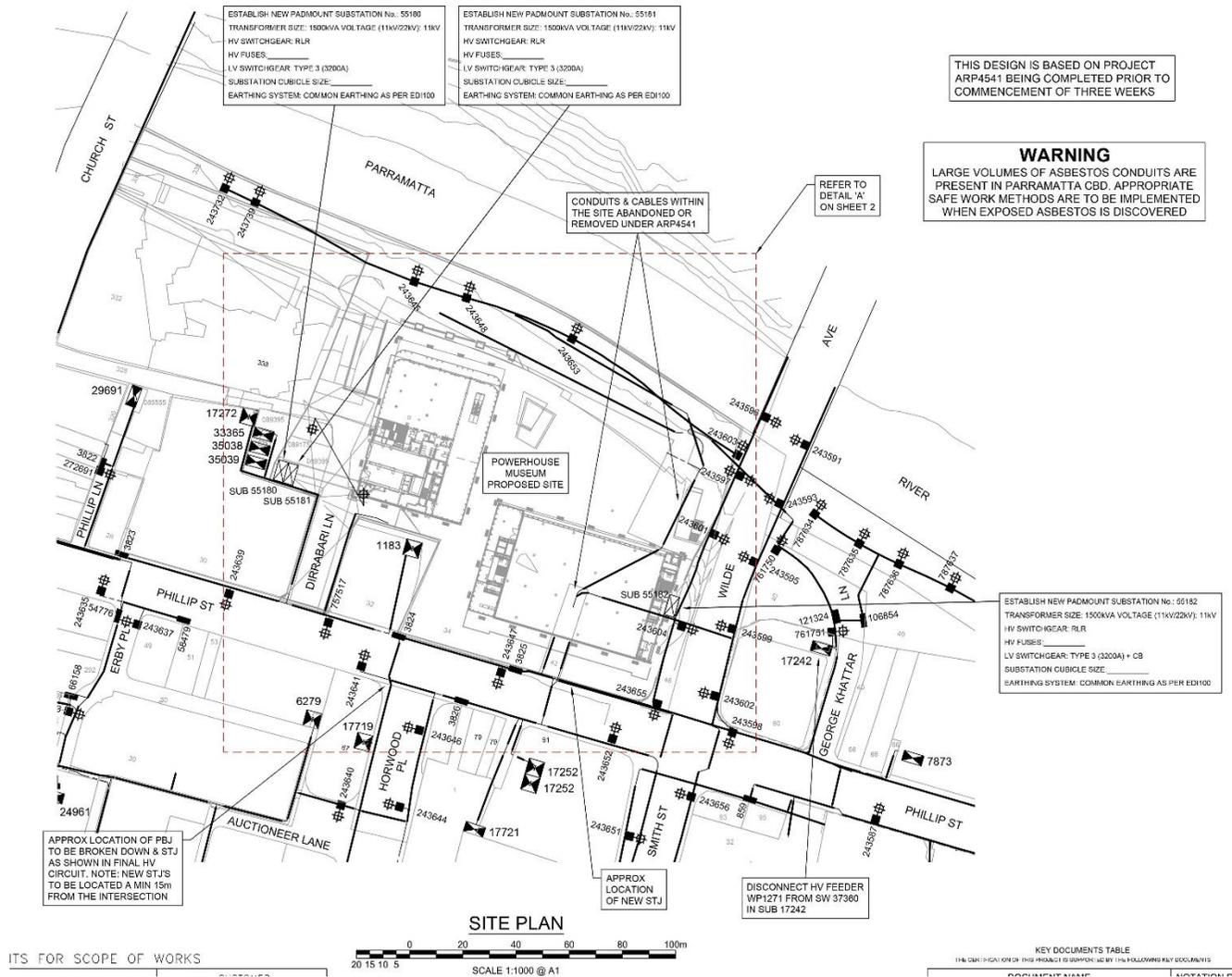


Figure 2-2 Plan of existing electrical services on the study area. (Source: ARUP)

