

Archaeological assessment and research design Cherrybrook Station

North West Rail Link

Prepared for Baulderstone Pty Ltd | 28 June 2013



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Archaeological assessment and research design

Final Draft

Report J13006RP4 | Prepared for Baulderstone Pty Ltd | 28 June 2013

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Date	28 June 2013	Date	28 June 2013

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Executive Summary

The North West Rail Link is a priority transport infrastructure project for NSW and will provide a new 23 km electrified passenger rail line between Epping and Rouse Hill. The Project includes eight new stations (Cherrybrook, Castle Hill, Hills Centre, Norwest, Bella Vista, Kellyville, Rouse Hill and Cudgegong Road), a stabling facility and associated infrastructure.

Transport for NSW (TfNSW, the NSW Department of Transport) has commissioned Boulderstone Pty Ltd (BPL) as the managing contractor for the 'Early Works' to allow construction sites establishment prior to commencement of the major works for the NWRL. Works at the Cherrybrook Station site are expected to result in removal of a large amount of soil to create the tunnel and the station building and to widen Castle Hill Road. This will result in removal of all potential archaeological evidence at the Cherrybrook Station site.

Heritage constraints were initially identified in the preliminary phases of the project, specifically two potential archaeological sites (GML 2012a p.20). A 1920s subdivision plan of the area showed two structures fronting Franklin Road, by 1947 only one of these structures is clearly visible on an aerial photograph. The rest of the area was identified as cleared paddocks and orchards. Historical research has shown that the study area has been subject to multiple subdivision events and has been owned by over fifty people since it was first granted to Will Willamjohn in 1818. This has resulted in a complex and changing land ownership structure in this area and includes a number of missing links which prevent the full understanding of the study area's development.

The historical and archaeological research has concluded that there is moderate potential for the remains of a weatherboard structure, possibly built in the 1880s to be present within the study area. This archaeological evidence will be totally removed as a result of the NWRL construction.

The study area contains the potential remains of a locally significant archaeological site. The archaeological resource has the potential to yield information relating to the construction and building techniques of weatherboard cottages, at least specifically to this weatherboard cottage during the late nineteenth and early twentieth centuries including potential changes to the structures through additions and renovations. The archaeological resource may also be able to answer questions relating to the date and therefore the earliest form of the weatherboard cottage. Additionally this site has the potential to uncover information on the lives of fruit growers/orchardists supplying the market in Sydney. The orchardists that lived and worked within the study area do not appear to have been notable in their own right but they are representative of a group of people, who left their physical marks on the landscape. This is an opportunity to investigate what survives archaeologically of their lives.

The recommendations relating to the archaeological resource are to:

- Conduct an archaeological test excavation should be conducted on targeted areas of the site to test the conclusions of this report. The targeted archaeological test excavations are to determine the extent of the significant archaeological resource. This archaeological excavation program is provided in Appendix A.
- Prepare a Research Design to guide the archaeological test excavation and frame the approach. This Research Design is provided in Appendix A.
- Ensure that if during the course of excavation, Aboriginal cultural material is found, work must cease and the indigenous heritage consultant be alerted.

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1 Introduction

1.1 Background

EMGA Mitchell McLennan Pty Ltd (EMM) has been commissioned by Baulderstone Pty Ltd (BPL) to undertake an archaeological program at the Cherrybrook Station construction site. This report details the archaeological assessment and research design for the archaeological program.

Heritage constraints were initially identified in the preliminary phases of the project, specifically two potential archaeological sites (GML 2012a p.20). A 1920s subdivision plan of the area showed two structures fronting Franklin Road (Figure 1.1); by 1947 only one of these structures is clearly visible on an aerial photograph. The rest of the area was identified as cleared paddocks and orchards.

1.2 Project description

The North West Rail Link is a priority transport infrastructure project for NSW and will provide a new 23 km electrified passenger rail line between Epping and Rouse Hill. The Project includes eight new stations (Cherrybrook, Castle Hill, Hills Centre, Norwest, Bella Vista, Kellyville, Rouse Hill and Cudgegong Road), a stabling facility and associated infrastructure (Figure 1.2). The Early Works include site establishment prior to the commencement of the Major Works and can be grouped into the following categories:

- tunnelling construction power – high voltage power supplies for construction;
- demolition – demolition of a mixture of residential and commercial properties and/or facilities;
- roads and traffic – road adjustments, signalling, and existing transport network facilities relocation; and
- precinct preparation – utilities, services relocations and miscellaneous works.

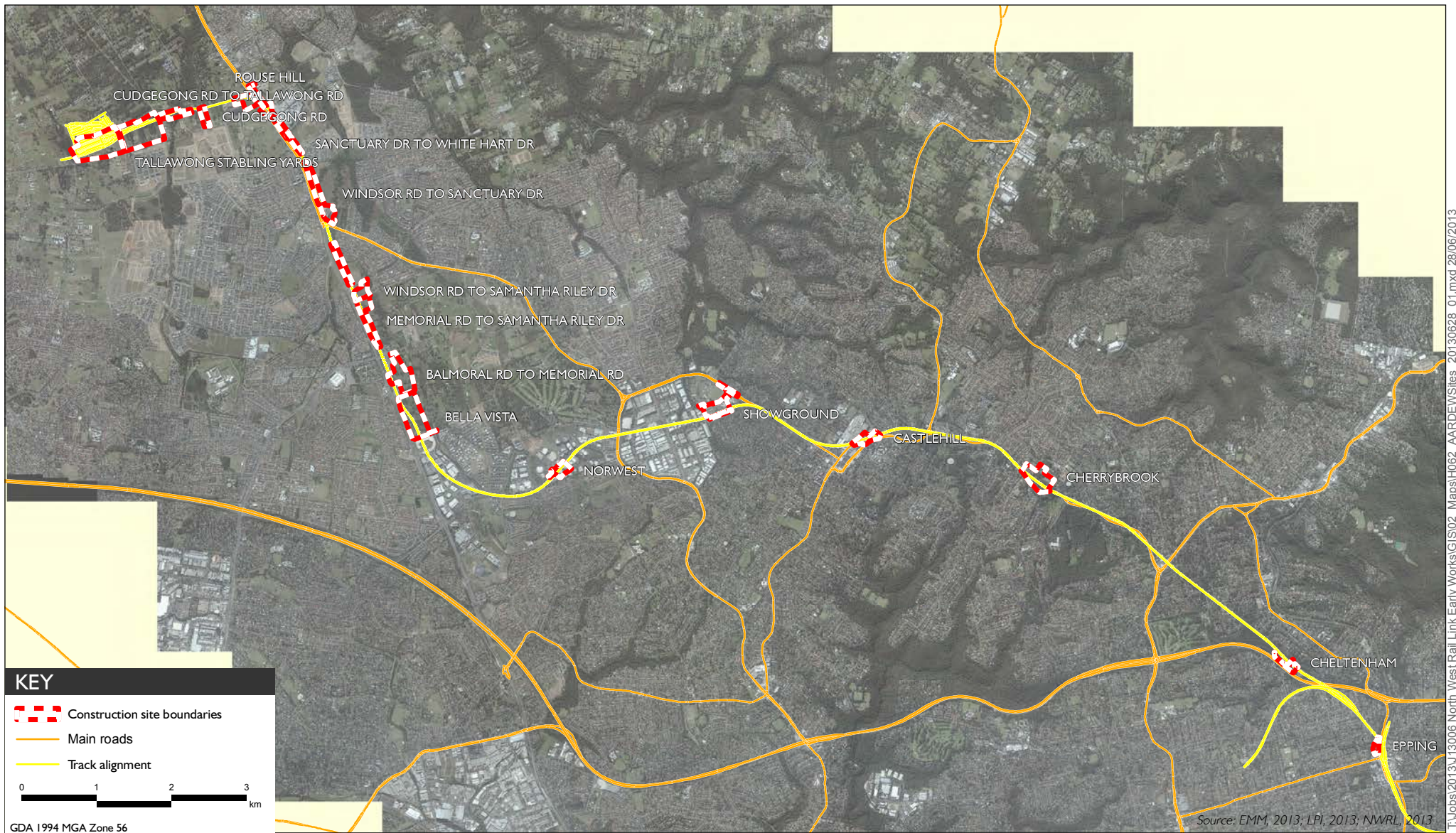
Transport for NSW (TfNSW, the NSW Department of Transport) has commissioned BPL as the managing contractor for the 'Early Works' to allow construction sites establishment prior to commencement of the major works for the NWRL. Works at the Cherrybrook Station site are expected to result in removal of a large amount of soil to create the tunnel and the station building and to widen Castle Hill Road. This will result in removal of all potential archaeological evidence at the Cherrybrook Station site.

The works program specific to the Cherrybrook construction area includes the widening of Castle Hill Road, the demolition and removal of houses and other buildings, the removal of trees and the grading and levelling of the construction area in preparation for the forthcoming tunnelling and station construction. At the completion of works the study area will become Cherrybrook Station.

1.3 Cherrybrook Station

Construction is proposed in the area selected for the location of Cherrybrook Station. The proposed station site is approximately 61,000 m² on the northern side of Castle Hill Road and bound to the east by Franklin Road, to the north by the northernmost boundary of Lot 8 DP 16975 and partly bounded to the west by Robert Road. The affected lots are shown in Table 1.1, with the lots that have been identified as possessing archaeological potential being marked with an asterisk. The construction site boundary for the Cherrybrook Station site is shown in Figure 1.3.





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Table 1.1 **Affected Lots**

Lot//DP	Lot//DP
11//1005792*	4//22429
12//1005792*	5//22429
13//1005792*	1//285659
14//1005792*	2//285659
15//1005792*	3//285659
1//772261	4//285659
2//772261*	5//285659
6//22429	6//285659
7//22429	7//285659
8//22429	8//285659
9//22429	9//285659
10//22429	10//285659
11//22429	11//285659
4//14282	12//285659
5//14282	13//285659
6//14282	14//285659

1.4 Area of archaeological investigation

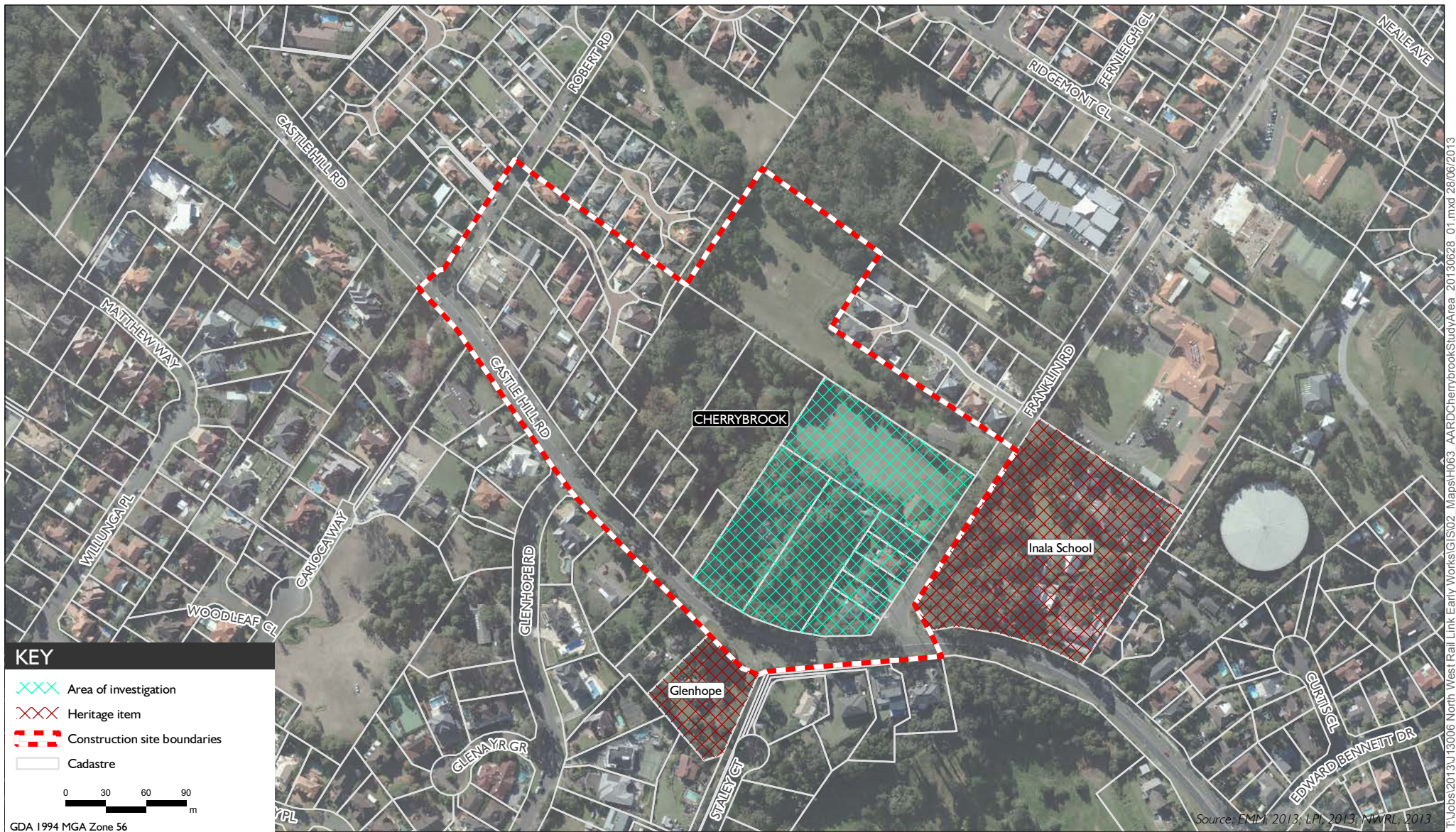
The land under investigation (study area) at the Cherrybrook Station construction area encompasses Lot 2 DP 772261 and Lots 11 - 15 DP 1005729. The land has frontage to both Castle Hill Road (Lot 2 DP 772261) and Franklin Road (Lots 11 - 15 DP 1005729).

For the purposes of the current assessment, the study area is located within the Hornsby Shire Local Government Area (LGA) where it adjoins The Hills Shire LGA. It is bound by Castle Hill Road to the south, Franklin Road to the east, Lot 7 DP 16975 to the north and Lot 2 DP 772261 to the west.

Heritage items occur in the immediate vicinity of the study area and include:

- “Glenhope”, a dwelling at 113 Castle Hill Road, West Pennant Hills (Cherrybrook) (Lot 7 DP 1012463), which is listed in the Baulkham Hills Shire Local Environmental Plan (LEP) 2005 as an item of local significance. Glenhope is situated to the south of the study area across Castle Hill Road; and
- “Inala School” (original house), a school building at 160-168 Castle Hill Road, Cherrybrook (Lot 1 DP 259853), which is listed as an item of local significance in the Hornsby Shire LEP 1994. Inala School is situated to the east across Franklin Road.

As part of the NWRL construction program, the study area was recently cleared of four houses, constructed in 1997 and currently retains rubble from the demolition and introduced fill that the former houses were constructed on. Due to the time constraints on the project, a preliminary assessment was completed by EMM archaeologists which narrowed the area of investigation for this report and allowed some pre-construction work to commence in areas of the site not considered to possess archaeological potential. These works involve levelling, tree removal and house demolition. Unexpected finds procedures apply in these areas and at this stage no heritage items or archaeological features have been identified.



1.5 Legislative context

In 2012, the Early Works were approved under Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The planning approval process does not involve the requirement for excavation permit approval under the *Heritage Act 1977* (s140) but retains the notification for unexpected finds clause (s146) of the Act. The management strategies presented in this report are a response to the Minister's Conditions of Approval (MCoA), which require consultation with the Heritage Council of NSW.

The MCoAs list a number of requirements for heritage including the heritage management tasks EH1 to EH19 in the Heritage Report (GML 2012a) to mitigate the associated impacts. Not all the MCoAs relate to potential archaeological sites but the following relates specifically to this report:

E10. Prior to the commencement of pre-construction and/or construction activities that will impact the historical archaeological sites identified in Table 4.2 of the North West Rail Link EIS: Technical Paper 3 – European Heritage, dated March 2012, the Proponent shall undertake an archaeological excavation program in accordance with the Heritage Council of NSW Archaeological Assessments Guideline (1996) using a methodology prepared in consultation with the Heritage Council of NSW, and to the satisfaction of the Director General. This work shall be undertaken by an appropriately qualified heritage consultant.

Within 2 years of completing the above work, unless otherwise agreed by the Director General, the Proponent shall submit a report containing the findings of the excavations, including artefact analysis and the identification of a final repository for any finds, prepared in consultation with the Heritage Council of NSW and to the satisfaction of the Director General.

This report details the methodology devised for the archaeological excavation program for review and comment from the Heritage Council and the Department of Planning and Infrastructure (DP&I).

1.6 Objectives

This report has been prepared to fulfil the MCoA listed above for the NWRL Early Works Project and the conditions detailed in the Construction Heritage Management Plan (Baulderstone 2013). This report also aims to:

- investigate the historic archaeological resource identified in the Heritage Report (GML 2012a) through historical research;
- determine the likely location of the archaeological resource;
- assess the level of potential for archaeological resources;
- provide a preliminary assessment of significance;
- present appropriate archaeological management strategies for the historic archaeology; and
- provide recommendations on future procedures required to best mitigate impacts on the archaeological resource.

1.7 Research Method

This report was prepared in accordance with the *Archaeological Assessment Guidelines* (Heritage Council 1996) as prescribed by the MCoA. This report is also guided by the philosophy of the *Charter for Places of Cultural Significance* commonly known as the *Burra Charter* (Australian International Council on Monuments and Sites, ICOMOS 1999).

Significance and impacts to significance have been assessed using the following guidelines:

- *Statements of Heritage Impact Guidelines* (Heritage Office 2006);
- *Investigating Heritage Significance* (Heritage Office 2004);
- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (Heritage Branch Department of Planning 2009);
- *Historical Archaeology Code of Practice* (Heritage Office 2006); and
- *How to Prepare Archival Records of Heritage Items* (Heritage Office 1998).

At this stage the significance assessment is preliminary and based on the historical documentation obtained thus far. If an archaeological field program is determined to be the most appropriate management strategy, the assessment of significance will be updated to reflect new data recovered through excavation.

To determine the likely location, survival and heritage significance of the archaeological resource the following sources were consulted:

- historic maps and plans;
- Picture Australia for historic photographs;
- previous historical or archaeological reports;
- geotechnical investigations of the site;
- modern and historic aerial photography; and
- additional local historical resources including rate books and probate records.

