



Cape Chestnut, Menangle Village.

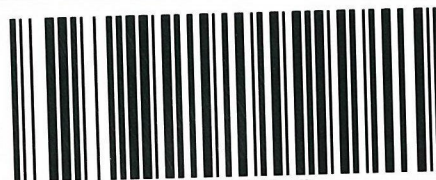
Menangle Community Association

Care, Honour, Heritage

Maurice Blackwood.
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Douglas Park, NSW. 2569

Department of Planning
Received
12 NOV 2015
Scanning Room

10th November, 2015.



PCU062670

David Fitzgibbon

Senior Precinct Planner
Housing Land Release
Department of Planning & Environment
GPO Box 39 SYDNEY NSW 2001

Dear David,

Re: The Greater Macarthur Development Investigation

Please find enclosed a memory stick with the large files we discussed.

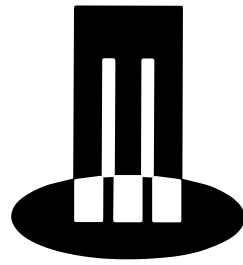
These are the two major reports about the heritage significance of the Menangle Village, and its Landscape.

- a. Menangle Landscape Conservation Area Assessment of Significance and Proposed Boundaries, June 2012, completed for Wollondilly Council, prior to its approval and gazetting. This is the second conservation.
 1. This report details the heritage significance of the Menangle Village and its Landscape.
 2. It confirms that the area achieves most if not all of the seven criteria of the NSW Heritage Act 1977. (Page 136, 5.4), but no such listing has ever been sought, because it will not save the landscape from proposed developments from our experience.
- b. BHP's Non Aboriginal Heritage assessment, 2009, completed prior to mining.
 1. The report lists 22 items of heritage in Menangle Village; such is the density of heritage in Menangle.
 2. These 22 items of heritage interest, judged by the heritage author as being significant, are mostly unlisted, because again there is no purpose in doing so.
 3. These 22 items all achieve the minimum of two of the seven criteria of the NSW Heritage Act 1977, with an average of 3.9, indicating their high degree of significance.
 4. This is confirmation of the areas significance on its own apart from the associations to the Camden Park Estate area which unbelievably is outside your area of examination!

I do hope you will be able to correct your draft strategy to reflect the heritage in Menangle and that somehow you better identify the area as previously requested.

Yours sincerely,

Maurice Blackwood, Menangle Community Association. Ph 0417218462.



MUSEcape

MENANGLE LANDSCAPE CONSERVATION AREA ASSESSMENT OF SIGNIFICANCE & PROPOSED BOUNDARIES



A Report prepared by Chris Betteridge, **MUSEcape Pty Ltd**
for
Wollondilly Shire Council

Final Draft, 19 June 2012

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SPECIALISTS IN THE IDENTIFICATION, ASSESSMENT, MANAGEMENT & INTERPRETATION
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Figure 1 (Front Cover): (Top): *Menangle Viaduct* 2010-11 by artist Michael Fitzjames, oil on linen, 30.5 x 106.5cm); **(Centre):** Panoramic photograph of part of study area viewed from Elizabeth Macarthur Agricultural Institute by Chris Betteridge, 1 May 2012; **(Bottom):** Panoramic photograph of part of study area from the south by Chris Betteridge, 1 May 2012.

Executive Summary

This assessment of the significance of the landscape around the Menangle Village Conservation Area has been commissioned by Wollondilly Shire Council (WSC) and prepared by Chris Betteridge of **MUSEcape** Pty Ltd, Heritage Consultants. This study has been prepared in response to development proposals for lands to the north and east of the village which pose potential threats to the cultural landscape heritage values and ambience of the village and its setting.

The findings in this assessment generally agree with the advice prepared by Dr Peter Kabaila, consultant Heritage Adviser to WSC and dated 14 April 2011 and recommend creation of a Landscape Conservation Area to protect the historical, associational, aesthetic and other heritage values of the wider cultural landscape setting of Menangle Village.

It finds that the boundary for the existing Menangle Village Conservation Area has too limited a focus, concentrated on the historic core of the village, and omits significant areas related to the historic boundaries of the former Camden Park estate and the Macarthur and Onslow families' agricultural enterprises as well as significant individual heritage items including the former Menangle Creamery, the Rotolactor site, the Menangle Railway Station, the Menangle Railway Bridge and Gilbulla.

In the opinion of this author lands to the east of Menangle Road, including sites both north and south of Station Street, Menangle, and Gilbulla, to the southeast of the village, are just as significant, if not more so, than paddocks on the western side of Menangle Road within the Elizabeth Macarthur Agricultural Institute (EMAI). Significant sites within EMAI and Camden Park are included on the State Heritage Register whereas those outside, with the exception of the Menangle Railway Station group and the Menangle Railway Bridge, are not. This omission should be rectified.

An analysis of the existing Menangle Village Conservation Area reveals the outstanding cultural heritage values that the area possesses as a result of its, its strong historical associations, its aesthetic landscape qualities, historic settlement patterns and tightly controlled recent development as a result of implementation of Wollondilly Development Control Plan (DCP) No.41. There is wide support in the local community for greater recognition and improved protection of the wider cultural landscape setting for the village.

External pressures for residential subdivision and employment-generating development are perceived threats to this cultural landscape, particularly in the visually sensitive areas between Station Street, the main Southern Railway Line and the Nepean River to the east and north.

It is acknowledged that there are opportunities for further sympathetic development related to heritage interpretation, cultural tourism and recreation and some potential for further sympathetically located and designed

residential and rural development subject to strict planning controls designed to conserve and enhance the cultural landscape heritage values.

Perceived threats include the risk of over-development of the type that has adversely affected many historic villages in Australia, traffic and parking impacts posed by increased population density, a proliferation of directional and advertising signage, unsympathetically located and designed rural structures such as farm sheds, the visual impact of new developments and possible associated road and other infrastructure upgrading.

A cultural landscape conservation approach is recommended, rather than an emphasis on individual items with limited curtilages. To provide for a greater degree of protection for heritage values, a more inclusive boundary is proposed. A flexible approach to new development is recommended, including the possibility of a land swap or transfer of development rights from the currently approved residential strip development on the northern side of Station Street to another, less visually sensitive site.

Measures designed to protect the area's heritage values are recommended.

A list of sources consulted and useful references is provided.

1.0 Introduction

This section provides background on the need for the assessment, the methodology employed, author details, acknowledgments, limitations and a disclaimer, a list of measurement units, abbreviations and conservation terms used in the text..

1.1 The Brief

In November 2011 Wollondilly Shire Council commissioned Chris Betteridge, Director, **MUSEcape** Pty Ltd to carry out a detailed heritage assessment to support Council's Planning Proposal for a Landscape Conservation Area around the village of Menangle. The brief required that the study should address the matters outlined in the NSW Department of Planning and Infrastructure Gateway determination received by Council on 31 August 2011. In its letter to Council the Department acknowledges the intent of such a proposal and "supports, in principle the rationale to conserve the character of the rural landscape pending future growth and development within the vicinity of the village".

However, the Department has deferred the issue of a Gateway determination in this matter pending the preparation of a detailed heritage study that "should clearly identify the heritage value of the land, the characteristics of the landscape that Council intends to preserve and detailed consideration of how Council intends to achieve its objectives. The study should pay particular attention to the proposals [sic] inconsistency with section 117 Direction 3.1 Residential Zones and should justify the impact of the proposal on potential future residential growth in the area and intended impact of a landscape conservation area on the built form."

1.2 The Study Area

The Study Area is shown in the map below and includes major parts of the visual catchment of Menangle Village including the historic village, retirement village development to the south, agricultural land to the north, parts of the Elizabeth Macarthur Agricultural Institute and private farm land to the west. Lands to the east of the main Southern Railway Line and west of the F5 Freeway are also considered, including the historic property Gilbulla.



Figure 2 The Study Area edged red. (Source: Google Maps)

1.3 Methodology

This heritage landscape assessment has included the following steps:

1. Review of current and previous planning instruments, plans and reports relevant to the landscape and visual qualities of the area, analysis of archival and recent aerial photographs, with additional library and web-based research to inform determination of a practical boundary for a landscape conservation area;
2. Site inspections, involving assessment of townscape / cultural landscape character including limited analysis of views and vistas to, from and within the potential area;
3. Consultation with relevant Wollondilly Shire Council staff, consultants and other stakeholders, particularly in regard to the management of the existing conservation area boundaries and potential constraints and opportunities arising from extension of those boundaries to create a landscape conservation area. The adequacy of existing controls under Wollondilly LEP 2011 and the shire-wide Development Control Plan in comparison with the previous site-specific DCP No.41 – Menangle Village has been analysed;
4. Analysis of documentary and physical evidence, enabling assessment of significance against Heritage Council criteria to enable preparation of a statement of significance for the area around Menangle Village, including its component elements. The report includes a brief

description of the cultural landscape of the Study Area and a table of all listed and some potential heritage items within the Study Area;

5. Consideration of relevant issues, constraints and opportunities and recommendation of a boundary for a Landscape Conservation Area to complement the existing Menangle Village Heritage Conservation Area, with justification for boundary determination.
6. Development of draft guidelines for new development within the proposed Landscape Conservation Area.

1.4 Authorship

This report has been prepared by Chris Betteridge, BSc (Sydney), MSc (Leicester), AMA (London), MICOMOS, Director of **MUSEcape** Pty Ltd, specialists in the identification, assessment, management and interpretation of cultural landscapes. The author was Specialist – Environmental / Landscape in the Heritage & Conservation Branch, NSW Department of Planning for ten years (1978-88), then in a variety of senior management positions in NSW Government agencies. He has been in private practice as a heritage consultant since 1991, including eight years as consultant Heritage Advisor to both Wollondilly Shire Council and Port Stephens Council. Chris specialises in the conservation of significant places, including some of the most important cultural landscapes in NSW. He has prepared or contributed to conservation planning documents for many significant sites and has particular experience on community-based heritage studies, heritage conservation areas and the settings of significant heritage places. Chris is listed on the Register of Consultants maintained by the Heritage Branch, Office of Environment and Heritage, NSW Department of Premier and Cabinet.

Chris has recently completed a Conservation Management Plan (CMP) for the Macarthur Family Cemetery near Belgenny Farm and was part of the team which has prepared the CMP Review for the Elizabeth Macarthur Agricultural Institute (EMA). In recent years he has also prepared visual and landscape impact assessments for soil and sand extraction proposals at Menangle Park and Spring Farm and for employment-generating development proposals at Glenlee.

1.5 Acknowledgments

The assistance of the following individuals in the preparation of this report is gratefully acknowledged:

Rosemary Annable
Margaret Betteridge, **MUSEcape** Pty Ltd;
Maurice Blackwood;
Graham Brooks, Graham Brooks & Associates;
Martin Cooper, Wollondilly Shire Council;
Alan Hobbs;
Peter Kabaila, Heritage Adviser to Wollondilly Shire Council;
Richard Lamb, Richard Lamb & Associates;
Menangle Action Group;

Menangle Community Group;
 Sophie Perry, Wollondilly Shire Council;
 Brian, John and Lisa Redmond;
 James Sellwood, Wollondilly Shire Council;
 Brian Tench;
 Kate Terry;
 Peter Wright, Wollondilly Shire Council;

1.6 Limitations & Disclaimer

Research was limited to those sources readily available to the author within the timeframe of the study. Identification and assessment of sites was limited to external visual investigations from the public domain and no physical intervention into heritage items or conservation areas was carried out. No historical archaeological assessment of the study area was made. The potential for Aboriginal relics and non-indigenous archaeological sites is acknowledged but their investigation was beyond the scope of this study.

This document may only be used for the purpose for which it was commissioned and in accordance with the contract between **MUSEcape** Pty Ltd (the consultant) and Wollondilly Shire Council (the client). The scope of services was defined in consultation with the client, by time and budgetary constraints agreed between the consultant and client, and the availability of reports and other data on the site. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up-to-date information. **MUSEcape** Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report and its supporting material by any third party. Information provided is not intended to be a substitute for site specific assessment or legal advice in relation to any matter. Unauthorised use of this report in any form is prohibited.

1.7 Definition of Terms

The following terms from the Burra Charter of Australia ICOMOS have been used in this document.

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

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

Fabric means all the physical material of the *place* including components, fixtures, contents, and objects.

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

Maintenance means the continuous protective care of the *fabric* and *setting* of a *place*, and is to be distinguished from repair. Repair involves restoration or reconstruction.

Preservation means maintaining the *fabric* of a *place* in its existing state and retarding deterioration.

Restoration means returning the existing *fabric* of a *place* to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.

Reconstruction means returning a *place* to a known earlier state and is distinguished from *restoration* by the introduction of new material into the *fabric*.

Adaptation means modifying a *place* to suit the existing use or a proposed use.

Use means the functions of a *place*, as well as the activities and practices that may occur at the *place*.

Compatible use means a use which respects the cultural significance of a *place*. Such a use involves no, or minimal, impact on cultural significance.

Setting means the area around a *place*, which may include the visual catchment.

Related place means a place that contributes to the *cultural significance* of another place.

1.8 Abbreviations

AEP - Annual Exceedance Probability (Flood Extent);
 AHC - Australian Heritage Council;
 AMP – Archaeological Management Plan;
 BCA – Building Code of Australia;
 BFT – Belgenny Farm Trust;
 CA – Conservation Area;
 CC – Camden Council;
 CMP - Conservation Management Plan;
 CP – Conservation Plan;
 DA – Development Application;
 DCP - Development Control Plan;
 DECCW – NSW Department of Environment, Climate Change and Water;
 DEP – NSW Department of Environment and Planning;
 DOP - NSW Department of Planning;
 DoPI – NSW Department of Planning and Infrastructure;
 DPI – NSW Department of Primary Industries;
 EMAI – Elizabeth Macarthur Agricultural Institute;
 EP & A Act – *Environmental Planning & Assessment Act 1979*

EP & A Regulation - *Environmental Planning & Assessment Regulation* 2000;
 HCA – Heritage Conservation Area;
 HIS – Heritage Impact Statement;
 ICOMOS - International Council of Monuments and Sites;
 IDA – Integrated Development Application;
 ILP – Indicative Layout Plan;
 JMAI – John Macarthur Agricultural Institute;
 JRPP – Joint Regional Planning Panel;
 LEP - Local Environmental Plan;
 LMP – Landscape Management Plan;
 MV – Menangle Village;
 MVCA - Menangle Village Conservation Area;
 NPWS – National Parks and Wildlife Service;
 NT - National Trust of Australia (New South Wales);
 PCO – Permanent Conservation Area;
 PP – Planning Proposal;
 REP – Regional Environmental Plan;
 RNE – Register of the National Estate;
 SEPP – State Environmental Planning Policy;
 SHR - State Heritage Register;
 SOHI - Statement of Heritage Impact;
 TSC Act – *Threatened Species Conservation Act* 1995;
 WSC – Wollondilly Shire Council.

1.9 Measurement Units

Many of the historical documents relating to the Study Area have distances and areas measured in imperial units such as miles and acres. These have been converted to metric units and where possible both are shown in the text. Set out below are conversions for some imperial measurement units that may be found in the history and description of the site.

Distance

1 inch = 2.54 centimetres;
 1 foot = 30.48 centimetres;
 1 yard = 91.44 centimetres;
 1 rod = 5 1/2 yards or 16 1/2 feet = 5.0292 metres;
 1 rood = 5 1/2 to 8 yards, depending on local variations;
 1 chain = 66 feet = 20.1168 metres;
 1 mile = 5,280 feet = 1,760 yards = approximately 1.6 kilometres

Area

1 square rod = 1 perch = 30 square yards = 25.29 m²;
 1 rood = 40 square rods or 1/4 acre = approximately 1011.714 m²;
 1 acre = 4,840 square yards = 160 perches = approximately 0.405 hectare

Jyoti Somerville carried out a brief review of the historical origins of Menangle Village together with a building by building examination of its existing physical fabric, which revealed a settlement of considerable historic, social and visual significance which had undergone a number of changes particularly to its early building stock.

The consultant found that amongst its buildings the village featured a number of somewhat "out of character" modern structures as well as alterations to early buildings which were not particularly sympathetic to the original. As a whole, however, Jyoti Somerville was of the opinion that the village had retained the essential elements of its early layout and architectural character, patterns of landscape treatment and visual and social cohesiveness.

Accommodating additional residential development in Menangle on the scale then envisaged became, in this context, an issue of some concern and one not simply solvable by the provision of development controls for individual buildings. More important, in fact, was the need to address the impact of the scale and location of the proposed new development on the village, particularly in relation to the physical and visual curtilages of significant heritage items (St James' Church being the most important).

Jyoti Somerville prepared guidelines for the appropriate siting of the proposed new subdivision allotments as the essential precursor to the provision of building controls to highlight their priority in ensuring such development does not *"detract from the heritage significance of Menangle"*. General development controls for new buildings were then prepared, based on the significant characteristics of existing early buildings. General recommendations for streetscape upgrading were also made using the important qualities of the early village as their basis and essential reference point.

2.2 Draft Menangle Village Development Control Plan

Somerville expressed considerable concern that the number, extent and visual exposure of new residential developments proposed for Menangle posed a very real threat to the heritage values of the village and its setting which would require very detailed development controls. Her subsequent draft Menangle Village Development Control Plan was very detailed and comprehensive, addressing the following heads of consideration.

- Siting
- Proposed subdivision along Station Street and Menangle Road (north);
- Proposed subdivision to north of St James Church site;
- Development on south side of St James Church site;
- New buildings;
 - Site area;
 - Building height;
 - Building alignment;
 - Building and roof form;

- Façade character, including features which should not be used on prominent front or side elevations;
- Materials;
- For roofs;
- For external walls;
- Materials which should not be used;
- Garages and vehicular access;
- Fences.

2.3 Menangle Village Conservation Area and DCP

The village of Menangle was identified as Menangle Village Conservation Area (MVCA) in *Wollondilly Local Environmental Plan 1991 Amendment No. 3*, gazetted on 11 December 1992. *Wollondilly Shire Council Development Control Plan (DCP) No 41 – Menangle Village* was updated in March 2000. The DCP, developed from Jyoti Somerville's draft documents, also applies to that land south of the village outlined in *Wollondilly LEP 1991 Amendment No.6*. The area covered by the DCP is shown on the map below.

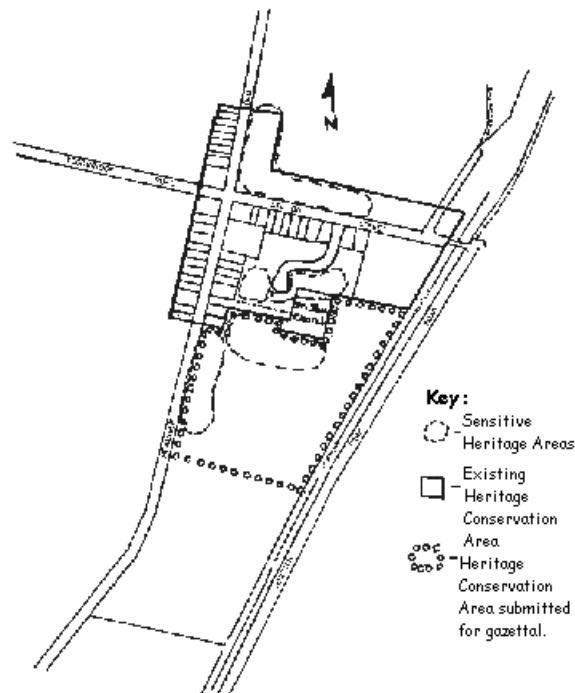


Figure 4 Map showing the sensitive heritage areas identified in Wollondilly DCP Menangle Village. (Source: Wollondilly Shire Council).

2.4 Macarthur South Paper, Regional Environmental Study 1991

Other planning studies of the region were being carried out at the same time as the Wollondilly Shire Heritage Study and the studies of Menangle Village.

The Macarthur South Paper, Regional Environmental Study 1991 concluded that "Development of Macarthur South should take into account its unique landscape and its natural and cultural elements as these play an important role in contributing to its visual character and living environment. Appropriate conservation strategies will be required. These strategies include preservation, reinforcement of character and

management. They may include acquisition or the retention of land in private ownership under strict environmental and development controls¹.

Areas identified by the Macarthur South Paper which have environmental and visual significance and for which particular treatment is suggested include:

- Razorback Range and foothills which include Spaniards Hill;
- Menangle Hills²;
- Nepean River and its tributaries;
- Beulah Forest and Beulah / Menangle Creek wildlife corridor;
- Areas adjacent to the Hume Highway corridor;
- Heritage buildings and sites;³

Ridgetops and localised high points give visual definition to the area and some of the ridgetops like Spaniards Hill could be acquired to provide lookouts and open space⁴. The Menangle Hills provide an important rural backdrop when viewed from within the study area at Menangle, the Hume Highway and the railway line⁵.

The Macarthur South Paper states that travellers along the Hume Highway will get their first impression of Sydney from the Macarthur South, the area near Menangle will require innovative planning and landscaping, this area could be used for both passive and active open space⁶. Razorback Range, its footslopes, and the Menangle Hill should be retained as a scenic backdrop⁷.

