



3 February 2010

Mr Paul Robilliard
Precinct Project Manager
Strategies and Land Release, Department of Planning
PO Box 1457
Parramatta, NSW, 2124

Dear Paul,

Archaeological Review – Riverstone & Alex Avenue Precincts**1.0 Introduction****1.1 This Letter-Report**

ENSR Australia Pty Ltd (trading as AECOM and hereafter referred to as AECOM) was engaged by the Strategies and Land Release Branch of the Department of Planning (SLR) to provide additional advice on Aboriginal heritage values within the Riverstone and Alex Avenue Growth Centre Precincts (Figure 1).

This letter report provides further detail on Aboriginal sites RAA11 and RAA23 and reviews the assessment of those sites as described in the report "Aboriginal Heritage Assessment Alex Avenue and Riverstone Growth Centre Precincts (ENSR 2008 – the ENSR report). The proposed management of Aboriginal heritage in the ENSR report is also reviewed. This review is warranted due to new information that has come to light since the preparation of the ENSR report.

Aboriginal community representatives had previously been consulted and involved in the assessment of these sites during an archaeological survey by archaeologist Alan Williams (formerly with ENSR AECOM) in late 2007.

1.2 Scope of Work

The scope of works for this engagement was set out in ENSR AECOM's letter of 18 December 2008 to the Department of Planning (DoP):

The scope of work was as follows:

- carry out additional field work at site RAA23 to clarify the boundaries of the site (presently a square area in the assessment report) and the level of Aboriginal cultural heritage significance;
- carry out additional field work at site RAA11 to confirm the boundaries of the site and the level of Aboriginal cultural heritage significance;
- for both sites above, provide advice on management to ensure that Aboriginal heritage values are appropriately conserved where required; and
- assist the SLR in discussions with Department of Environment, Climate Change and Water (DECCW) Aboriginal Heritage officers to confirm the need for any additional precinct wide investigations and to confirm next steps for progressing in principle section 90 approvals for all areas of the precinct assessed to have a low archaeological significance in the previous report.

Comment is also provided on appropriate management of Aboriginal sites where this review has identified new information.

An earlier version of this letter was provided to DECCW by DoP for comments at a meeting held on 4 August 2009. A response letter was received from DECCW dated 14 August 2009. The DECCW comments are noted in this final version of this letter of advice.

2.0 Site RAA11

2.1 Location and Previous Descriptions

Site RAA11 is the site name given by the ENSR report to an area of land owned by Mr Ian Bell and registered as Lot 79 DP752030 (the land – Figure 1, Figure 2). The land is bounded on three sides by Westminster Street, Chester Street and Kensington Park Road. The land rises from Chester Street to its high point at the eastern end. The highest point of the land is the corner on Westminster Street. The landform generally at this location is a local hill crest which is part of the larger north west trending Riverstone ridge running between Eastern Creek and First Ponds Creek.

The ENSR report maps the entire Lot 79 as Aboriginal site RAA11 (ENSR 2008 Figures 7 and 10). The site is described in text as containing natural silcrete only. The ENSR report refers to its original recording by archaeologist Emma Lee (who used the trading name of "Darwala-Lia") as site RL8 containing silcrete artefacts. A search of the Aboriginal Heritage Information Management System did not reveal any site card lodged by Lee. It appears no site card was previously entered.

The ENSR report describes the site as follows:

This site was originally identified by Darwala-Lia (1999) as RL 8, and was documented as 16 stone artefacts including silcrete flakes, utilized flakes, cores and flaked basalt river pebble. While a number of transects undertaken by ENSR investigated this area, no artefactual material was identified. However, the area did retain one of the highest concentrations of silcrete cobbles/fragments/pieces (>50 pieces/m²) within the Riverstone Study Area ... Several of these silcrete pieces did retain diagnostic features, but not enough to be identified as artefactual. It should be noted that the area is only 400 m from the extensive A7 Complex, and as such it is not infeasible that this area was the location for silcrete found at this site and the surrounding sites at First Ponds Creek. Currently, the site is approximately 150 m from east – west and 70 m from north – south. While the ridgeline/hilltop and silcrete extends beyond this area, the integrity is very low due to development.

This is not considered an Aboriginal artefact scatter site, but retains Aboriginal heritage values, and consideration to preservation of this area should be undertaken during the master-planning process. (ENSR 2008 p.59).