Research was undertaken a number of sources listed below:

- Land and Property Information: title searches;
- Land and Property Information: Six Spatial Information Exchange (online);
- the Mitchell Library;
- the State Records Authority NSW;
- Hornsby Shire Local Studies Library;
- Hills Shire Local Studies Library;

- Trove Newspapers online;
- Heritage Branch Library: Consultant reports;
- Archaeology Online: Consultant reports; and
- Miles Lewis: Online database.

1.8 Consultation

A meeting with the Heritage Branch, TfNSW and EMM occurred on 13 June 2013. This meeting presented information on each of the study areas with archaeological potential and the preliminary research and excavation strategies planned for each. The Heritage Branch comments from that meeting noted the requirement that this report be submitted to the Heritage Branch on behalf of the Heritage Council for review and comment.

1.9 Limitations of the investigation

Due to the constraints of project timing there was limited time to conduct background research on the study area. A number of resources were consulted, which did not yield the anticipated level of information. Additional research may be required during and after the completion of any excavation and reporting on the excavation results.

1.10 Authorship

This report was written by Rebecca Newell BA (EMM) with assistance from Ryan Desic (EMM). Research was conducted by Ryan Desic (EMM) and Louise Doherty (Heritage Advisory Services). Analysis, report direction and review was provided by Pamela Kottaras BA Hons (Archaeology) – Associate Archaeologist (EMM) and David Kelly BTP Hons – Senior Environmental Planner (EMM). External review was undertaken by Jillian Comber of Comber Consultants, who is the nominated excavation director.

1.11 Acknowledgments

Staff at the State Library and the State Records provided invaluable assistance.

2 Historical analysis

2.1 Aboriginal people

The majority of information about the social and cultural structure of Aboriginal society before contact with new settlers comes from accounts made by Europeans. These accounts and observations were made after massive social disruption due to disease and displacement. As a result, this information is often contentious, particularly in relation to language area boundaries. The discussion below is based on information obtained for early settlers and explorers in the Castle Hill area.

The dominant Aboriginal language group for the study area was the Darug (hinterland) (according to Attenbrow 2010 p.34). Their territory extended from the mouth of the Hawkesbury River inland to Mount Victoria, Campbelltown and Liverpool (Tindale 1974). The surrounding landscape, including the Hawkesbury River, would have yielded fresh water and fresh water fish, crustaceans and shellfish. Men and women fished, women hunted small animals such as lizards and snakes while men hunted the larger animals such as kangaroos (GML 2012c, Hornsby Shire Council 2013). This diet was supplemented by edible flowers and plant roots, honey, berries and fruits.

Suitable stone for manufacture of stone tools occurs across the Cumberland Plain. The closest raw material would have been the silcrete of the St Mary's formation at Plumpton Ridge, Eastern Creek and Marsden Park (GML 2012c p.13).

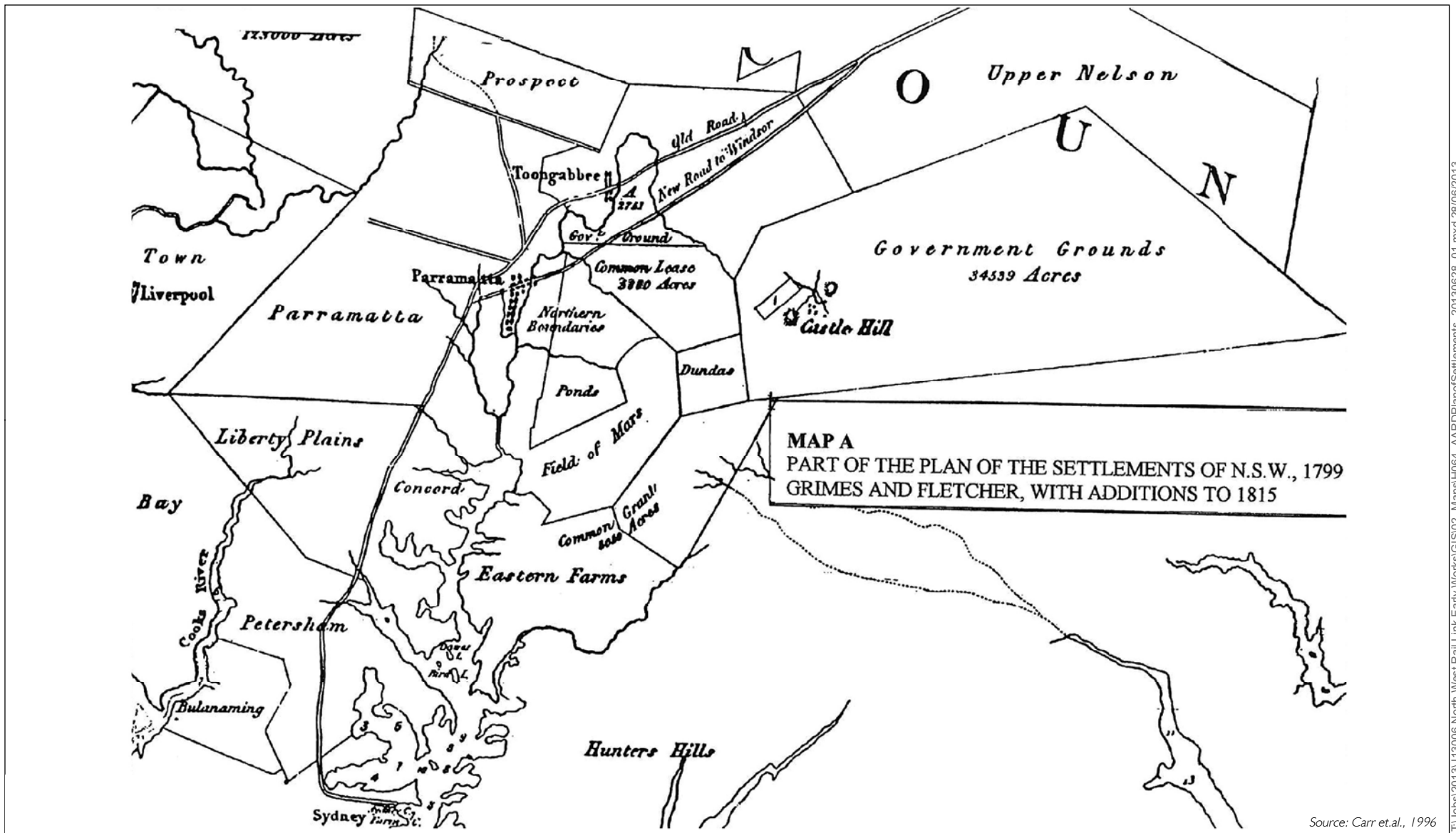
The Aboriginal cultural heritage issues on site have been addressed in GML 2012c.

2.2 Historical context

The Pennant Hills and Castle Hill areas were initially reserved by the colonial Government as part of a 34,539 acre area known as the Government Grounds, shown in Figure 2.1 (Carr et al 1997). This area was largely uninhabited but included government run model farms to test the productivity of the soil (Carr et al 1997). In 1811, a lunatic asylum was created in Castle Hill by Governor Macquarie, while the remaining area of the Government Grounds remained unoccupied but under the Government's control (Neil 1992 p.6). After approximately 1815, the Government Grounds were released to settlers as Crown Grants and the asylum was closed in 1826 (Carr et al 1997).

The model farms were a moderate success and the settlers who came to the area created a large agricultural district. Large land grants were given to George Suttor, the Mobbs family, Andrew McDougall and Matthew Pearce. The rich loamy soil of the area was suitable for the cultivation of fruit trees, particularly citrus, nectarines and peaches. Numerous plans, surveys and aerial photos note the large number of orchards along Castle Hill and Franklin Roads and in the greater Hills district. A noted orchardist, John Spier Heron, lived at Glenhope, a large property across Castle Hill Road to the south-west which remains today. Heron published books on fruit growing and was likely to have influenced the other fruit growers in the district, including his neighbours along Franklin Road.

The Cherrybrook Station construction area remained largely rural until the 1960s. Subdivisions in the late 1960's opened the area to further growth and land holdings were reduced to the suburban blocks common in the area today. Much of the areas housing stock stems from this period. The population of the area grew steadily and more recently blocks from the 1960s and 1970s have been further subdivided to build additional houses.



Source: Carr et al., 1996

Part of the plan of the settlements of NSW 1799 Grimes and Fletcher, with additions to 1815

North West Rail Link Early Works
Archaeological Assessment and Research Design

Figure 2.1

2.3 Development of the Cherrybrook study area

2.3.1 1800 – 1850

As noted above, from 1788 to approximately 1815 the study area was part of the Government Grounds (Figure 2.1). The first land grant on this area was a 60 acre Crown Grant to Will (or possibly John) Williamjohn in 1818. His name is noted on parish maps for Castle Hill (Figure 2.2), Pennant Hills (Figure 2.3) South Colah in 1897 (Figure 2.4) and possible on an earlier map unable to be conclusively dated (Figure 2.5). Three additional parish maps without dates also show his Crown Grant. Adjacent to Williamjohn's grant was Eleanor Kilpatrick with a grant of 60 acres, Charles Franks (45 acres), James Cook (35 acres) and John Powell (60 acres).

Pennant Hills Road (now Castle Hill Road) is noted on the Parish map for 1897. Franklin Road appears later in the land titles records at approximately 1920.

2.3.2 1850 – 1880

The land title records for this property show that Williamjohn's land was purchased in 1874 by Robert Milson. He consolidated the land of Williamjohn, Elanor Kilpatrick and his father James Milson into a 220 landholding. Robert Milson was a farmer from Castle Hill and likely used the land for cultivation of crops.

A land titles record is missing for the transfer of the land from Milson. From the next available record it can be seen that in approximately 1880 the large grant obtained by Milson was divided into smaller lots. In 1883, Richard Rothwell obtained title over the land fronting Franklin Road with additional frontage onto Castle Hill Road. It was a smaller grant than Milsons, being approximately seventy acres. Rothwell was listed as a Civil Engineer from Hunters Hill. The land was transferred to his wife Adah Pearson Rothwell in 1883. Adah transferred the land to John Booth Jones of Sydney in 1887. Booth Jones' occupation was listed as solicitor.

The parcel of land was moved into the ownership of Robert Watson of Pennant Hills on 7 April 1888 and was swiftly transferred to John Radley on 11 April 1888. John Radley was a fruitgrower from Castle Hill. It appears that John Radley obtained a mortgage from Rosa Hopkins, his neighbour (see Section 2.3.3 below), in 1891 as she is listed on the land title as the owner of the property. John Radley died in 1905 and the land remained untitled for a number of years until title was obtained by transmission by Herbert Harry Hinton (see Section 2.3.3). Radley's probate records list an estate of 65 acres with a weatherboard cottage and other buildings located on the corner of Franklin Road and Pennant Hills Road (now Castle Hill Road).

2.3.3 1890 – 1950

Joseph Hopkins obtained title over some of the portions along Franklin Road in 1891. These portions were located north and east of the portions obtained by John Radley. Hopkins was listed as a fruit merchant on the land title records. He was also listed in rate books for the Hornsby Shire as a merchant and a fruit grower and by his death owned a large portion of the surrounding area including a large parcel of land along Franklin Road to the east, opposite the study area.

Joseph Hopkins died in 1911 and his estate was transferred to his wife Rosa, who is listed on the transfer deed and on his probate records. Research on "Rosa" did not yield any information about Hopkins' wife. His headstone is located at the Castle Hill Anglican Cemetery and; the inscription provides his birthplace as Rutland, England, July 1842 and his that he died at "Ridlington Pennant Hills" on June 21, 1911. He had two children, Thomas and Susannah (Australian Cemeteries Index).

On Hopkins death, his estate was valued at over £3,000 and included a fruit growing business. The valuation of his estate lists a brick cottage called 'Ridlington' at the corner of Pennant Hills Road and Franklin Road in an elevated position.

Ridlington contained nine rooms, through passage, kitchen, bathroom, laundry, pantries, a basement cellar, verandah (back and front) and outbuildings at the rear. This building, also listed on his headstone, became the Inala School and still stands today. Also listed in his estate was a weatherboard cottage shed and stabling yard fronting Franklin Road and 23 acres of orchard.

It appears Rosa continued to live in their brick house on the eastern side of Franklin Road until her death in the 1920s (based on the transfer date to Herbert Henry Hinton in 1927).

In 1926 James Meville Derrin purchased a series of lots surrounding the study area. Derrin is listed as a merchant from Eastwood. It is also likely that during this period Derrin purchased a portion of the current study area (however this assertion cannot be confirmed as the records are missing). The rest of the portion of the lot along Franklin Road, within the study area was obtained by Herbert Henry Hinton in March 1927 as an application by transmission. Hinton was declared bankrupt in 1928 and the land within the study area was transferred to Derrin due to a mortgage from Edward Powell. The 1920s saw the area speculatively subdivided for estate auctions. One of these occurred in 1929 and was called the Ridlington Estate. The advertisement for this subdivision shows two structures on Lot 1 fronting Franklin Road (Figure 2.6). The Pennant Farms Estate subdivision of 1920 also looks over the area, but does not show any houses in the vicinity of the land (Figure 2.7).

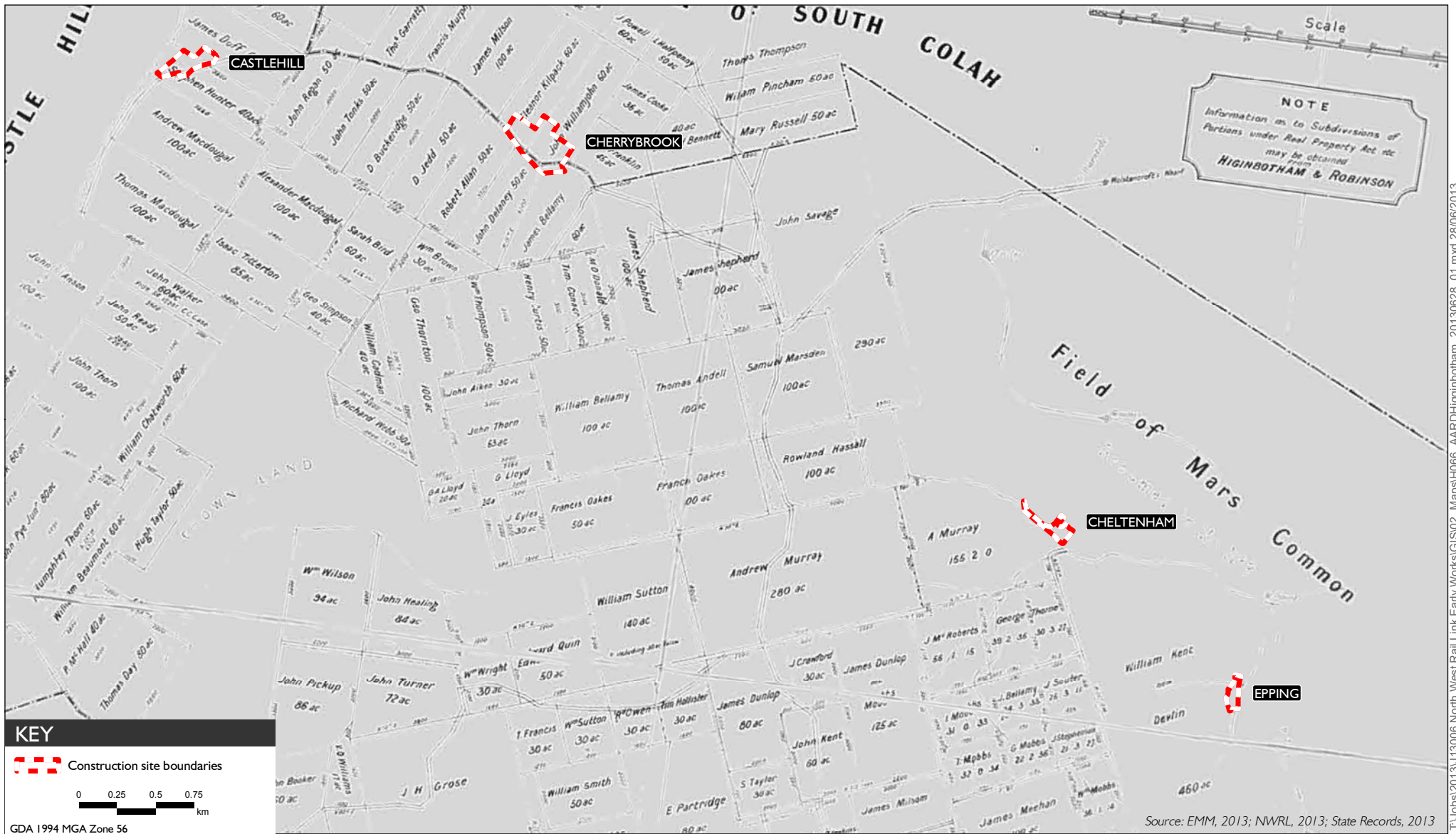
Between 1928 and 1935 Derrin's land was subdivided, with lots renumbered, and sold off in portions. In 1935 Derrin sold Lot 1 (the study area) to Lesley Charles Small, which included a weatherboard cottage structure.

Adjacent to the study area Derrin possessed the title until the mortgage was discharged in 1931. Derrin maintained title over the land until 1934 when it was transferred to Reginald Allan Eager in September of the same year. The land over which Eager obtained title was one lot west of Franklin Road and is listed as Lot 2 on the Certificate of Title. This land was transferred to Fredrick John Salisbury in August 1935. Salisbury was a manufacturer from Annandale. His son Francis James Salisbury of Pennant Hills obtained the land in July 1936. Francis Salisbury's occupation is listed as a gentleman. Due to the resumption of land for the widening of Castle Hill Road, a new Certificate of Title was issued to Francis Salisbury in January 1938. The land was then transferred jointly to James Henry Curtis and George Gould both from Pennant Hills in 1939. Gould died in 1945 and the land was transferred to Curtis in June 1945. Curtis passed the land onto Edward George Maddocks Cohen, a clerk from Edgecliff in August 1945. In October 1949 Edward Cohen transferred the land to Ernst John Maddocks Cohen, a solicitor from West Pennant Hills.

The earliest aerial photography of the Franklin Road area discovered during research for this project was taken in 1928 (Figure 2.8). It shows two buildings along Franklin Road and a large cleared area, with orchards in surrounding lots. As shown in Figure 2.9, the 1943 aerial (RMS 2013) shows that the orchard trees had been cleared and the site was being used as a paddock while orchards remained in the surrounding properties. The two buildings remain, with the one closest to Castle Hill Road presenting a roof pitch, veranda and rear addition suggesting the form of a house, likely to be the weatherboard house. The building adjacent may be a house but has the form of a shed and it is more likely that it was used as part of the orcharding activities on the site. The 1943 aerial also shows an unused area of road reserve that has since been resumed into Pennant Hills Road – part of the old alignment survives on the bend of Castle Hill Road where it passes that Stanley Court. Another aerial photograph taken in 1947 (Figure 2.10) shows a cottage or similar structure is present in the north-western corner of the study area.