In July 2009 the NSW Government announced it had cancelled plans to investigate the feasibility of a huge new housing release in Macarthur South in Sydney's south west because it would be too costly. The then Planning Minister, Kristina Keneally, said investigations into the suitability of the 17,000 hectare site 25 kilometres south of Campbelltown would cease as other land could be developed more cheaply. She said infrastructure costs were estimated as "more than \$100,000" per lot for the 62,000 houses, a figure she said was "prohibitively expensive".⁸

2.5 Wollondilly Vision 2025

Wollondilly Vision 2025, a strategic planning document released by Wollondilly Shire Council in 2004 following consultant studies and extensive community consultation, identified a vision and strategies for various towns and villages within the local government area. The vision and strategy for Menangle were identified as:

Vision

A consolidated village centre and maintained rural setting.

Strategy

- maintain views to rural land and bushland at the end of new streets;
- strengthen road and rail infrastructure;
- nominate 1 in 100 flood zone as town edge;
- Create vibrant mixed use hub at rail station / interchange;

¹ *Macarthur South Paper, Regional Environmental Study 1991*, p.76

² *Macarthur South Paper, Regional Environmental Study 1991*, map 4, p.35

³ *Ibid.*, pp.76-7

⁴ *Ibid.*, p.79

⁵ *Ibid.*, p.26

⁶ *Ibid.*, p.77

⁷ *Ibid.*, p.26

⁸ *Sydney Morning Herald*, 23 July 2009

- create a town edge street to reinforce the town extents;
- maintain visual prominence of hilltop church and develop its curtilage as a public park; and
- investigate opportunities for sporting fields and open space in 1 in 100 year flood zone.

Maps supporting the *Vision 2025* document indicated the investigation of possible future employment opportunities on land between Menangle and the F5 freeway.

2.6 Wollondilly Economic Development Study 2007

This economic development study was adopted by Wollondilly Shire Council in April 2008. The goals of the strategy are to encourage increased business investment, good jobs and learning opportunities within a framework that improves the quality of life of residents and values the area's outstanding natural environment. There are no specific recommendations in regards to the Menangle area.

2.7 Wollondilly Industrial Lands Assessment Criteria March 2008

Wollondilly Shire Council adopted a criterion for the assessment of the suitability of lands for industrial development purposes.

In August 2008, consultants Environmental Resources Management (ERM) Australia prepared a report for Macquarie Bank Limited identifying the Constraints and Opportunities Mapping for a proposed development site of approximately 580 hectares adjacent to Menangle Village, as shown on the map below.

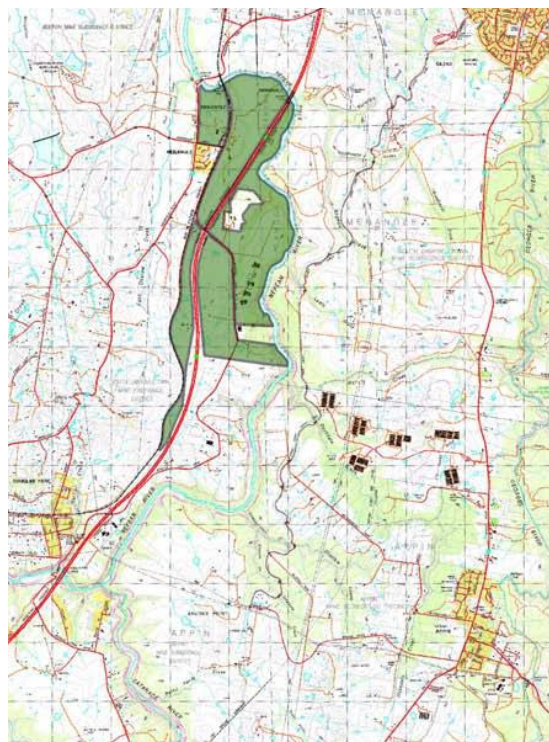


Figure 5 Map showing proposed development sites adjoining Menangle Village and along Moreton Park Road studied by ERM Australia for Macquarie Bank. (Source: ERM Australia Pty Ltd).

ERM identified those assessment criteria that they considered might impact on the development potential of their study area as follows:

- the consistency of the project with the South West Regional Strategy;
- provision of a 50m buffer from the top of the bank of major water courses;
- the provision of appropriate buffers to native habitats and the protection of sensitive areas within the riverine corridor;
- need for buffers to protect residential amenity;
- protection of critical habitat and significant tracts of remnant vegetation;
- exclusion of land affected by the 1% AEP event;
- exclusion of land having a slope of more than 1 in 10 (9%);
- impact on existing or future coal mining operations, including subsidence impacts;
- bushfire hazard;
- aboriginal and cultural heritage values;
- impact on visual catchments;
- impact on agricultural significance of the land and adjoining land;
- size and shape of land;
- access; and
- availability of infrastructure services.

At a meeting between ERM and Peter Wright, Wollondilly Shire Council's Strategic Planning Manager on 9 July 2008 to ascertain Council's position in regard to employment lands generally and to discuss the potential for development of ERM's study area, the following points were raised:

- Council's economic development strategy recognises the need for increased employment opportunities in the LGA and the strategic importance of the freeway corridor;
- the Sydney Metro Strategy deferred development of Macarthur South for 25 years. The recently exhibited South West Sydney Strategy identifies the study area as a potential employment site but without infrastructure and services;
- one of the problems of the Macarthur South area is the lack of infrastructure and its relative isolation from the nominated growth centres. APP has been commissioned by the Department of Planning to prepare a infrastructure analysis for the Macarthur South area;
- Council is in two minds about employment generating uses at Menangle. On one hand it has the potential to increase employment opportunities but on the other it would have a major impact on the rural ambience which is valued by many residents; there is a concern that warehouse style uses of the study area would not deliver employment benefits. Any development would need to be designed to attract employment generating uses;
- the residents of Menangle are concerned about the nature of any future use of the study area and the potential hours of operation. The village is a conservation area with high amenity. It is important that any development retains the rural ambience of this village. A curtilage to the conservation area needs to be identified and retained;
- the Menangle community would be looking for community benefits such as access to the river, walking/cycle tracks along the top of the river bank;
- Campbelltown Council have prepared a draft LEP to allow residential development in the southern part of the LGA. Development of the study area for employment uses may complement this development in

- Campbelltown;
- employment uses may assist in providing a critical mass to extend the electrification of the railway;
- Wollondilly Shire Council has supported a rezoning of land at Maldon for industrial use and a draft LEP is being prepared. Council has developed industrial lands assessment criteria;
- the study area is at the Gateway to the Wollondilly LGA, adjacent to the Nepean River. This would need to be respected in any design scenarios; and
- Council does not have information that suggests the land is of high agricultural value.

In its conclusions on non-indigenous cultural heritage, ERM found:

“Development [within the ERM study area] has the potential to impact upon the heritage listed sites and values both within and adjacent to the study area. Potential impacts may occur directly upon heritage sites or through developments which alter the context and setting that contribute to the heritage values of a site or the conservation zone.

A Heritage Impact Assessment would be required as part of the approval process. The detailed impacts analysis would need to consider options to avoid and minimise adverse heritage impacts, including visual as well as physical impacts. These mitigation measures may include ‘buffer zones’ around heritage sites and conservation areas, and interpretation strategies.”

2.8 Draft Wollondilly LEP 2009

Draft Wollondilly LEP 2009 extended the Menangle Village Conservation Area to the north and east to include part of Lot 201 DP 590247, part of Lot 21 DP 581462, part of the railway line, the Menangle Railway Station and part of Moreton Park Road, as shown on the map in Section 2.11 below.

2.9 Planning Proposal Employment Lands Moreton Park Road, Menangle

In 2010 Wollondilly Shire Council received a Planning Proposal (formerly known as a rezoning application) for Employment Lands in the vicinity of Moreton Park Road, Menangle. The subject land is situated southeast of Menangle village straddling the Hume Highway/F5 Corridor. The land is bordered to the west by the Main Southern Railway and the Nepean River to the east and is located on both sides of Moreton Park Road. The subject site is approximately 600 hectares in size of which the planning proposal identifies approximately 240 hectares to be rezoned for employment uses.

A report by Council staff to Council on 26 August 2010 acknowledged the site’s potential for employment lands, however it also acknowledged that there were a number of unresolved matters affecting its suitability, capacity, and appropriate timing.

Accordingly the report recommended that Council indicate its in-principle support for the planning proposal subject to it being amended and resubmitted by the applicant so as to address the following matters:

- a) The need to reducing the scale of the proposal to reduce its landscape and heritage impacts;

- b) Key Policy Directions from the Draft Growth Management Strategy P1, P2, P5, P11, P12, P14, P15, P17, P18, P21;
- c) Relevant Key Directions of the draft South West Sub-regional Strategy relating to the inter-relationship of this site to the longer term development of Macarthur South
- d) Comparison with other potential future land uses which do not require a planning proposal (rezoning) process; and,
- e) Assessment criteria from the draft GMS.

The Report also recommended therefore that the planning proposal not be forwarded to the Minister for a '*Gateway determination*' at that stage. It was considered that the above matters should be addressed by the proponent in consultation with Council's Strategic Planning staff with additional information and a revised proposal being subject to community notification and consultation with the Department of Planning, MACROC and major infrastructure providers before Council could consider supporting the proposal and sending to the Gateway Planning Process.

The Applicant requested the Minister for Planning to delegate the Joint Regional Planning Panel (JRPP) as the Responsible Planning Authority for the proposal. The Minister granted the delegation.

2.10 Elton Consulting Planning Proposal March 2011

In March 2011 Elton Consulting prepared a planning proposal (PP) on behalf of Menangle Pastoral, seeking to amend the principal *Wollondilly Local Environmental Plan 2011* to allow for employment uses on land along Moreton Park Road, Menangle and residential development with a vibrant neighbourhood space adjacent to Menangle village. The Planning Proposal was submitted to the JRPP. The JRPP requested Council to provide assessment comment on the proposal and Council's response is contained in Item PE3 to the Ordinary Agenda of 16 May 2011.

2.11 Wollondilly LEP 2011

The heritage maps for Wollondilly LEP 2011 shows the extended Menangle Conservation Area as well as listed heritage items in the vicinity of the village

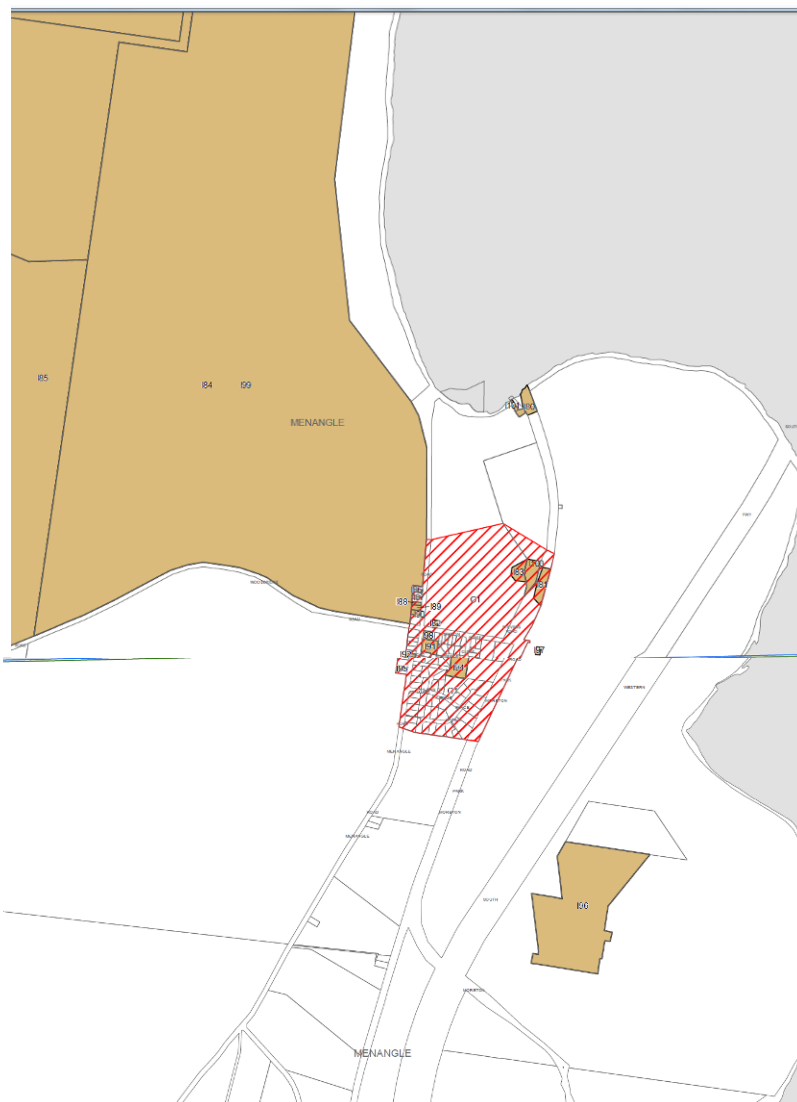


Figure 7 Extract from heritage maps 11D and 10B from Wollondilly LEP 2011, showing expanded Menangle Heritage Conservation Area (MHCA) hatched red, with individually listed heritage items coloured buff. The large buff area to the west and northwest of the village is part of EMAI while the buff area to the southeast of the village is Gilbulla. (Source: Wollondilly LEP 2011)

In addition to the MHCA shown above, Schedule 5 to the WLEP 2011 lists the following heritage items in Menangle.

Description	Address	Property Description	Level	LEP Schedule No.
Slab Hut	40 Carrolls Road	Lot 123, DP 809576	Local	179
Menangle Rail Bridge over Nepean River	Menangle Road (Main Southern Railway)	Nil	State	180

Description	Address	Property Description	Level	LEP Schedule No.
Camden Park Estate— Central Creamery Manager's Cottage	15 Menangle Road	Part Lot 201, DP 590247	Local	I82
Camden Park Rotolactor	15 Menangle Road	Part Lot 201, DP 590247	Local	I83
Bungalow	92 Menangle Road	Lot A, DP 940830	Local	I86
Bungalow	96 Menangle Road	Lot 1, DP 305932	Local	I87
House	100 Menangle Road	Lot 1, DP 587187	Local	I88
Cottage	102 Menangle Road	Lot A, DP 322713	Local	I89
Bungalow	106 Menangle Road	Lot B, DP 322713	Local	I90
St Patrick's Catholic Church	119 Menangle Road	Lot 100, DP 790213	Local	I91
Cottage	124 Menangle Road	Lot 1, DP 979893	Local	I92
Cottage	128 Menangle Road	Lot B, DP 398310	Local	I93
St James' Anglican Church	131 Menangle Road	Lot 1, DP 306367	Local	I94
Cottage	138 Menangle Road	Lot 1, DP 963033	Local	I95
Gilbulla (Anglican Conference Centre)	710 Moreton Park Road	Lot 1, DP 370921	Local	I96
Dairy Cottage	1370 Moreton Park Road	Part Lot 202, DP 590247	Local	I97
Menangle Weir	Station Street	Lot 2, DP 775452	Local	I101
Menangle Railway Station Group	Station Street (Main Southern Railway)	Nil	State	I81
Menangle Store	2 Station Street	Lot 8, DP 531899	Local	I98
Camden Park Estate Central Creamery	45 Stevens Road	Part Lot 21, DP 581462	Local	I100
Dairy No 4 (EMAI Cottage 29)	60 Woodbridge Road	Lot 2, DP 1133910	Local	I84
Menangle Gate Lodge (former)	60 Woodbridge Road	Lot 2, DP 1133910	Local	I99
Dairy No 9 (EMAI Cottage 24)	240 Woodbridge Road	Lot 1, DP 130288	Local	I85

2.12 Wollondilly Development Control Plan 2011

Section 2.2 of Wollondilly DCP 2011 provides general controls and guidelines for conserving heritage in the local government area as well as guidelines for new development in heritage conservation areas generally and Menangle Conservation

Area particularly. Section 2.2.9 of the DCP includes the following description of the MCA.

“Character Description

Menangle Village, created in the 1850's and 1860's, is unique in that it has remained essentially contained within the settlement boundaries formed by village development by the second decade of the 20th century. It was established by the Macarthur family for their estate workers and was centred on St James' Church, then later the school and the general store.

The town has had a strong association with the dairy industry, which developed following the opening of the railway after construction of the railway bridge over the Nepean River in 1863. The railway line became the commercial focus of the village and the growing dairy industry and the historic character of the village, as we see it today, is largely a reflection of the railway-related development that took place in the late 19th and early 20th centuries.

Further evidence of the association with the dairy industry includes buildings such as the Camden Estate Central Creamery (1910) and Rotolactor (1952) and worker cottages for the nearby Camden Park Estate (1870's to 1920's). The Macarthurs of nearby Camden Park Estate patronised the Village and were directly responsible for many of the fine buildings in Menangle, which assisted the village to grow and gives its character. They paid for St James's church (including Horbury Hunt's nave in 1876 and Sulman's chancel and steeple in 1898) and in circa 1904 they built the present General Store (used by the Estate as its buying agent for all provisions, stores, seeds fuel etc),”

The objectives and controls for Menangle repeat many of those in the former Wollondilly DCP No.41.

2.13 Wollondilly Growth Management Strategy 2011

This strategy, adopted by Wollondilly Shire Council in February 2011, seeks to balance the need for growth in keeping with the NSW Government's policies, mainly around existing town centres, with the need to maintain Wollondilly's promotion of the local government area as a place for “rural living”.

The Structure Plan for Menangle is shown in Figure 8 below.

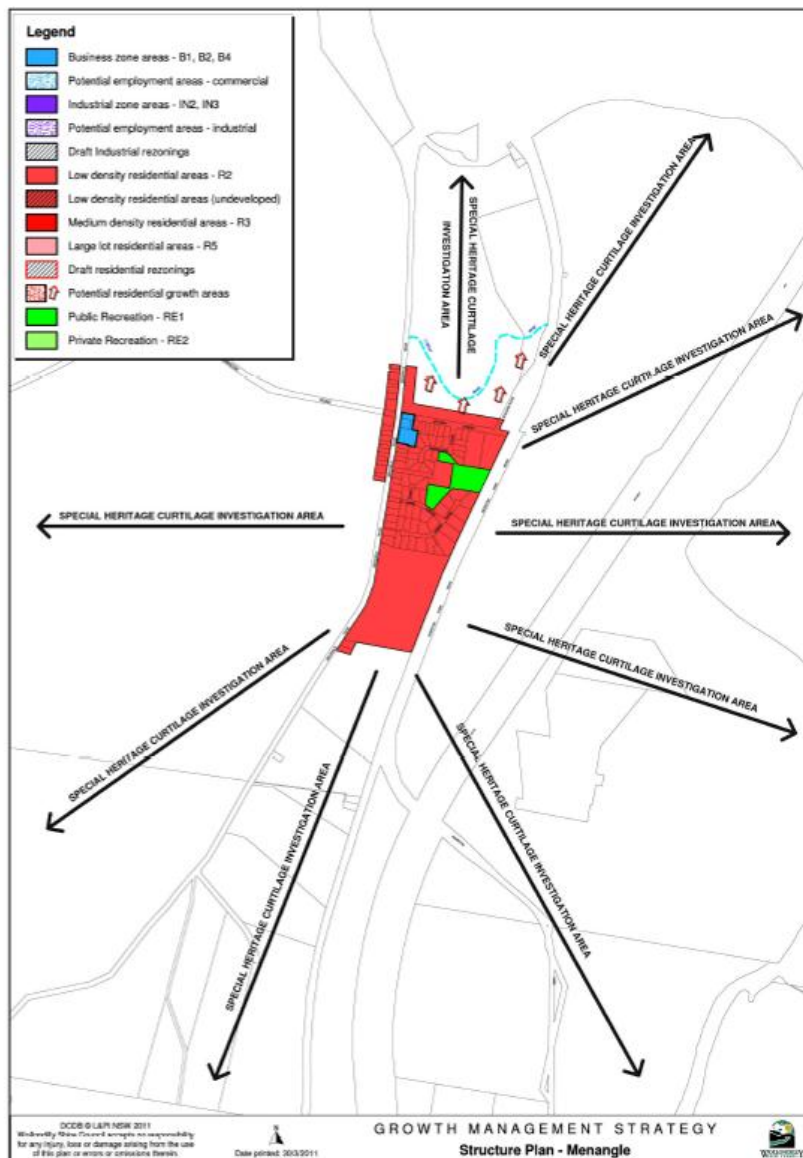


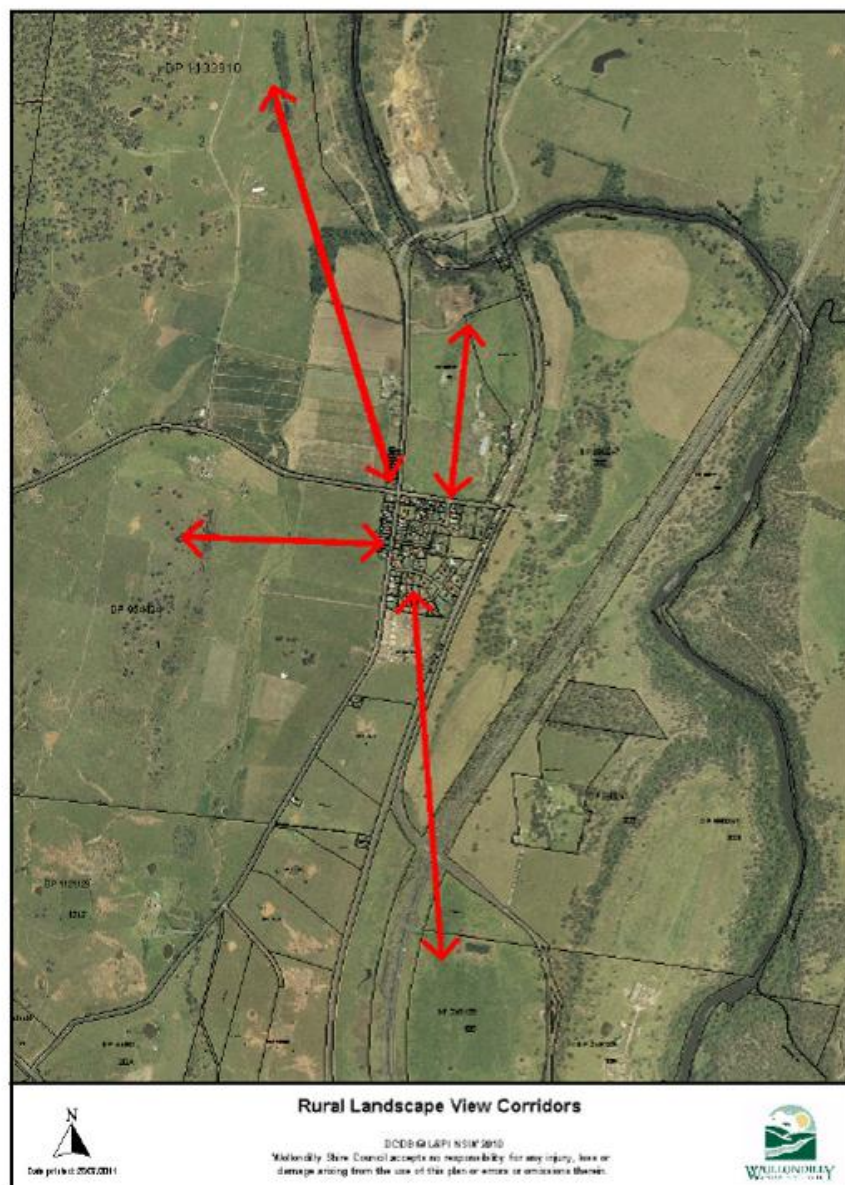
Figure 8 The Structure Plan for Menangle in the Wollondilly Growth Management Strategy 2011 identifies potential residential growth areas north of the existing village, between Menangle Road and the railway. The landscape around Menangle is identified as a “Special Heritage Curtilage Investigation Area”. (Source: Wollondilly Shire Council).