Location of Study Area and proposed impacts

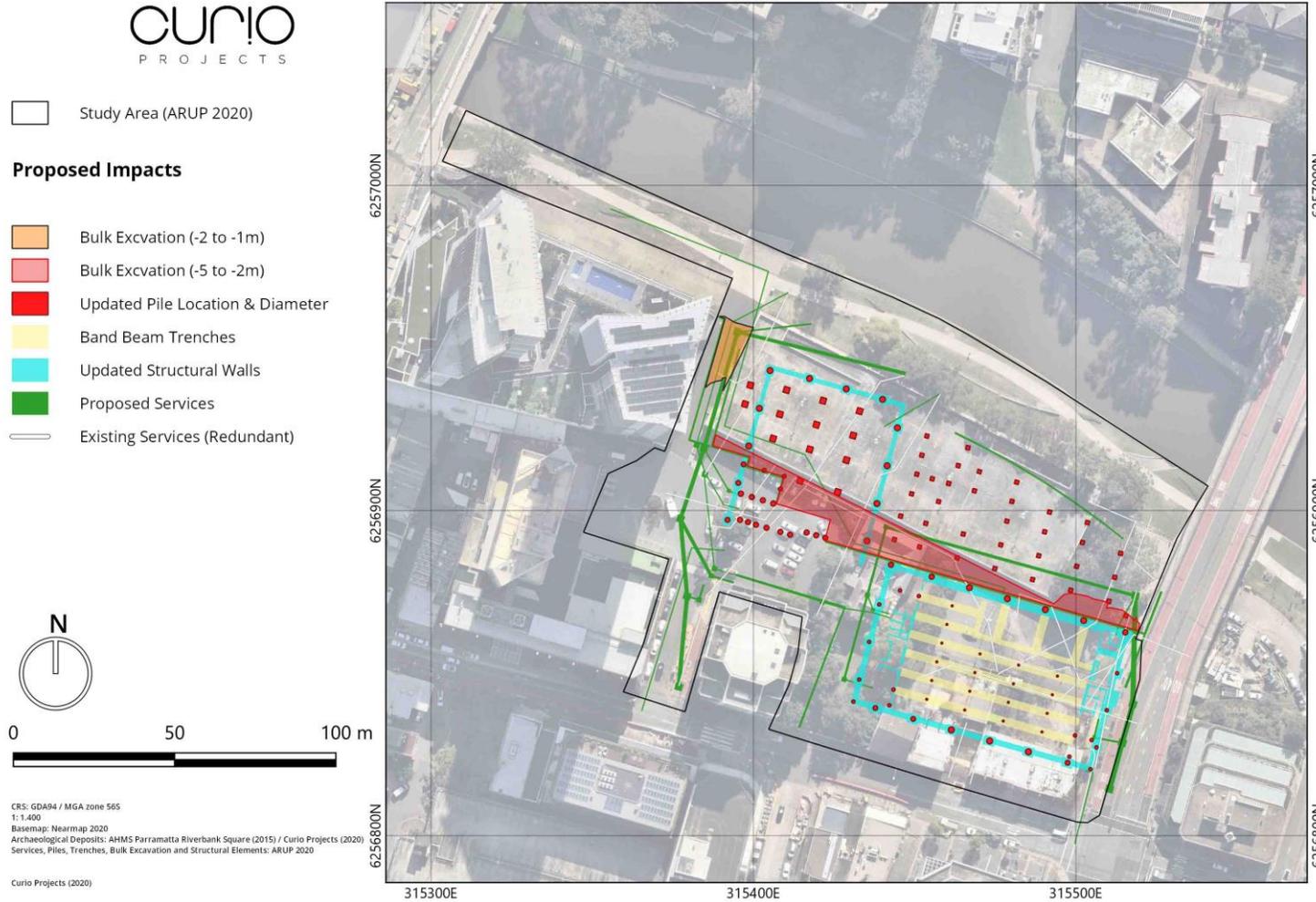


Figure 2-4 Plan of identified construction impacts. (Source: Curio projects).

3. Potential Impacts on Archaeology

3.1. Introduction

The archaeological potential of the study area was established and mapped by AHMS and this was set out in their 2015 report (shown as Figure 3-1). This plan has been used as the basis for the following assessment of the physical impacts of the proposed works. The impacts set out in Section 2 show some potential to have physical impacts on the potential archaeological resource (Figure 3-2).