2.2 Previous Assessment

The ENSR report identifies the location of the site variously as the whole block of land owned by Mr Bell (mapped in Figures 7 and 10 of the ENSR report) as "reduced to the crest of the hilltop upon which it was located, since no silcrete was located downslope" (p.49), and as 150 m east west and 70 m north south. The coordinates provided in the site description table 6 are located in the very eastern corner of the Bell property at the highest point of the land. The site is described as "relatively undisturbed" giving rise to "potential for both aesthetic and educative opportunities" and thus a moderate significance ranking in the ENSR report (p.80). Furthermore the ENSR report suggests that RAA11 may be the only silcrete source that exhibits the same scale and intensity of the Plumpton Ridge silcrete source (p.86) and therefore a "good example" of the St Marys Formation (p.91).

2.3 2009 Inspection and Recording

2.3.1 Method

The site was inspected on 19 March 2009 by AECOM archaeologists Neville Baker and Rick Bullers accompanied by property owner Mr Ian Bell. The purpose of the inspection was to point locate each silcrete fragment and stone artefact to the extent necessary to identify their distribution, and thus clarify the actual extent of silcrete across the land. A differential GPS (Trimble GeoXM) was used to record all relevant features. The location of vehicle tracks was recorded as line features. Naturally occurring silcrete cobbles and fragments were recorded in four size classes: boulders (>640 mm), large cobbles (300 – 640 mm), small cobbles (64 -300 mm) and gravel (<64 mm).

2.3.2 Extensive Disturbance

While there is heavy weed and grass groundcover over much of the property, sufficient exposure is offered through the network of unsealed dirt tracks to provide an archaeological window into the soil across the land. Previous recordings have not acknowledged the extensive disturbance on the land resulting from past land modification and construction of a house, now demolished, in the central third of the property. The old house is clearly indicated as a "ruin" in the Riverstone series 2 1:25,000 topographic map. The alignment of old pepper trees indicated the garden boundaries in the middle of the land.

Disturbance has also been caused by dumping over parts of the lower western areas of the land. In the upper, eastern area of the land next to Westminster Street, the remnants of a low vernacular garden wall constructed of natural silcrete cobbles bonded by a concrete mortar is present. An old shallow trench and bund wall surrounds the property, constructed by the owner years earlier to prevent vehicle access and dumping on the property. The bund has unearthed and disturbed silcrete cobbles in the eastern crest corner of the property. Silcrete cobbles and disturbance at this location are visible in the ENSR report Plate 32. Silcrete boulders and cobbles were observed next to Westminster Street in association with the trench and bund. From this vantage point it was observed that the house on the crest of the hill across Westminster Street had several silcrete boulders displayed along the outside of its fence.

Silcrete cobbles have evidently been collected together close to the eastern corner of the property. Piles were observed stacked several layers deep. Not every cobble was recorded at this point, although it is quite evident from the silcrete mapping (Figure 2) that the piles occur within the greatest concentration of cobbles.

2.3.3 Artefacts and Natural Silcrete

Three silcrete artefacts were recorded on the land in association with an area of naturally occurring silcrete which is limited to the higher 0.7 ha of the 3.5 ha property – an area defined generally by land above the 50 m contour. The locations of silcrete artefacts and silcrete non-artefactual fragments are shown in Figure 2 as occurring primarily above the 50 m topographic contour. One silcrete gravel fragment was observed at the 49 m contour, with no silcrete, artefactual or non-artefactual, occurring below this point. No silcrete fragments or stone artefacts were observed on the lower areas of the property, despite extensive and repeated inspection of all exposed areas of soil.

The evidence of natural silcrete and stone artefacts does not extend across all of the land. The attached map shows the extent of silcrete observed on the land and the location of the three flaked Aboriginal stone artefacts.

The three silcrete artefacts include one large core and two large flakes. Each artefact showed diagnostic signs of marginal fracture initiation, conchoidal fracture and a lack of heavy compressive initiation which might indicate fracture from machine impact. The core has more than seven large flake scars and the flakes bear clear evidence of conchoidal fracture initiation typical of Aboriginal flaked artefacts.

2.4 Archaeological Reassessment

Silcrete cobbles and boulders occur on the land over a smaller area than previously estimated. Silcrete does not occur across the land, instead it is restricted to an area of 0.7 ha (70 m x 75 m irregular area). With the exception of one small silcrete gravel fragment, all silcrete cobbles and boulders occur from the 50 m topographic contour and above. The ENSR report had cautiously followed the description of Lee and, in a large scale survey, did not have the resources to scrutinise every actual piece of stone across the property to challenge the previous recording.