2.14 Amendment to Wollondilly LEP 2011 Menangle Landscape Conservation Area (Extension of Menangle Heritage Conservation Area)

On 28 July 2011 Wollondilly Shire Council submitted a draft Planning Proposal to the Department of Planning and Infrastructure. The draft PP seeks to add a Landscape Conservation Area to Menangle. The Landscape Conservation Area is intended to apply to an area of land to be identified in an Assessment of Heritage Significance which defines a visual catchment and the historic landscape which are relevant to the locality.



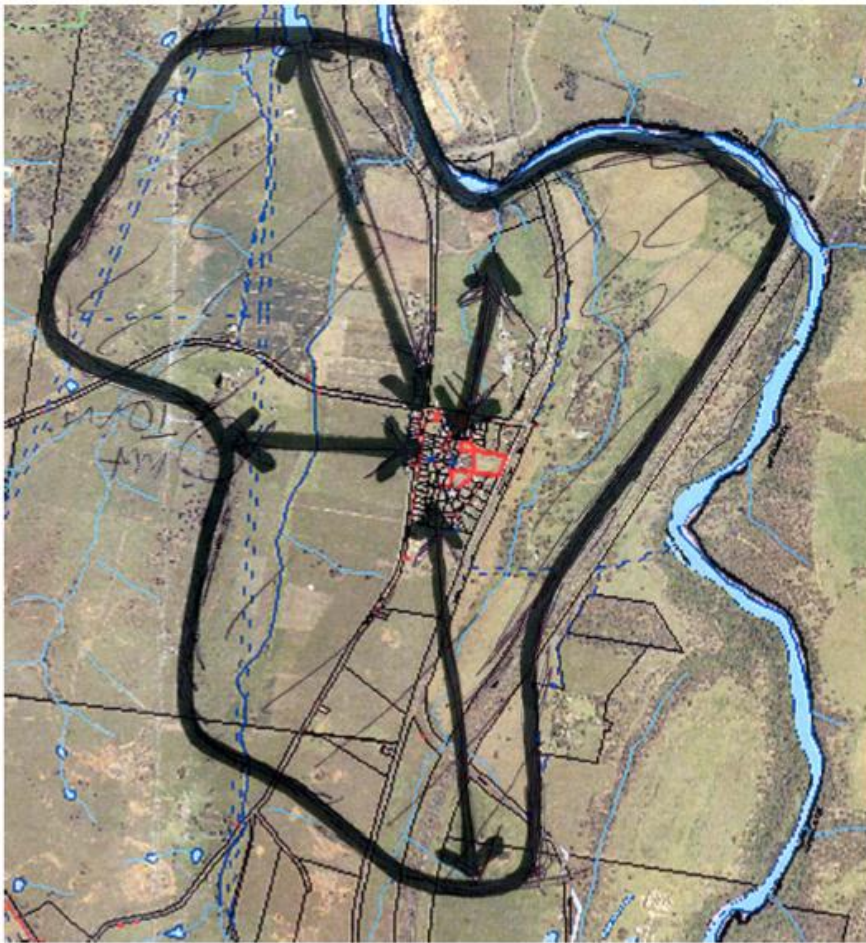
Figure 9 Tentative boundary for proposed Menangle Landscape Conservation Area in WSC Planning Proposal Amendment to Wollondilly LEP 2011 (Extension of Menangle Conservation Area). (Source: WSC)



Arrows show the 4 most significant rural landscape view corridors.

From north, running clockwise, these are:

1. North: Railway, Rotolactor, Central Creamery with grazing and cropping land.
2. South: St James Hill to Gilbulla with grazing and cropping land.
3. West: Mt Taurus with grazing and cropping land.
4. North west: Menangle Pond and Barrigal lagoon with grazing and cropping land.



Map 1

Proposed extension of Menangle Heritage Conservation Area to surrounding ridges to include visual catchment and historic landscapes identified as Menangle Landscape Conservation Area.

3.0 Analysis of Documentary and Physical Evidence

This section provides a brief analysis of the available archival and documentary evidence relating to the place, both chronologically and thematically. It describes the evolution of the Macarthurs' agricultural enterprises in The Cowpastures and places Menangle and its cultural landscape in its historical context.

3.1 Documentary Evidence

This section presents the documentary evidence relating to the place, presented both chronologically and thematically. The European history of Menangle, Camden Park and the Macarthurs is largely derived from historical research carried out by Dr Rosemary Annable, with additional material provided by Annette Macarthur-Onslow, John Wrigley, the Menangle Action Group, Menangle Community Group and others. Chris Betteridge added material on the early history of the place.

3.1.1 Pre- and Early Post-contact Period

In May 1788, five months after the First Fleet settlement at Farm Cove in Port Jackson, two bulls and four cows escaped from Sydney and headed south, eventually travelling some 40 miles through undeveloped country to the area around present day Menangle. These cattle would have been seen by the local indigenous people but it was not until 1795, seven years after they had escaped, that the cattle were sighted by a convict hunter. By then they had multiplied to about forty cows and two bulls. That same year Governor Hunter visited the area to see the cattle, climbing a hill which he named Mount Taurus, after the Latin word for bull and he named the area "The Cowpastures". Some of these cows gave the infant colony its first taste of fresh beef but Hunter then made it a crime to kill these cattle, keeping the bulk of the herd for breeding to ensure an ongoing meat supply. The Governor now realized that the colony could survive after the scarcity of food in its first few years.

The explorer Barrallier in 1802 wrote of the Aboriginal people near Camden, at the southern extremity of the Cumberland Plain, noting that in 'the swamps of Manhandle, Carabeely, and others, enormous eels, fishes and various species of shells are found, which are sometimes used by the natives as food.'⁹ He also commented that the local indigenous people:

*'... usually feed upon opossums and squirrels, which are abundant in that country, and also upon kangaroo-rat and kangaroo, but they can only catch this last one with the greatest trouble, and they are obliged to unite in great numbers to hunt it.'*¹⁰

The Cowpastures area was declared a government reserve to enable the cattle to continue to multiply and two constables were stationed in a new structure called 'Cowpastures House' in early 1805 at Elderslie, near the ford crossing of the Nepean River to protect the cattle.

In 1821 Reverend William Walker listed the 'Cowpastures tribe' as one of three 'numerous' tribes among the nine he identified in the greater Sydney area.¹¹ Although the fight by Aboriginal people to retain some land in the Sydney region had

⁹ Ibid., p.70

¹⁰ Ibid., p.71

¹¹ Ibid., p.22

been lost by the 1820s, some of the original inhabitants and their descendants remained in many parts of the region, including at 'Camden Farm'.¹²

The 1828 NSW Census and the 1832-43 Returns of Aboriginal Natives suggest that prior to the European occupation of the Cowpastures, the area around Camden Park was occupied by the Muringong clan of the Gundungurra Aboriginal people¹³. Pioneer anthropologist / linguist R H Mathews, at the beginning of the 20th century, reported that Aboriginal people at Camden spoke the Dhar'-rook (Darug) dialect, which closely resembled the Gundungurra¹⁴.

There is still much debate on the languages and dialects spoken by Aboriginal people at the time of European settlement: it is also possible that aborigines in the Camden area may have used the Dharawal language, spoken from the Georges River south to the Shoalhaven, and possibly as far west as Camden.¹⁵

Governor Lachlan Macquarie issued 38 breastplates to Aboriginal individuals with whom the British colonists communicated and negotiated as leaders or 'chiefs'. These included Cogie or Cogy, Chief of the George's River (Cowpastures) tribe.¹⁶

A lithograph dated 1828 by the French artist E B de la Touanne depicts an Arcadian¹⁷ scene beside the Nepean River 'near the house of Mr Macarthur' in which a small group of Aborigines in skin cloaks are clustered around a fire on the river bank.¹⁸ (see Figure 10, below).

As indicated in the section on limitations of this assessment, the brief did not include consideration of Aboriginal sites. However, it is known from Dreamtime stories handed down from generation to generation and from the historical record that parts of the Study Area were occupied and / or visited by Aboriginal people.

In her introduction to a recent interpretive publication on Belgenny Farm¹⁹, Glenda Chalker, on behalf of the Local Aboriginal People states:

"The Dharawal people recorded the arrival of the missing cattle from Sydney in a rock shelter, where two bulls with no horns were drawn in charcoal. The missing cattle were found near Menangle, and the area became known as the Cowpastures. By association, the local people became known as the 'Cowpastures Tribe.'"

During archaeological investigations for the Camden Park Urban Release Area, six scarred trees were recorded within the release area²⁰, to the west of the Elizabeth Macarthur Agricultural Institute (EMAI). The occurrence of scar trees in the survey area was assessed as indicating "the frequency of use of the landscape by Aboriginal

¹² Ibid., p.159

¹³ Attenbrow, V 2010, pp.23, 27

¹⁴ Ibid., p.32

¹⁵ Ibid., p.34

¹⁶ Ibid., p.61

¹⁷ The term Arcadian, particularly in regard to picturesque landscape painting, is often applied to scenes that are rural, rustic, simple or innocent. It is derived from Arcadia, a mountainous district in Greece in the centre of the Peloponnesus, known from ancient times for its quiet rural simplicity.

¹⁸ Attenbrow, V 2010, p.46

¹⁹ Wood 2010, p.5

²⁰ Layman, S 1999, Section 4.8.6, p.69

people".²¹ This occurrence, together with the close proximity of the survey area to both Navigation Creek and Matahill Creek, produced a medium level of local Aboriginal archaeological potential.²²

The elevated lands in the western part of the Study Area, overlooking the Nepean River and tributaries, would have provided Aboriginal people with a good vantage point from which to view the surrounding country. The riparian corridor and adjoining lands would have provided them with a variety of opportunities for camp sites and for hunting and fishing.



Figure 10 New South Wales: view along the course of the Nepean River, near the house of Mr Macarthur in Camdenshire by E B de la Touanne (artist), Louis P A Bichebois (engraver), Langlume (lithographer), c1828. (National Library of Australia, accession no. S11039/32)

3.1.2 The Cowpastures District

In November 1795 a herd of wild cattle was discovered grazing 'in a pleasant and apparently fertile pasturage' on the west bank of the Nepean River. It was quickly realised that these were the progeny of the two bulls and four cows that had wandered from Sydney Cove in June 1788 and the district was soon named the Cowpastures. It seemed to be a bovine paradise:

*'The country where they were grazing' wrote David Collins, 'was remarkably pleasant to the eye; every where the foot trod on thick and luxuriant grass; the trees were thickly scattered, and free from underwood, except in particular spots; several beautiful flats presented large ponds, covered with ducks and the black swan, the margins of which were fringed with shrubs of the most delightful tints, and the ground rose from these levels into hills of easy ascent.'*²³

²¹ Ibid, Section 4.8.7, p.69

²² Ibid, Section 4.8.8, p.72

²³ David Collins: *An account of the English Colony in New South Wales*, Volume 1, edited by Brian H Fletcher, Royal Australian Historical Society & A H & A W Reed, 1975, pp 26-27 & 365-366

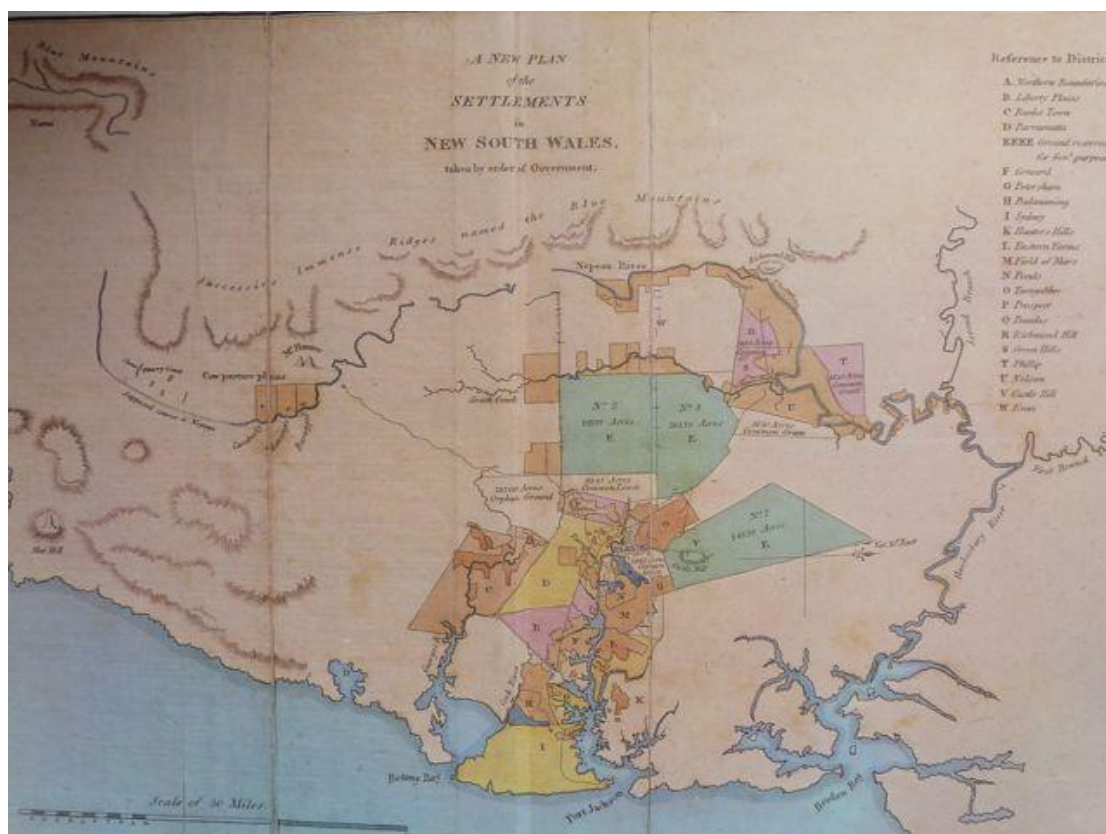


Figure 11 The comparative remoteness of the 1805 grants to Macarthur and Davidson is illustrated in 'A New Plan of the Settlements in New South Wales ...' published by John Booth in London in July 1810. (Frontispiece to D D Mann: *The Present Picture of New South Wales 1811*, Facsimile reprint published in 1979 by John Ferguson, Sydney, with an introduction by B H Fletcher)

Following the discovery of the wild cattle the district had been officially declared out of bounds to settlers, but the prohibition did not prevent visitors, including vice-regal parties and those 'in search of curiosity' from traversing the area. By September 1805 when the government surveyor James Meehan was marking out a road to the south-west of Prospect he was following an established track.²⁴ In the same month John Macarthur and Walter Davidson were camping out at the Cowpastures where, in December, Meehan surveyed their grants on the west bank of the Nepean.²⁵

The main natural feature of all three grants at the Cowpastures was the Nepean River that provided valuable flood plains and lagoons with land suitable for both crops and pasture, while the higher land provided security for sheep in wet seasons. Davidson's 2000 acres called 'Belmont' separated Macarthur's 2250 acre 'Camden Park' and 2750 acre 'Upper Camden'. The division gave both owners access to their properties by fordable routes across the Nepean, Macarthur at Kirkham and Davidson at what became known as Menangle. In January 1806, when he had moved some of his flocks to the Cowpastures, Macarthur received more assigned convicts as shepherds to protect his new enterprise.²⁶

²⁴ See *Sydney Gazette* 23 September 1804, p 2c for an account of a visit by a traveller exploring the interior in search of curiosity.

²⁵ M H Ellis: *John Macarthur*, Angus and Robertson, Sydney, Famous Australia Lives edition, 1978, p 249 quoting Macarthur Papers A 2958 p 60

²⁶ M H Ellis: *John Macarthur*, 1978, p 250

The ban on settlement beyond the Nepean provided protection not only for the wild cattle (still claimed and prized by government) but also for Macarthur's flocks. Further protection from contamination was provided during the Macquarie period when government orders were frequently issued forbidding settlers from sending their cattle to graze in the area. Only civil and military officers of government and the families of Mr Macarthur and Mr Davidson and their shepherds and servants were allowed into the district.²⁷

In October 1806, two months after his arrival in the Colony, the new governor, Captain William Bligh, set out to visit the Cowpastures, via Government House, Parramatta. Bligh's predecessor, Governor King had prevaricated about the legitimacy of the instructions received from Lord Camden to grant land to Macarthur and although he had issued the grants, he had referred the matter back to his superiors in London. It was still unresolved when King left and when Macarthur took the opportunity to raise the question of the Cowpastures land with Governor Bligh, the nature of the governor's reply shocked not only Macarthur but also those around him. It was to be recalled and retold four years later at Colonel Johnstone's court martial for the overthrow of Governor Bligh.²⁸

If the Governor had been annoyed by the mention of Macarthur's enterprise then his visit to the Cowpastures, accompanied by the Reverend Samuel Marsden, to see the land and the cattle for himself cannot have improved his temper. After crossing the Nepean and visiting Davidson, Bligh was stranded as heavy rains caused the river to rise to some forty feet and was only extricated a week later in 'a slight canoe, which had been constructed in his presence by a few obliging natives'.²⁹ The experience can have done little to encourage the Governor to think favourably of the area and its occupants.

3.1.3 Early settlement at Camden Park

Activity on Macarthur's land at the Cowpastures centred first on an area which the local Aborigines called 'Benkennie' (meaning 'high, dry land') close to the Nepean crossing, where he and William Davidson had first bivouacked. Given the isolation of the place it seems likely the two men worked closely together for the two years in which Davidson engaged in agriculture, before turning to commercial enterprises.³⁰ Macarthur's work in developing his sheep enterprises lasted until 1809 when he was once again forced to leave Sydney for London, this time as a witness for the defence at Johnstone's court martial. From then until his return in 1817 the responsibility for managing all of his business and agricultural enterprises fell upon his wife Elizabeth. By this time the Macarthur flocks numbered between 3500 and 5500.³¹ The home flock of the merinos was kept at Parramatta, and the remainder at the Cowpastures.