3.2. Specific Areas of Impact

These include (refer to Figure 3-2 and Figure 6.14 in the 2020 ARD)

- Pile and band beam footprints,
 1. on the area now occupied by 'Willow Grove';
 2. through the area at the rear of St George's terraces;
 3. through areas at the south-eastern and eastern portions of the study area containing State significant archaeology, and
- Service Corridors,
 4. across an area on the south-western portion of the study area containing locally significant archaeology;
 5. through areas at adjacent to 'Willow Grove' containing State significant archaeology;
 6. through an identified brick barrel drain running north-south across the study area;
- Bulk Excavation,
 7. through areas containing potentially State significant archaeology in the centre of the study area;
 8. through areas containing potentially State significant archaeology in the east of the study area;
- Tree plantings (not shown in Figure 3-2),
 9. through areas at adjacent to 'Willowgrove' containing State significant archaeology;
 10. through areas at the south and eastern portion of the study area containing State significant archaeology.

3.3. Mitigation Measures

3.3.1. Avoidance

The first, and preferred, option to mitigate any identified impacts on the archaeological resource is redesign to avoid. Options may be sought to reposition (where possible) support columns or seek to span areas identified as having archaeological potential with two or more columns. A similar avoidance approach may also be employed with installation of services, either avoiding areas of the archaeological resource and redesigning the route of the services or identifying existing service corridors, trenches etc and laying new services within areas that have previously been subject to excavation disturbance. Finally, landscaping may also be redesigned to avoid physical impacts on the archaeological resource either through changing the nature of the intended planting, i.e. low impact shallow rooted bushes rather than mature trees with the potential to create future damage through expansion of the root ball.

3.3.2. Archaeological Excavation/Recording

If it is not possible to avoid through redesign or use of previously disturbed areas, then archaeological intervention may be necessary to provide a level of mitigation (i.e. recording the archaeology) prior to unavoidable disturbance or removal by the development. For further details of the provisional approach for archaeological recording as a mitigation measure see Section 0.

Location of Study Area, built heritage structures and areas of Archaeological potential

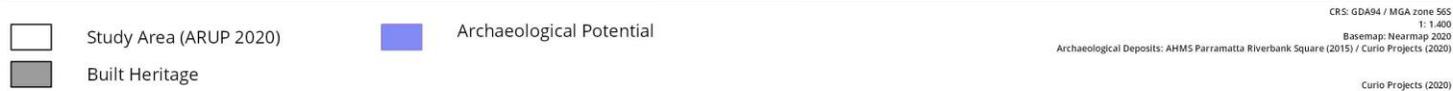
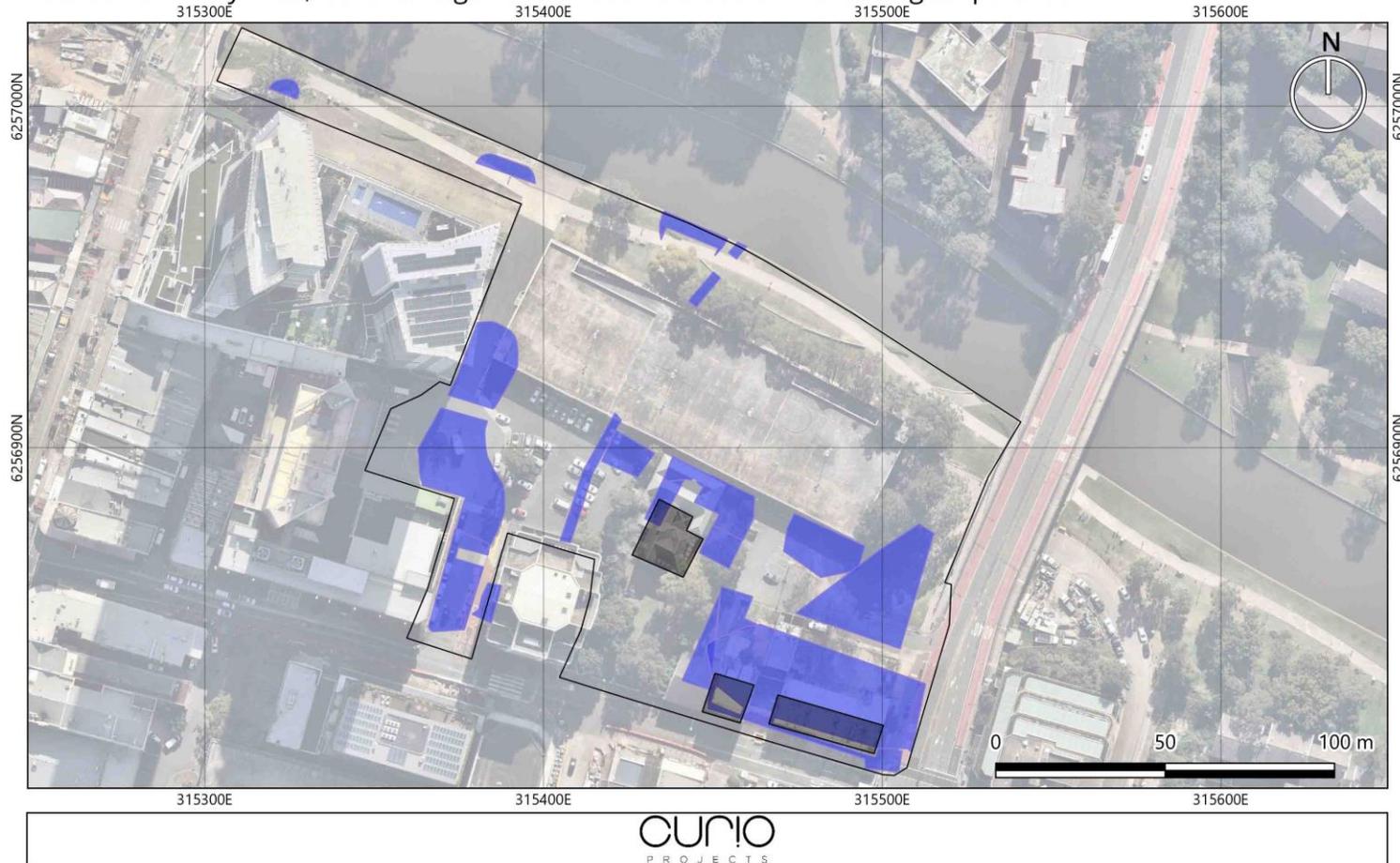