The extensive distribution of flaked silcrete artefacts reported by Lee in 1999 does not occur, instead there is an extensive distribution of angular silcrete fragments in association with the silcrete cobbles. It seems likely that the naturally occurring angular silcrete fragments were mis-identified as Aboriginal artefacts by Lee. This has been a common occurrence in the region. Furthermore there is not a distribution of silcrete fragment across the land. This appears to have been a generalisation from the more exposed areas in the eastern high ground to the less exposed areas in the eastern lower ground – despite the excellent exposure afforded through the dirt tracks. There can be no reconciliation for the current 2009 absence of silcrete and the 1999 reporting of silcrete artefacts occurring across the land other than it was an unwarranted generalisation from a small observation.

The description of site RAA11 in the 2008 ENSR report adopted a cautious approach to silcrete artefact identification in light of this issue. Without the extensive time taken to identify every one of the hundreds of silcrete fragments the very rare flaked artefact occurrences were understandably missed. While there is some suggestion of a revision of site extent in the text of the ENSR 2008 report, this revision was not reflected in the maps which continued the initial site dimensions as originally reported by Lee over the whole block of land. Lee's assumption of a uniform silcrete distribution across the land, as reported in the ENSR report, is not supported by the archaeological recording presented here.

The occurrence of silcrete in association with high ground is typical of the St Marys Formation – a geological formation that caps the Wianamatta Shales in high areas of the Riverstone ridge and other high ground further east at Colebee. The greater concentration of cobbles in the upper part of the land compared to adjacent blocks to the east is quite possibly due to clearance activities on those adjacent blocks where yards are presently almost totally devoid of cobbles. Clearly the land has been the nearest unfenced "bushland" block adjacent to other properties where silcrete cobbles would have originally occurred on the surface. It is unlikely to be a coincidence that adjacent properties are largely clear of cobbles while the closest part of the land includes thick piles of cobbles close to Westminster Street where cobble dumps are obscured by vegetation. The concentration of silcrete cobbles in piles at the eastern crest corner of the Bell property is likely the result of dumping and disturbance. The area retains little of the original character of a St Marys Formation exposure due to this artificial accumulation of silcrete cobbles. The impact of dumping and disturbance could not have been identified in the original ENSR assessment and report without the detailed recording as undertaken for this new review.

Notwithstanding the likely continuing occurrence of subsurface silcrete on adjacent blocks located on the hill top, the land includes an occurrence of silcrete which has been previously recognised as a suitable representation of a natural silcrete source with Aboriginal heritage value. The new recording of confirmed flaked artefacts in association with the natural cobbles confirms that the silcrete source was a confirmed Aboriginal quarry, albeit one with rare artefactual evidence. Aboriginal quarrying activity most likely comprised for the most part of collection of small cobbles. The reduction of primary cobbles on archaeological sites distant from sources has been demonstrated in an assemblage excavated by the author at area "OP2" at Oran Park.

The archaeological evidence as reported does not support previous findings for conservation of the whole land. Archaeological evidence warranting long term management for protection of heritage values is limited to the area above the 50 m contour. Furthermore, the degree of disturbance warrants some measure of active site restoration as part of reserve development. Restoration of trenches, berms and previously dumped piles of silcrete cobbles to a natural condition should be conducted according to a detailed site restoration plan prepared in consultation with the local Aboriginal community stakeholders.

2.5 DECCW Comments on this Advice

DECCW review stated,

The recommendation that at site RAA11 'restoration of trenches, berms and previously dumped piles of silcrete cobbles to a natural condition should be conducted according to a detailed site restoration plan prepared in consultation with the local Aboriginal community stakeholders' is an impractical and is not justified based on the information provided (sic).

In response to the DECCW comment, the recommendation by AECOM for conserving the specified area at RAA11 was because the area demonstrated one aspect of the scientific heritage values of the Riverstone and Alex Avenue area, namely the presence of a significant local silcrete resource in its natural state. This heritage value had been identified in the ENSR report. Past concern had been expressed by the Darug Custodian Aboriginal Corporation for recognition of naturally occurring silcrete as having socio-cultural value to the Aboriginal community (Darwala-Lia 1999). Restoration of the area is warranted because of the current unsightly disturbance to the area due to dumping and past berm construction. Given the socio-cultural value of the area identified, Aboriginal stakeholders should be consulted in how restoration is to be managed. The restoration is not an impractical measure, given that it might be compared with commonly implemented practices of landcare in the wider community.