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Higinbotham and Robinson's Pennant Hills Parish Map 1882
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 Figure 2.3

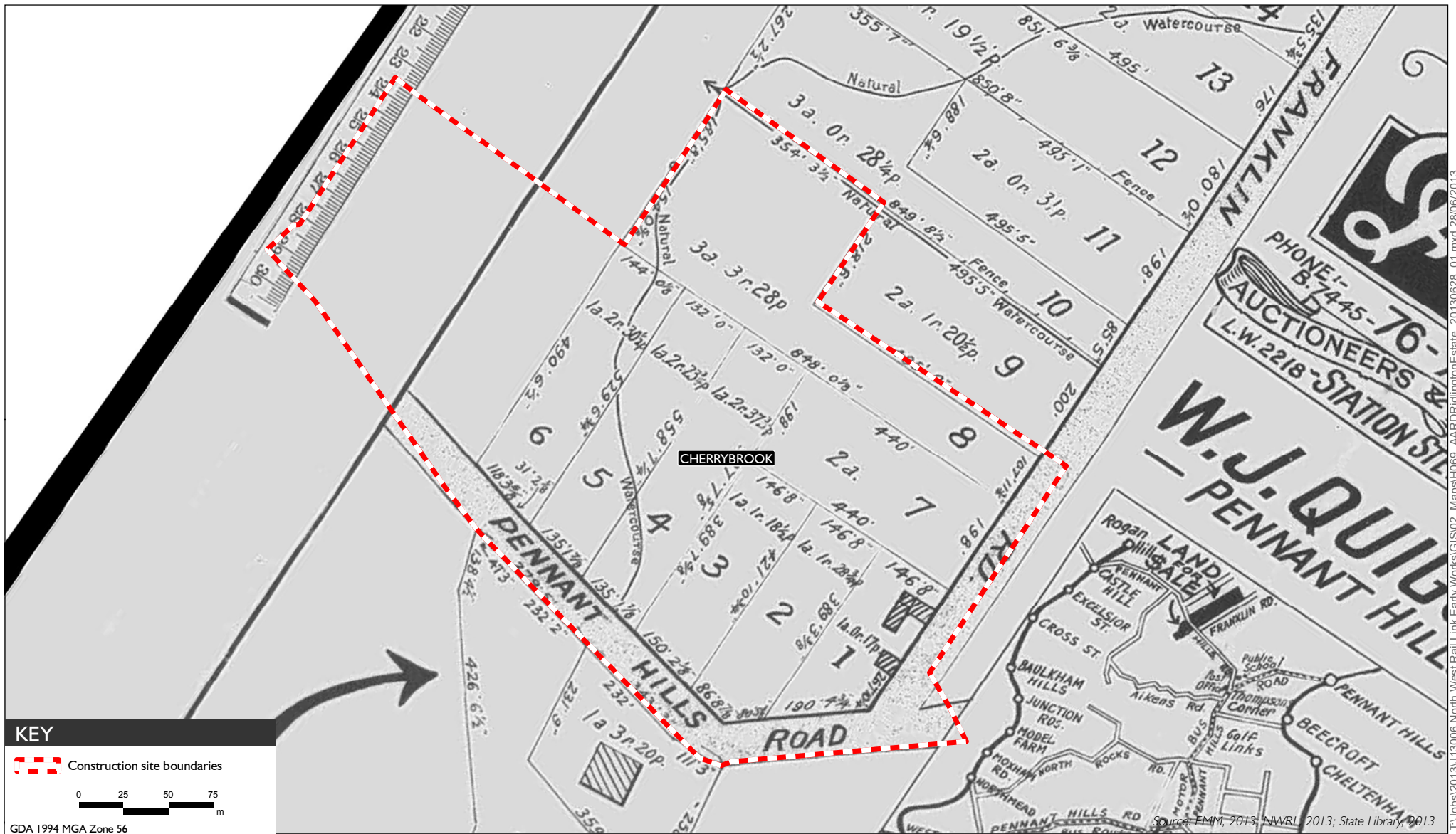


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Map of the parish of South Colah no date
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 Figure 2.5



Ridlington Estate subdivision
 North West Rail Link Early Works
 Archaeological Assessment and Research Design
 Figure 2.6



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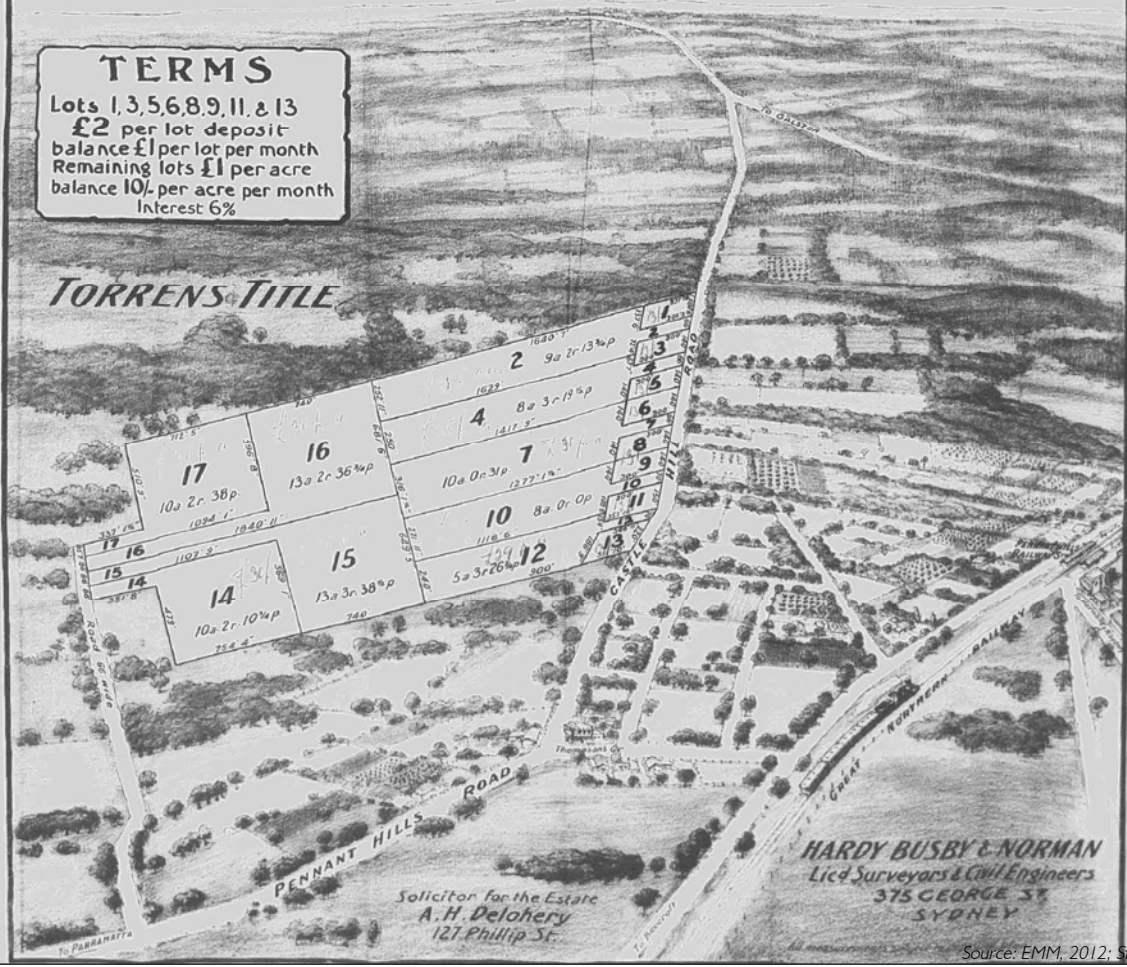
PENNANT FARMS ESTATE PENNANT HILLS

AUCTION SALE
on the LAND **SAT. 13TH - NOVEMBER 1920**
AT 3 P. M.

SLADE. BROWN & BLOOMFIELD LTD
115 PITT ST AUCTIONEERS in conjunction with
E.C.V. BROUGHTON & CO.
113 PITT ST.

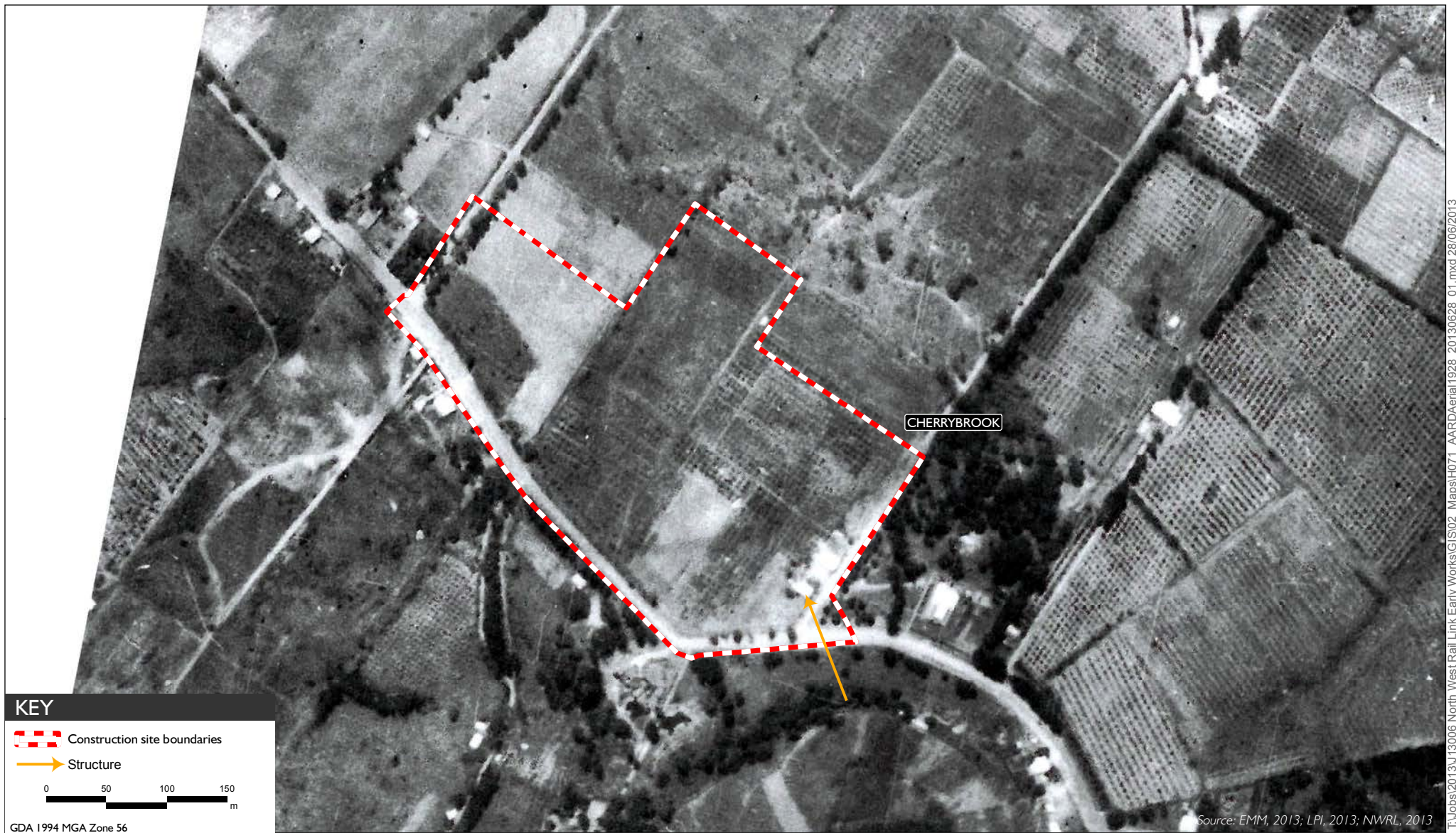
*EVERY LOT FIRST-CLASS ORCHARD SOIL
VIRGIN LAND*

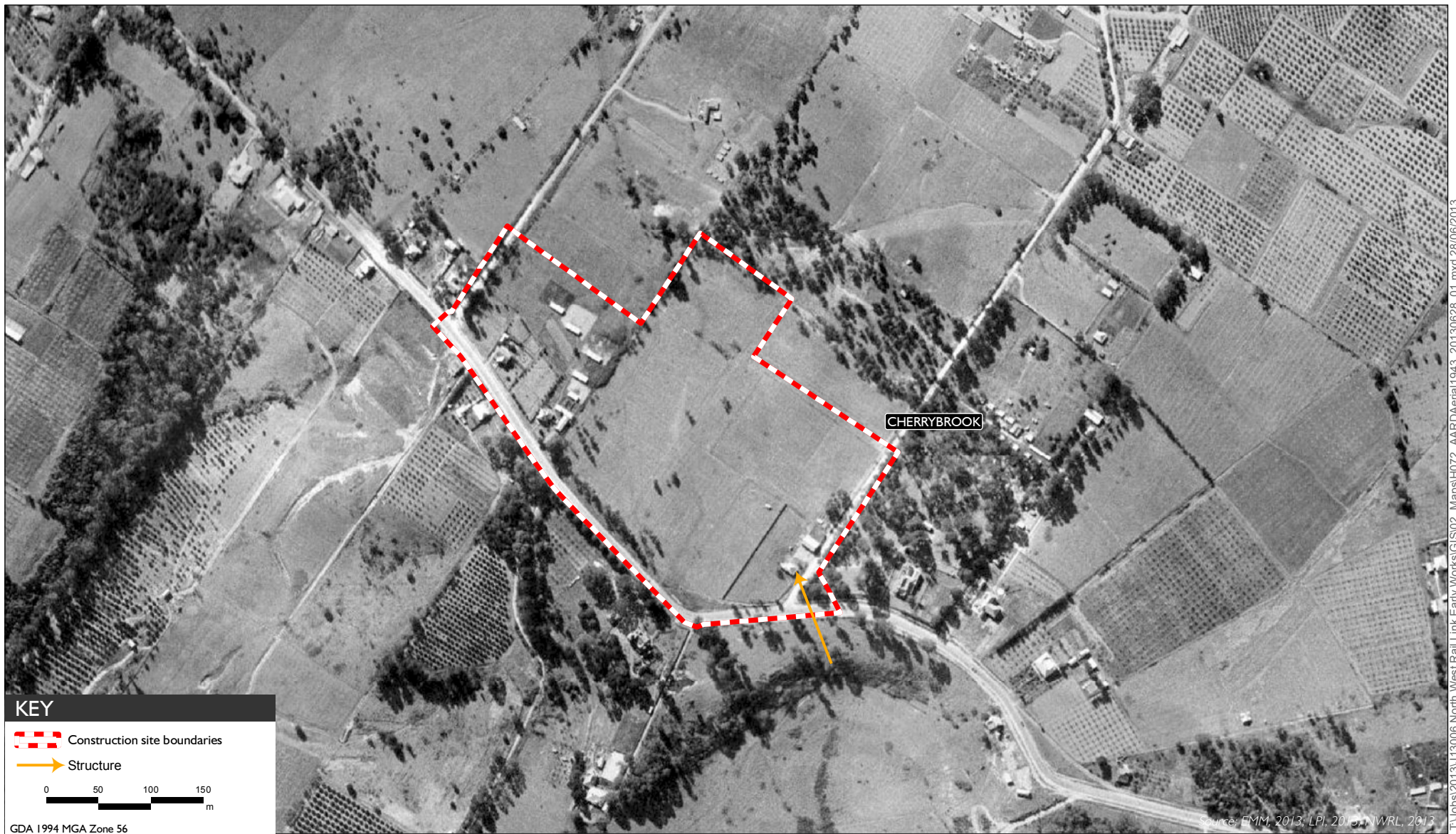
TERMS
Lots 1, 3, 5, 6, 8, 9, 11, & 13
£2 per lot deposit
balance £1 per lot per month
Remaining lots £1 per acre
balance 10% per acre per month
Interest 6%

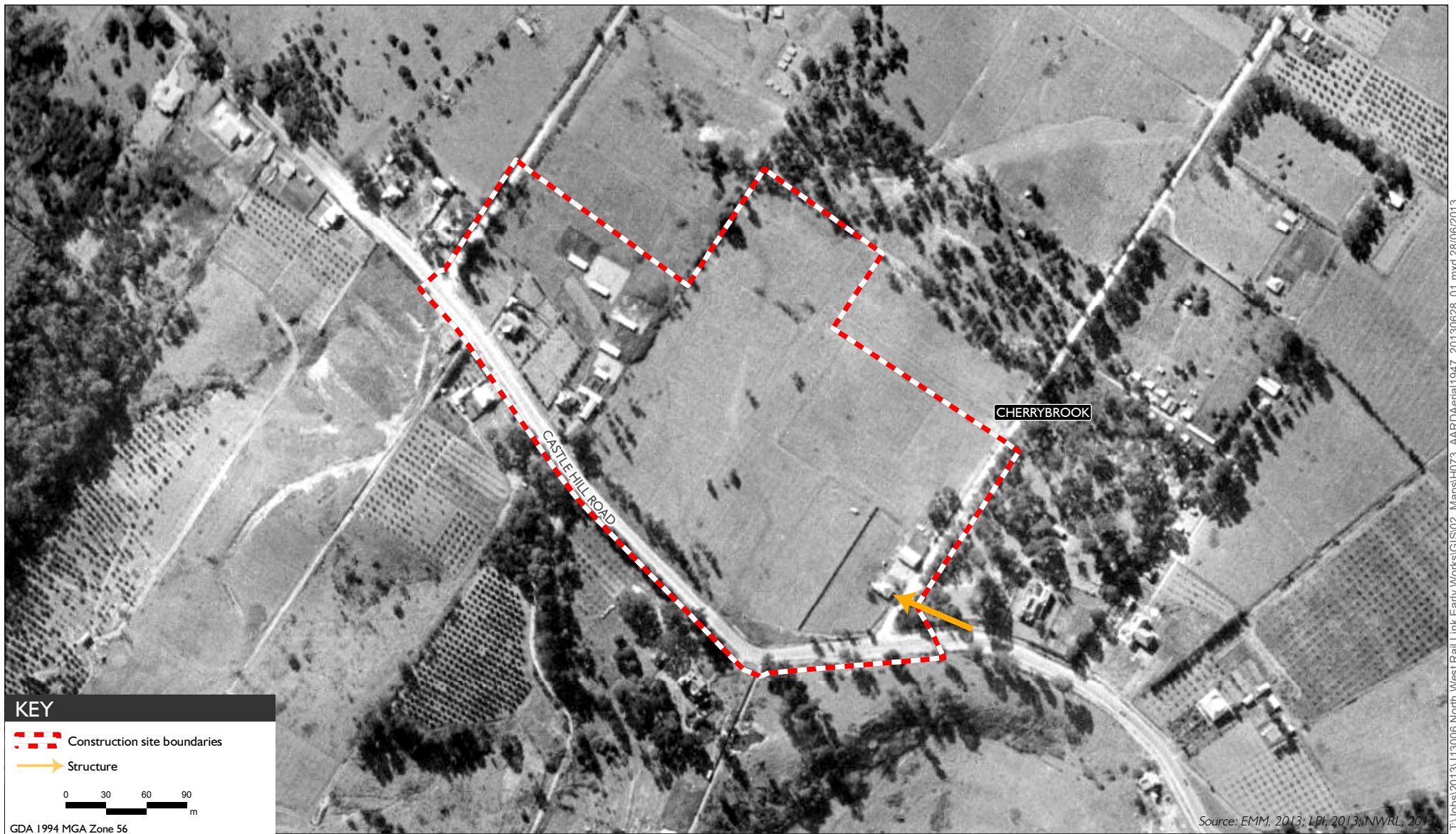


Source: EMM, 2012; State Library, 2013

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2.3.4 1950 – 2000

Lot 2 DP 772261 west from Franklin Road along Castle Hill Road remained in the hands of Ernest John Maddocks Cohen until December 1952 when the land was transferred under mortgage to Harry Fredrick Russell, a horse trainer from Kingsford. The title was transferred through mortgages to the Automobile and General Finance Company Limited in May 1963, Alliance Acceptance Limited in November 1965 and Harley and Levers Limited in February 1968. The land was then obtained by Irene Olive Braybon from North Ryde in March 1968. Anne Braybon obtained the title by transmission in December 1987, possibly after the death of her relative Irene Braybon. In 2002 the land was obtained by the NSW Government.