³²

²⁷ Government orders 1812-1817, Index to Colonial Secretary's correspondence 1788-1825 under the names of Walter Davidson and John Macarthur (State Records NSW)

²⁸ 'What have I to do with your sheep, sir? What have I to do with your cattle? Are you to have such flocks of sheep and herds of cattle as no man ever heard of before? No, sir, I have heard of your concerns, sir. You have got five thousand acres of land, sir, in the finest situation in the country, but by God you shan't keep it!' quoted in M H Ellis: *John Macarthur*, 1978, pp 269-270

²⁹ *Sydney Gazette* 26 October 1806 p 1b

³⁰ *Australian Dictionary of Biography Volume 2: 1788-1850 I-Z*, Melbourne University Press, 1979 entry for Walter Stevenson Davidson

³¹ M H Ellis: *John Macarthur*, 1978, p 427

³² Hazel King: *Elizabeth Macarthur and her world*, Sydney University Press, 1980, pp 72-73

Bligh's successor, Governor Macquarie met Mrs Macarthur on one of her periodic visits to her 'first farm called by the natives Benkennie' in 1810 and sat with her in a 'small miserable hut'. In 1813 a store was built and by 1815 a small cottage had been constructed, sited in error outside the boundaries of the grant. Governor Macquarie obligingly promised a small addition of some 60 acres to rectify the mistake but this never eventuated during his administration. By 1820 the original Macarthur grants at the Cowpastures were known as Lower and Upper Camden and Walter Davidson's property, which they also managed, as Menangle.³³

Within a few years the early peaceful and open encounters with the local aborigines had ceased and in 1814 an old shepherd of the Macarthur's, William Baker and a shepherd's wife were killed at the Upper Camden yards while convicts were also 'roving uncontrolled through the country'.³⁴ When some shepherds' huts were burned two years later, soldiers were sent to the area to offer some protection.³⁵

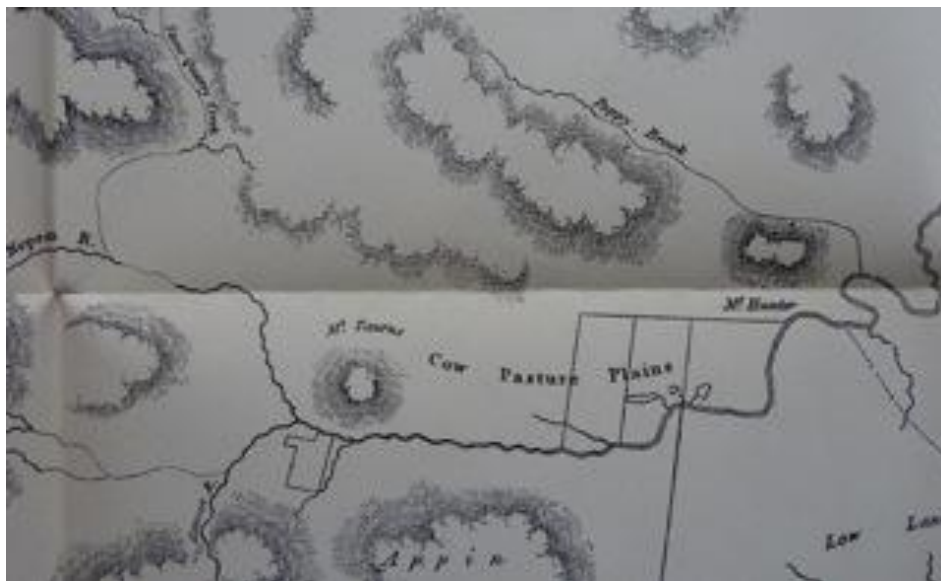


Figure 12 On 18 November 1810 Governor Macquarie and his party went to see Walter Davidson's 2000 acres, 'excellent rich land for both tillage and pasture, with a fine large lagoon in the centre of it, which is called Manangle and is the native name of this farm'. Grimes and Flinders 'Topographical Plan of the Settlement of New South Wales', 1815, illustrates the extent of the lagoons at 'Manangle' (Belmont) and also at Lower Camden. (*Lachlan Macquarie Governor of New South Wales Journals of his Tours in New South Wales and Van Diemen's Land 1810-1822*, Library of Australian History in association with the Library Council of New South Wales, Sydney, 1979, p 9 & facsimile of map)

3.1.4 Extending the estate

The return of John Macarthur in 1817 brought extra manpower to the family enterprises with the arrival of two of his sons, William and James, who had been to school in England. In 1818 assisted by Andrew Murray, a gardener, they began work at Belgennie where there was only a small weatherboard cottage and an acre of

³³ *Lachlan Macquarie Governor of New South Wales. Journals of his tours in New South Wales and Van Diemen's Land 1810-1822*, Library of Australian History in association with the Library Council of New South Wales Sydney, 1979, pp 6-10, 114, 165-166

³⁴ S Macarthur Onslow (ed): *Some early records on the Macarthurs of Camden*, 1914, p 301-302

³⁵ Hazel King: *Elizabeth Macarthur and her world*, 1980, pp 72-74

cleared land.³⁶ Activity intensified, not only in sheep rearing but also in horticulture and viticulture, which William, James and their father had studied during a tour in Europe, bringing much plant stock back with them to Australia.

In July 1822 James and William Macarthur each received grants of 1150 acres to the south of Upper Camden with frontages to the Nepean River. These they named Melrose (William's grant) and Rosslyn (James' grant). In addition to the usual condition that the land was not to be sold within a period of five years, they were each required to take eleven convicts off the stores. These men would have provided useful additions to the Macarthur workforce.³⁷

The following year their father secured the boundaries of his existing Camden properties by giving up land in the District of Toongabbie for 2065 acres along the western boundary of his existing lands (West Camden) and 1565 acres along the southern (South Camden), and so linking William and James' grants with the rest of the family property.³⁸ At the same time he also acquired 4368 acres around Mount Hunter as payment for 300 rams that had been purchased by government.³⁹ The name given to this grant, Brisbane Farm, acknowledged the somewhat better relationship between John Macarthur and this governor, than with his predecessors.

In the meantime Macarthur, aided by his son John in England,⁴⁰ continued to press his claim for the additional 5000 acres promised by Lord Camden and to purchase an adjoining area (some 5700 acres) under the terms suggested by Commissioner Bigge in his report. Not only was it intended to effect further improvements and to increase the number of merino sheep, but also to undertake 'the establishment of vineyards and olive-grounds, and the introduction of various agricultural products' and to spend a great deal of money in doing so.⁴¹

Further complications arose when it was realised that Earl Bathurst had not known that some 600 acres of the land that he had agreed be made available to Macarthur had been reserved for a church and school, centred around the existing government stock establishment at Cawdor.⁴² By 1824 the matter was reaching a resolution and Macarthur was allowed possession of the 10,400 acres that were finally granted to him in 1825.⁴³ With the addition of these two grants, some 5400 acres originally known as Lefevres Corner [later North Camden and North Cawdor] and 5000 acres known as Cawdor or Cawdor South⁴⁴ the Macarthur holdings at Camden totalled over 25,000 acres.

³⁶ S Macarthur Onslow (ed): *Some early records on the Macarthurs of Camden*, 1914, p 314

³⁷ Ser. 14 Nos. 13 (Roslyn) and 14 (Melrose) (LPMA)

³⁸ Ser. 14 Nos 173 (West Camden) and 174 (South Camden) (LPMA)

³⁹ Ser. 14 No. 172 (LPMA)

⁴⁰ Joy N Hughes: *The Macarthurs: a brief family history*, Historic Houses Trust of New South Wales, 1984, pp 14-15

⁴¹ John Macarthur junior to Under Secretary Horton 21 July 1823, enclosure with Bathurst to Brisbane, Despatch No. 27, 31 July 1823, *Historical Records of Australia* (Ser. 1) Vol. XI, pp 93-95

⁴² Brisbane to Bathurst, Despatch No. 73, 4 August 1825, *Historical Records of Australia* (Ser. 1) Vol. XI, p 699

⁴³ Brisbane to Archdeacon Scott 30 July 1825, Enclosure No. 6 (E) with Despatch No. 73, 4 August 1825, *Historical Records of Australia* (Ser. 1) Vol. XI, pp 715-716

⁴⁴ Ser. 14 Nos 185 & 186 (LPMA)

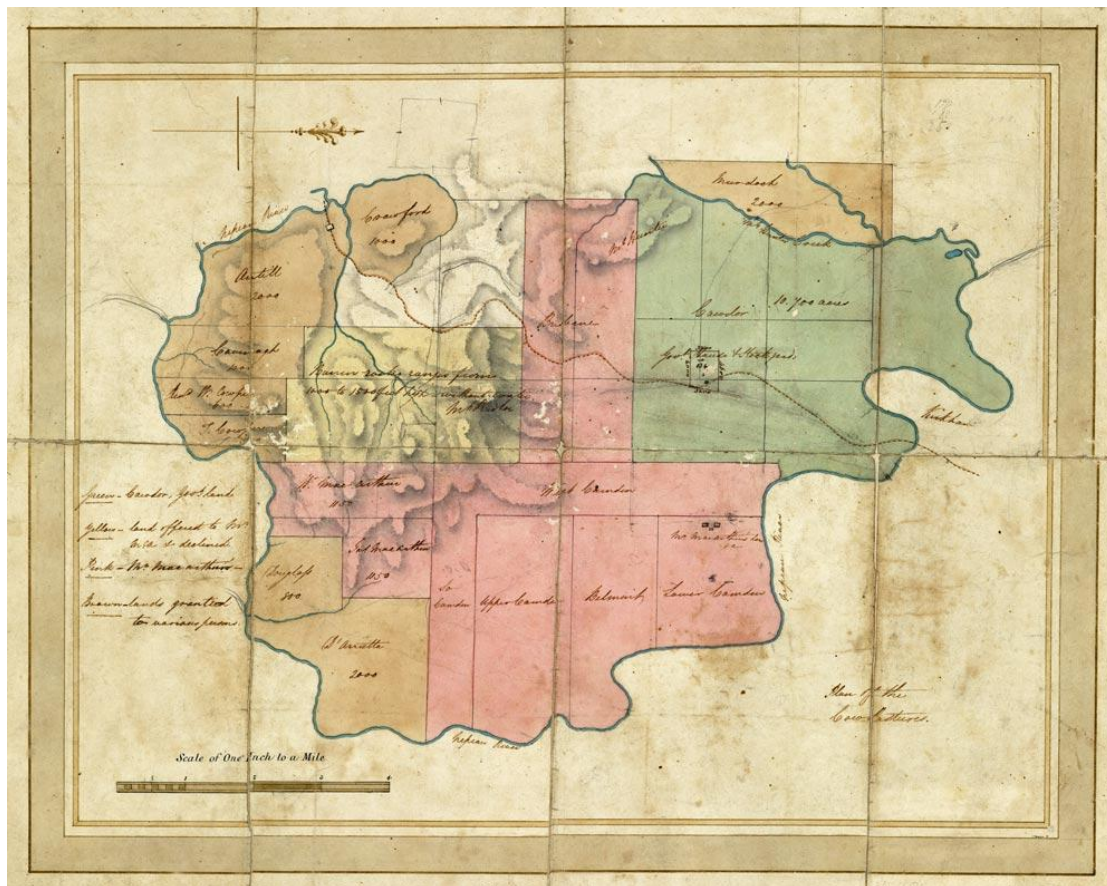


Figure 13 In 1823 John Macarthur rejected an offer of land to the south of his grant 'Brisbane', described as 'Barren rocks ranges 1000 to 1500 ft high – without water' [shown in yellow] and instead was granted the much more productive Cawdor [shown in green] with the old government stockyards. Belmont was not owned by Macarthur at this date, but was worked by him for Walter Davidson. (Macarthur Papers, M Ser 4 000/1 A 30004 Map 20, undated but 1823-1825, Mitchell Library)

3.1.5 Diversifying the activities of the estate: 1817 to mid-1830s

The arrival of Macarthur's sons, William and James, marked the beginning of much greater and more diversified agricultural and horticultural activity at Belgenny. Plant stock brought from Europe, described by John Macarthur as 'everything we can think of that may be most useful or ornamental in the Colony' together with the best and newest agricultural implements were ultimately to transform a sheep farm into a highly productive enterprise and a gentleman's estate.⁴⁵

While Elizabeth Macarthur had paid regular visits to her shepherds at the Cowpastures, this part of the Macarthur estates now benefited from the care and supervision of resident family members, in particular William who was to devote the next thirty years to its development. By the early 1820s these efforts were considerably assisted by a large convict workforce. In 1824 the total number of people employed on all of the Macarthur estates (at Parramatta and the Cowpastures) was 208 of whom 90% were convicts, mostly employed as shepherds, herdsmen, general farm labourers or in clearing gangs.⁴⁶

⁴⁵ S Macarthur Onslow (ed): *Some early records on the Macarthurs of Camden*, 1914, p 292

⁴⁶ Hazel King: *Elizabeth Macarthur and her world*, 1980, pp 117-118

At Belgenny wheat, corn and maize cultivation began on some 400 acres of river flats while English grasses were grown for seed for pasture improvement. In addition, a large clearing party worked on the newer land acquisitions at Cawdor.⁴⁷ The first vineyard was planted in 1820⁴⁸ but early attempts at viticulture were disappointing when it was discovered that vine stock brought out from Europe were not, as had been thought, the valuable varieties that had been seen in France.⁴⁹

By 1826 the homestead included the cottage where William and James lived, a garden stocked with flowers and fruit trees, stables, coach house and other outbuildings. While Belgenny was supplied in its early years with many goods from Elizabeth Farm, it still had to be self-sufficient in essential skills. In 1823 Belgenny's tradesmen included: a bricklayer, carpenter, gardener, blacksmith, sawyer, hurdler, shoemaker, wool sorter and clerk, together with shearers, grass cutters and corn pitchers.⁵⁰

The security of the Macarthur estates from public access was gradually eroded. In 1824 three lines of road had been laid out through the Macarthur grants. Two of these, the Razor Back and Menangle roads were to be public highways for carriages, which should have prevented unauthorised access through the Macarthur land by the other route which lay closer to the main homestead. But when government working parties were removed from the Razor Back and from work on the bridge at Menangle, both public roads became useless leaving the road through the Macarthur estates as the main route between the County of Cumberland and the southern counties. In April 1833 James Macarthur (on behalf of his now incapacitated father) complained of the damage done to fencing, by fire and trespass and the infection of his valuable flocks by scabby sheep passing through the property. A reduction of quit rent was suggested, as compensation for the loss of valuable improvements.⁵¹ This road [the Old Hume Highway and Finns Road] was not marked on early maps but was obviously well known and utilised.⁵² By 1866 it was officially mapped.⁵³

After more than ten years investment in farming and sheep rearing centred on Belgenny, attention finally turned to the construction of an elegant house for the estate. Named Camden park in honour of his benefactor and designed by architect John Verge the house took four years to complete and Macarthur died before it was finished, spending his final days in a cottage at Belgenny.

3.1.6 John Macarthur's Legacy

On John Macarthur's death in 1834 his Camden estate passed to his sons William and James, as tenants in common. Their mother retained for her lifetime the use of Elizabeth Farm, which would then pass to her eldest son Edward who had also inherited the rest of the Macarthur estates at Parramatta, Sydney and in Argyle. The two unmarried Macarthur daughters, Emmeline and Elizabeth were to receive

⁴⁷ Carol J Baxter (ed.): *General Muster List of New South Wales 1823, 1824, 1825*, Australian Biographical and Genealogical Record, Sydney, 1999, Appendix 4 p 654

⁴⁸ *Some account of the vineyards at Camden, on the Nepean River, forty miles south west of Sydney, the property of James and William Macarthur*, London, 1849, republished June 1851, p 3

⁴⁹ Peter Mylrea: *Belgenny Farm 1805-1835. The early years of the Macarthurs of Camden*, Camden Historical Society Inc., 2nd ed., 2007, pp 15-16

⁵⁰ Peter Mylrea: *Belgenny Farm 1805-1835. The early years of the Macarthurs of Camden*, Camden Historical Society Inc., 2nd ed., 2007, pp 5-17

⁵¹ James Macarthur (on behalf of John Macarthur) to Collector of Internal Revenue 19 April 1833, Colonial Secretary re: land, John Macarthur, 2/7918, Reel 1158 (State Records NSW)

⁵² P J Mylrea; *Camden District. A history to 1840*, Camden Historical Society Inc, Camden 2002, pp 41-43

⁵³ County Camden, Crown Plan C.1521.a, Map 2360 dated 1866 (State Records NSW)

annuities chargeable on both Edward's estate and William and James', as too was the larger annuity payable to their mother. In the more lucid moments of his later years, John Macarthur had wanted to change the provisions of his will to make better provision for his younger sons but, for his own protection, they had refused to release their father from their guardianship.

The property division caused a rift between the brothers that was exacerbated by the changing value of parts of the estate and by William's perhaps justifiable resentment that it was his unstinting work that had built the family fortunes while Edward pursued his own career overseas. After originally agreeing that the family estates should be run as a whole and shared equally, Edward decided that his father had intended to provide for him separately (as the eldest son) and thereafter tended to treat his brothers as his agents rather than as partners while holding out to them the promise that, if they survived him, they would be his heirs.⁵⁴



Figure 14 The heart of the Macarthur estate at the Cowpastures in about the later 1830s, comprising Lower Camden (granted in 1805) and West Camden (granted in 1823) where Elizabeth Macarthur had, 'by mistake', built a small cottage. The area includes Belkennie with its deer park, family cemetery and first vineyard and the later mansion, Camden Park House, to the east. Camden Park House has been built, but Camden village has not yet been laid out. (Macarthur Papers, M Ser 4 000/1 A 30004 Map 1, undated but possibly later 1830s, Mitchell Library)

In 1837, with borrowed funds, James and William finally purchased Walter Davidson's grant Belmont that been worked by the family since Davidson left the Colony in 1809.⁵⁵ The price was £4000 for 2000 acres of good land 'fit for every purpose whether of grazing or agriculture and well watered'.⁵⁶ With this purchase the

⁵⁴ Hazel King: *Elizabeth Macarthur and her world*, 1980, pp 172-174 & 178-181

⁵⁵ Conveyance Bk 10 No. 277 (LPMA)

⁵⁶ Land Boards report No. 437 of 18 September 1830, 30/7071, Colonial Secretary re: land, Walter Stevenson Davidson, 2/7839, Reel 1118, (State Records NSW)

Macarthur estates at Camden reached their maximum extent; ten separate grants totalling some 27,698 acres.

3.1.7 Migrant workers 1830s to 1840s

Adding to the family's considerable expenses from the construction of the big house and outbuildings, the cessation of the assignment of convicts to private service that had provided the estate's large, unpaid workforce ended. A few emancipists who had worked for many years for the Macarthurs stayed on and leased land from their former masters, but in general the end of the convict system caused a major upheaval in labour arrangements and the financing of large estates.

The answer to the looming labour shortage lay, for James and William Macarthur, in the bounty system introduced in 1835 by Governor Bourke under which employers could bring free labourers out to the Colony at a reasonable cost. Between 1837 and 1839 William and James brought out to Camden a total of 41 families of agricultural labourers from Dorset and Kent in England, vine dressers from the Rhineland in Germany and a few single men. With the introduction of these immigrants, the demographic structure of the Camden Park workforce changed dramatically from an almost exclusively male domain to one with families. New accommodation was required of a quite different type from that provided for convict workers. Each family was provided with a pise cottage, allowed a milking cow, a pig and poultry and was bound to work for the Macarthurs for three or five years.⁵⁷

By 1841 there were 208 people living on the Camden estate, of whom about one-third were children. While there was still a large single male workforce there were now some thirty married couples and the vast majority of the workers were free. In addition to the estate's two 'landed proprietors' James and William, there were five artificers or mechanics, eight shepherds, seven domestic servants and fifty-nine people engaged in agricultural work or as stockmen and gardeners.⁵⁸ By now agriculture, horticulture and viticulture formed a large part of the economy of the estate.

As employers the Macarthur's established in Camden a model of paternalistic benevolence and management typical of the English gentry in which the landlord's superior wealth and social standing enabled him to direct the lives of others within his domain. It was, in many senses, a system completely at odds with the entrepreneurial spirit of the Colony, but for rural workers who had come from impoverished circumstances, it did at least offer the possibility of a livelihood.

3.1.8 Camden Village

John Macarthur had sought to maintain the purity of his flocks by precluding outside intrusions upon his Camden properties but by 1835, only a year after his death, his sons had an area cleared for a town and opened a subscription list for a church. A plan for the private town of Camden went to the Surveyor General's office in 1836 but it was not until 1841 that allotments were put up for public sale. By this time there was already a post office, a steam mill and a few cottages on the town site, but it was an inauspicious time to look for buyers as the financial depression deepened. Meanwhile an advertised sale of 2000 acres of the Macarthur estate subdivided into small farms, found no buyers.⁵⁹ By 1843 only twelve lots had been sold in Camden

⁵⁷ Alan Atkinson: *Camden*, Oxford University Press Australia, 1988, pp 38-41

⁵⁸ 1841 Census returns, Co. of Camden, District of Picton X 949 p 75, entry No. 66 James & Wm Macarthur Camden (State Records NSW)

⁵⁹ Hazel King: *Elizabeth Macarthur and her world*, 1980, p 189 and

village.⁶⁰ With money in short supply the Macarthurs were not able to complete the church until 1849.⁶¹



Figure 15 The creation of Camden Village within the Macarthur estate in 1841. The surrounding land was already leased. The private road to Camden House met the eastern side of the village on either side of the church being built by the Macarthur family (Plan of the Village of Camden, Macarthur Papers, Camden Park Estate Land Sales 1841-1881, A4218, CY 2150, Mitchell Library)

3.1.9 Leasehold settlement

James and William Macarthur's model of management was that their migrant workers should aspire to work for themselves as estate tenants on small farms of about 30-40 acres after the period during which they were obliged to work for them. Rents would rise with the increasing cultivation and productivity of the land and, where tenants proved successful, they might then lease additional farms. Under this system much of the success of the estate rested on the skills of its tenant farmers, their ability to improve their own lot and so to pay increasing rents.⁶² From just four leases in the later 1830s, all located around the Camden village site, leasehold settlement spread during the 1840s into three main areas: Menangle road; the foot of Razorback (the Great High Road); and Cobbitty paddock. Meanwhile the area immediately associated with the Home Farm (Belgenny) and the main house was divided into

⁶⁰ Listed as reservations from the mortgage taken out in that year Bk 5 No. 502 and FP 192218 (LPMA)

⁶¹ Alan Atkinson: *Camden*, Oxford University Press Australia, 1988, pp 44-46

⁶² *Ibid.*, pp 67-79

some thirty enclosures or paddocks. Plans of the estate drawn in the later 1840s show these leased areas and also the paddocks at the home farm.⁶³

Although the land had been owned by the Macarthur family for many years, this did not necessarily mean that it was ready to farm. Tenants had to clear and fence to form their farms and then had to build their houses and establish their own gardens.