Figure 3-1 Areas of archaeological potential on the study area. (Source: Curio 2020 based on AHMS 2015)

Location of Study Area, Archaeological potential, existing services to be made redundant and general subsurface impacts

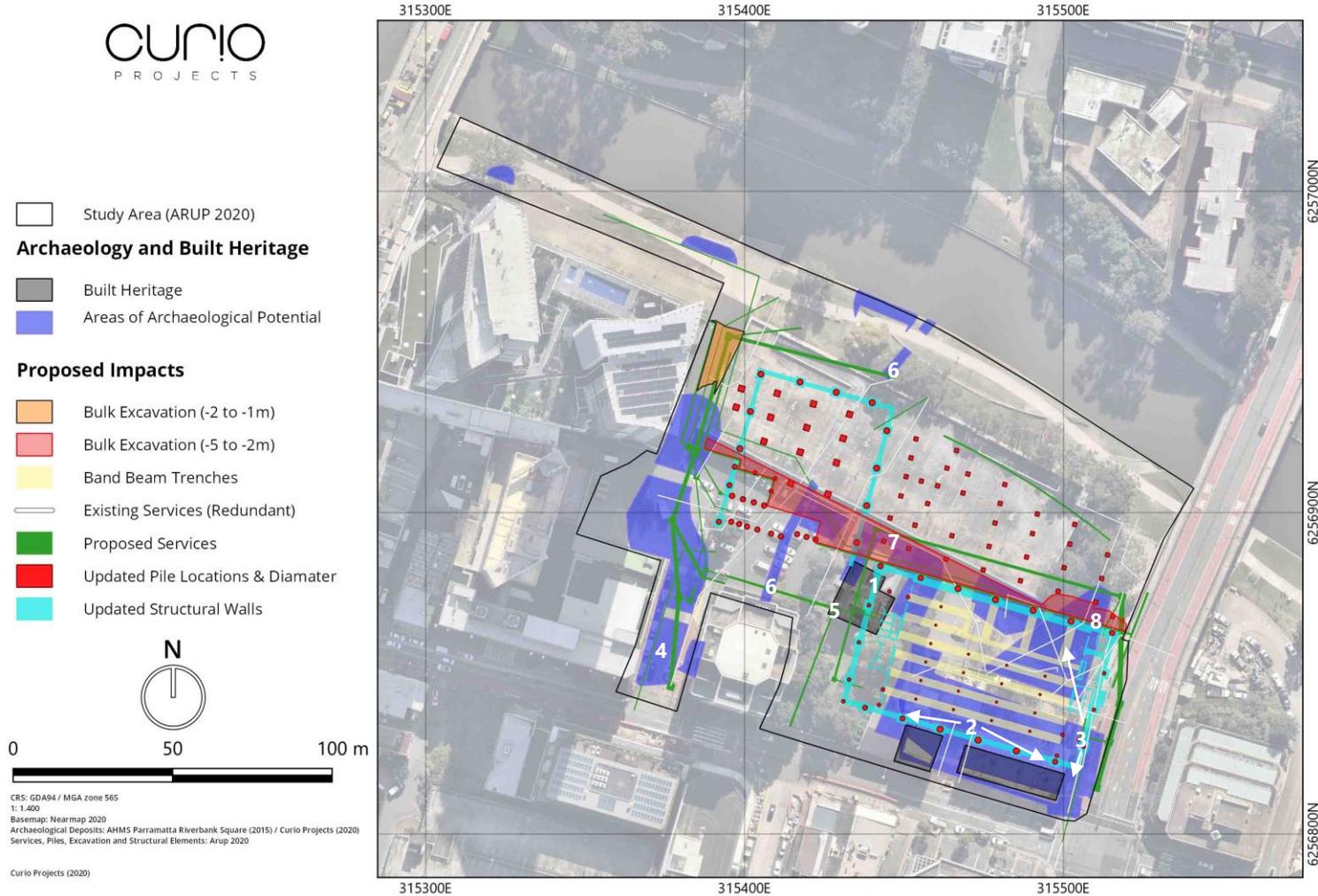


Figure 3-2 Plan of mapped impacts on archaeological potential. (Source: Curio 2020).

4. MITIGATIVE STRATEGY AND EXCAVATION METHODS

4.1. Archaeological Investigation Methods

4.1.1. General

The assessment of archaeological potential for the study area assessed it as having archaeological potential, albeit, variable but encompassing archaeological remains of both local and State significant research potential. As such it is initially proposed to undertake test trenches to investigate the nature and extent of the potential archaeological remains. Should the testing indicate the presence of intact and significant archaeological features and deposits then it would be anticipated that the excavations would be expanded into open area excavations.

4.1.2. Nominated Team

Archaeological investigation works would be directed by Dr. Matthew Kelly, who would be nominated as the Primary Excavation Director and Andre Fleury, who would be the Secondary Excavation Director. Dr Kelly has worked extensively within the Parramatta LGA 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 surveying and planning would be carried out by Bernadette Owens, who would also be responsible for the collation of site drawings.

Excavation Director: Matthew Kelly

Secondary Excavation Director: Andre Fleury

Archaeological Assistant(s) TBC

Planner: Bernadette Owens

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

4.1.3. Demolition Plan

Prior to demolition works proceeding a demolition plan should be completed to guide the demolition works and reduce any potential impacts of the structural demolition, services decommissioning and decontamination on the site.

4.1.4. Test Trenching

It is proposed that an initial program of the excavation of test trenches across the study area of be undertaken to investigate the potential for archaeological remains of features and deposits of the occupation of the study area (see Figure 4-1). Should the test trenches indicate that no significant archaeological deposits or features remain on study area then the archaeologist will record the exposed deposits to indicate the nature of the remains beneath the existing floor and complete a short report to meet the relevant condition(s) of the Excavation Permit. 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 excavation will be conducted to expose and record those deposits and features in the areas of the study area where they are present.