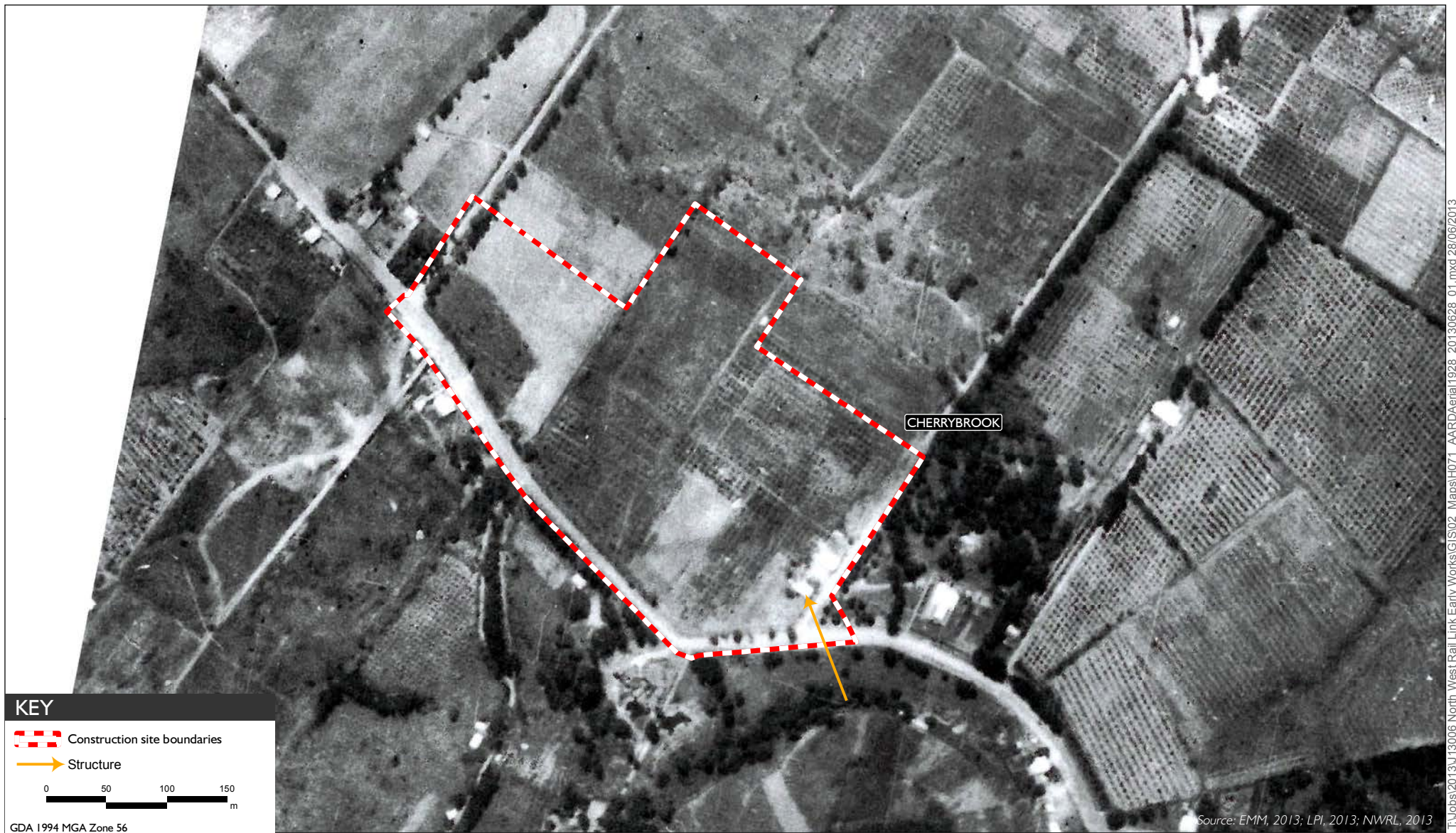
In 1957, Lot 1 DP 16975 (formerly), within the study area, was obtained by Lenna Small on the death of Leslie Small; a map on the 1957 land title indicates that a standing structure, possibly the weatherboard house or shed, existed during this time and encroached onto Franklin Road in the north-east of the site (Figure 2.11). No further details of the building were provided in the diagram.

Within the following two months, the property was transferred to Leslie Merryn Small of West Pennant Hills. In 1975 the property was transferred to Jan Gwendellen Small. The property remained in Jan Smalls' possession for twenty years until it her death, where it was then received by William Small and Beverly Dunn in 1995. Within a year Beverly Dunn was removed from the title and replaced by Patricia McMullen who was then a joint tenant with William Small. In September 1997, Taydel Properties Pty Limited purchased the entire property and subdivided it into five lots, renumbering each lot to the current legal description. These lots were occupied by four houses that existed until early 2013. The four houses were sold, one in May 2007, two in June 2007 and one in March 2008. One lot remained unsold and no house was built on it. The NSW Government obtained the land for the provision of the rail link in 2011.

2.3.5 Present date

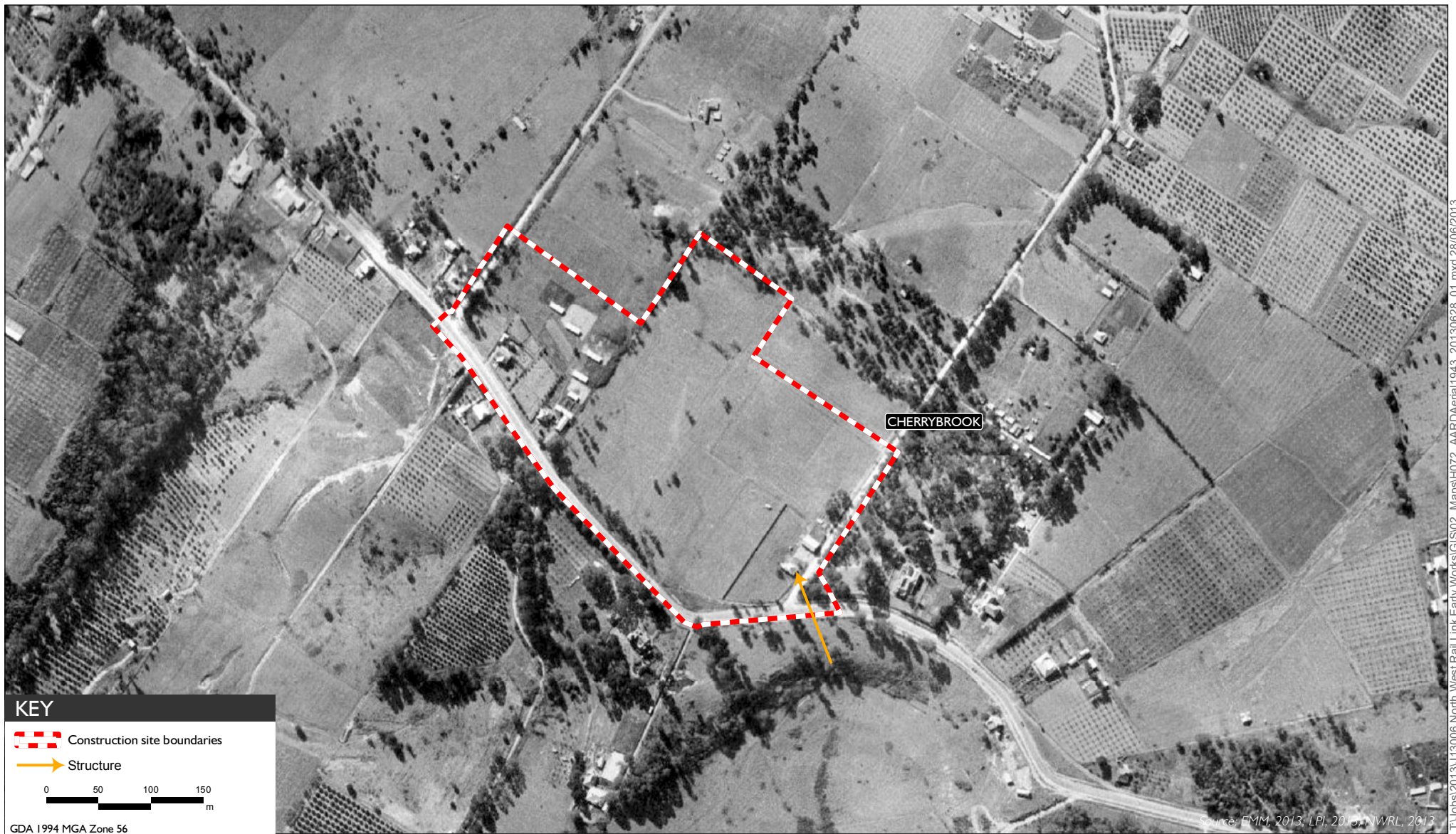
Today the surroundings of Franklin Road comprise a number of residential properties, some areas of open space, as well as bushland and a transmission line easement. Some large houses established during the late nineteenth century and early twentieth century are located nearby. The character of Castle Hill Road in this area remains predominantly verdant with stands of tall trees remaining on both sides of the road. The site prior to the house demolition is shown in Figure 2.12.

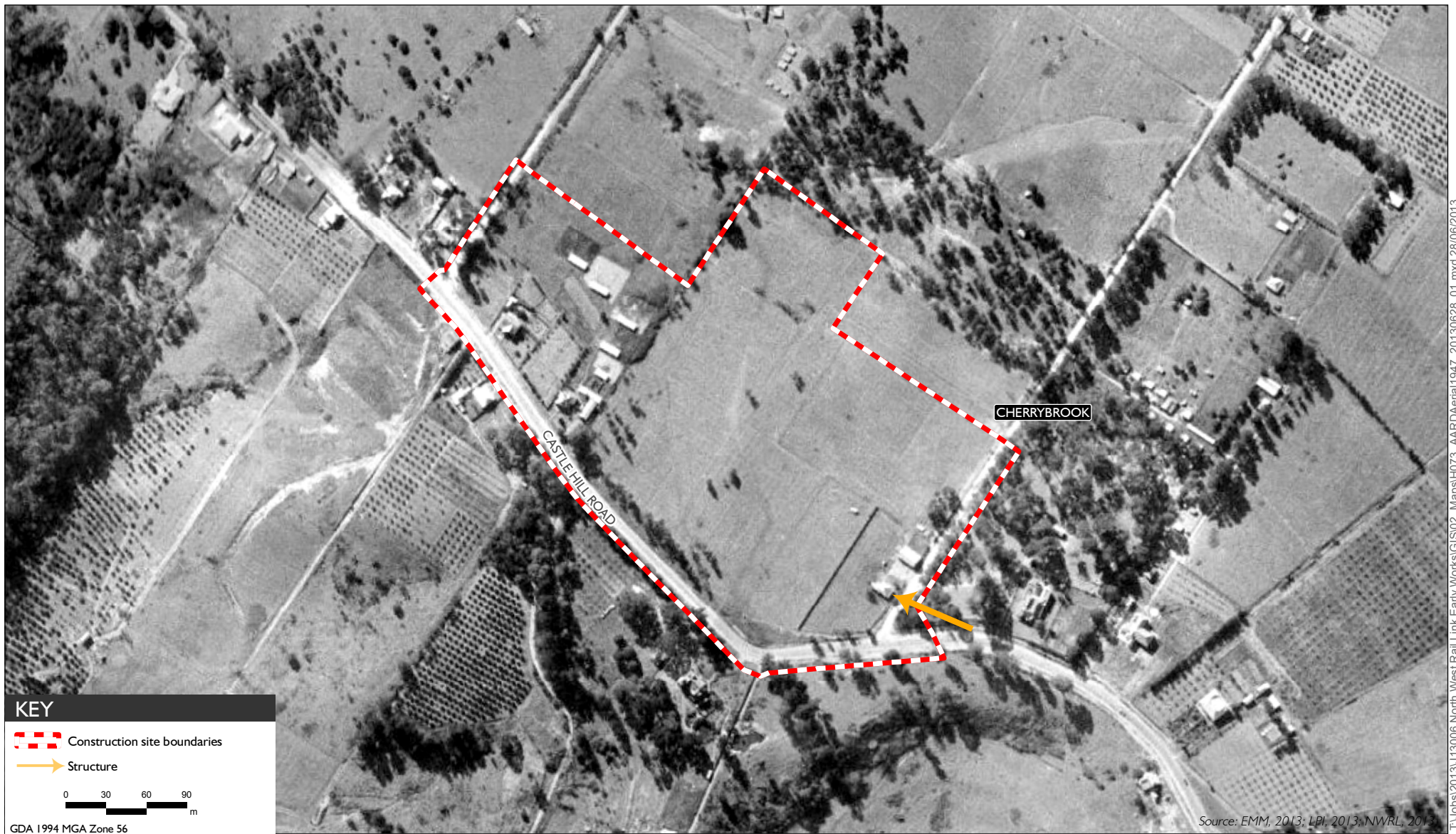
The development of the subdivision from 1818 to the present day is shown in Figure 2.13.



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Source: EMM, 2013; LPI, 2013; NWRL, 2013





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2.4 Historic themes

The historic themes relevant to the archaeological investigation of the site were taken from the NSW Heritage Branch website (www.environment.nsw.gov.au/heritage/index.htm). These have been used as a source and starting point in the formulation of research questions for the proposed archaeological monitoring program. The national historic themes relating to the study area are:

- building settlements, towns and cities;
- marking the phases of life;
- developing Australia's cultural life; and
- developing local, regional and national economies.

The NSW historic state themes relating to the study area are:

- accommodation;
- domestic life;
- land tenure;
- environment – cultural landscape;
- persons; and
- agriculture.

3 Site evaluation

3.1 Overview from research

An evaluation of the study area aids in the identification of archaeological potential as well as the significance of potential relics. It is achieved through a process of analysing the archival sources, historical maps, plans and photographs, comparing historic aerials with modern aerials and the results of the site visit, as well as reviewing previous reports for sites in the vicinity. The following sections address the sources of information that have assisted with the assessment of archaeological potential and assessment of significance.

3.1.1 Early grants

The study area was originally part of the 34,539 acre Government Grounds and used for farm production until approximately 1815. The Government farm and asylum are located approximately 4 km to the east of the site and it is likely that the study area was used for cattle grazing and crops during this time. While it may be possible that vernacular structures were built illegally, on government grounds, no documentary evidence has been found that suggests this and any evidence of early structures may have survived only in fragmentary form. Subsequent subdivision and cultivation of the land is likely to have disturbed the context of early structures.

The land was alienated in 1818 and granted to Will Williamjohn. There is little information on his land grant, though it does appear on the parish records until the 1900s. No information has been found in regards to his use of the land or to any structures present. The modern aerial photographs suggest that the land has been heavily cultivated which may have removed evidence of Williamjohn's use of the land, if indeed he did proceed with modifications.

3.1.2 Orchardring

The dominant industry in the area has been orcharding. The soil proved very good for fruit trees, particularly citrus and large portions of the Castle Hill and Cherrybrook areas were turned into orchards. As indicated in the aerial photographs from 1928 and 1947 the practice of orcharding continued well into the twentieth century and dominated land use practices until the subdivisions of the 1960s and 1970s.

Specific to the study area, the 1928s aerial photograph shows extensive orchards surrounding Franklin Road, however by 1943 the trees have been removed and vacant paddocks remain. Few additional buildings were present in the orchard areas. When the fruit trees were removed, the landscape retained the furrows and tracks of the cultivated areas. Crop marks of the orchard are still visible in aerial photographs from 1943 and 1947 and can be seen as feint lines in cleared areas through the mowing pattern that now dominates.

More recent urban development of the area post-1960, which includes the construction of houses, it is unlikely that many relics and crop marks survived in this area. Structures associated with the orchard, such as sheds may have survived and been reused for other purposes however none of these items were visible on aerial photographs within the orchard areas.

3.1.3 Subdivision

The land title records show the development of the subdivision of the land from the original 60 acre Crown Grant to Will Williamjohn in 1818 to the current site owned by the NSW Government.

The grant of Williamjohn was consolidated by Robert Milson into a much larger 220 acre holding in the 1870s. It was then subdivided back into a similar size (70 acres) to the original Crown Grant by Richard Rothwell in 1883 and bought by John Radley. Portions of land including the study area were incorporated briefly into the extensive holdings of the Hopkins family in 1919 as the result of a mortgage between Rosa Hopkins and John Radley.