⁶⁴ At Belmont, Walter Davidson's original grant, the buildings and improvements made some thirty years previously had long been dilapidated. In 1830 it was reported that only twelve acres near the crossing place on the Nepean River called Menangle were cleared, but not stumped, and most of the fencing at the old stockyard was decayed.⁶⁵ For tenants in this area it seems there was much to do.

At the same time, the agricultural and horticultural activities of the home farm were considerably diversified due to the specialist interests of William Macarthur, assisted by a more skilful workforce. James' visit to Europe in 1836-1838 had resulted in the introduction of new machinery and the importation of more vines, as well as citrus and ornamental trees. In about 1840 a new vineyard was established on a different type of site and soil type from that begun in 1830, with the hill slope artificially terraced to prevent damage from heavy rains.⁶⁶ Wine production and the sale of vine cuttings, fruit trees and garden plants began to form a substantial part of the income and reputation of the estate. The list of fruit bearing trees in the catalogue of plants cultivated at Camden Park published in 1845 included: 32 varieties of apple; ten varieties of cider apples; apricots; cherries; figs; oranges; pears; plums; peaches and nectarines; almonds and quince, as well as vines for table grapes and for wine.

⁶⁷ Underground silos were also constructed to store grain, possibly as a response to the drought of the late 1830s. Their location has not been identified but the form of construction was illustrated in several contemporary publications.⁶⁸

Butter production and horse breeding were also large enterprises.⁶⁹ By 1849 the estate livestock consisted of 22,000 sheep, 400 horses and 2000 cattle. Some 16,000 gallons of wine had been produced during the year and there were 800-900 people living on the estate.⁷⁰ In addition to trees and vines, William had introduced over one thousand varieties of plants at Camden Park including exotics such as camellias, orchids and some tropical plants.

⁶³ Chart of the District of Camden including Camden Estate, 1842 (Mitchell Library M Ser 4 000/1 A30004 Map 3) and Plan of the north-eastern section of the Macarthur holdings in the early 1840s, 1842 (Mitchell Library M Ser 4 000/1 A30004 Maps 4 & 5)

⁶⁴ William Macarthur 10 April 1846, A 2935 p 136 (Mitchell Library)

⁶⁵ Antill to Colonial Secretary 7 September 1830 with Land Boards report No. 437 of 18 September 1830, 30/7071, Colonial Secretary re: land, Walter Stevenson Davidson, 2/7839, Reel 1118, (State Records NSW)

⁶⁶ *Some account of the vineyards at Camden, on the Nepean River, forty miles south west of Sydney, the property of James and William Macarthur*, London, 1849, republished June 1851, p 6

⁶⁷ *Catalogue of plants cultivated at Camden, 1845*, Statham and Forster, Sydney.

⁶⁸ Cameron Archer & Val Anderson: *Colonial silo mysteries*, C B Alexander Foundation, Tocal, 2003 pp 21-22

⁶⁹ Alan Atkinson: *Camden*, Oxford University Press Australia, 1988, pp 90-91

⁷⁰ Memorandum dated 4 June 1849, James Macarthur In-letters 1847-1856, Macarthur Papers Vol. 27, A2923, CY 955 (Mitchell Library)



Figure 16 The Camden Estate in 1847, showing areas under cultivation. This map shows the extensive areas being farmed around Riversford (now Menangle). (Plan of the Camden Estate in the County of Camden the property of James & Willm Macarthur Esqrs Shewing the Extent of Agriculture 1847, Macarthur Papers, M Ser 4 000/1 A30004 Map 4, Mitchell Library)

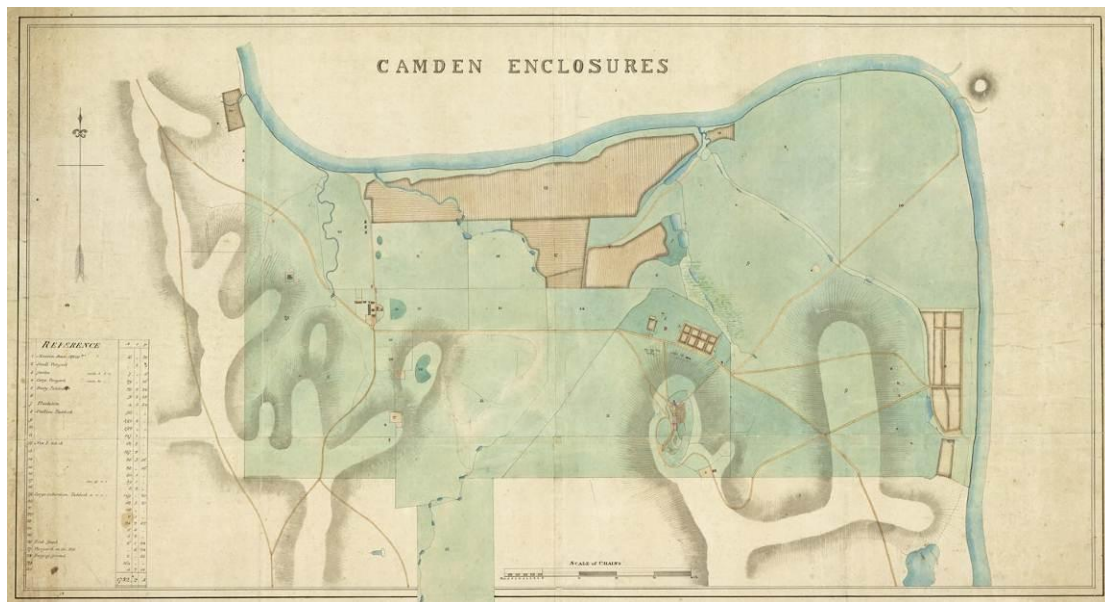


Figure 17 The Camden Enclosures, probably in the late 1840s. This part of the estate was run by the family and was never leased to tenants. (Macarthur Papers, M Ser 4 000/1 A 30004 Map 5, Mitchell Library)

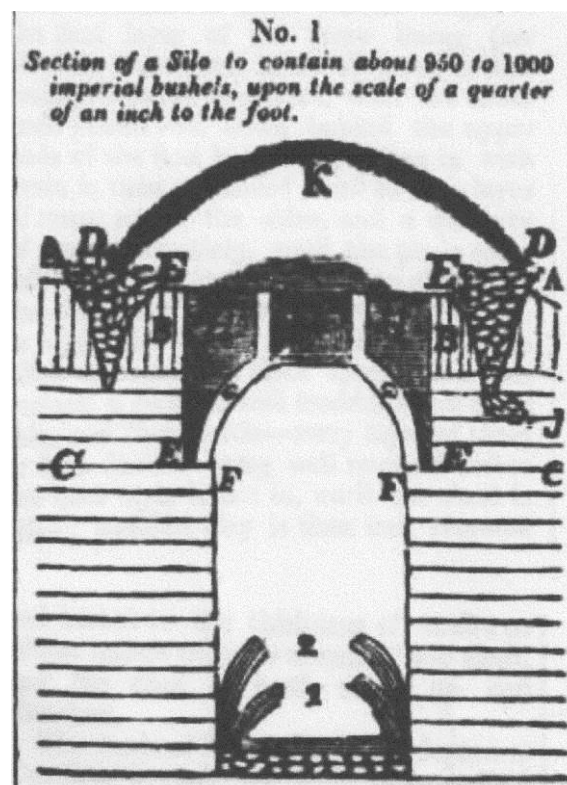


Figure 18 One of many agricultural innovations at Camden: the construction of eight underground silos for the storage of grain. A full description, with costs, section and plan, were published in the *Sydney Herald* in 1842. Four more silos were planned. (*Sydney Herald* 15 March 1842, p 4)

3.1.10 Harder times

The costs of running and improving the estate, even with immigrant labour, were considerable and in the economic depression of the 1840s these became harder to sustain. Family members made various sacrifices. James and William's sisters, Elizabeth and Emmeline and their mother Elizabeth gave up their annuities but parts of the Macarthur estates were mortgaged to the two sisters at a rate calculated to provide an equal annual income. Interest payments on the marriage settlement made in 1838 for James' wife-to-be, Amelia [Emily] Stone, the daughter of a London banker, further taxed the estate's finances. In 1838 James raised a £10,000 loan in London, followed by others in 1841 from the Bank of Australasia and in 1842 from their London bankers. The money helped to build twenty cottages for their emigrant workers and to make considerable improvements including the vineyard, a vine house and dairy, while other lands were purchased to the south in the County of Argyle.⁷¹

Interest on their various loans together with quit rent payments comprised a large part of the outgoings of the estate, which also suffered by the fall in wool prices in the late 1830s and substantial losses during the economic depression of the early 1840s particularly at their Richlands property. Meanwhile the cost of wages and general supplies rose from £1800 a year between 1834-1843 to £2500 a year from 1844-1854.⁷²

The death of their sister Elizabeth in 1842 caused James and William both personal grief and further financial worry, as they had to find the money owing to her under the terms of their father's will, now held in the form of a mortgage and only finally paid in 1853.⁷³

When Emmeline married Henry Parker in November 1843, James and William entered into a mortgage with her trustees to cover her annuity. The only remaining portion of the estate that was not already mortgaged, some 5400 acres at the north-west corner of the estate, less the allotments that had already sold in the village of Camden, was mortgaged and remained so until after Emmeline's death in 1888.⁷⁴ James and William's family responsibilities were not confined to those imposed under the terms of their father's will. Their sister Mary had married James Bowman in 1823 and so had not previously needed to be provided for, but in 1842 it was discovered that her husband was in dire financial difficulties. James and William came to his aid, took over his liabilities and managed his estates, an act of familial kindness of which their brother Edward did not approve.⁷⁵

The sale of allotments in the village of Camden did little to improve the family's financial position in the 1840s. By 1847 there was still comparatively little development and the inn and the steam engine were the main commercial buildings.

3.1.11 The changing scene: the 1840s to 1850s

From a tenantry roll of some sixty people in 1849, there were by the late 1850s about 160 farms on Camden Park. Many of the original tenants who had migrated as married men in the 1830s now had adult children or in-laws to help them and so leased additional farms, while those with younger families often pooled labour to help

⁷¹ Hazel King: *Elizabeth Macarthur and her world*, 1980, p 188

⁷² Statement of expenditure from 1834 to 1854 inclusive, James Macarthur financial statements, Macarthur Papers Vol. 32, pp 48-56, A2928 CY 1016 (Mitchell Library)

⁷³ Bk 32 No. 564 1 August 1853 (LPMA)

⁷⁴ Bk 5 No. 508 dated 20 November 1843 (LPMA)

⁷⁵ Hazel King: *Elizabeth Macarthur and her world*, 1980, pp 185-187

each other. With the ability to take on a second farm, tenants could aim for profit, not just subsistence and became employers in their own right. The most densely tenanted area was the north-west corner of the estate, west of the Great South Road, known as Cobbitty Paddock (mortgaged to provide Emmeline's annuity) all of which was divided into farms. Not only was the area well watered but it also enjoyed the benefits of proximity to Camden, to the Cobbitty Road and the route to Sydney.⁷⁶ While the Camden Park Estate continued to be renowned for its produce, it was still a considerable financial worry to its owners. In 1851 James and William sold the southern parts of their Rosslyn and Melrose grants to their neighbour, Lachlan Macalister.⁷⁷ The sale made sense in terms of the topography of the Camden estate and of Macalister's adjacent property Clifton; but selling land was not part of the usual pattern of Macarthur economic management and the £750 that the land raised may have been crucial.

In August 1853 James and William mortgaged the whole of their Camden Park property (with the exception of allotments in the village that had already been sold and allotments set aside for schools and churches) to John Thacker, Campbell Drummond Riddell and Sir Charles Nicholson for a loan of £10,000 at 10% interest.⁷⁸ Camden Park Estate had made application for a school at Riversford (later known as Menangle) in 1849 and a church school was established. The mortgage was subsequently transferred to other mortgagors but was repaid in 1857.⁷⁹ The plan accompanying the 1853 mortgage shows the extent of the Macarthur estate after the sale of the southern parts of Rosslyn and Melrose. The paddock boundaries in the vicinity of Camden House and its home farm [Belgenny] are closely comparable with those shown in 1840s plans.⁸⁰

While the rent roll at Camden Park was growing, other factors required substantial changes in farming practice that saw an end to the wool growing that had formed the basis of the Macarthur family reputation. The 'sweet natural herbage' at the Cowpastures had gradually been replaced by coarse wiry grasses whose barbed seeds caused perpetual skin irritation to sheep, while the land that had once been 'naturally all forest' became choked with thickets of saplings and large thorn bushes. In about 1853 the general flocks at Camden Park were disposed of and only the registered flock of about 1000 rams and ewes was retained. In 1858, in the absence of any demand for rams, and facing considerable expense to maintain them on poor pasture, the Camden Park registered merino flock was sold.⁸¹ In the same period the horse stud was also sold.⁸²

As pastoralism declined, grain crops became a staple of the estate, first wheat and then mixed grain production. Wine and butter remained important products for the Sydney markets, the latter a female enterprise undertaken by Emily Macarthur (James' wife) who also oversaw the estate during William and James' absences on parliamentary business.⁸³

⁷⁶ Alan Atkinson: *Camden*, Oxford University Press Australia, 1988, p 70 & 74 and Map 4 p 75

⁷⁷ Bk 20 Nos 807 & 808 (LPMA)

⁷⁸ Bk 27 No. 894 dated 3 August 1853 with plan (LPMA)

⁷⁹ Bk 30 No. 193 dated 20 October 1853 and reconveyance Bk 49 No. 419 dated 21 May 1857 (LPMA)

⁸⁰ Plan with mortgage 3 August 1853, Book 27 No. 894 (LPMA)

⁸¹ Sir William Macarthur: 'The Camden Flock' *Sydney Morning Herald* 31 August 1866, p 3c-e

⁸² Alan Atkinson: *Camden*, Oxford University Press Australia, 1988, p 71

⁸³ Joy Hughes in Richard Aitken & Michael Looker (eds): *The Oxford Companion to Australian Gardens*, Oxford University Press, 2002, p 384

If William and James had been able to set up on their own they might by now have been doing well. Instead their difficulty had been 'keeping up and carrying on a complicated joint and family property' which, together with the deterioration of grazing at their property at Richlands and the subsequent losses was the cause of much financial anxiety.⁸⁴ In 1860 the two brothers finally paid off the £10,000 mortgage raised in 1838 from James' wife Emily's family that had encumbered seven of the grants that comprised the estate.⁸⁵

As in all of the Macarthurs' agricultural endeavours, the move into arable production included the best from overseas. Following his visit to the French Exhibition in 1857 William brought back new machinery, including iron ploughs and a McCormick reaper while new wheat varieties from England were also introduced. Attempts were made to encourage tenants to educate themselves in new farming techniques, both by example on the Camden estate and in the formation of the Camden Farmers and General Improvement Society.

Horticulture remained William's passion and a means of providing additional income for the estate, with the publication of nursery catalogues in 1843 and 1845 and their re-publication in 1850 and 1857. Like his management of the Camden flocks, William's plant breeding successes and failures were meticulously recorded while his letters and sales books documented the extensive contribution made by Camden Park to the distribution of vines, bulbs and plants to the four eastern colonies.⁸⁶

3.1.12 Floods and Drought

While innovation and experimentation helped to keep Camden Park in the forefront of modern agricultural developments, some factors remained outside the control of its owners. Flooding had been a common feature of life on the Nepean but from the 1840s flooding became a much more frequent phenomenon, with almost three times as many floods in the years from 1843-1868 as in 1819-1842. In earlier years the floodwaters had come and gone slowly, 'assuming the appearance, for several successive days, of tranquil lakes over the greater portion of their extent' and doing little damage. From 1860 the shorter duration of the flooding, rising and falling with great rapidity, caused immense damage to the land and to fencing.⁸⁷

Access across the Nepean had been at a point north of Menangle called the 'Bird's Eye Crossing' with another east of the village known as 'Archie's Crossing' near river features called the 'Black Hole' and the 'Narrows'. The first road bridge, built in 1855, improved transport and helped to open up the area but it was damaged in the 1867 flood and replaced further upstream by a lower height bridge that would be less prone to flood damage.

In the 1860s and 1870s both rain and drought affected the area, with devastating results. At the same time the arrival of 'stem rust' brought another form of destruction and eventually wheat ceased to be cultivated and the geographical distribution of the crop moved south.

For those who survived, and stayed in the area oats became the staple crop together with maize and barely, with a greater dependence upon livestock. In 1862 there had

⁸⁴ James Macarthur [to Edward Macarthur] 15 January 1858, James Macarthur financial statements, Macarthur Papers Vol. 32, pp 48-56, A2928 CY 1016 (Mitchell Library)

⁸⁵ Bk 74 No. 267 dated 12 April 1860 (L&PI)

⁸⁶ Joy Hughes in Richard Aitken & Michael Looker (eds): *The Oxford Companion to Australian Gardens*, Oxford University Press, 2002, pp 383-385

⁸⁷ William Macarthur, Letter to the Editor, *Sydney Morning Herald* 25 February 1868 p 3d-e

been 4733 acres under wheat but by 1869 this had changed to a mixture of wheat (1163 acres), oats (1562 acres), barley (318 acres), and rye (127 acres).⁸⁸ Others moved further out towards Goulburn, often following family members, and quietly deserted their leases. At Camden Park the number of tenants declined from 167 in 1862 to 120 in 1869 while large arrears of rent were written off for those who had suffered in floods and drought.⁸⁹ The Macarthurs eventually changed the long leases they had originally offered to yearly tenancies, an acknowledgement that their model of long-term commitment to improvement and development by tenants was no longer relevant, or workable, in changed circumstances.

3.1.13 The Coming of the Railway

The old railway line south of Sydney had finished at 'Menangle North' station, close to the site of the house 'The Pines' at present day Menangle Park. The railway was extended south in 1863 with the construction of the steel girder and brick pier construction Menangle Railway Viaduct over the Nepean and its floodplain and a new station at Menangle,



Figure 19 Menangle Railway Station, dating from 1864⁹⁰, is one of the earliest surviving station complexes in NSW. (Image source: Wikipedia)

⁸⁸ Papers re: land 1849-1888, Macarthur Papers A 4220 (CY 2150)

⁸⁹ Alan Atkinson: *Camden*, Oxford University Press Australia, 1988, pp 94-100

⁹⁰ State Heritage Inventory database.



Figure 20 Menangle Railway Bridge over the Nepean River is the earliest bridge of its type in NSW. (Photo: Chris Betteridge, 5 November 2003).

3.1.14 Generational change

After more than forty years at Camden Park, James and William Macarthur were now in their late fifties and early sixties and finding it difficult to be optimistic. In 1859 James resigned from colonial politics, disillusioned with the rise of popular liberalism. The following year he returned to England, at the same time mortgaging his half of 2250 acres at Camden Park for a loan of £10,000.⁹¹ After representing New South Wales in various capacities, and touring the continent from 1860-1864 with his wife Emily and daughter Elizabeth,⁹² James was eventually persuaded to return to Camden by Elizabeth and once again took up parliamentary duties.⁹³ He died in April 1867, just a few months after Elizabeth's marriage to Captain Arthur Onslow RN, a grandson of Alexander Macleay, and left a life interest in his share of the estate to his widow Emily, with Elizabeth, his only child, as his heir.

In 1862 William too had left for a visit to England, as a commissioner at the London International Exhibition, leaving his agents to deal with tenants while he also toured Europe with James and his family. On his return in 1864 William was appointed to the Legislative Council and continued his involvement in numerous societies and his horticultural interests. Despite the difficulties of defaulting tenants, the original estate remained almost intact. Only one piece of land was sold, 95 acres with a frontage to Mt Hunter rivulet sold to James Wheeler in 1865 for £700, a rare exception to the integrity of the Macarthur holdings.⁹⁴

⁹¹ To William and James Kinghorne Chisholm of Gledswood, Bk 88 No. 523 dated 14 April 1860 (LPMA)

⁹² Joy N Hughes: *The Macarthurs: a brief family history*, Historic Houses Trust of New South Wales, 1984, p 19

⁹³ *Australian Dictionary of Biography Volume 2: 1788-1850 I-Z*, Melbourne University Press, 1979 entry for James Macarthur

⁹⁴ Bk 95 No. 411 dated 28 June 1865 (LPMA)

3.1.15 A School and a Church at Menangle

Pressure for a public school culminated with the opening in 1871 of a school on land donated by William 'for the education of the children at Menangle' with an initial enrolment of 43 pupils. A residence was added before repairs in 1876 but the first school building was sold by auction along with the fence on 7 January 1876. A two room weather shed was added in 1878.⁹⁵

The spiritual life of the community in the eastern part of the estate was not neglected. Church services had been held in the old school building from 28 May 1871 but on 24 March 1876 the foundation stone was laid for St James Church on the hill at Menangle. Specifications included side walls 18 inches thick, end walls 14 inches thick, a roof of colonial pine and a cedar door with a good 9 inch draw lock. This fine church on land provided by the Macarthur family was built to the design of architect John Horbury Hunt who also designed the 'fairy tale' Queen Anne Revival mansion 'Camelot' at Kirkham for the Faithfull Anderson family. A lectern was added in 1878.