The 12 test trenches set out below have been sited to investigate the presence of specific built elements and interior spaces 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.

- Trench 1 (dimensions 10 metre x 2 metre) has been sited to investigate the potential for potential archaeological remains along the course of the major service lines in the north-west of the impact zone;
- Trench 2 (dimensions 10 metre x 2 metre) has been sited to investigate the potential for potential archaeological remains associated with late 19th century occupation on the Phillip Street frontage;
- Trench 3 (dimensions 5 metre x 2 metre) has been sited to investigate the location of a brick barrel drain running to the river on the northern side of the study area;
- Trench 4 (dimensions 5 metre x 2 metre) has been sited to investigate the location of a brick barrel drain running to the river on the southern side of the study area;
- Trench 5 (dimensions 5 metre x 2 metre) has been sited to investigate the location of a brick barrel drain running to the river in the centre of the study area;
- Trench 6 (dimensions 15 metre x 2 metre) has been sited to investigate the potential for State Significant archaeological remains through the site of 'Willowgrove';
- Trench 7 (dimensions 15 metre x 2 metre) has been sited to investigate the potential for State Significant archaeological remains through the site of 'Willowgrove';
- Trench 8 (dimensions 10 metre x 2 metre) has been sited to investigate the potential for State Significant archaeological remains north of Phillip Street;
- Trench 9 (dimensions 10metre x 2 metre) has been sited to investigate the potential for State Significant archaeological remains to the rear of St George's terrace;
- Trench 10 (dimensions 15 metre x 2 metre) has been sited to investigate the potential for State Significant archaeological remains to the north of St George's terrace;
- Trench 11 (dimensions 15 metre x 2 metre) has been sited to investigate the potential for State Significant archaeological remains to the west of Wilde Avenue;
- Trench 12 (dimensions 15 metre x 2 metre) has been sited to investigate the potential for State Significant archaeological remains on the south eastern corner of the study area.