A major change in the subdivision layout occurred in the 1920s when the study area and the land surrounding it was redivided and relabelled for the Ridlington Estate subdivision. The subject area became Lot 1 of this subdivision. It remained this lot size and shape until the 1990s. In 1997 Lot 1 was further divided into five lots (known as lots 11 – 15) as part of the expansion of the Cherrybrook area for housing. It remained in this configuration until bought by the NSW Government.

3.1.4 Existing land use and disturbance

The most recent developments on the site have been the subdivision in 1997 of one large lot fronting Franklin Road into five smaller lots and the construction of four houses. The land or the houses was bought between 2002 and 2003. Based on archaeological monitoring undertaken in June 2013, it appears that the house structures did not encroach significantly below the ground. It was noted that the some of the houses were in fact built up by a layer of levelling fill. Subsequently, there is potential for archaeological evidence to exist beneath the modern housing footprint.

The site has also been subject to varying levels of disturbance from existing utility trenches. Areas disturbed by utility trenches within the study include:

- fibre optic/phone network cables;
- electricity cables; and
- PVC sewerage piping.

The impact of the existing utility trenches on the potential archaeological deposit is likely to be minor. The disturbance areas for these utilities are largely discrete and isolated, and are unlikely to have significantly affected any potential archaeological deposit. However, there is the possibility for these trenches to have affected the intactness of certain archaeological features or deposits.

3.1.5 Study area site visit

An inspection of the study area occurred in February 2013 (Photograph 3.1 and Photograph 3.2). The area was observed to have high grass cover and the majority of the area was occupied by houses. The four houses on the lots are of a moderate size. The vacant lot is grassy with large eucalypt trees along the boundaries. In the southern area of the vacant lot (Lot 13 DP1005729) a cesspit structure was noted (Photograph 3.3). The area is currently a mix of vacant land, houses and landscaped gardens.



Photograph 3.1 **Lot 13 DP 1005729 - Cherrybrook Station**



Photograph 3.2 **Lot 2 DP 772261 facing Castle Hill Road – Cherrybrook Station**



Photograph 3.3 Possible cesspit structure in the south of Lot 13

3.1.6 Current demolition program

Due to the time constraints on the project, demolition of the four houses constructed in the 1990s has already begun. Additionally work has commenced in the areas of the Cherrybrook construction site not considered to be of archaeological significance, after a preliminary review of maps, aerial photographs and subdivision plans. From the research presented in this report the majority of the study area was orchards and would have little likelihood of containing material for archaeological excavation.

3.1.7 Historic maps & plans

Minimal information has been obtained for the majority of the title holders of the study area from maps and plans, particularly in relation to any structures which may have been present during their holding of the title.

The parish records for this area do not provide any further indication of structures on the sites. Parish maps for this area are only available dated for five years between 1897 and 1955 with a number of additional maps unable to be dated. All parish maps regardless of year show Will Williamjohn as the Crown Grant owner of the land. This information is confirmed through the land title documents.

Robert Milson did have a large holding which included the study area however, due to his family connections further to the west (and outside the current impact area) it is suggested that his home and farm buildings may have been in that area. It is possible that he built structures on this portion of the property however the survival rate is likely to have been low.

Little other mapping information was forthcoming. Town water and sewerage was not connected in Castle Hill until after 1917 and would likely have been connected to Cherrybrook a number of years later. Thus, it was considered unlikely that water board plans of the area would be present or able to provide further information on the site at Cherrybrook. Similarly, fire and insurance maps were also considered but relevant information was not obtained.

One subdivision plan from 1929 shows the subdivision of the land along Franklin Road for sale. Two structures were listed on the Ridlington Estate subdivision plans. The hatching on the diagram is suggestive of a weatherboard construction and differs from the hatching on the brick structure located to the south (Figure 2.6). The Pennant Farms subdivision plan showed a general view of the area, however it did not indicate any structures or specifically show the study area.

Three historical aerial photographs also provide information on the structures present in the study area. In a 1928 aerial photograph, two buildings and a large vacant area is shown along Franklin Road. This is likely to be the structures from the Ridlington Estate subdivision and may be the weatherboard cottage and an associated outbuilding. The 1943 and 1947 aerial photographs show that the two structures, which are almost identical to those located in the 1928 aerial photograph.

The Small family purchased the land in 1932 and were still living in the area in the 1990s. This places them on the Franklin Road property. Considering that the house has not changed its exterior substantially between the 1928 and 1947 aerial photograph, it may be possible that these structures were used by the Small family, possibly as a home. The Small family passed the house onto Tayandel Properties who subdivided it into five smaller blocks. It is possible the structures used by the Small family were demolished during the subdivision process or during the construction of the four houses in the 1990s. No evidence of the structures was present during the survey and no further information on these structures has been able to be obtained.



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Ridlington Estate subdivision overlay onto 2013 aerial photograph
 North West Rail Link Early Works
 Archaeological Assessment and Research Design
 Figure 3.1



3.1.8 Probate records

Probate records for two men associated with the study area have been identified and they provide information on the possible structures which may be present on the site.

John Radley obtained title over the land in approximately 1891 and on his death in 1905 his probate records list a weatherboard cottage and outbuildings on his estate along Franklin Road.

A weatherboard cottage, fronting Franklin Road is also listed in the estate records of Joseph Hopkins who died in 1911. It is possible that the buildings from these two probate records are the same and have been captured on the historical aerial photographs.

Probate records were unable to be obtained for others listed as owning the study area.

3.1.9 Comparative studies

The local area has been subject to a limited number of archaeological investigations relating to domestic vernacular buildings and associated properties in the late nineteenth century and beyond. A search of the Heritage Branch library catalogue and other library resources identified only a few relevant previous investigations.

The most prominent archaeological investigation in the local area relates Castle Hill Heritage Park which is assessed to be of state heritage significance. The Castle Hill Heritage Park contains a number of known and potential archaeological sites, including the Third Government Farm, a lunatic asylum and barracks, a church and school, the remains of early dwellings and wells, roads, tracks fencing, and bridges of the early to mid-nineteenth century. The site was later adapted for orcharding from 1870 to 1930 (GML 2007). The Castle Hill Heritage Park has little comparative value with the current study area as it does not encompass late nineteenth–early twentieth vernacular buildings that were occupied during the orcharding phase of the study area. A mid-twentieth century domestic building and cistern remains in the north-east quadrant of the park, however it is likely to post-date any historical buildings constructed within the study area.

In 2006, an historic and archaeological study was completed for a nearby domestic house and property known as ‘Kentwell Cottage’ at 244 Old Northern Road Castle Hill (Edward Higginbotham and Associates 2006). This was undertaken in response to proposed road widening that would impact the site. The Kentwell Cottage property was owned by John Kentwell from 1823, while the house was owned and occupied by the Kentwell Family from its construction c. 1857 through to the 1890s and demonstrates the improvement, extension and additions to the cottage. The house is one of the few surviving ‘slab’ cottages in the Baulkham Hills Shire Council Area: an upstanding single-storey timber cottage with several outbuildings in various states of collapse.

The house was originally a two-roomed wooden slab construction with a shingle roof, later covered with weatherboards and a galvanised iron roof (Figure 3.3). It was observed that this vernacular design dated back to the first years of historic settlement in Australia (Higginbotham 2006 p. 25). The original house contained a fireplace (with a chimney of sandstock bricks) in the larger room and a smaller bedroom, with possibility of a detached kitchen. Initial weatherboarding of the house was likely to have occurred in the 1890s (based on cladding method and nails — see Higginbotham 2006 p. 30). Kentwell Cottage underwent considerable additions into the twentieth century, and contained eight rooms in total. Outbuildings on the property included a toilet and laundry (each with cement floors), a carport and a shed.

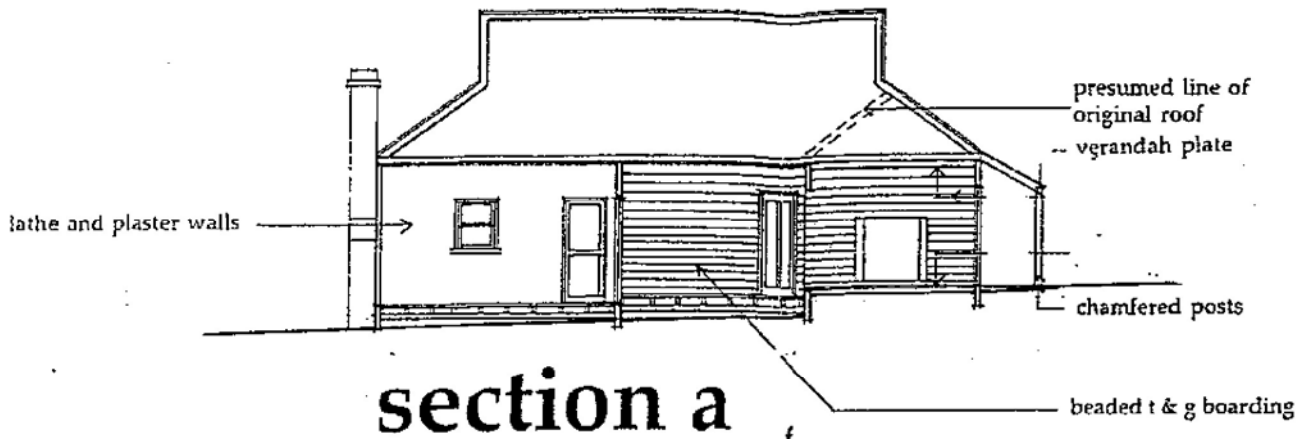
Kentwell Cottage was considered to have state significance, and was listed on the Baulkham Hills Council 1991 LEP as an item of *local* significance only. It was considered that Kentwell Cottage was an item of rare local significance as the majority of slab cottages are found in other local government areas and regions. However the Hill Shire Council LEP 2012 does not list the Kentwell Cottage in its heritage schedule. It was removed during construction of new apartments which are now present at 244 Old Northern Road. The house also had potential to yield important information concerning the structural and technological development of vernacular buildings over time. It was recommended that the house be subject archival recording dismantled and relocated as part of heritage management and conservation.

Kentwell Cottage shares similar and historic themes with the current study area as it follows the historical development of the Castle Hill Area from mixed agricultural to fruit growing and orchards. It may also provide insights into the archaeological potential of the weatherboard cottage and outbuildings built before the twentieth century. Kentwell Cottage and the current study area share a similar context of having vernacular buildings constructed on land used for agriculture and orchards in the late nineteenth century. As such, it is likely that similar construction methods and materials were used for the cottage as those mentioned above for Kentwell Cottage. The archaeological potential of the study area is discussed further in Section 3.2.

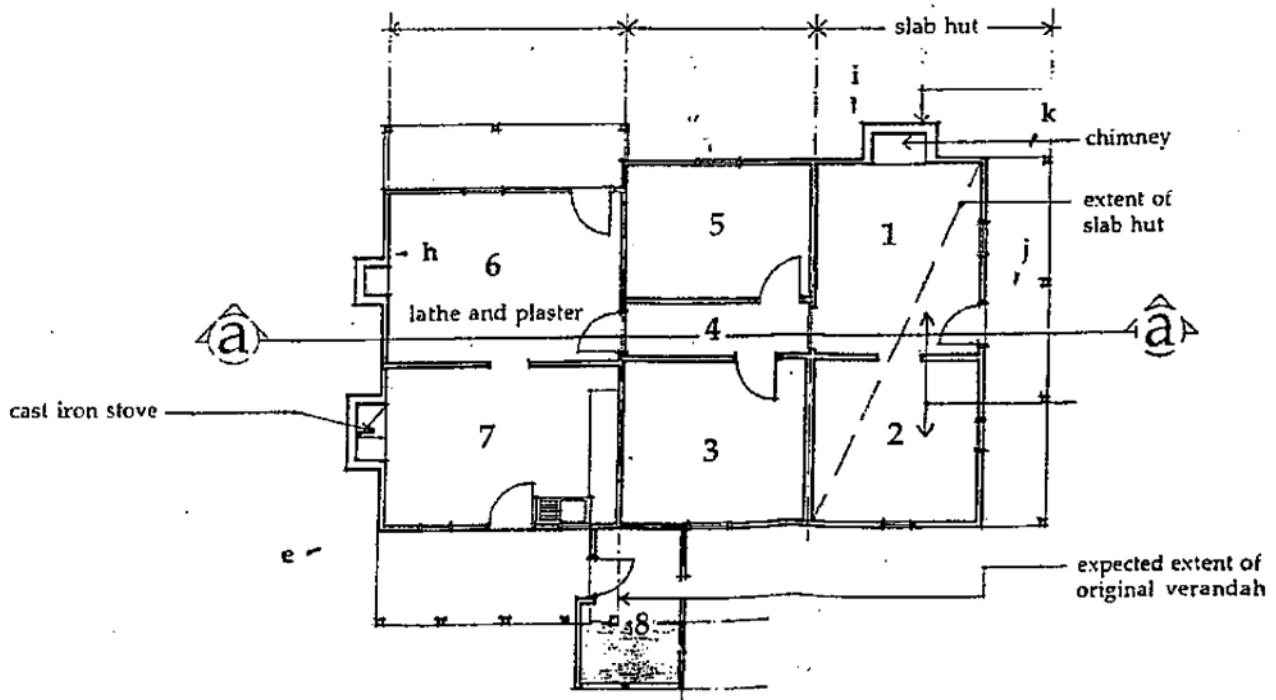
The previous investigation of Kentwell Cottage may provide information on the nature of the archaeological remains in the study area; however this is based only on the assessment of an existing standing structure. There is therefore limited comparative information on the subsurface potential and survival for the weatherboard house and other outbuildings within the study area.

GML identified two pre-1920s house sites along Franklin Road (NWRL heritage site numbers 29 and 30) requiring further background research and potentially archaeological monitoring during construction activities. GML (2012a p.20) note these structures were visible on a 1920s plan but that only one was present in the 1947 aerial photograph. No above ground evidence of these structures was shown in the field survey (GML 2012a p.20). Two pre 1920s sites were also listed in the Casey and Lowe (2006) preliminary report on the North West Rail link as items 123 and 124.

Hornsby Shire Council commissioned a heritage study (Perumal 1993) which assessed historic archaeology in the site but did not directly reference this area.



section a



plan

Source: Edward Higginbotham and Associates, 2006

3.1.10 Data from geotechnical investigations

Geotechnical testing was conducted by Coffey Geotechnics in November and December 2011. Three sites were investigated for the proposed Cherrybrook Station; one test pit and two bore holes. All three geotechnical test sites were located beyond the area identified in this report as possessing archaeological potential (Figure 3.4).

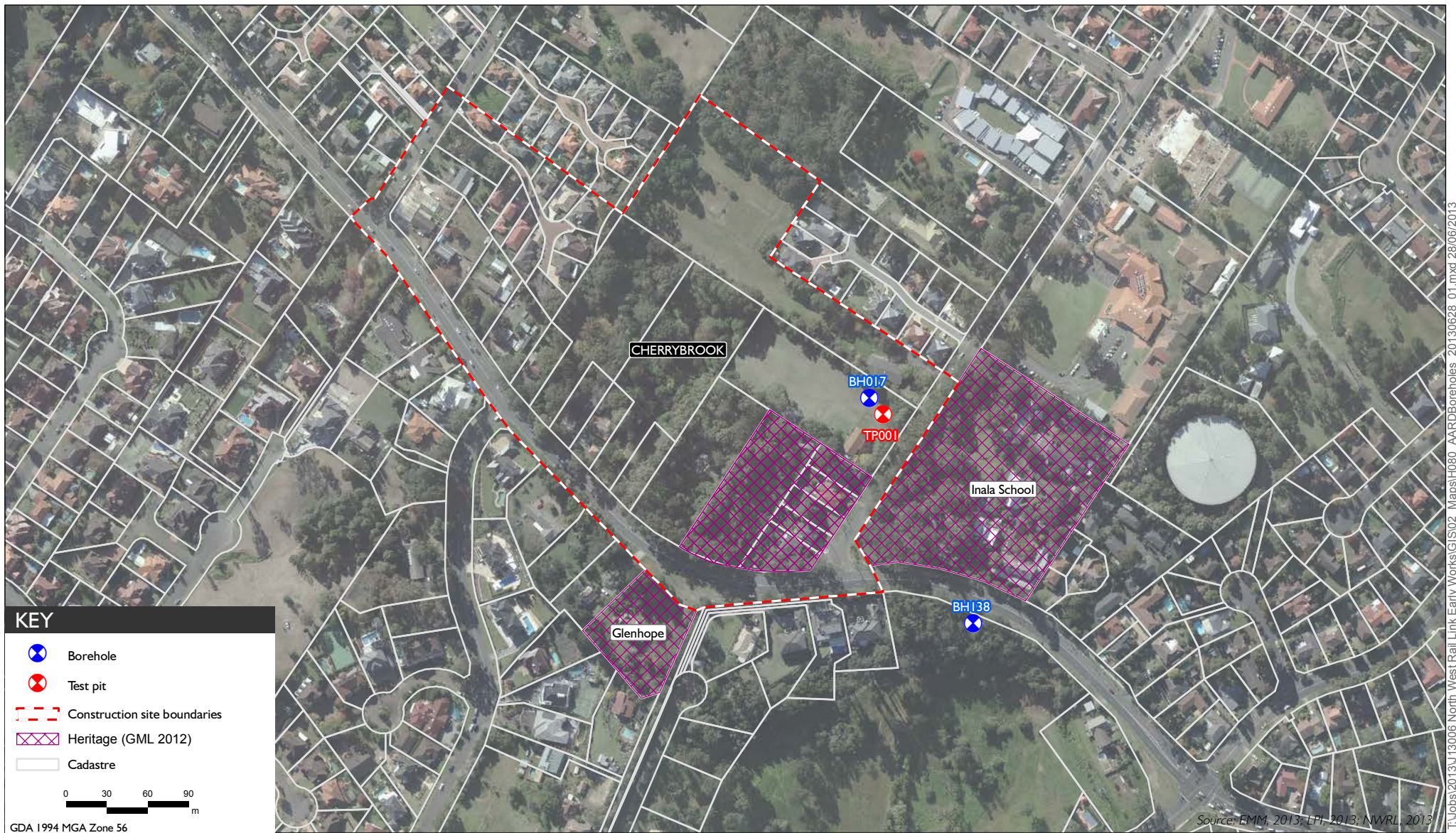
Test Pit 1 (TP01) was excavated in November 2011 in the north east corner of the construction zone. The dimensions of the test pit were 3 m by 0.6 m and reached a depth of 2.7 m. The top 20 cm were identified as clayey silt topsoil overlying 80 cm of silty clay “residual soil” of high plasticity, red brown in colour becoming orange brown then mottle pale grey at depth. Bedrock was reached at 2.7 m.