3.1.16 Selling off the farms: the 1880s

Flooding and drought in the 1870s continued to put tenants under stress and, in its turn, the income of the Camden Park Estate. From 1876 many tenants were given notice to quit, generally without compensation for any improvements that they had made. William now had the help of his niece Elizabeth Onslow in running of the estate of which she became part owner in 1880 on the death of her mother. With her husband Arthur Onslow, Elizabeth lived at Camden Park. After an active career in the navy (from which he formally retired in 1871) Arthur had entered colonial politics and the Legislative Assembly, winning the seat of Camden in 1869. While busy raising a family of eight children, Elizabeth had begun to play an important role in running of the estate, an essential training for eventually assuming her inheritance.⁹⁶

In changing times and with the influence of the next generation, there was a major shift in approach concerning the Macarthur lands at Camden. In 1881 William Macarthur entered into a private contract with a syndicate of four purchasers to sell 5100 acres including the flourishing north-west corner of the estate, Cobbitty Paddock and Cawdor, that consisted entirely of tenanted farms, together with all of the unsold allotments in the township of Camden. The land was still encumbered by the annuity payable to Lady Parker (William and James' sister Emmeline). The vendors undertook to attempt to discharge this and in the meantime covered the liability by investing £5000 of the purchase price.⁹⁷

Numerous tenants were affected by the proposal.⁹⁸ Their names and holdings are shown on the plan prepared for the first of the syndicate's sales in March 1882.⁹⁹ While some of the tenants' leases had been divided to provide the 96 lots on offer 'all fenced-in, and fronting wide and well-made roads', the plan provides a good idea of the workings of the tenanted estate. The new plan was intended to provide both large and small farms not only for local residents, but also for 'farmers and yeomanry

⁹⁵ Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010

⁹⁶ *Australian Dictionary of Biography Volume 5: 1851-1890 K-Q*, Melbourne University Press, 1974 entry for A A W Onslow.

⁹⁷ Private contract 6 September 1881, Hardie & Gorman, Papers re: land 1849-1888, Macarthur Papers A 4220 (CY 2150)

⁹⁸ List of 'Tenants in that portion of the Camden Estate sold to syndicate', Papers re: land 1849-1888, Macarthur Papers A 4220 pp 115-116 (CY 2150)

⁹⁹ Hardie & Gorman: Cawdor Estate, Camden Park for auction sale Monday & Tuesday, 13th & 14th March 1882, Town Plans, Camden, Z TP: C1/21 (Mitchell Library)

from all parts of the colony determined to settle in this charming and productive district' as well as potential homestead blocks 'for gentlemen from Sydney', some early 'hobby farmers'.¹⁰⁰



Figure 21 Camden Park as a tenanted estate of small farms, before the sale of the Cobbitty Paddocks in 1882. Unlike the rest of the estate, the farms at Riversford (Menangle) were named. (Macarthur Papers, M Ser 4 000/1 A30004 Map 43, undated, Mitchell Library)

¹⁰⁰ Sale advertisement *Sydney Morning Herald* 11 March 1882 p 14 d and Hardie & Gorman auction sale plan Town Plans Camden Z TP: C1/21 (Mitchell Library)

The first sale took place in March 1882. Six months later Sir William Macarthur died leaving his niece Elizabeth Onslow as his heir and the sole owner of the Macarthur properties at Camden.

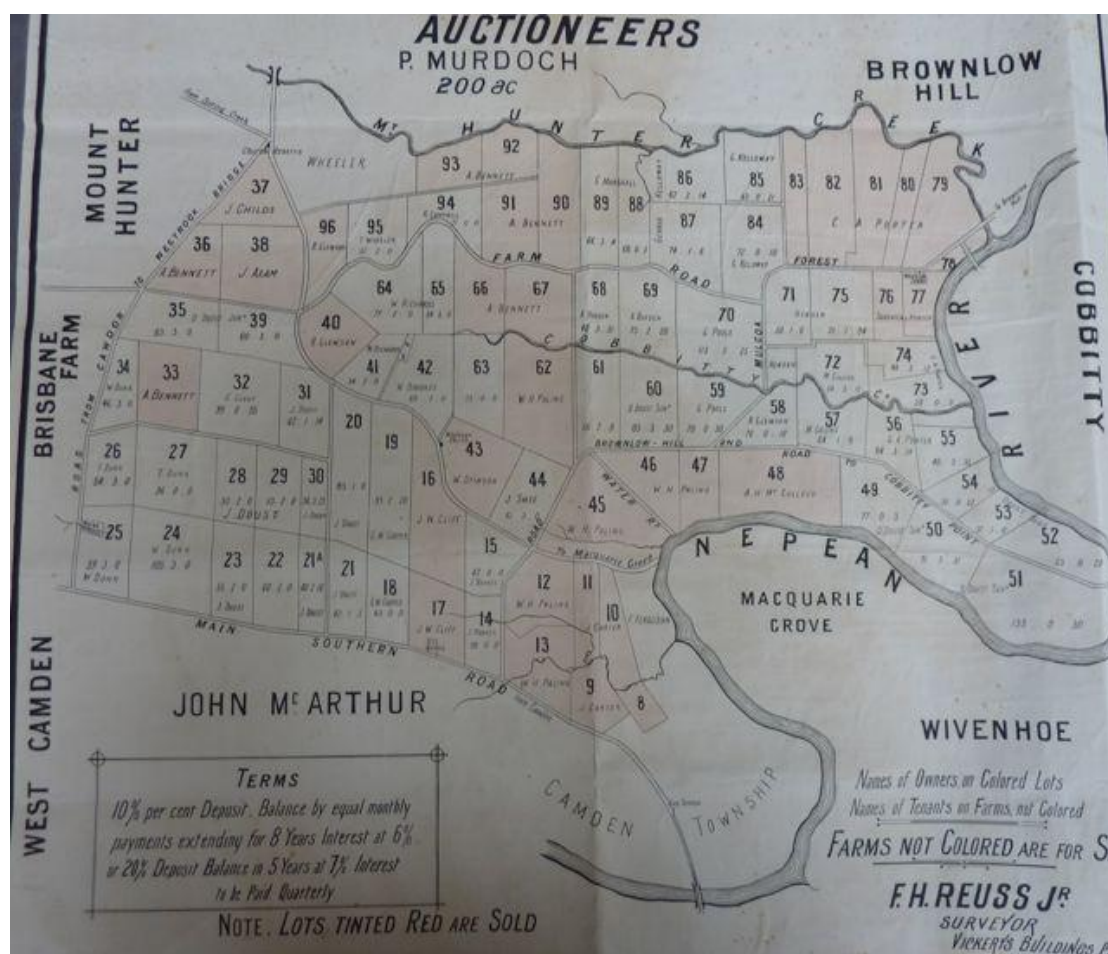


Figure 22 The Cobbitty paddocks, marketed as the Cawdor Estate, were put up for auction in March 1882 but by May 1887 a considerable number remained unsold. Purchasers' names are shown on the lots tinted pink. The unsold lots, with tenants' names, are uncoloured. The land to the west of Lots 95 and 96 had been sold to James Wheeler in 1865. (Camden Park Estate, Cawdor Farms for auction sale on Queen's Birthday 24th May 1887 by Hardie & Gorman, Maps of Country Properties CP: C1/55 Mitchell Library)

At the time of Sir William's death, following the agreed sale to the syndicate, the Camden estate had been reduced to 19,993 acres of which 14,030 acres were tenanted. While the grazing land occupied by Elizabeth Onslow was the 'very pick of the estate' the remaining tenanted farms were of variable quality. One-third, stretching from Mount Hunter Creek along Razorback and the Greenhills to Douglas Park consisted of rough, hilly and inferior grazing land that had to be let in large areas together with some arable in order to be workable, while some of the farms around Cawdor were also 'of very middling quality'. Although rents had been reduced there was clearly some hesitation amongst potential tenants as to whether they could make the farms pay.¹⁰¹

¹⁰¹ Correspondence from [Dawson] 4 April 1883, Valuation of Camden Estate for probate after death of Sir W Macarthur, Macarthur Papers Vol. 109, D185 pp 165-167 (Mitchell Library)

The Camden properties of which Sir William Macarthur owned a half share, were valued as:

Mansion and offices; 13 acres ornamental grounds; 205 acres in farm cultivation; 4 acres in vineyard; 14 acre orchard; 5 1/2 acre kitchen garden; 5721 acres grazing land; 14028 acres tenanted as farms; 4 Menangle village lots; Doust's allotment in Camden; the house and land on Church Hill, Camden; Parsonage; chief gardener's cottage (Reddy's); school house; gate houses; overseers' labourers' and stockman's dwellings; winehouse; dairy; farm buildings and steadings; 3 acres in Elderslie village (severely damaged all over by excavating sandpits).

The whole was valued at £103,621.10s.¹⁰²

On paper Camden Park was still very much the gentleman's estate; but the vision that had inspired it had never quite worked in the Australian context. The old model of a profitable tenantry was in decline, while the varied quality of the land meant that ideas about the future economic basis of the estate would require a different approach to land holding from that fostered by the founders of Camden Park.

In 1885 there were still 88 tenants on the Camden Estate. Sales of the syndicate's land were slow and a second auction in 1887 once more offered tenanted farms varying from 40 to 130 acres. Three members of the original syndicate had personally invested in the area and their properties were noted amongst the improvements surrounding the sale lots. An illustrated sales booklet extolled the comforts and benefits of the district.¹⁰³

In the meantime the syndicate had become the Anglo-Australian Investment Finance & Land Co. Ltd. Homestead blocks, nursery and vineyard areas were all a possibility on the rich arable land, the sale advertisements suggested, but the main attraction for farmers was now the prospect of dairying. The incentives for this form of farming were not just the 'rich herbage' that grew in 'rare luxuriance' on the estate but the Camden tramway that provided the means of sending milk to the Sydney markets.¹⁰⁴ The description was reminiscent of David Collins' 1795 account of the landscape that had once tempted the cattle that gave the Cowpastures its name.

3.1.17 The introduction of dairying on the Camden Park estate

The earliest years of Elizabeth Onslow's ownership of Camden Park were ones of personal tragedy. In just two years she lost her husband Arthur, her uncle Sir William Macarthur and her last child, Alexander, aged only one. With six surviving children aged between three and fourteen, Elizabeth had much to do, but it is clear that she already had ideas for the development of the estate. When an instalment of the purchase price was overdue from the syndicate in January 1883 she wrote to the family solicitors asking them to demand payment. The sum owing was 'too much to leave unpaid' and the money was required, Elizabeth wrote, for 'objects which I have

¹⁰² Correspondence concerning valuation of Camden Estate for probate after death of Sir W Macarthur, Macarthur Papers Vol. 109, D185 p 162 (Mitchell Library)

¹⁰³ Hardie & Gorman: North Cawdor Estate, Camden New South Wales To be sold at auction 25 May 1887, available online at <http://nla.gov.au/nla.map-lfsp444> (National Library of Australia)

¹⁰⁴ Auction sale advertisement Hardie & Gorman, *Sydney Morning Herald* 21 May 1887 p 16a and sale plan Camden Park Estate Cawdor Farms, Country Properties Z CP: C1/55 (Mitchell Library)

in view'.¹⁰⁵ Those objects were to herald a radical change in farming at Camden Park.

By 1884 the main Camden Park holdings occupied by Elizabeth Onslow consisted of 6000 acres, with 140 horses, 840 cattle, 1420 sheep and 50 pigs. The estate's tenants occupied farms of varying size in Menangle, Camden, Mount Hunter, Upper Camden and Razorback with horses and cattle as their main livestock. In about 1886 a timber weir was constructed across the Nepean River as part of the Upper Nepean Water Scheme to maintain landholders' riparian water rights. The remains of this weir can still be found about a metre below the surface but a second weir made of concrete was constructed circa 1911 near the Menangle Railway Bridge as part of an eleven weir system to maintain water levels right along the length of the river.



Figure 23 Menangle Weir with the railway viaduct in the background at left. (Photo: Chris Betteridge, 5 November 2003).

In 1887 Elizabeth took her children to Europe for their education and during her two years absence from Australia studied dairying in southern England and the metayage share farming system in Italy. On her return she established a dairying complex at Camden Park and employed a relation, Captain A J Onslow Thompson, as manager.¹⁰⁶ In 1889, following the death of her aunt, Elizabeth finally paid off the mortgage that had been raised on the Cawdor and Cobbitty Paddock property and so the land purchased by the syndicate could finally be conveyed without encumbrance.¹⁰⁷ Now free of debt and with no more historic encumbrances on the estate, the way was clear for new investment and a modern form of management. In 1892 Elizabeth Onslow changed her name to Macarthur-Onslow.¹⁰⁸

¹⁰⁵ Elizabeth Onslow to Norton Smith 18 January 1883, Papers re: land 1849-1888, Macarthur Papers A 4220 (CY 2150)

¹⁰⁶ *Australian Dictionary of Biography Volume 10 1891-1939 Lat-Ner*, Melbourne University Press, 1986 entry for James William, George Macleay and Francis Arthur Macarthur-Onslow

¹⁰⁷ Bk 427 No. 615 dated 20 November 1889 (LPMA)

¹⁰⁸ *Australian Dictionary of Biography Volume 5: 1851-1890 K-Q*, Melbourne University Press, 1974 entry for A A W Onslow

In 1891 during Arbor Day celebrations, funds were raised for a library at the Menangle School and from 1892 fifty-two shade trees and twenty citrus trees were planted in the school grounds.¹⁰⁹

3.1.18 Camden Park Estate Ltd

In 1899 the Camden Park estate became a private company, Camden Park Estate Ltd, in which Elizabeth Macarthur-Onslow's children were shareholders.¹¹⁰ At the same time the property, which now comprised some 21,392 acres, was brought under Torrens Title. As well as the land sold to the syndicate and the allotments in Camden village, several lots had been given for churches and schools and an area on the east side of the property had been taken for the Great Southern Railway. There were 39 tenants on the estate, the majority at Menangle, Cawdor and Camden, with much less activity in the Mount Hunter and Razorback areas.¹¹¹

The property was held under two separate titles: the house and 956 acres of land surrounding it was owned by Elizabeth Macarthur-Onslow¹¹²; and the remainder of the land was owned by Camden Park Estate Ltd.¹¹³ A survey prepared in 1899 for the purposes of the Torrens application shows the location of a number of buildings and their occupants' names. Only four of these names appear in the list of tenants, suggesting that the rest were employees at Camden Park. With the exception of the home farm and the main house, these occupants were concentrated in the Menangle area.

In 1898 the chancel sanctuary and tower were added to St James Church at Menangle to the design of John Sulman, with a second-hand manually pumped organ (built by Bryceson & Bryceson of London circa late 1870s) purchased from Hill & Son by Elizabeth Macarthur Onslow and installed in 1902.¹¹⁴

3.1.19 The 1880s to World War I

From the late 1880s Camden Park began to take on a new aspect as a farming enterprise based on dairying. The ledgers of workmen's duties at this period indicate considerable activity including brick making, quarrying, new buildings, irrigation and drainage¹¹⁵ with a substantial investment in the orangery and orchard and a renewed vineyard in which 4000 vines were replaced in 1889.¹¹⁶ In place of Sir William Macarthur's plant sales, the estate specialised in the production of cut flowers, in particular hyacinths, for the Sydney market. These were grown on the flats south of the orchard. A horse stud was also re-established. The introduction of the cream separator provided by-products such as skim milk that opened up another potential source of income from an investment in pig farming.

¹⁰⁹ Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010

¹¹⁰ Memorandum & Articles of Association of Camden Park Estate Ltd., Norton Smith Papers, Camden Park Estate A5383/2 Item No. 127. The company was incorporated on 15 August 1899. (Mitchell Library)

¹¹¹ PA 11487 (LPMA)

¹¹² CT Vol. 1364 Fol. 142 dated 29 July 1901 (LPMA)

¹¹³ CT Vol. 1364 Fl. 143 dated 29 July 1901 an area of 20415a 3r 28p (LPMA)

¹¹⁴ <http://www.ohta.org.au/organs/organs/StJamesManangle.html>

¹¹⁵ Workmen's duties 1887-1888, Macarthur Papers A4224, CY 2390 (Mitchell Library)

¹¹⁶ Howard Tanner & Associates: Camden Park Estate Conservation Plan prepared for the Department of Planning NSW, April 1989, Appendix 7 History by K Blackmore & P Ashton, pp 16-17

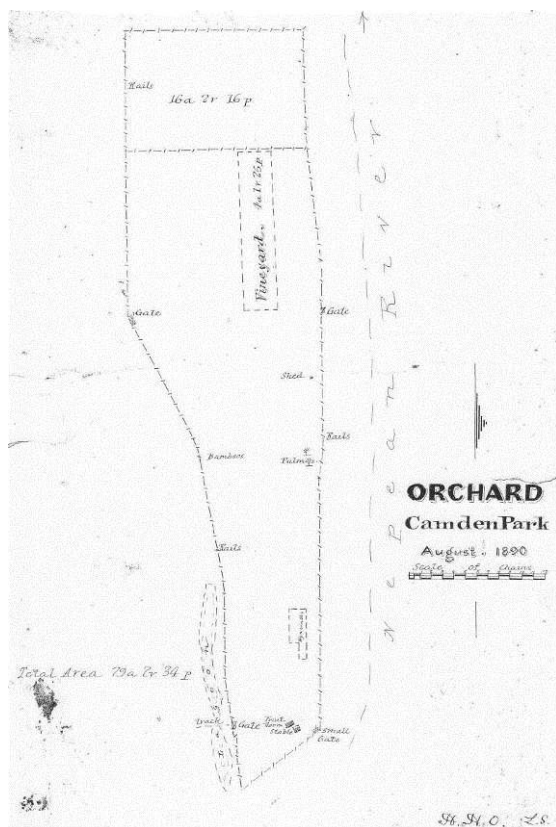


Figure 24 The orchard at Camden Park in August 1890 and within it the hyacinth bed, bamboos, palms, a shed, fruit room and stable and a vineyard of over 4 acres (PXD 507 Mitchell Library)

The orchard was damaged by flooding in 1890, but two years later 2,500 additional trees were planted and fruit, mainly peaches, became an important component of the income of the estate.¹¹⁷ By 1899 the orchard had been extended to the north-west at the bend in the Nepean River.¹¹⁸

New developments meant new buildings, some for dairying, and others for show. Plans and specifications for additions to the estate during the early 1890s included:

- Hay shed, feed pens and chaff house at Farm No. 18 (W Mills farm);¹¹⁹
- New dairy, milking shed, cooler, cow yards and pig yard at Camden House in 1890;¹²⁰
- Two private entrance lodges, one at Menangle¹²¹ and the other on the private entrance road to Camden Park, suitably adorned with the family coat of arms;¹²²
- Alterations & additions to farm stables / draught horse stables 1891.¹²³

Plans of other cottages, including accommodation for T Reedy and J Veness may also be of the same period.¹²⁴ For the more stylish parts of the establishment, the

¹¹⁷ Howard Tanner & Associates: Camden Park Estate Conservation Plan prepared for the Department of Planning NSW, April 1989, Appendix 7 History by K Blackmore & P Ashton, pp 22-23

¹¹⁸ PA11487 and DP61487 (Roll Plan 222) The tenants are listed on PA11487 (LPMA)

¹¹⁹ PXD 507 f.26 Camden Park miscellaneous plans (Mitchell Library)

¹²⁰ PXD 507 [no folio number] Camden Park miscellaneous plans (Mitchell Library)

¹²¹ PXD 507 f.7 dated March 1895 and initialled RJC, Camden Park miscellaneous plans (Mitchell Library)

¹²² PXD 507 fols 8 & 9 Camden Park miscellaneous plans (Mitchell Library)

¹²³ Plan lists and specifications, Macarthur Papers MSS 4378 Item 65 (66) (Mitchell Library)

Macarthur-Onslow family's architects of choice were the fashionable firm of Sulman & Power.¹²⁵



Figure 25 The Menangle Gate Lodge, attributed to architects Sulman and Power. The visible gable end features the coat-of-arms of the Macarthurs with the motto 'Fide et opera' (by fidelity and work). The other gable end features the coat-of-arms of the Onslow family, relocated from the former Camden Gate Lodge, now in residential development on Camden Valley Way. (Photo: Chris Betteridge, 11 September 2008).



Figure 26 (Left): Macarthur coat-of-arms, bearing the Latin motto '*Fide et Opera*' (through faith and work); **(Right):** Onslow family crest, bearing the Latin motto '*Festina lente*' (hasten but without impetuosity). **(Photos:** Chris Betteridge, 11 September 2008).

In 1892 the Camden Park dairy was described as 'a factory which has 30 suppliers and sends its cream for treatment in Sydney'¹²⁶ but by 1895 creameries had been built on the estate.¹²⁷

By the mid-1890s the estate had been cleared to provide additional grazing, co-operative dairy farms had been established, (in addition to the leased farms), creameries built including those at Camden and Menangle, pig farming and bacon curing were in operation and the orchard and flower cultivation were in full production. An undated newspaper article about Woodford bacon factory, near

¹²⁴ PXD 507 f.11 (cottage), f. 10 (for T Reedy) and f. 13 (for J Veness) Camden Park miscellaneous plans (Mitchell Library)

¹²⁵ Zeny Edwards: 'The life and work of Sir John Sulman 1848-1934', PhD thesis, Faculty of Design Architecture and Building, University of Technology Sydney, July 2006, Chapter 16.

¹²⁶ 'National Prize Competition 1892, Dairies', *Agricultural Gazette of New South Wales* Vol. IV Pt 4 April 1893, pp 265-269

¹²⁷ The Camden Park Estate in *Beautiful Sydney (1895-1896)*, Geo. Robertson & Co.