4.1.5. Open Area Salvage Excavation

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

These areas/deposits, with locally or State significant 'relics' will be excavated in their entirety, in the process recording the 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, or machine at the discretion of the Excavation Director, until sterile natural or deposits of no significance are exposed.

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 archaeologist.

4.1.6. Archaeological Monitoring

Additional areas of the site, including excavations for services lines, additional piling, landscaping and areas subject to impacts not identified in this report may be subject to archaeological monitoring and recording. The exposure of archaeological features or deposits identified by the Unexpected Finds Procedure (see Section 4.4) may result in archaeological monitoring of specific areas of the site.

4.1.7. Recording

The recording process will include the following:

- Manual (hand) excavation of exposed relics using hand tools (shovels and trowels);
- Exposure (via hand excavation) of the identified archaeological deposit/relic to the extent of the deposit within the test pit or trench;
- Preparation of annotated site plans to plot the location of features, deposits and items;
- Note taking in a dedicated field notebook that will be used to create a running record of the monitoring and salvage program;
- Photography of the excavation using a high-end digital camera (& scale bar/mini rod) with photo date and contextual details recorded in a photo catalogue; and
- Recording of any archaeological features and deposits identified to be of local significance, which will be given sequential identifiers (context numbers). Contexts and summary details will be entered into a running context catalogue with significant/notable items recorded on individual data sheets.

Artefacts from intact and significant contexts will be retained, bagged and tagged according to location, context and fabric. These will later be cleaned, re-bagged and subject to preliminary cataloguing before being secured in archive boxes.

4.2. Post Excavation Reporting/Analysis

Following completion of the field program, analysis of the excavation results will be undertaken. This will address the research questions outlined in Section 8.2 of the Curio ARD, with regard to the exact location, extent and nature of the archaeological remains present on the site. The artefacts recovered during the course of the archaeological investigation will be catalogued and analysed by appropriate artefact specialists. Where relevant, specialists will produce reports about the artefacts that explain how these remains assist an understanding of the study area's history and occupation. Typical artefact assemblage groups include ceramics, miscellaneous, building materials, glass and bone and shell.

The excavation report and results of the artefacts analysis will be incorporated into a final excavation report. The report will be prepared in accordance with current heritage best practice and the requirements and any specific conditions identified in the approved excavation permit for the site.

4.3. Artefact and Excavation Records Repository

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.

4.4. Unexpected Finds Procedure

If potential relics are encountered during any phase of construction work the following steps shall be taken.

- STOP ALL WORK in the vicinity of the find and immediately notify the relevant Site Supervisor or the Project Archaeologist/Excavation Director and demark the area to protect the potential relic.
- The Site Supervisor is to record the details, take photos of the find and ensure that the area is adequately protected from additional disturbance.
- If the Archaeological Excavation Director advises that the find is not a potential Aboriginal object or significant historical relic, work will recommence in accordance with the established program.
- If the Archaeological Excavation Director advises that the find is a potential relic, the Site Supervisor/Project Manager should undertake the following procedure:
 - Liaise with the Archaeological Excavation Director to determine the significance of the heritage item; and
 - Implement any appropriate mitigations dependent on the advised significance of the relic as outlined in appropriate site management documents (i.e. an Archaeological Management Plan).