TP01 was located in an area that has thus far been identified as being modified but undeveloped. An aerial photograph dating to 1928 shows that the location of the test pit is within an area that was part of the cultivated section of an orchard. By 1943, the orchard has been cleared but the rows are still visible as crop marks. Similarly, in a 1947 aerial, the same area remains cleared except for grass; the crop marks relating to the orchard remain visible (Figure 2.9).

Borehole 017 (BH017) was located approximately 10 m to the west of TP01. Data obtained from here reflects the findings of TP01: 25 cm of topsoil, overlying residual soil with high plasticity, mottle red brown and grey. The bore was halted at 110 cm and continued as a cored hole. This bore hole was also located within the former orchard.

Borehole 138 (BH138) was located on Castle Hill Road near Coonara Avenue approximately 66 m to the east of TP01. It is adjacent to Castle Hill road and consisted of a shallow deposit of topsoil (10 cm) overlying extremely weathered rock that recovered as clay. At 1.3 m, the borehole yielded extremely to high weathered rock.

The recorded data from the geotechnical samples did not yield material that could be described as archaeological deposit or potential artefactual material but the data from TP01 and BH017 supports the photographs that show the field was used as an orchard in the past.



3.2 Archaeological Potential

The assessment of the potential for archaeological evidence, known as “archaeological potential”, is based on a predictive model that assumes historical archaeological evidence is generally located in close proximity to occupation and activity areas.

“Archaeological potential” refers to an areas potential to contain archaeological relics which fall under the provisions of the *Heritage Act 1977*. This potential is identified through historical research and by judging whether current building or earlier development activities have removed all evidence of known previous lands uses (Heritage Council 1996). From this evidence conclusions are drawn from this section to identify the likely location, survival of the archaeological evidence. The preceding Section 3.1, the “evaluation”, is where each area of investigation was analysed to ascertain the potential for the survival of archaeological resources.

3.2.1 Aboriginal occupation

Aboriginal people utilised and passed through the Cherrybrook area for thousands of years. A due diligence Aboriginal heritage assessment did not identify any potential Aboriginal heritage in the study area. Two Aboriginal heritage sites were identified in the north-west of the site. From an Aboriginal heritage perspective, the development of the house structures shown on the 1928 aerial photograph and the subsequent house construction in the 1990s, suggest that Aboriginal heritage objects are likely to have been disturbed and removed.

A separate Aboriginal heritage assessment and salvage excavation has been completed by RPS. Excavations have occurred approximately 100 m to the north-west of the site. These results will be presented in a separate report.

In the unlikely event that any subsurface deposits containing Aboriginal relics are found, they are likely to consist of isolated or low density artefacts with disturbed soil profiles. The unexpected finds protocol includes Aboriginal heritage objects and should these objects be found all work will cease in the vicinity of the finds until an assessment of significance can be made in consultation with the registered Aboriginal parties for the project.

3.2.2 Assessment of archaeological potential

Figure 3.5 presents the evidence for where the remains of structures are likely to be found. This is based on the most accurate information available from the research. There is likely to be some inaccuracy in the plans due to the factors of time and the difficulties of geo-referencing the various historical data sources.

Previously this site has been assessed as having a low likelihood of archaeological remains surviving due to the previous disturbance caused by the development of modern houses (GML 2012a). From the information available it is most likely that the archaeological evidence will be located along Franklin Road.

There was no visible evidence of the structures identified in the historic evidence during the most recent site inspection in February 2013. On Lot 13 DP 1005729 a possible cesspit/well structure was identified which may have been located adjacent to the weatherboard cottage. The possibility that this was a cesspit or that a cesspit exists on the property is supported by the late arrival of reticulated water and sewage pipes to the area.

There is potential for the archaeological evidence of the historically identified weatherboard cottage of John Radley, Joseph Hopkins and the Small family and associated buildings to have survived along Franklin Road including cottage foundations, building debris and household items.

The physical location of the weatherboard cottage based on the description of both John Radley and Joseph Hopkins' estates suggest it is one of these buildings which is located on the Ridlington estate subdivision and the 1928 aerial photo. It is likely that the aerial photographs of 1943 and 1947 show the house of Joseph Hopkins as this was noted as having frontage to Franklin Road. In addition to the potential cottage shown on the aerial photographs, there may have been further structures built by the Small family or other owners of the land which are currently not known.

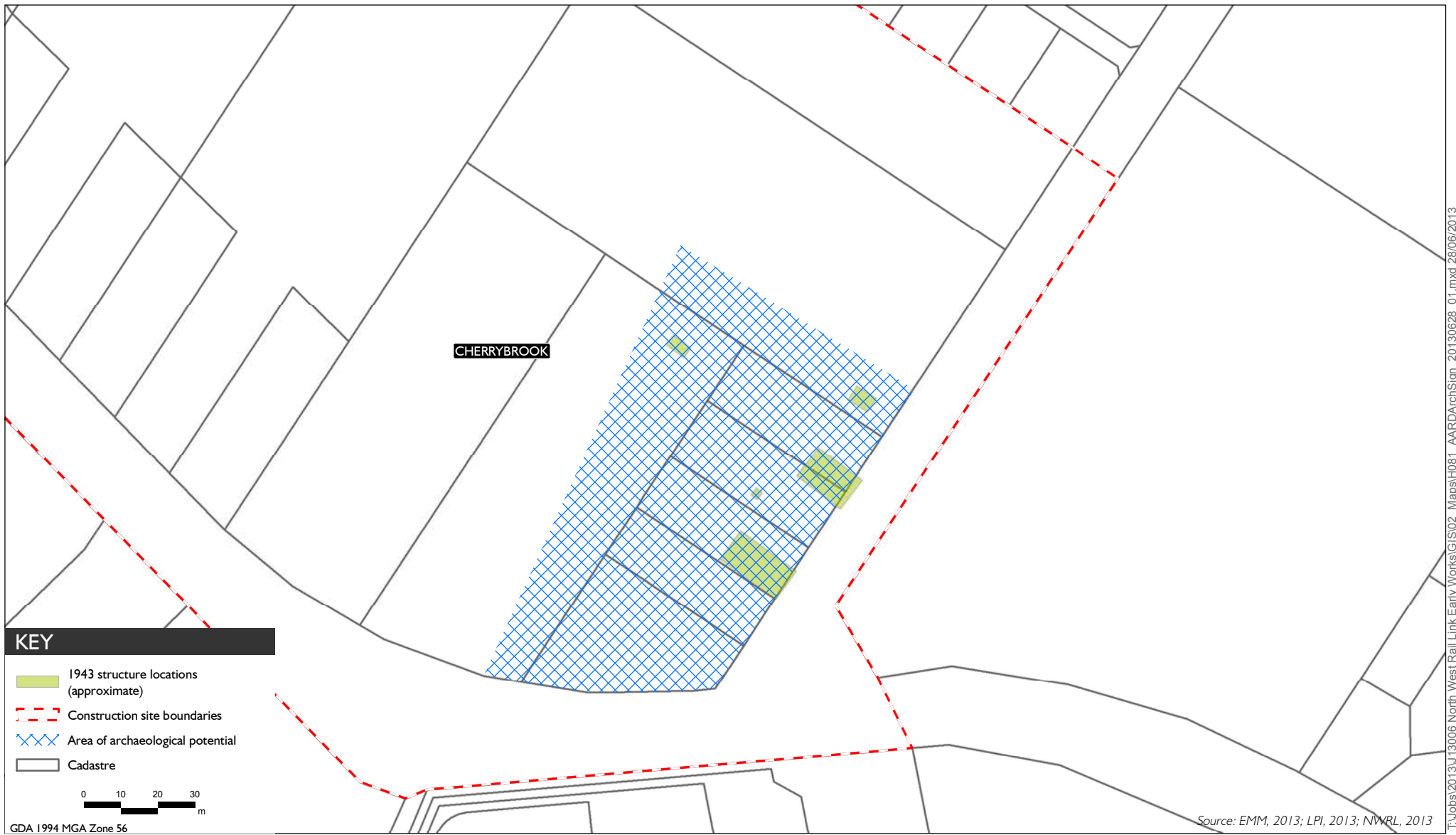
Houses during this period were built with tongue and groove floorboards, reducing the amount of subfloor deposit that would normally accumulate under other types of floorboards. However, this house was built in a rural setting remote from the city and may have been built using earlier techniques. Therefore underfloor deposits may exist and if it is found that the house was built prior to the 1870s, there may be the potential for earlier structural evidence such as an earthen floor and slab construction.

It is possible that the construction of the four modern houses on some of the lots in the last 15 years has reduced the likelihood of retaining substantial information about these previous structures. However, when the historical information is overlaid onto the modern aerial it is clear that the weatherboard cottage present in the historical aerial photographs was located in the still vacant land between the houses constructed in the 1990s. In this area there is a moderate likelihood of these remains surviving intact, depending on the fill required to level the area for the construction of the adjacent houses.

A review of comparative studies in the local area has indicated that the weatherboard structure and outbuildings built by John Radley may share common features with the nearby Kentwell Cottage (see Section 3.3).

In summary, the assessment concludes that the following may exist below the ground surface:

- weatherboard house demonstrated by remnants of wooden slabs, posts, framework, subfloor deposits and earthen floor;
- bricks as remnants of a fireplace;
- remnants of galvanised iron roofing;
- postholes for shed structure;
- structural materials, including nails and wire;
- cesspits/wells/cisterns;
- rubbish pits;
- cement pads for outbuildings such as toilets or laundries; and
- remnants of fencing including fence post holes and wire.



3.3 Heritage significance

The following section presents the statement of significance for the potential archaeological resources at Cherrybrook. The statement of significance is based on the guideline *Assessing Heritage Significance* (Heritage Office 2001). No previous statement of heritage significance has been completed for these potential archaeological remains. Analysis in Section 2 and 3 of this report presented a range of evidence regarding the potential archaeological remains which has been used in the assessment of significance.

The concept of cultural significance is defined as “aesthetic, historic, scientific, social or spiritual value for past, present or future generations” (*Burra Charter* 1999: Article 1.2). It identifies that conservation of an item of cultural significance should be guided by the item’s level of significance.

Table 3.1 provides a summary of the assessment criteria and their application to the potential archaeological remains. Section 3.4 provides a full statement of significance.

Table 3.1 Statement of significance summary

NSW Heritage criteria (NSW <i>Heritage Act</i> 1977)	The potential archaeological remains at Cherrybrook Station.
Criterion (a) an item is important in the course, or pattern, of NSW’s cultural or natural history (or the local area);	The potential archaeological resources is historically associated with the late eighteenth and early twentieth century use of the local area particularly orcharding and farming. The agricultural uses of the site demonstrate the importance of the region in producing food for the region and was one of many such orchards, none of which survive in the local area. Archaeological evidence demonstrating the domestic and commercial uses of the study area would be of local significance.
Criterion (b) an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW’s cultural or natural history (or the local area);	The research conducted to date has not indicated that the potential archaeological remains fulfils this criterion.
Criterion (c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);	The research conducted to date has not indicated that the potential archaeological resources fulfil this criterion. The expected archaeological resource may include remains of a weatherboard cottage that is unlikely to be aesthetically significant. However, if evidence survives that demonstrates rudimentary building techniques such as slab construction, these technical aspects of the resource would be of local significance.
Criterion (d) an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);	The research conducted to date has not indicated that the potential archaeological remains fulfils this criterion.

Table 3.1 Statement of significance summary

NSW Heritage criteria (NSW <i>Heritage Act 1977</i>)	The potential archaeological remains at Cherrybrook Station.
<p>Criterion (e) an item has potential to yield information that will contribute to an understanding of NSW’s cultural or natural history (or the local area);</p>	<p>The subject site is likely to include archaeological resources relating to a vernacular weatherboard cottage and associated buildings and deposits. The site has the potential to yield new information that would contribute to an understanding of construction techniques and materials used in structures during the late nineteenth and early twentieth centuries including how they changed over time. In addition, archaeological evidence relating to the life of the people that lived there may shed light on their way of life, their economic situation as well as answer questions related to farming in what had been recognised as an important food-producing area on the outskirts of Sydney. The presence of a cesspit is likely, which would yield important information regarding the lives of the people that lived there.</p> <p>Archaeological evidence demonstrating this criterion would be of local significance.</p>
<p>Criterion (f) an item possesses uncommon, rare or endangered aspects of NSW’s cultural or natural history (or the local area); and</p>	<p>The research conducted to date has not indicated that the potential archaeological remains fulfils this criterion.</p>
<p>Criterion (g) an item is important in demonstrating the principal characteristics of a class of NSW’s cultural or natural places or cultural or natural environments (or the local area).</p>	<p>The potential archaeological resources are associated with the Hopkins family which owned a larger portion of land to around the study area and who also owned the study area for approximately five years. Joseph Hopkins built the large and still standing Ridlington house located to the east of the study area.</p> <p>Archaeological evidence demonstrating the life of an orcharding and farming family would be of local significance.</p> <p>Archaeological evidence related to this criterion would be of local significance.</p>

3.4 Statement of significance for the potential archaeological remains

The potential archaeological resources along Franklin Road are considered to be of local heritage significance. The potential archaeological remains may yield information relating to the construction techniques used to create weatherboard houses and farm buildings during the late nineteenth and early twentieth centuries and specifically, the techniques used to build the now demolished weatherboard house. Also of local significance would be archaeological evidence, including a cesspit, that could demonstrate the life of the families that lived in the house and answer questions relating to personal and commercial activities on the orchard.

Much of the surrounding archaeological resource is likely to have been disturbed by the construction of modern houses on the site in 1997 but the topography of the site indicates the subsurface features and deposits may still survive.

4 Impact assessment

4.1 Impacts from the proposed development

The entire area of the Cherrybrook Station footprint will be disturbed for the construction of the station. The station will be built below the current ground level and will result in the removal of a large layer of fill. Impacts to all areas of archaeological potential are expected due to the large amount of soil to be removed.

The potential archaeological remains will be impacted by:

- the removal of soil to create the station area;
- the levelling of areas surrounding the station area to create walkways, parks ;
- widening of Castle Hill Road to connect the road to the station;
- excavation for services including water, sewer and electricity; and
- the construction of a car park to service the station.

Figure 4.1 shows the development plan for the Cherrybrook Station site. It is noted that the current development plan may be revised during construction and installation of the station buildings. However, this is not expected to change the comprehensive impacts to the potential archaeological remains.



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5 Conclusions and recommendations

5.1 Conclusions

The study area has been subject to multiple subdivision events and which has been owned by over fifty people since it was first granted to Will Willamjohn in 1818. This has resulted in a complex and changing land ownership structure in this area which includes a number of missing links which prevent the full understanding of the study area's development.

Research on the nature of structures and potential archaeological sites which may be present in the study area has shown that there is moderate potential for the remains of a weatherboard structure, possibly built in the 1880s to be present within the study area. This archaeological evidence will be totally removed as a result of the NWRL construction.

The study area contains the potential remains of a locally significant archaeological site. The archaeological resource has the potential to yield information relating to the construction and building techniques of weatherboard cottages, at least specifically to this weatherboard cottage during the late nineteenth and early twentieth centuries, including potential changes to the structures through additions and renovations. The archaeological resource may also be able to answer questions relating to the date and therefore the earliest form of the weatherboard cottage (refer to Kentwell discussed in 3.1.9 of this report).

Additionally, the lives of fruit growers/orchardists supplying the market in Sydney but located beyond what was then the outskirts of the town, is not well understood. More notable persons such as the Hopkins, and Radleys are generally researched in more detail and documents of their lives survive in greater quantities. Therefore, generally less is known of how some other classes and groups in the area lived their lives and went about their business. The orchardists that lived and worked within the study area do not appear to have been notable in their own right but they are representative of a group of people, who left their physical marks on the landscape. This is an opportunity to investigate what survives archaeologically of their lives.

5.2 Recommendations

Research undertaken for this report indicates that the potential for relics exists within the identified study area and that these resources may be able to answer questions relating to the growth of commercial activities and about representative families who undertook those activities. The recommendations relating to the archaeological resource are to:

- Conduct an archaeological test excavation on targeted areas of the site to test the conclusions of this report. The targeted archaeological test excavations to determine the extent of significant archaeological resource. This archaeological excavation program is provided in Appendix A.
- Prepare a Research Design to guide the archaeological test excavation and frame the approach. This Research Design is provided in Appendix A.
- Ensure that if during the course of excavation Aboriginal cultural material is found, work must cease and the indigenous heritage consultant be alerted.

Glossary of Terms

Many of these definitions use throughout this report have been taken from the *Archaeological Assessments Guidelines* (Heritage Branch 1996).

Archaeological Potential: a sites potential to contain archaeological relics as defined in the Heritage Act 1977. The degree of physical evidence present on an archaeological site usually assessed on the basis of physical evaluation and historical research. It refers to the surviving condition of archaeological sites). Common terms for describing archaeological potential are:

- known archaeological features/sites (high archaeological potential);
- potential archaeological features/sites (medium archaeological potential); and
- no archaeological features/sites (low archaeological potential).

Archaeological Site: a place that contains evidence of past human activity. Below ground archaeological sites may include building foundations, occupation deposits, features, artefacts and relics. Above ground archaeological sites may include buildings, works, or industrial structures that are intact or ruined.

Archaeology: the study of the human past using material evidence.

Archaeological investigation or excavation: the manual excavation of an archaeological site.

Artefact: an object produced by human activity. In historical archaeology the term usually refers to small objects contained within occupation deposits. The term may also encompass food or plant remains and ecological features (for example, pollen).

Conservation: all of the processes of looking after a place so as to retain its cultural significance.

Building: a part of a building, structure or part of a structure.

Heritage: encompasses both Aboriginal and historic heritage including sites that predate European settlement and a shared history since European settlement such as the shared associations in pastoral landscapes as well as associated link with the mission period.

Heritage Item: an item defined under the *Heritage Act 1977* and assessed as being of local, State and/or National heritage significance

Heritage Significance: a term used to encompass all aspects of significance (see Cultural Significance). Defined in the *Heritage Act 1977* (Section 4A) as being of State or Local significance in relation to historical, scientific, cultural, social, archaeological, natural or aesthetic value of the item.

Historical Archaeology: in NSW historical archaeology is the study of the physical remains of the past, in association with historical documentation, since European occupation of NSW in 1788.

Item: a place, building, work, relic, moveable object or precinct.

Listing: an item is placed on a statutory heritage list.