Warrnambool in Victoria, amongst the Macarthur family papers, annotated 'The origin of the scheme', suggests the origin of the piggery enterprise.¹²⁸ However the most up-to-date piece of dairy mechanisation, the imported milking machine, first used at Bodalla in 1892, was not included in the new developments and it was to be many years before this labour saving invention appeared at Camden Park.¹²⁹

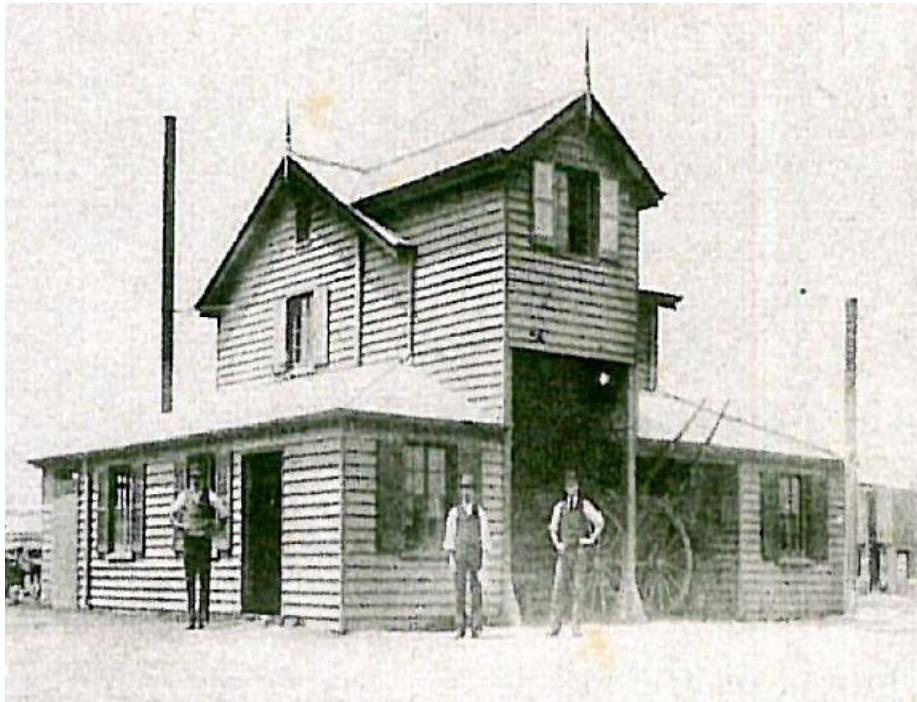


Figure 27 The original Menangle creamery, illustrated in Anon, *Beautiful Sydney* (1895-96): including Newcastle coalopolis and fertile Maitland. The form of this building is similar to the surviving former creamery at Mount Hunter.

A description of Camden Park published in *Beautiful Sydney* (1895-1896) provides a snapshot of the property.

"The estate has now over a dozen co-operative dairy farms, and over forty leased farms beside the home farm of 5000 acres. The various creameries have been admirably designed as will be seen from the picture of the one at Menangle, which is about four miles from Camden Park House. Saving of labour, perfect cleanliness, being the watchwords of the manager, steam and water are laid on everywhere, and the milk from over a thousand cows is delivered each morning. Model Milking yards close by the factory are connected with one of the largest of the co-operative dairy farms, and have answered excellently. The dairy herd is chiefly cross-bred Ayrshires with a few jersey cattle. The Central Creamery at Camden, like that at Menangle, is seen in the illustrations. Here the cream is churned, which is separated at the outlying creameries, and butter made, chilled and packed ready for export. Ice for local consumption is also manufactured, and a bacon-curing establishment with the necessary chilling and curing rooms is attached."

¹²⁸ Plan lists and specifications, Macarthur Papers MSS 4378 Item 65 (66) (Mitchell Library)

¹²⁹ *Agricultural Gazette of New South Wales* Vol. III Pt 8 August 1892, pp 620-621

The clearing of estate was done under good supervision, and the clumps of trees then preserved afford grateful shade for the cattle. The view of the ponds near the house brings into strong relief the varied character of the trees and shrubs, which include English oaks, elm, ash, and willow, many wonderful old trees having grown from seeds, and were planted by Captain Macarthur and others.

The stud includes the thoroughbred stallion "Stockdale" and the Suffolk Punch "Samson" ... and about eighty brood mares.

The orchard at Camden Park covers about one hundred and fifty acres, from which numberless varieties of fruit find their way to the Sydney market every season. Not only summer fruits, but olives, walnuts, and chestnuts are grown, and successfully too, and from one corner there have been sent over a hundred thousand spikes of flowers raised from choice hyacinth bulbs.

The co-operative farms have a simple system, which works well, as Captain A J Onslow Thompson says: - "At first we had trouble no doubt. It was not easy to make people understand the system, but now the whole thing works admirably. All we want is a family man with a good knowledge of practical farming. We find house, farm, cows and horses, tools, everything that is necessary, although of course many of our farmers have some of these things of their own, and prefer to use them.

We supply each farmer on an average with about sixty cows in full milk. All dry stock are kept by ourselves, and as the cows come in they are apportioned to the various farms. Of course considerable oversight is needed, but our people see that the whole arrangement is a mutual one, and the results are fairly divided."

By this time, two of Elizabeth's sons were assisting Captain Thompson in running the estate.¹³⁰

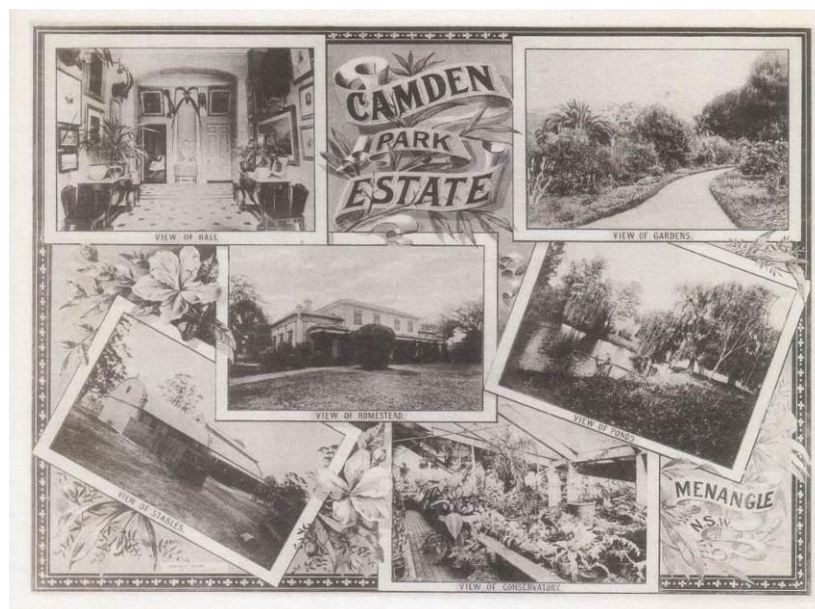


Figure 28 Views of Camden Park House and its associated buildings and grounds, listing the location as Menangle, published in *Beautiful Sydney* (1895-1896), by Geo. Robertson & Co. (Mitchell Library)

¹³⁰ The Camden Park Estate in *Beautiful Sydney* (1895-1896), Geo. Robertson & Co.

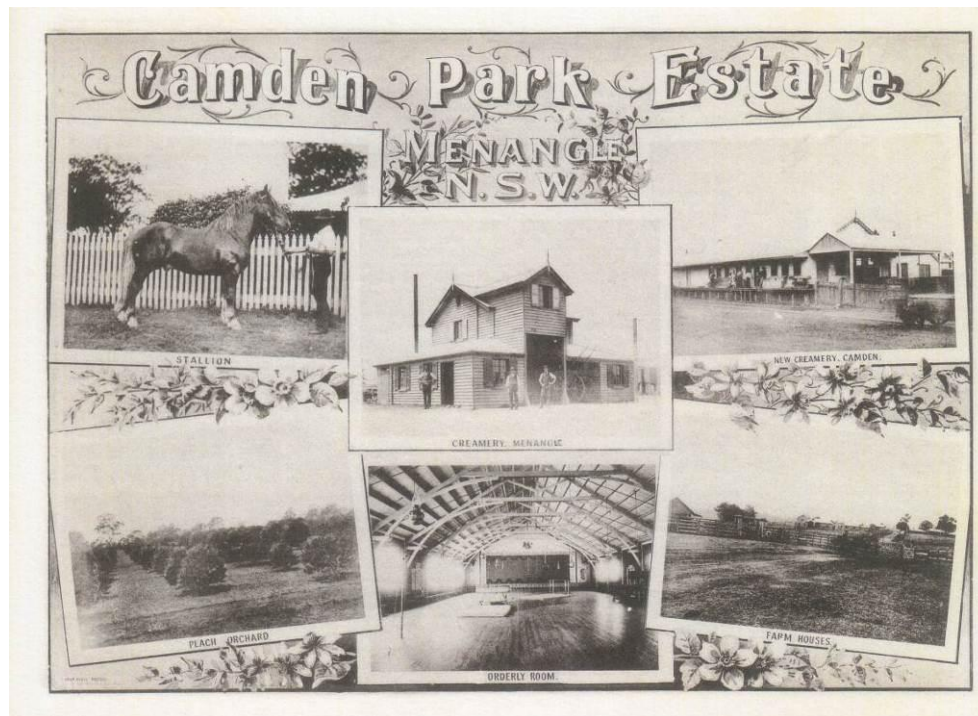


Figure 29 Views of the Menangle side of the Camden Park Estate published in *Beautiful Sydney* (1895-1896), by Geo. Robertson & Co. (Mitchell Library)

While co-operative factories were a major development in the dairy industry in the 1880s and 1890s, enabling individual producers to share equipment and transport, the form of co-operative dairy farming employed at Camden Park still involved elements of the tenant farming ethos that had typified the estate many years previously. Under the metayage system that Elizabeth Onslow had studied in Europe, the cultivator (metayer) used land that he did not own, was supplied with the chief capital items required for farming (mainly stock) by the landowner and paid rent in kind. In its purest form the shared tenancy involved the payment of approximately half of the annual output to the landowner.¹³¹ Captain Thompson's description of the co-operative dairy farms in operation at Camden Park in 1895 contains all of these elements. None of these farmers owned their own land and there was the same emphasis, as in earlier years, on the family man - the stable unit of the system, who came with the added advantage of family members to assist run the farm. Contemporary developments in the dairy industry such as the introduction of machinery and an emphasis upon scientific methods required greater capital investment than many small farmers could afford. For these farmers, tenancies at Camden Park may have provided a suitable solution to a lack of investment capital.

In 1895 St Patrick's Church was built at Menangle to serve the local Catholic community. Prior to this a small Catholic school with up to sixty children existed, run by the Josephite nuns and one of six local schools initiated by Mary MacKillop.

The rosy picture of the estate presented in 1895 was again mitigated by long dry spells in the late 1890s culminating in the great drought of 1902. Fodder was imported from South America while new dams and twenty timber silos were

¹³¹ *New Encyclopaedia Britannica*, Volume 8 Micropaedia, 15th edition, 2007, p 64

constructed to increase the storage capacity of water and fodder.¹³² Making silage was a comparatively new practice in dairying and one that was being actively promoted at this period.¹³³ The existence of silos on some neighbouring farms was remarked upon as a new practice in the sale booklet for the Cawdor Estate in 1887.¹³⁴ The dry years continued, in 1905 and 1907-1908 with another major drought in 1914 while considerable sums were spent on another form of pasture destruction, the rabbit pest.¹³⁵ Real income from the estate fell as the sale of more peripheral land helped to support continuing investment.

Despite the adverse conditions, investment in dairying continued with new machinery for the Westbrook Creamery¹³⁶, operating near the Mount Hunter Rivulet on Burragorang Road. This was the first butter factory erected in the district and was originally a dairy co-operative (the Camden Dairy Company Limited), subsequently acquired by the Camden Park Estate.¹³⁷ It operated from 1880 to 1907, the first creamery building being burnt down in 1902 and almost immediately replaced by the two-storey timber building which still stands today.¹³⁸

The original timber Menangle Creamery, shown in Figures 24 and 26, was replaced by a two storey brick creamery built in 1898 by Camden Park Estate Co.



Figure 30 The 'new' Menangle Creamery built in 1898, as it appeared in 1992. (Source: Wollondilly Heritage Study).

¹³² Howard Tanner & Associates: Camden Park Estate Conservation Plan prepared for the Department of Planning NSW, April 1989, Appendix 7 History by K Blackmore & P Ashton, pp 21-22

¹³³ For example various articles in the *Agricultural Gazette of New South Wales* in the 1890s

¹³⁴ Hardie & Gorman: North Cawdor Estate, Camden New South Wales To be sold at auction 25 May 1887, available online at <http://nla.gov.au/nla.map-lfsp444> (National Library of Australia)

¹³⁵ Howard Tanner & Associates: Camden Park Estate Conservation Plan prepared for the Department of Planning NSW, April 1989, Appendix 7 History by K Blackmore & P Ashton, p 23

¹³⁶ Plan lists and specifications, Macarthur Papers MSS 4378 Item 65 (66) (Mitchell Library)

¹³⁷ Ian Willis: 'The Gentry and the Village', Camden, 1800-1939, *Camden History Journal of the Camden Historical Society*, Vol. 1 No. 10, September 2005, p 236

¹³⁸ Akers, Jenny *Mount Hunter*, <http://www.camdenhistory.org.au/Mount%20Hunter.pdf>

Also built on Macarthur land at Menangle circa 1890s was a School of Arts. Such buildings were encouraged by the NSW Government to stimulate community interaction and enlightenment and it became a focus for events such as regular dances¹³⁹.

3.1.20 Consolidation and sale

As Elizabeth Macarthur-Onslow's children returned to Camden after their overseas education and travel, a second storey was added to one of the courtyard wings at Camden House. There were other additions for the next generation. At Menangle a fashionable house called Gilbulla, designed by Sulman & Power, was built by James at his own expense in 1899 (he had married in 1897) to be followed in about 1904 by a house near Camden (also by Sulman & Power) for Arthur John ('Jack') Macarthur-Onslow and his wife Christian.¹⁴⁰ Originally called Balwearie, the name was changed to Murrundah when it became the home of George Macarthur-Onslow and his wife Violet who had married in October 1907.¹⁴¹



Figure 31 Gilbulla, off Moreton Park Road, to the southeast of Menangle Village. (Photo: Chris Betteridge, 11 August 2004).

While James and George married, Sibella did not, and Camden Park remained her home and that of Elizabeth's other unmarried children. In 1902 Gilbulla and its surrounding 14 acres were leased to James for an annual rent of £5 for a term of 99 years, in effect a peppercorn rent.¹⁴²

Subdivision of the estate, in progress in a small way in 1900 when Camden Park was brought under Torrens title, continued.¹⁴³ Further subdivisions to the west and east

¹³⁹ Wayne McPhee & Associates, 2010.

¹⁴⁰ Zeny Edwards: 'The life and work of Sir John Sulman 1848-1934', Doctor of Philosophy thesis, Faculty of Design Architecture and Building, University of Technology Sydney, July 2006, Chapter 16.

¹⁴¹ *Sydney Morning Herald* 19 October 1907

¹⁴² Memorandum of lease 352422 (LPMA)

¹⁴³ Called Section 12, DP3812 with sales from c.1901 to 1916

of this area were offered for sale in 1905 and 1910.¹⁴⁴ In the same period substantial tracts of land around the peripheries of the estate, that were much less suitable for dairying, were also subdivided into farm lots. These included the area to the west of Mount Hunter¹⁴⁵ divided into 15 lots and sold from 1910-1912; and the southern end of the estate, south of the road from Cawdor to Menangle. The first part (including Rosslyn and Melrose) was sold in 1905 and was still selling in 1916 and the second between 1912 and 1914.¹⁴⁶ The effect of these subdivisions was to consolidate the Camden Park Estate around its main dairying facilities, the creameries at Camden, Menangle and Cawdor, on its richest lands. Sales were slow but presumably provided useful income. At the same period there were some sales of allotments at Menangle, originally a private village, to long time estate workers such as members of the Hickey and Hawkey families.

Developments at Menangle during this period included the Menangle Store, a two storey building designed by Sulman and Power and erected in 1904 on a prominent site at the intersection of Menangle Road and Station Street. The store had a butcher's room, chill room, cool rooms, a domed brick well and its own ovens. It supplied groceries, fresh bread, fresh store-killed meat, drapery, tinware and many other provisions. It also served as a post office and a meeting place for the local community. Deliveries from the store were made by horse and cart 'in all directions' including via Moreton Park Road to Douglas Park and on to Wilton as well as via the Camden Park estate to Camden and across Archie's Crossing on the Nepean up through Mt Gilead to Appin. In 1906 a new public school building and residence were built on a half-acre given by the Macarthur family and alterations to the Menangle Railway Bridge were carried out the following year to increase its load bearing capacity.¹⁴⁷

The consolidation of the estate into the family company Camden Park Ltd, received a considerable blow in 1910 with the introduction of the Federal *Land Tax Act*, a tax on the unimproved capital value of land, designed to break up large estates. In response to this impost both George and [Francis] Arthur purchased substantial areas of the estate in their own names in 1911. At least some elements of these 'sales' were essentially paper transactions, presumably to reduce the land tax burden on the company. The £5000 deposit for George's 2,414 acres between the southern road and the road to Menangle [the Old Hume Highway] was paid for by a ten-year loan from his mother¹⁴⁸ and the land was immediately mortgaged to Camden Park Estate Ltd.¹⁴⁹

Transfers to family members continued in 1917 when 567 acres at Menangle, west of the Campbelltown Road, was transferred to Arthur;¹⁵⁰ in 1921 with the transfer to James of 1,008 acres adjacent to Gilbulla;¹⁵¹ and in 1927 to the next generation with the transfer of 1,103 acres to Denzil, Arthur's son.¹⁵² Like George's property, James' and his nephew Denzil's lands were mortgaged to Camden Park Estate Ltd. The exception was the land owned by Arthur. In 1927 part of this was subdivided into six

¹⁴⁴ DP4538 sold 1905-1912 and DP5895 sold 1910 and 1914 (LPMA)

¹⁴⁵ DP5827 (LPMA)

¹⁴⁶ DP5995 and DP4450 (LPMA)

¹⁴⁷ Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010

¹⁴⁸ Norton Smith papers A5383/2 No. 93 Miscellaneous agreements re: land 1911 (Mitchell Library)

¹⁴⁹ Vol. 2216 Fol. 40 (LPMA)

¹⁵⁰ Vol. 2728 Fol. 178 (LPMA)

¹⁵¹ Vol. 3182 Fol. 66 (LPMA)

¹⁵² Vol. 3980 Fol. 178 (LPMA)

lots, only two of which were sold. The remainder was transferred back to Camden Park Estate in 1935.¹⁵³

3.1.21 The death of Elizabeth Macarthur-Onslow and the war

In 1911 Elizabeth Macarthur-Onslow died in England. Her shares in Camden Park Estate Ltd were divided between her six children, with Sibella inheriting slightly more than her brothers. Elizabeth's own property, Camden Park House with its 963 acres, was inherited jointly by James, George and Sibella¹⁵⁴ with the use of the house and its contents to Sibella for her lifetime (or until she married) with an annual income of £20,000 for its upkeep. For Elizabeth Macarthur-Onslow, an essential part of the Macarthur-Onslow legacy was that family members should live at Camden Park House and the arrangement for Sibella was conditional upon this. Should Sibella choose not live at Camden Park, then it would be held in trust for James who would have to undertake to live there, and who would then give his home, Gilbulla, to George.¹⁵⁵ These arrangements were a reflection of family members' individual interests for, of Elizabeth's six surviving children, it was James, George and Sibella who had the greatest involvement in running the Camden Park estate.

Military service was very much a family tradition. James, Arthur, John and William all saw service in the South African War and the outbreak of World War I saw George, James and William on active service while Arthur remained at Camden to manage the estate. George and James returned, but William died at Ypres and the estate's long time manager, Major Onslow Thompson, was killed in action at Gallipoli.¹⁵⁶ The estate also served in the Great War with the Menangle School being used in 1915 as sleeping quarters for non-commissioned officers (NCOs) being trained locally.¹⁵⁷

3.1.22 Post World War I to early 1930s

From 1914 until the early 1930s George and Arthur Macarthur-Onslow were joint managers of the estate. By the 1920s the main thrust of activity was towards modernisation and improvement, as new standards brought the dairy industry into a new age. In 1920 the family set up the Camden Vale Milk Company, which processed its milk at its Menangle and Camden factories and then sent it by rail to the Sydney market. The following year Camden Vale Milk Co. became a co-operative with 162 milk suppliers and 289 cream suppliers. From 1926 the company sold bottled milk under its own name and even when it merged with Dairy Farmers in 1928 it continued to sell milk under its own label.¹⁵⁸

Hygiene was of paramount importance for the production of clean milk, while the nutritional value of milk and milk products was part of the active promotion of health, particularly that of children and invalids. With its herd certified as tuberculosis free in 1924 Arthur, assisted by his son Denzil, began to specialise in the production of pasteurised milk specifically suited to children and adults, the 'milk with the golden cap' that spread the reputation of the Camden Vale brand. New buildings and improvements, the 'model' dairies, exemplified modernity and an emphasis upon

¹⁵³ Vol. 4687 Fol. 85 (LPMA)

¹⁵⁴ Transfer A215470 & Vol. 1363 Fol. 142 (LPMA)

¹⁵⁵ 'Camden Park Estate', *Sydney Morning Herald* 5 September 1911 p 8e

¹⁵⁶ *Australian Dictionary of Biography Volume 10 1891-1939 Lat-Ner*, Melbourne University Press, 1986 entry for James William, George Macleay and Francis Arthur Macarthur-Onslow and *Camden Vale Special Pasteurised Milk Production & Distribution* [nd but pre-1946]

¹⁵⁷ Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010

¹⁵⁸ Ian Willis: 'The Gentry and the Village', Camden, 1800-1939, *Camden History Journal of the Camden Historical Society*, Vol. 1 No. 10, September 2005, pp 236-237

hygiene and milk quality. The estate was used by the Department of Agriculture for demonstrations, to host conferences of dairy inspectors and it frequently featured in Health Week campaigns, all proof of its high reputation.