3.0 Site RAA23

3.1 Location and Previous Description

The area described as RAA23 in the ENSR report text and field notes comprises the cultivated area of 50 m x 50 m at the eastern end of the Baiada property (114 Alex Avenue). The site is described as a "background scatter and archaeological deposit" in the ENSR 2008 report as follows.

This site is an extensive background scatter located within a large market garden adjacent the upper tributaries of First Ponds Creek within Transect 70, between Alex Avenue and Hambledon Road... The ongoing 'turnover' of the soil profile as part of the market gardening process in this location has exposed an extensive number of artefact in an area approximately 50 m x 50 m in size. The site extended across the entire exposed market garden in this location, which was contained in the north by the creek, and by dams to the north and northeast. Areas to the east and southeast continued to show evidence of stone artefacts... and it is believed the site extends to the east and southeast of the core concentration. However, the site has been extensively impacted by the market garden and other agricultural activities in many areas..... While the sites has been extensively turned over by the market garden, the area has been identified as a PAD, since it is believed that artefacts will be found within the subsurface deposits, regardless of their stratification. There is further potential that the market garden may have only impacted the surface soil profile of this site, and therefore there may be potential for stratified material below the disturbed market garden activities..." (Table 5 p.64).

While the area actually observed in the field was the 50 m x 50 m market garden area, the area of constraint comprising site RAA23 is also described as 200 m x 200 m in extent (p.2; p.90). The coordinates provided in Table 5 p.64 define the area just slightly larger than the market garden at 114 Alex Ave, i.e. around 65 m x 65 m. The actual size of the cultivated area described by Williams is closer to these dimensions. The inconsistency in the ENSR report with regard to site size reporting may be due to a late decision on the part of Williams to change the area of constraints from the area of observed artefacts to a larger area where there was some uncertainty about the presence of stratified archaeological deposit. The revised area changes were not reflected throughout the report. The final mapped polygon on Figures 7, 9 and 10 of the ENSR Report reflects a non-metric symbol used on large scale maps (approx. 1:33,333 at A3) by the ENSR graphic artist and does not accurately represent the size or boundaries of the heritage constraint reported.

The site is variously described as a PAD (Potential Archaeological Deposit) and as an archaeological deposit within Table 5 on page 64. The difference between the two terms is described in a footnote on pp.50-51, and relates to the absence of archaeological surface evidence at a PAD. The term "archaeological deposit" is more appropriate where surface artefacts are present.

3.1.1 Previous Assessment

Approximately 50 artefacts were recorded within the small area of market garden observed. The site is assessed as being of high significance due to the assessed potential for stratified archaeological deposits which are assumed to have survived below the level of cultivation. Stratified deposits are normally defined as discrete layers of soil which preserved chronologically discrete archaeological assemblages which, when analysed, can reveal the sequence of prehistoric activity at a site and also accurately reveal the earliest age of occupation at a site.

The site is described as heavily disturbed (p.64, p.80) to the extent that the site is not of social or aesthetic value, and is of "lesser significance" than the extensive A7 complex site to the north along First Ponds Creek (pp.84-85).

3.2 2009 Inspection and Recording

3.2.1 Method

Certain properties adjacent to the original area of site RAA23 were inspected on 23 June 2009 by AECOM archaeologist Neville Baker. The purpose of the inspection was to record data on artefact occurrence on and around the area originally inspected by Williams. While permission was not provided for inspection of the original market garden area observed in 2007, inspection was undertaken by permission on relevant areas of 95, 97 and 99 Hambledon Road – properties which back onto First Ponds Creek and the original site location, and 108 Alex Avenue which adjoins the original site. Permission to enter was sought from the owners of 114 Alex Ave and 116 Alex Ave and was not granted.

No artefacts were observed on these properties. Excellent visibility was afforded at 95 Hambledon Road due to market gardening activities. 100% visibility and 100% exposure was provided in the cultivated area nearest the western boundary of the property by First Ponds Creek. Other properties inspected were grass covered. One piece of natural silcrete gravel was found towards the rear of 99 Hambledon Road in a cultivated area immediately east of a large farm dam.

3.2.2 Extensive Disturbance

The condition of the originally observed area could be determined through observations from adjoining properties and through conversations with Mr John Baiada, the son of the present owner of the land in which RAA23 was originally recorded by Williams. According to Mr Baiada, his father had deep ripped the area of the market garden and adjacent dam by bulldozer in the 1980s. The creek had been artificially channelized in the vicinity of this property (114 Alex Ave) and others adjacent. These impacts were greater than envisaged in the original archaeological assessment.