Local Significance: in relation to a place, building, work, relic, moveable object or precinct, means significance to an area in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.

Place: site, area, land, landscape, building or other work group of buildings or other works and may include components, contents, spaces and views.

Potential Archaeological Site: a place which may contain physical evidence of past human activity (see Archaeological Site).

Relic: any deposit object or material evidence that (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.

Research Design: a set of questions, which can be investigated using archaeological evidence and a methodology for addressing them. A research design is intended to ensure that archaeological investigations focus on genuine research needs. It is an important tool which ensures that when archaeological resources are destroyed by excavation, their information content can be preserved and can contribute to current and relevant knowledge.

Research Potential: the ability of a site or feature to yield information through archaeological investigation. The significance of archaeological sites is assessed according to their ability to contribute information to research questions.

State Significance: in relation to a place, building, work, relic, moveable object or precinct, means significance to the State in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item. An item can be both of State heritage significance and local heritage significance. An item that is of local heritage significance may or may not be of State heritage significance.

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Land Title References

Lot 2 Deposited Plan (DP) 772261

Lot 11 DP 1005729

Lot 12 DP 1005729

Lot 13 DP 1005729

Lot 14 DP 1005729

Lot 15 DP 1005729

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Abbreviations

Abbreviation	Term
£	Pounds
\$	dollars
AHD	Australian Height Datum
AHIMS	Aboriginal heritage information management system
BOM	Bureau of Meteorology
BH	borehole
c	circa
cm	centimetres
DP	Deposited Plan
DP&I	Department of Planning and Infrastructure
EMM	EMGA Mitchell McLennan Pty Limited
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
GML	Gooden Mackay Logan
km	kilometres
LEP	Local Environmental Plan
LGA	Local Government Area
m	metres
m ²	metres squared
MCoA	Ministers Conditions of Approval
mm	millimetres
NSW	New South Wales
NWRL	North West Rail Link
OEH	Office of Environment and Heritage
PAD	Potential archaeological deposit
RMS	Roads and Maritime Services
SHR	State Heritage Register
t	Tonne
TfNSW	Transport for NSW
TP	Test pit

Appendix A

Research Design

A.1 Introduction

A.1.1 Background

EMGA Mitchell McLennan Pty Ltd (EMM) has been commissioned by Boulderstone to undertake an archaeological program at the Cherrybrook Station construction site. This report details the research design for the archaeological program.

The requirements for the archaeological program come from the Ministers Conditions of Approval E10. Condition E10 states that:

E10. Prior to the commencement of pre-construction and/or construction activities that will impact the historical archaeological sites identified in Table 4.2 of the North West Rail Link EIS: Technical Paper 3 – European Heritage, dated March 2012, the Proponent shall undertake an archaeological excavation program in accordance with the Heritage Council of NSW Archaeological Assessments Guideline (1996) using a methodology prepared in consultation with the Heritage Council of NSW, and to the satisfaction of the Director General. This work shall be undertaken by an appropriately qualified heritage consultant.

Additionally TfNSW has requested that the archaeological investigations for these sites are completed in the earliest possible timeframe to facilitate a smooth transition between the various stages of the project.

Heritage constraints were initially identified in the preliminary phases of the project, specifically two potential archaeological sites (GML 2012a p.20). A 1920s subdivision plan of the area showed two structures fronting Franklin Road by 1947 only one of these structures is clearly visible on an aerial photograph. The rest of the area was identified as cleared paddocks and orchards.

Historical research has shown that the study area has been subject to multiple subdivision events and which has been owned by over fifty people since it was first granted to Will Willamjohn in 1818. This has resulted in a complex and changing land ownership structure in this area which includes a number of missing links which prevent the full understanding of the study area's development.

The historical and archaeological research has concluded that there is moderate potential for the remains of a weatherboard structure, possibly built in the 1880s to be present within the study area. This archaeological evidence will be totally removed as a result of the North West Rail Link (NWRL) construction.

The study area contains the potential remains of a locally significant archaeological site. The archaeological resource has the potential to yield information relating to the construction and building techniques of weatherboard cottages, at least specifically to this weatherboard cottage during the late nineteenth and early twentieth centuries including potential changes to the structures through additions and renovations. The archaeological resource may also be able to answer questions relating to the date and therefore the earliest form of the weatherboard cottage. Additionally this site has the potential to uncover information on the lives of fruit growers/orchardists supplying the market in Sydney. The orchardists that lived and worked within the study area do not appear to have been notable in their own right but they are representative of a group of people, who left their physical marks on the landscape. This is an opportunity to investigate what survives archaeologically of their lives.

The recommendations relating to the archaeological resource are to:

- Conduct an archaeological test excavation on targeted areas of the site to test the conclusions of this report. The targeted archaeological test excavations to determine the extent of significant archaeological resource. This archaeological excavation program is provided in Appendix A.
- Prepare a Research Design to guide the archaeological test excavation and frame the approach. This is the Research Design.
- Ensure that if during the course of excavation Aboriginal cultural material is found, work must cease and the indigenous heritage consultant be alerted.

A.1.2 Site location

Construction is proposed in the area selected for the location of Cherrybrook Station. The proposed station site is approximately 61,000 m² on the northern side of Castle Hill Road and bound to the east by Franklin Road, to the north by the northernmost boundary of Lot 8 DP 16975 and partly bounded to the west by Robert Road (see Figure 1.3 of the archaeological assessment report).

The affected lots are shown in Table A.1.

Table A.1 Affected lots

Lot//DP	Lot//DP
11//1005792	4//22429
12//1005792	5//22429
13//1005792	1//285659
14//1005792	2//285659
15//1005792	3//285659
1//772261	4//285659
2//772261	5//285659
6//22429	6//285659
7//22429	7//285659
8//22429	8//285659
9//22429	9//285659
10//22429	10//285659
11//22429	11//285659
4//14282	12//285659
5//14282	13//285659
6//14282	14//285659

A.1.3 Limitations

This report deals specifically with items of historical archaeological significance within the study area. Issues related to heritage items outside the scope of the NWRL Project are not covered in this report. A detailed assessment of Aboriginal heritage for the study area is separate to this report. This report considers historic heritage only.

A.1.4 Author Identification

This report has been prepared by Rebecca Newell BA Hons (Archaeology) and Ryan Desic BA Hons (Archaeology). The report was reviewed by Pamela Kottaras BA Hons (Archaeology) – Associate Archaeologist and David Kelly BTP (Hons) – Senior Environmental Planner EMM.

A.2 Development proposal

A.2.1 Project description

The North West Rail Link is a priority transport infrastructure project for NSW and will provide a new 23 km electrified passenger rail line between Epping and Rouse Hill. The Project includes eight new stations (Cherrybrook, Castle Hill, Hills Centre, Norwest, Bella Vista, Kellyville, Rouse Hill and Cudgegong Road), a stabling facility and associated infrastructure (Figure 1.2 of the archaeological assessment report). The Early Works include site establishment prior to the commencement of the Major Works and can be grouped into the following categories:

- tunnelling construction power – high voltage power supplies for construction;
- demolition – demolition of a mixture of residential and commercial properties and/or facilities;
- roads and traffic – road adjustments, signalling, and existing transport network facilities relocation; and
- precinct preparation – utilities, services relocations and miscellaneous works.

Transport for NSW (TfNSW, the NSW Department of Transport) has commissioned BPL as the managing contractor for the ‘Early Works’ to allow construction sites establishment prior to commencement of the major works for the NWRL. Works at the Cherrybrook Station site are expected to result in removal of a large amount of soil to create the tunnel and the station building and to widen Castle Hill Road. This will result in removal of all potential archaeological evidence at the Cherrybrook Station site.

The works program specific to the Cherrybrook construction area includes the widening of Castle Hill Road, the demolition and removal of houses and other buildings, the removal of trees and the grading and levelling of the construction area in preparation for the forthcoming tunnelling and station construction. At the completion of works the study area will become Cherrybrook Station.

A.2.2 Impacts from the proposed development

The entire area of the Cherrybrook Station footprint will be disturbed for the construction of the station. The station will be built below the current ground level and will result in the removal of a large layer of fill. Impacts to all areas of archaeological potential are expected due to the large amount of soil to be removed.

The potential archaeological remains will be impacted by:

- the removal of soil to create the station area;
- the levelling of areas surrounding the station area to create walkways, parks ;
- widening of Castle Hill Road to connect the road to the station;

- excavation for services including water, sewer and electricity; and
- the construction of a car park to service the station.

Figure 4.1 of the archaeological assessment report shows the current development plan for the Cherrybrook Station site. It is noted that the current development plan may be revised during construction and installation of the station buildings. However, this is not expected to change the comprehensive impacts to the potential archaeological resources.

A.3 Proposed research design and archaeological program

A.3.1 Research design

A research design is a set of research questions developed for a specific site, which contributes to current and relevant knowledge. The questions posed must be responsive to the nature of the archaeological evidence that is likely to be encountered. In addition, the how and where of the excavation is described in this document.

The archaeological assessment for Cherrybrook Station by EMM (2013) assessed the site as having moderate potential for the remains of a weatherboard structure, an associated shed and potentially cesspit built by 1905. The significance of the potential archaeological resource has been assessed to be of *local* significance.

This research design proposes a program of archaeological testing to record the nature and extent of the archaeological resource present at the site. The archaeological program will aim to clarify the archaeological potential of the site by verifying the presence or absence of the remains of a weatherboard house, shed structure and cesspit as well as other possible associated features. This research design also includes a provision for salvage excavation for particular areas of significance.

A.3.2 Research questions

The archaeological remains of interest are those associated with the occupation of the site in the late eighteenth and early twentieth century. There is potential for archaeological remains relating to vernacular structures and occupation deposits to exist within the study area. The potential archaeology is within the context of a rural landscape characterised by orcharding and farming. Remnants of a weatherboard house, a cesspit and shed structure have the potential to exist as subsurface relics. At present, it is not discernible whether development and land use subsequent to the demolition of the weatherboard house has removed the site's archaeology. Test excavation will aim to verify the sites' archaeology in conjunction with a methodology that will target specific research questions.

Although the focus of the research design is aimed at the late eighteenth and early twentieth century, the weatherboard house and shed structures potentially existed for at least 100 years (according to probate records and historical maps and plans — see EMM 2013). This considerable extent of occupation has the potential to provide multiple archaeological deposits along with evidence of additions and alterations to the house structure. Research questions have also considered the potential for this site to change over time through multiple occupation events.

Research questions have also been guided by comparative study of a nearby weatherboard house and property in Castle Hill named 'Kentwell Cottage' (described in Section 3.1.8 of EMM 2013). This report has considered the structural components and physical layout of Kentwell Cottage in the formulation of site specific research questions.

Research questions have been guided by historic themes relevant to the site which have been taken for the NSW Heritage Branch website (www.environment.nsw.gov.au/heritage/index.htm). These have been used to ensure that the site may be a comparable resource for previous and future archaeological investigations in NSW and nationally.

The national historic themes relating to the study area are:

- building settlements, towns and cities;
- marking the phases of life;
- developing Australia's cultural life; and
- developing local, regional and national economies.

The NSW historic state themes relating to the study area are:

- accommodation;
- domestic life;
- land tenure;
- environment – cultural landscape;
- persons; and
- agriculture.

Some of these questions will be answered during the test excavation, while the more detailed questions may be answered by a subsequent salvage excavation.

i General research questions

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

That is:

- i) What is the condition and extent of the surviving archaeological evidence?
- ii) What is the nature of extant archaeological features?
- iii) Do the deposits and features contribute new information about the occupation and development of the site?
- iv) Is there any evidence of domestic occupation at the site? If so, what form does it take, how does it change over time and what can it relate about the site's residents?

General questions concerning the settlement of rural north-western Sydney, agricultural economies and the cultural life surrounding these events in the late nineteenth and early twentieth century are also appropriate for comparative purposes.

ii Site specific research questions

Is there any physical evidence of the weatherboard house, cesspit and shed identified in the archaeological assessment?

- v) Do any structural remains or material culture deposits at the site tell us about the social status and standard of living of those who occupied the site?
- vi) Do the structural remains indicate a specific design or style of vernacular architecture? If so, are they comparable to other archaeological sites, or existing structures on a local, regional or national level?
- vii) Do the structural remains indicate additions or alterations over time, and does this coincide with changes in occupancy as shown in the historic record?
- viii) What do the structural remains reveal about the changes from traditional to modern building techniques and their dating?
- ix) Is there evidence of domestic occupation at the site? If so, does the material culture assemblage change through time and with phases of occupation? Is there any historical evidence linking these changes to certain people, occupational phases, or other events?
- x) What does the material culture assemblage reveal about the owners and occupants of the house, when compared with assemblages from other sites?
- xi) Is there any evidence of agricultural produce at the site, especially fruit growing? If so what form does it take and how does the information contribute to our knowledge of the agricultural practices in the area?

It should be noted that the archaeological program may uncover a range of information not expected and the research questions are likely to evolve depending upon the type of evidence and artefacts found at the site.

A.4 Methodology

An excavation strategy has been prepared which represents the most appropriate archaeological methodologies for the archaeological program. This strategy responds to the requirements above, the development plans and the local heritage significance of the site.

As mentioned in the previous section, it is difficult to discern how much of the site is likely to contain intact archaeological remains that are associated with the weatherboard house and/or shed. Recent utility ground works and the construction of four houses on the site since the deposition of the archaeological evidence may have disturbed the subsurface deposit to some extent. Subsequently, archaeological test excavation is the only reliable method to quantify and characterise any potential subsurface deposit. This archaeological management strategy presented here is based on the findings of the archaeological assessment (EMM 2013) and geotechnical testing to the north of the site.

The archaeological investigation of the site will involve the excavation of test pits targeted at locating specific archaeological evidence, followed by the monitoring of areas within the site that are considered to be lower archaeological sensitivity. There is also a provision for the salvage excavation of areas that have the potential to contribute knowledge that no other site or resource can. The knowledge retrieved

from salvage will aim to answer the general and specific research questions provided in the research design.

A.4.1 Archaeological testing

Excavation of test trenches will determine the nature and extent of archaeological features associated with previous structures and may determine the stratigraphy across the site. Archaeological testing will consist of excavating areas where the weatherboard house, cesspit and shed are predicted to survive within areas of least known post-depositional disturbance. Areas with existing utility trenches and other previous development areas will be avoided where possible. Targeting predicted deposits with the least known post-disturbance will increase the likelihood of locating intact archaeological evidence. The test excavation will also aim to sample the widest cross-section of features and associated deposit as possible.

Testing will target the original weatherboard house, a potential cesspit and a shed structure by using trenches orientated to catch as much information as possible from limited trench dimensions. An additional test trench may be excavated within an area anticipated to be archaeologically sterile in order to provide an understanding of the soil profile test trenches. If testing confirms archaeological evidence, it will be fully recorded and an assessment will be made on its significance. The archaeological potential of the remains and its significance will determine if salvage excavation is warranted.

The testing program will require the use of an excavator with a smooth edged mud bucket, to remove overburden down to just above any occupational surface, structural remains or natural soil levels. At all stages of the test excavation, the archaeologist will have the authority to halt work if archaeological evidence is suspected. Any archaeological evidence will be verified by hand excavation techniques.

The proposed test pit layout is shown in Figure A.1. The archaeological testing program will be undertaken by:

- Targeting test pits or trenches in order to investigate the archaeological evidence according to historical imagery and plans.
- Excavating one 6 m by 4 m trench at the predicted location of the weatherboard house. This will aim to identify any structural remains, including walls. The width of the trench also has the potential to include occupational deposits inside or outside any structures, and a potential cesspit adjacent to the house structure.
- Excavating one 6 m by 4 m trench at the predicted location of the shed north of the weatherboard house.
- Scraping back an area of approximately 20 – 30 m by smooth edged mud bucket in the rear yards of the lots, to assist with locating the third test trench.
- Excavating one 3 m by 2 m trench outside the areas of predicted subsurface remains. This will be fully recorded as a means to characterise the soil profile of the local area.
- Excavation of the test areas to remove overburden will proceed by using appropriate machinery, including a 5 tonne excavator with a smooth bucket.
- Monitoring the removal of any overburden, fill or other culturally sterile layers until any significant archaeological evidence, occupational surface or structure is identified by a qualified archaeologist.

- Hand excavation by field archaeologists to fully expose or characterise the archaeological evidence. The decision to excavation stratigraphically or by feature will be determined in the field based on the archaeological evidence uncovered. For example, any cesspits will be excavated as a feature.
- Recording of remains and deposits according to the detailed recording methodology outlined below.
- Test trenching via machine-excavation to a depth the archaeologist considers appropriate for finding relics, and to also determine culturally sterile layers.
- Dealing with artefacts according to the artefact methodology outlined below.
- Implementing salvage excavation if sufficient evidence of the presence of archaeological deposits of local significance occur. If the deposits are of state heritage significance then the Heritage Branch will be contacted to review the excavation. Salvage excavation would preferably commence within a week of finishing the test excavation.

Salvage excavations will follow the salvage excavation methodology outlined below.

Where appropriate, the archaeologist will sample any cultural and non-cultural deposits that may provide significant information regarding the pre and post European environment and occupation of the site. Soil samples will be analysed by a soil specialist.

In the event that evidence of Aboriginal cultural remains are found on site all works in the immediate vicinity of the area will cease and Boulderstone will be contacted. Appropriate measures provided in the NWRL Early Work Aboriginal Cultural Heritage Management Plan will be adhered to before works recommence.

A.4.2 Salvage excavation approach

Salvage excavation will be undertaken subsequent to test excavation if significant archaeological remains warranting further excavation are found. Salvage excavation will largely be guided by the nature and extent of the archaeological remains uncovered from test excavation. The basic principles of open area salvage excavation that will be used on the site are:

- salvage excavation will aim to retrieve a level of information relative to the significance and intactness of the archaeological resources;
- salvage excavation will aim to answer research questions provided in the research design;
- salvage excavation will involve the expansion of test trenches to adequately characterise the archaeological evidence initially exposed; and
- a similar methodology to that outlined for the testing will be followed.



Potential remains of significance and the appropriate archaeological management strategy

North West Rail Link Early Works
Archaeological Assessment and Research Design

Figure A.1

A.4.3 Recording methodology

All recording will be undertaken using the following principles:

- the establishment of an appropriate site grid;
- use of surveying techniques for location of remains;
- detailed archaeological scale plans;
- the use of context recording forms and context numbers to record all archaeological information;
- use of Harris matrix as part of the recording program;
- all structural remains, post holes and features will be planned using an established survey point;
- detailed photographic recording;
- collection, labelling, safe storage, washing, sorting and boxing of artefacts.