Location of Study Area, Archaeological potential, existing services to be made redundant and general subsurface impacts

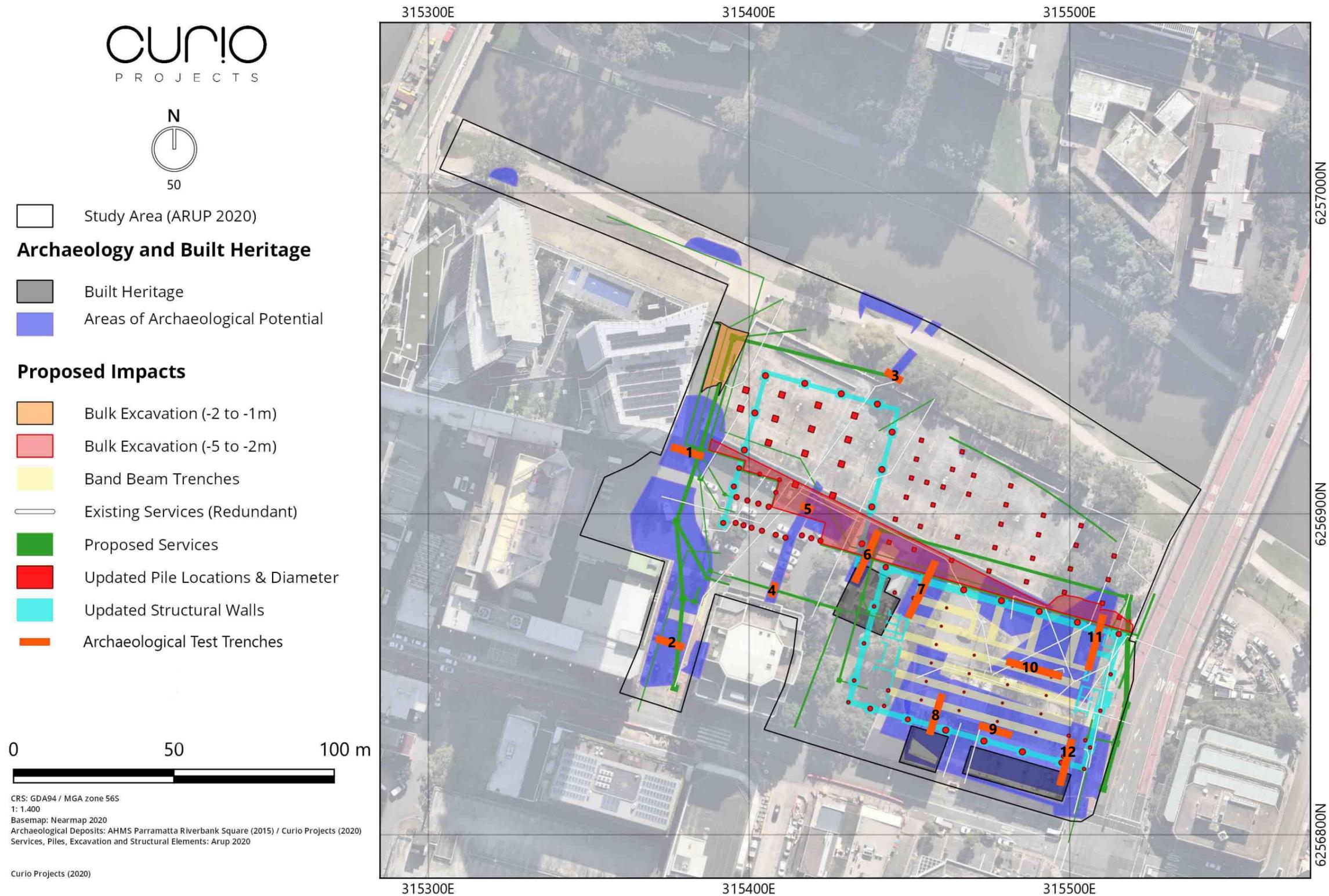


Figure 4-1 Proposed Historical Archaeological Test Trenches. Test trenches not to scale. (Source: Curio ARD 2020)

5. Summary

The review of the updated development impacts on the study area has identified the following as impacts on the potential archaeology;

- Demolition, Decommissioning and Decontamination.
- Bulk Excavation;
- Piling and Band Beams;
- Service Trenching; and
- Landscaping .

Ten specific areas of impact on the archaeology have been identified (see Section 3.2).

If avoidance of the impact(s) is not possible then a mitigation strategy involving archaeological excavation and recording has been developed. This mitigation strategy comprises a combination of test trenching, monitoring and, if required, open area excavation where the significance and integrity of the archaeological remains warrants it.



5 Blackfriars Street Chippendale | 02 8014 9800 | curioprojects.com.au