3.3 Archaeological Reassessment

The lack of permission to access 114 Alex Avenue did not allow the precise GPS mapping of artefacts within the area of land originally observed in 2007. The original qualitative description in the ENSR report is not disputed, as the location of artefacts close to creeks is typical. However, there is no local or regional basis for inferring the presence of stratified archaeological deposit or for the 200 m x 200 m extent of site RAA23.

An archaeological *site* is defined here as the location where artefacts may be observed or are known to occur or may be reliably inferred within archaeological deposit. The observations of soil exposures on land backing onto 114 Alex Avenue failed to locate artefacts despite the excellent visibility and exposure conditions. This indicates that there is not a large *site* as suggested by the mapping and certain textual descriptions in the ENSR report. Observations in 2009 support the position that the boundaries of site RAA23 are best regarded as the area of market garden originally observed at the eastern end of 114 Alex Avenue.

Most importantly, the new information provided by Mr Baiada about the extensive earthworks and deep ripping undertaken on the property was not known in 2007 during the original assessment. This new information as well as general soil conditions and disturbance point to the conclusion that there is no stratified archaeological deposit present and nor is there any likely at RAA23. Furthermore there is no mention of suitable soil conditions nor of stratified archaeological deposit in the nearby Second Ponds Creek archaeological project completed in 2005 for Landcom.

The prior disturbance of soil at RAA23 is greater than envisaged in the ENSR report. The degree of disturbance would have irreparably spoiled the integrity of archaeological deposits, whether stratified or not and thus would have compromised the research potential of the site. There is no archaeological precedent nor any recorded observations supporting the description of stratified archaeological deposit along First Ponds Creek where the site was recorded.

Site RAA23 is of low archaeological significance due to the highly disturbed nature of the site, the typical and unexceptional nature of the archaeological assemblage of Aboriginal stone artefacts and the lack of research potential related to stratified archaeological deposit. This revised assessment is made in light of new information about past earthmoving and better conditions of visibility available during the inspection for this review. Despite lack of permission to access two properties of relevance, visibility was identified by observation from adjoining properties.

If the original socio-cultural assessment by the Aboriginal community, suggested in the ENSR report on p.82, was tied to the archaeological significance and perceived need to test excavate, then this socio-cultural assessment also warrants revisiting.

There is no basis for a heritage constraint on land use consistent with surrounding areas in the Indicative Layout Plan (ILP) because there are no good grounds for assessing the site as of high scientific significance.

4.0 Review of Aboriginal Heritage Approval Process

The ENSR report identified a total of 37 Aboriginal sites within Riverstone and Alex Avenue Precincts. Areas of total constraint, test excavation, salvage collection and salvage excavation are proposed. These recommendations are reviewed and revised here.

4.1 Revised Constraints

Four areas of constraint were identified in the ENSR report:

- a) the A7 complex – a highly significant series of contiguous sites along First Ponds Creek largely lying outside of the precinct boundary;
- b) site RAA23 (200 m x 200 m area);
- c) site RL3 located by Loftus Street; and
- d) site RAA11.

The low scientific significance of RAA23 does not warrant a heritage constraint.

Site RL3 as recorded by Lee (trading as Darwala-Lia) is a re-recording of site LL-OS-01 by archaeologist Robynne Mills. Although the ENSR Report states that no artefacts were observed in 2007, inspection by AECOM in 2009 confirmed the presence of flaked stone artefacts along the unsealed Loftus Street over an area of very gentle slope and creek flat between the transmission line in the west and the unnamed creek in the east. The difference in observations is likely the result of typical changes in visibility due to changing environmental conditions. Test excavations by Mills in 1998, not referred to in the Lee 1999 report or the ENSR report, reported stone artefacts within the soil along Loftus Street and the area immediately south between the transmission line and Windsor Road. The sites were referred to as LL-OS-01 and LL-OS-02, although both are subsumed within the AHIMS site code 45-5-2526. This site will be impacted by the proposed main road indicated in the ILP. While a large area has been designated conservation area, the archaeological deposit within the Loftus Street road reserve identified by Mills 1998 and indicated by the presence of surface artefacts will require S90 AHIP.

The area defined as RAA11 may be refined to reflect the limited distribution of natural and artefactual silcrete items. Constraint over the areas of land devoid of silcrete on the land owned by Mr Bell is not warranted on heritage grounds.

The revised list of areas of constraints in light of more recent archaeological observations are:

- a) the A7 Complex;
- e) site RL3 (45-5-2526) south of Loftus Street road reserve (allowing for road development); and
- f) site RAA11 above the 50 m contour.