A.4.4 Artefact methodology

Any artefacts recovered from the site will be the subject of a detailed cataloguing and analysis program, including:

- all artefacts will be catalogued by specialist cataloguers using a system that identifies and allows easy retrieval of the item;
- the specialists' cataloguers will produce reports on the artefacts outlining issues of importance;
- in addition, important artefacts will be the subject of materials conservation which would include the gluing of pottery or the conservation of important metal or leather materials; and
- artefacts which are the subject of materials conservation may be used in artefact displays in interpretation of the stations.

The excavation report will contain an analysis of artefacts and their deposits and contexts. This analyses will be illustrated using tables in the final report.

A.4.5 Excavation Report

A detailed excavation report will be produced describing the results of the archaeological program. The report will include an artefact analyses and response to research questions.

A.5 Public interpretation of the archaeological program

The information and artefacts from the excavation may be used in interpretation of the site and in displays as part of the new station complex.

The following are suggested ways in which information about the site can be disseminated to be public:

- public information leaflets;

- regular updates on the archaeological program on the NWRL webpage; and
- media releases.

A.6 Aboriginal archaeology

A separate Aboriginal archaeological testing and excavation program has been completed as part of this project. The result of these will be made available in a separate report.

A.7 Public interpretation in the completed Cherrybrook Station site

Interpretation could utilise a range of archaeological material including:

- archaeological drawings, plans and images; and
- artefacts.

A.8 Personnel

The excavation program will be directed by Jillian Comber with Tory Stening as an alternate excavation director. Pamela Kottaras is the nominated excavation co-director. The following staff will also assist as site supervisors:

- Ryan Desic; and
- Rebecca Newell.

As the major constraint is time, it is intended to have a team of 6 archaeologists on call to complete the test excavation. If relics are uncovered in the three proposed test trenches, concurrent excavation may contract the amount of time required on site. The final decision however, rests with the excavation director.

We are intending to use a number of assistants and other staff where required. CV's and references for personnel listed above are contained in Appendix B.

Appendix B

Curricular Vitae

Curriculum vitae

Pamela Kottaras

Associate Archaeologist

Pamela has over 13 years experience as a heritage consultant and leads EMM's heritage service.

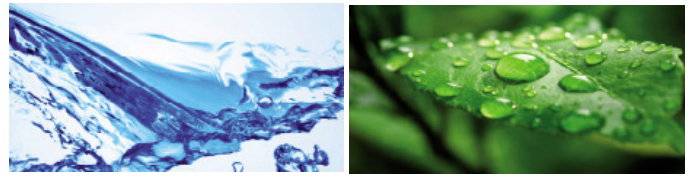
Her strengths include project direction and management of complex historic period assessments and heritage impact statements and Aboriginal heritage assessments, site analysis, archival recording, heritage statutory planning and policy review, and major excavation and survey planning and supervision.

Pamela's exceptional communication and interpersonal skills are demonstrated by her strong working relationships with historic and Aboriginal heritage communities, government agencies and clients.

She has undertaken heritage assessments for multiple sectors including: energy, infrastructure and utility providers; and property and construction.

Qualifications and memberships

- Bachelor of Arts (Hons) Prehistoric and Historical Archaeology, University of Sydney, 1997
- Laboratory Technician Certificate, Sydney Technical Collage, 1987
- Australian Society for Historical Archaeology
- Australasian Archaeological Association
- Australia ICOMOS Inc



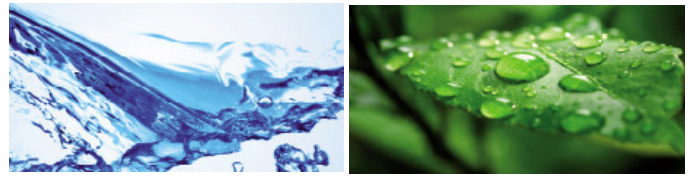
Career

- EMGA Mitchell McLennan, 2013present
- Team Leader Cultural heritage, Biosis Pty Ltd, 2009–2013
- Consultant, Austral Archaeology, 2004–2009
- Manager, Austral Archaeology, 20072009
- Heritage Consultant, City Plan Heritage, 2003–2004
- Research Assistant, Otto Cserhalmi & Partners Architects, 2001–2003
- Research assistant, Heritech Consulting, 19982001

Representative experience

- Windsor Bridge Replacement Project, historical heritage statement of heritage impacts, Sydney NSW for RMS (Biosis Pty Ltd with CRM)
- Grafton Bridge Duplication Project, non-Aboriginal heritage constraints reports and options report, Grafton NSW for Arup on behalf of RMS (Biosis Pty Ltd)
- Pipehead and Potts Hill Reservoirs 330 kV underground cable: statement of heritage impacts, Sydney NSW for Perram and Partners on behalf of Transgrid (Biosis Pty Ltd)
- Hume Highway Bypass at Tarcutta, archival record of Hambledon Homestead, Humula, Tarcutta Cemetery, Regional NSW for Leighton Contractors on behalf of RTA (Biosis Pty Ltd)

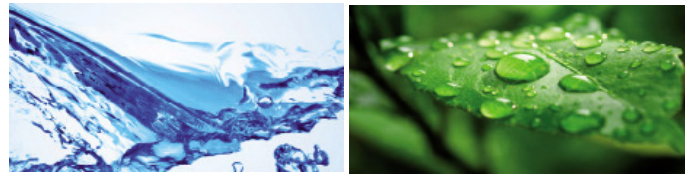
Curriculum vitae



Pamela Kottaras

- Hume Highway Bypass at Tarcutta Unexpected Finds Reports: Tarcutta stock camp and buried bridge, Regional NSW for Leighton Contractors on behalf of RTA (Biosis Pty Ltd)
- Tallawarra Lands Redevelopment, Historical Heritage Assessment, Wollongong NSW for TruEnergy (Biosis Pty Ltd)
- Nundah Bank Third Track, historical heritage assessment and statement of heritage for KMH on behalf of ARTC (Biosis Pty Ltd)
- Erskine Park Archaeological Salvage Excavation, Sydney NSW for RTA (Biosis Pty Ltd)
- Spring Farm Trunk Main, Aboriginal test excavation in accordance with the code of practice, Sydney NSW for Networks Alliance (Biosis Pty Ltd)
- North-West Growth Centre, heritage assessment, Sydney NSW for Sydney Water Corporation (Biosis Pty Ltd)
- Windsor Bridge Options Study: Assessment of Historical Heritage Constraints, Sydney NSW for the RTA (Austral Archaeology Pty Ltd)
- Edmondson Park Wastewater Planning Study, Aboriginal and historical risk assessment, Sydney NSW for SKM on behalf of Sydney Water (Austral Archaeology Pty Ltd)
- Proposed Holroyd Substation: Aboriginal archaeological and cultural assessment, Sydney NSW for SKM on behalf of Transgrid (Austral Archaeology Pty Ltd)
- Stevens Weir Deniliquin: proposal to install a vertical slot fishway statement of heritage impact, Regional NSW for the Department of Water and Energy on behalf of State Water (Austral Archaeology Pty Ltd)
- Great Western Highway Upgrade, Lawson: heritage construction management plan, heritage management report, Regional NSW (RTA with Austral Archaeology Pty Ltd)
- Wollondibby Project, Alpine Way, Jindabyne NSW Preliminary Heritage Advice, Snowy River Shire for Jay Harrison (Austral Archaeology Pty Ltd with City Plan Heritage Pty Ltd)
- Goat Island, conservation management plan. archaeological assessment, site analysis, archaeological policies & recommendations, Port Jackson NSW with Paul Davies Pty Ltd & Geoffrey Britton Environment Design for the National Parks & Wildlife Service (Austral Archaeology Pty Ltd)
- Bonnyrigg House, conservation management plan. archaeological assessment, site analysis and policies, Sydney NSW with Paul Davies Pty Ltd & Geoffrey Britton Environment Design for TSP Consulting on behalf of the Department of Planning (Austral Archaeology Pty Ltd)
- Proposed Subdivision of Bonnyrigg Male Orphan School Site Bonnyrigg, statement of heritage impact, Sydney NSW with Paul Davies Pty Ltd & Geoffrey Britton Environment Design for TSP Consulting on behalf of the Department of Planning (Austral Archaeology Pty Ltd)

Curriculum vitae

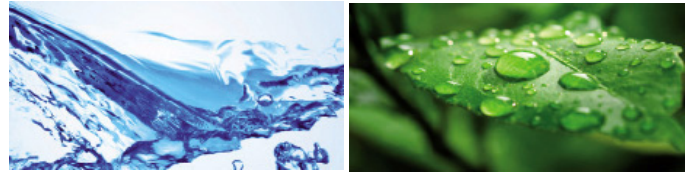


Pamela Kottaras

- Holy Trinity (Garrison) Church at Millers Point, archaeological assessment and exemption notification, Sydney NSW (under standard exemption 4) (Anglican Properties Trust with Austral Archaeology Pty Ltd)
- Gogeldrie Weir and Yanco Old Weir, statement of heritage impact & exemption notification, for NSW State Water, Leeton Branch (Austral Archaeology Pty Ltd)
- Australian Technology Park, temporary car parking innovation plaza upper, middle and lower car parks, Sydney NSW for The Australian Technology Park Management Pty Ltd (Austral Archaeology Pty Ltd)
- Australian Technology Park, Bays 3, 4 and 5 north internal fitout: statement of heritage impact and Section 60 application, Sydney NSW for The Australian Technology Park Management Pty Ltd (Austral Archaeology Pty Ltd)
- Australian Technology Park, Bays 6 and 7 north internal fitout: statement of heritage impact and Section 60 application for APP Corporation Pty Ltd on behalf of Fuji Xerox Australia (Austral Archaeology Pty Ltd)
- North West Transitway Project, Sydney NSW for Leighton Contractors (Austral Archaeology Pty Ltd)
- North West Transitway, archaeological assessments and research designs, for Leighton Contractors (Austral Archaeology Pty Ltd)
- 330–348 George Street, Sydney, archaeological assessment & research design, Sydney NSW for Hemmes Pty Ltd (Austral Archaeology Pty Ltd)
- Boggo Road Gaol: Excavation of Former One Division, Dutton Park, Brisbane Qld for Allom Lovell Architects on behalf of QLD govt (Austral Archaeology)
- 299–305 Sussex Street, Sydney, archaeological assessment & research design, Sydney NSW (City Plan Heritage Pty Ltd)
- University of Sydney School of Information Technologies, archaeological assessments & research design, Sydney NSW (City Plan Heritage Pty Ltd)
- RTA Heritage and Conservation Register Update, analysis & history, Warringah sub-region, NSW for the RTA with City Plan Heritage Pty Ltd)
- Spit Bridge, heritage impact statement review, Sydney NSW (City Plan Heritage Pty Ltd)
- Review Fort Scratchley Historic Site, Newcastle Conservation Management Plan, Newcastle NSW for the Heritage Office, Department of Planning (City Plan Heritage Pty Ltd)
- Review Wallarah and Moonee Collieries Conservation Management Plan, Central Coast NSW for the Heritage Office, Department of Planning (City Plan Heritage Pty Ltd)
- Review Dyke Point Conservation Management Plan, Newcastle NSW for the NSW Heritage Office (City Plan Heritage Pty Ltd)

Curriculum vitae

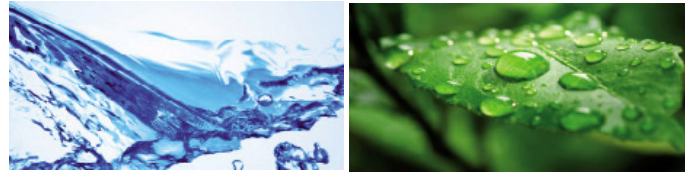
Pamela Kottaras



- Review Tracks into History Conservation Management Plan for the NSW Heritage Office (City Plan Heritage Pty Ltd)
- Review Sewage Pumping Station SP0038, Conservation Management Plan, Sydney Water for the NSW Heritage Office (City Plan Heritage Pty Ltd)
- Review Sewage Pumping Station SP0271, Conservation Management Plan, Sydney NSW for the NSW Heritage Office (City Plan Heritage Pty Ltd)
- Review White Bay Power Station, Conservation Management Plan, Sydney NSW for the NSW Heritage Office (City Plan Heritage Pty Ltd)

Curriculum vitae

Rebecca Newell



Archaeologist

Rebecca is an archaeologist with consulting and field experience in NSW and Tasmania. She has worked with industry leaders in both historic (European) and Aboriginal archaeology and heritage.

Her skills are in excavation and field survey techniques, artefact management, public communication and community engagement.

Rebecca has worked on a number of historic and Aboriginal archaeological excavations and surveys. This work has involved providing field assistance, site supervision and providing technical expertise.

Qualifications

- Bachelor of Arts (Hons Class 1) in Archaeology and Heritage Studies, University of Sydney, 2010
- Senior first aid certificate
- Nationally recognised OH&S construction induction certificate White Card

Representative experience

Environmental impact assessments

- Cobbora Coal Project, historic and Aboriginal heritage, Cobbora NSW (Cobbora Holding Company)
- Mount Penny coal mine, historic heritage, Mt Penny NSW (Mt Penny Coal)
- Peppertree Quarry, historic and Aboriginal heritage, Marulan South NSW (Boral Property Group)

Reviews of environmental factors

- Cobbora Coal Project geotechnical investigations, Cobbora NSW (Cobbora Holding Company)
- Hunter Gas Project, pilot testing, Windermere and Monkey Place, Hunter Valley NSW (AGL)

Archaeological excavations

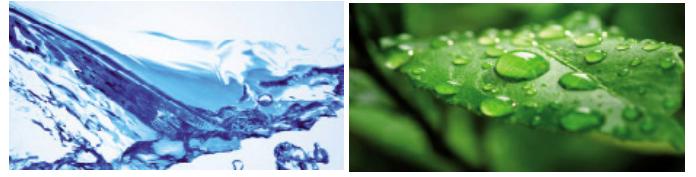
- Cobbora Coal Project, Aboriginal heritage test excavation, Cobbora NSW (Cobbora Holding Company)
- Penrith Lakes Scheme, Aboriginal heritage excavation, Sydney NSW (Penrith Lakes)
- Oatlands Gaol and Mill, historic heritage excavation, Oatlands TAS (Southern Midlands Council)
- Cumberland and Gloucester Streets, historic excavation and artefact processing, Sydney CBD NSW (Godden Mackay Logan)
- Rouse Hill House, historic school house excavation, Sydney NSW (Historic Houses Trust)

Aboriginal heritage impact permit (AHIP) applications and due diligence assessments

- Aboriginal heritage due diligence report Peppertree Quarry, Marulan South (Boral Property Group)
- Muswellbrook Sewer AHIP report, Hunter Valley NSW (NSW Public Works)
- Badgally Road, Camden Aboriginal Heritage due diligence report, Sydney NSW (Dart West Developments)

Curriculum vitae

Rebecca Newell

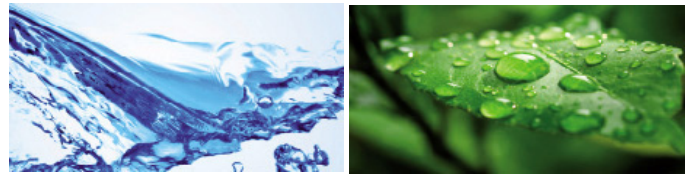


Heritage management plans and strategies

- Sydney Bennelong Stormwater Channel Heritage Management Strategy, Sydney NSW (Kembla Watertech)
- North West Rail Link Early Works Heritage Management Plan, Sydney NSW (Boulderstone)

Curriculum vitae

Ryan Desic



Archaeologist

Ryan is an archaeologist with consulting and field experience in NSW. He has worked in both historic and Aboriginal and heritage.

He has worked on a number of major Aboriginal and historic archaeological investigations including the Hume Highway Duplication Project and the Barangaroo redevelopment project.

Ryan's key skills are in archaeological excavation and recording, and Aboriginal and historic artefact identification and analysis. His work has involved providing site supervision, field assistance, technical expertise and report writing.

Qualifications

- Bachelor of Arts (Hons) in Prehistoric and Historical Archaeology, University of Sydney, 2009
- Nationally recognised OH&S construction induction White Card

Career

- EMGA Mitchell McLennan, 2012–present
- Archaeologist, subcontractor to multiple Sydney-based heritage companies, 2010–2012

Representative experience

Environmental impact assessments

- Cobbora Coal Project, Cobbora NSW (Cobbora Holding Company)
- Newcastle LNG Gas Storage Facility and Pipeline Project Modification, Tomago NSW (AGL)

- Camden Gas Project Modifications, Sydney NSW (AGL)

Reviews of environmental factors

- Gloucester Gas Project Exploration, Wards River pilot testing, Wards River NSW (AGL)
- Cobbora Coal Project, geotechnical investigations, Cobbora NSW (Cobbora Holding Company)

Heritage management plans

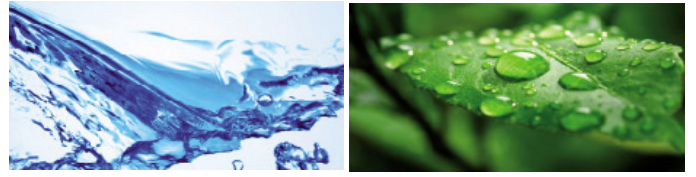
- Gloucester Gloucester Gas Project Exploration, aboriginal cultural heritage management plan, Gloucester NSW (AGL Energy)

Archaeological excavations

- Barangaroo Development, historic excavation and on site artefact management, Sydney CBD NSW (Casey and Lowe in association with Bovis Lend Lease)
- Cobbora Coal Project, Aboriginal cultural heritage test excavation, Cobbora NSW (Cobbora Holding Company)
- Hume Highway Duplication Project, Aboriginal excavation Tarcutta–Woomargama NSW (Kelleher Nightingale in association with Roads and Traffic Authority)
- Penrith Lakes Scheme, Aboriginal excavation, Sydney NSW (Penrith Lakes Development Corporation)
- Darling Walk Development, historic excavation, Sydney CBD NSW (Casey and Lowe in association with Bovis Lend Lease)

Curriculum vitae

Ryan Desic



Archaeological excavation reports

- Cobbora Coal Project: Aboriginal cultural heritage test excavation report, Cobbora NSW (Cobbora Holding Company)
- Australand Eastern Creek, Aboriginal cultural heritage test excavation report (Kelleher Nightingale Consulting)

Aboriginal opportunities and constraints

- Hume Coal, opportunities and constraints study, Southern Highlands NSW (Cockatoo Coal)

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