Figure 32 The Camden Vale brand: an important marketing asset (Reproduced from *Camden Vale Special Pasteurised Milk Production & Distribution* c. 1937)

In 1921 there were some 1400 cows on the estate, still milked by hand. The horse stud had also come back into its own, producing an income from racing earnings and the sale of yearlings.¹⁵⁹

Improvements in the 1920s and early 1930s included: a new milk depot and railway siding at Menangle in 1921; additions to the central creamery at Camden in 1920, later remodelled and improved in 1929-1930; the Menangle model dairy in 1926; a model dairy at the home farm in 1928;¹⁶⁰ and two new dairies (Nos. 5 & 6) built in 1930.¹⁶¹ Transport routes were an important determinant in the location of the dairies and Menangle, with its railway connection, was of considerable importance to the viability of the dairying enterprise. By the early 1930s the land owned by Camden Park Estate Ltd was concentrated at Menangle and to the east and west of Camden Park House, protected all around by the properties that had been transferred to family members, much as its founder had wished when securing such large land grants to protect his sheep.

The importance of Menangle during this period is further evidenced by developments at the school, with a tennis court and 45 foot flagpole added in the playground, together with vegetable plots¹⁶² which had become common practice in school

¹⁵⁹ William Muggridge: Thoroughbred Studs of NSW "Camden Park", *The P.F.A. [Pastoral Finance Association] Quarterly Magazine*, Vol. 8 No. 31, December 1921, pp 23-24

¹⁶⁰ 'Camden Park Dairies', *Sydney Morning Herald*, 14 April 1928, p 15f. The Menangle model dairy was in operation during this visit by dairy inspectors, and the Home Farm dairy was under construction.

¹⁶¹ Howard Tanner & Associates: Camden Park Estate Conservation Plan prepared for the Department of Planning NSW, April 1989, Appendix 5 Historical Archaeology report by Wendy Thorp, p 21

¹⁶² Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010

grounds across the state. In 1928 Menangle Public School, which by then had 54 pupils, was voted the school with the best garden within 50 miles of Sydney.¹⁶³

St James Church at Menangle was consecrated on 25 October 1923 and transferred to the local Diocesan Property Trust. The stables which had been erected behind the church to house the carriage from Camden Park during services and also the rector's buggy and horse were removed in 1930 following the advent of the motor car and were sold to R E Hawkey and re-erected at the back of his home.

3.1.23 New management: 1930s to 1940s

In September 1931 George Macarthur-Onslow died and the following year his brother and fellow manager, Arthur retired. In their place J S Haddin was appointed as estate manager.¹⁶⁴ Changes also took place in the other siblings' domestic arrangements as Sibella (who remained unmarried) moved to Gilbulla and James moved into Camden Park House, as provided for in their mother's will.

A plan and valuation of the estate drawn up in 1932 following George's death provide considerable details of the land held by Camden Park Estate Ltd and the associated family holdings at this date.¹⁶⁵

A much briefer 'reappraisal' of the property by the Valuer General's Department in November 1931 helps to identify some of the tenants and the location and numbering of the dairies, of which there were seven at this date. The majority of the land had been improved by 'clearing and fencing' and included farm and residential buildings, the exception being the 1,103 acres at the southern end of the estate owned under mortgage by Denzil that had been improved only by: 'clearing, ring-barking & fencing' and contained '2 dams and windmill'.¹⁶⁶

The new manager brought in a new system of recording. All of the paddocks and their stock were itemised while a paddock and building book recorded the paddocks and fencing and the estate houses, their occupants and when works were carried out, for the period from 1931-1952.¹⁶⁷

In 1934-1935 those parts of the estate that had been sold to family members and then mortgaged to Camden Park Estate Ltd were transferred back to the family company. This included: James' land at Menangle, (920 acres to the west of the main road and extending north towards the orchard);¹⁶⁸ Denzil's 1103 acres at the southern extent of the estate;¹⁶⁹ George's estate including Murrandah (2390 acres);¹⁷⁰ the unsold portion of the land at Cawdor that had belonged outright to Arthur;¹⁷¹ and Arthur's land to the south of the Menangle Road (some 567 acres).¹⁷² The

¹⁶³ Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010

¹⁶⁴ *Camden Vale Special Pasteurised Milk Production & Distribution* [nd but pre-1946]

¹⁶⁵ Dobbie & Foxall, Licensed Surveyors, Camden Park, M3 811.31/1932 and Valuation of estate, Raine & Horne 22 March 1932 Valuation No. 12,845 in Norton Smith & Co. Documents, Camden Park Estate A5383/2 (Mitchell Library)

¹⁶⁶ Valuation of estate, Raine & Horne 22 March 1932 Valuation No. 12,845 in Norton Smith & Co. Documents, Camden Park Estate A5383/2 (Mitchell Library)

¹⁶⁷ Camden Park Estate papers, Paddock Books MSS 4778 Item 5 (66) (Mitchell Library)

¹⁶⁸ Vol. 3182 Fol. 66 (LPMA)

¹⁶⁹ Vol. 3980 Fol. 178 (LPMA)

¹⁷⁰ Vol. 2734 Fol. 8 and Vol. 4689 Fol. 70 (LPMA)

¹⁷¹ Vol. 4687 Fol. 85 (LPMA)

¹⁷² Vol. 2728 Fol. 178 (LPMA)

purpose of the original transfers and their later re-amalgamation into Camden Park Estate Ltd is not known. This may have been for taxation purposes, or perhaps to provide each of the siblings with an independent income.

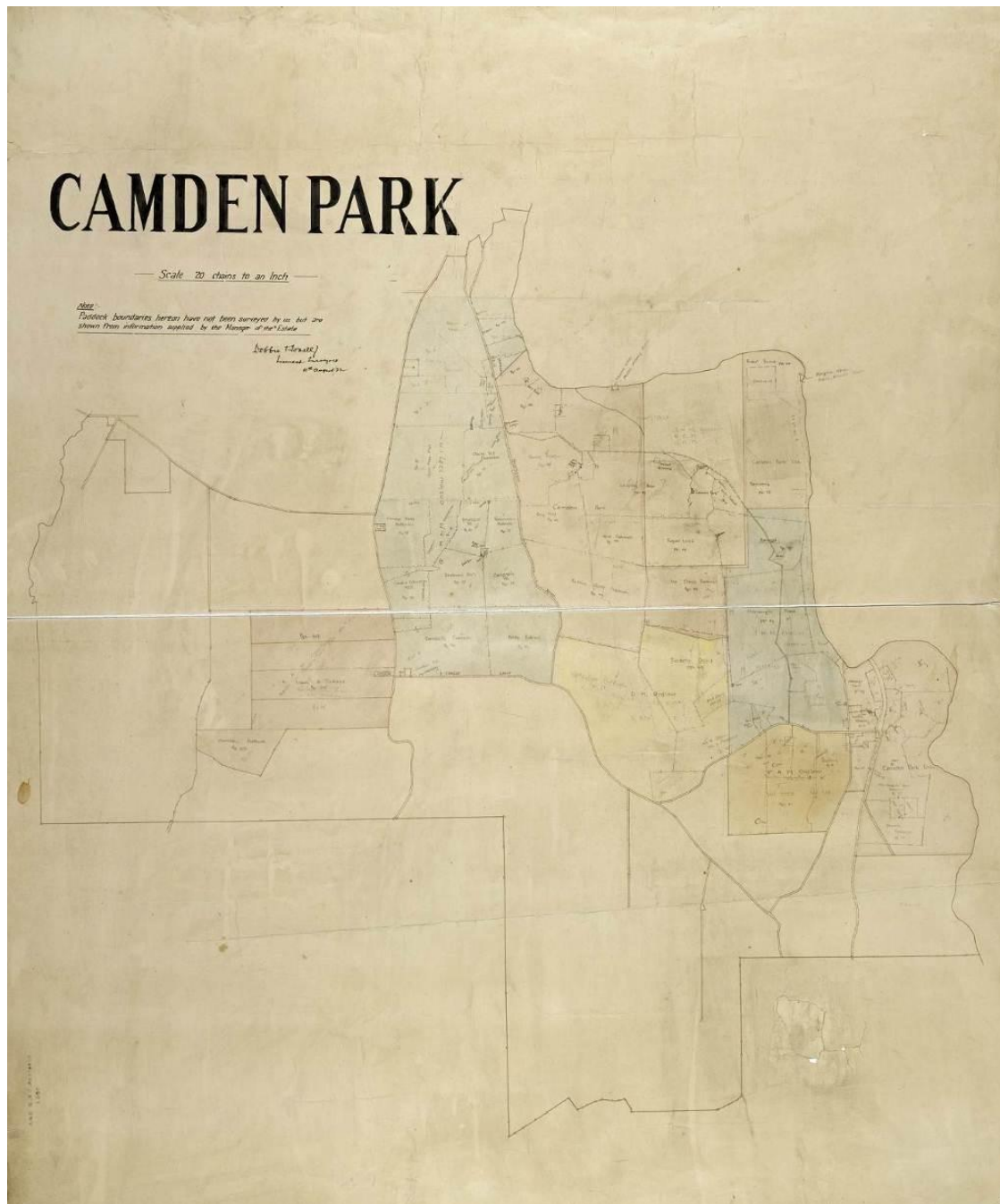


Figure 33 The Camden Park estate in 1932: the colouring identifies the various owners. At this date the company owned land to the west, east and south of Camden Park House and also at Menangle. (Camden Park, Dobbie & Foxall Licensed Surveyors 11th August 1932, Map Z M3 811.31/1932/1 Mitchell Library)

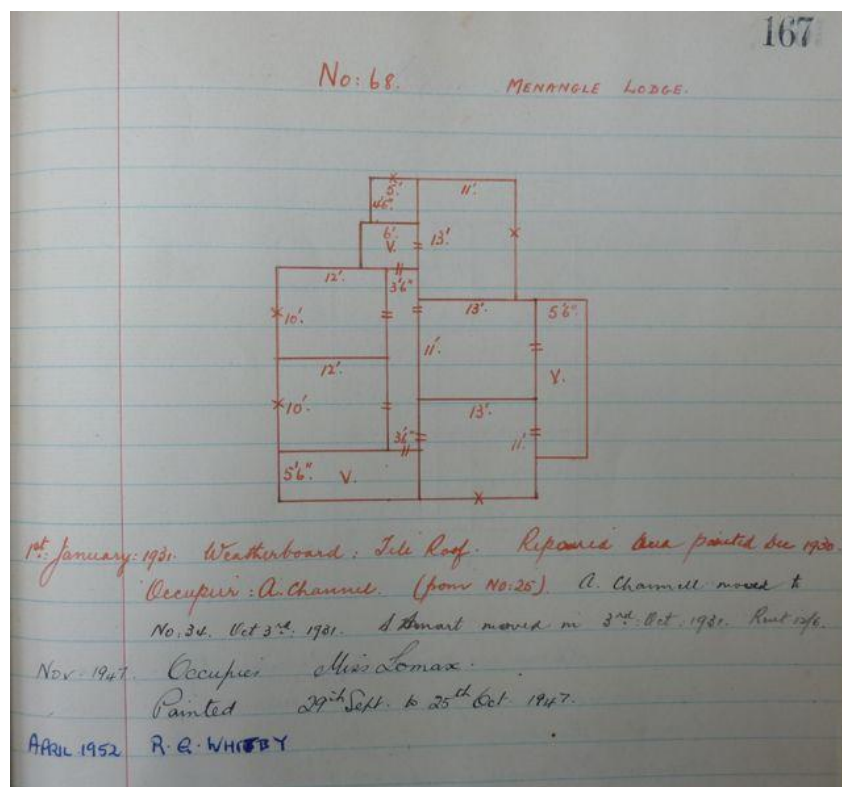


Figure 34 A sketch plan of the Menangle Lodge in 1931 with notes on repairs and occupants. (Camden Park Estate Ltd, Paddock & buildings book 1931-1952, MSS 4378 Item 5 (66), Mitchell Library)

In 1937 a replacement weather shed for the Menangle Public School was built.¹⁷³

3.1.24 Modern marketing: the Milk Bar

By the later 1930s, with growing car ownership, another element was added to the estate's enterprises; the potential for milk to be marketed in attractive surroundings to travellers on the Hume Highway. In 1937 plans were prepared by architect Cyril C Ruwald for the Camden Vale Inn, or Milk Bar, on the Hume Highway at Camden.¹⁷⁴ Designed in Tudor style 'with walls in attractively coloured brickwork suggesting a touch of modernity' and set in a landscaped setting, the inn was designed with a view to 'offering the utmost in comfort and convenience'. Milk drinks would be served, milk and cream would be available for sale and a special feature would be 'delicious morning and afternoon teas'.¹⁷⁵ The promotion of Camden Vale products in a modern 'roadhouse' was an interesting development in dairy marketing that was to be exemplified to an even greater extent in developments in the 1950s.

The importance of Camden Park as a model dairying establishment, and innovations such as the Camden Vale Inn, were however no protection from falling dairy prices, and profits declined dramatically throughout the 1930s. Considerable attention was given to fodder supply, with experiments in pasture improvement and much greater provision for ensilage both in pits and in above ground silos. Many of the estate cottages were overhauled; some 50 buildings, housing a workforce of 135

¹⁷³ Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010

¹⁷⁴ The plans for the grounds were by Hazelwood Bros of Epping, PXD 507 Camden Park Estate miscellaneous plans fols. 49-52 (Mitchell Library)

¹⁷⁵ Camden Vale Special Pasteurised Milk Production & Distribution [nd but pre-1946]

employees. At the seven dairies, the sharefarmers were milking nearly 750 cows a day while the Camden Park Estate Ltd herd had 600 Ayrshire cows as well as a Guernsey stud.¹⁷⁶

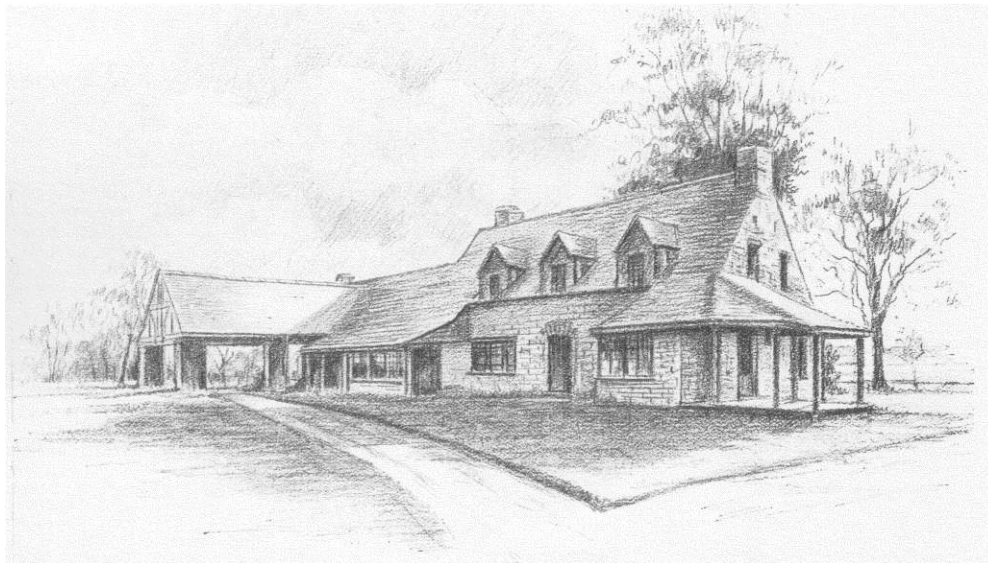


Figure 35 An artist's impression of the proposed Camden Vale Milk Bar on the Hume Highway between Camden and Picton, a modern concept in the marketing and promotion of Camden Park and its dairy produce. (Reproduced from *Camden Vale Special Pasteurised Milk Production & Distribution* c. 1937)

Premiums paid to sharefarmers based upon the quality of their milk, helped to ensure high standards of hygiene. In 1937 there were 450 acres of maize, 150 acres of lucerne, 16 overhead silos as well as many pits, and 70 purebred Suffolk punches, a sizeable component of working horses. 'The whole conveys an impression of enlightened closer settlement, community interest, and progressive association' wrote the *Sydney Morning Herald's* special representative.¹⁷⁷ Breeding dairy cattle to increase milk production and quality, a particular interest of James Macarthur-Onslow, was an integral part of the work of the estate.

¹⁷⁶ Howard Tanner & Associates: Camden Park Estate Conservation Plan prepared for the Department of Planning NSW, April 1989, Appendix 7 History by K Blackmore & P Ashton, pp 28-29

¹⁷⁷ 'Camden Park Inspection of Estate. Progressive dairy methods', *Sydney Morning Herald*, 10 February 1936 p 9g

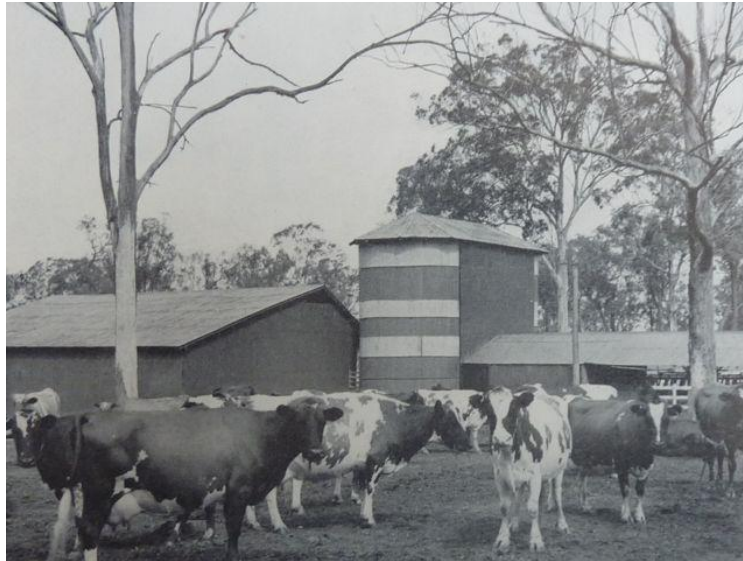


Figure 36 Cows at No. 8 Dairy with dairy buildings, including silos in the background. (Reproduced from *Camden Park Estate. Australia's oldest pastoral property*, Halstead Press, 1958)

The expansion of the 1930s was soon tempered by the war years. Poor working conditions and low wages, which had long been a feature of the dairy industry, did little to help retain workers during World War II when enlistment, or the opportunity to work in factories, took both men and women away from the land. In 1942 the Milk Board removed the premium previously paid for special milk for infants, an important part of the Camden Vale brand, and in 1943 a new Federal dairy industry award increased the Camden Park payroll with no commensurate increase in the price of milk. Some vegetable growing and freezing was carried out in 1944 to supply the American Army but this enterprise did not outlast the war.¹⁷⁸ Subsidies helped to keep the dairy industry in business.¹⁷⁹

With the death of Arthur in 1938, Sibella in 1943 and James in 1946 the fourth generation of the founding family came to an end. Gilbulla, which had been converted into a Red Cross convalescent hospital during the war, was acquired in 1949 by the Church of England, eventually serving as a diocesan conference centre until sold to the present owners Ellel Ministeries in about 1999. James' widow continued to live at Camden Park and the house was eventually inherited in 1958 by their daughter, Helen, who had married Major General Sir Reginald Stanham.¹⁸⁰

¹⁷⁸ 'On the Land. May go out of dairying. Camden Park Estate', *Sydney Morning Herald*, 10 February 1944 p 7f

¹⁷⁹ Howard Tanner & Associates: Camden Park Estate Conservation Plan prepared for the Department of Planning NSW, April 1989, Appendix 7 History by K Blackmore & P Ashton, pp 28-29

¹⁸⁰ Vol. 2659 Fol. 208 (LPMA)



Figure 37 Menangle Public School residence, 1950. (Source: Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010)

3.1.25 Modern dairying: the 1950s to 1960s

As the fifth generation took over, the Camden Park Estate was still a family firm and it was Lieut. Col. Edward Macarthur Onslow who brought back from the USA the idea of what was to be the estate's most revolutionary development in dairying, the Rotolactor. Of all farming enterprises, dairying was perhaps the most labour intensive, with its twice daily, year round, milking schedule combined with all of the cleaning and hygiene procedures necessary to maintain the purity of the product. Refrigeration eventually enabled the dairy farmer to be free from the rigid time schedule dictated by milk collection, but nothing substantially altered the considerable labour of milking.

The Rotolactor, an American invention, designed by Henry W Jeffers and first installed in 1930 by the Walker-Gordon Laboratory Co. at its dairy farm in New Jersey, was a rotating milking parlour capable of feeding and milking 50 cows simultaneously. Not only was the invention a model, labour-saving milking parlour but, as practised in New Jersey by the Walker-Gordon enterprise, it also included an integrated system of cattle breeding and feeding, fodder production and manure collection and was worked by sharefarmers.

In 1950 work began on the Camden Park Rotolactor (only the third of its kind in the world and the second outside the Walker-Gordon enterprises).¹⁸¹ The proposed construction time of 18 months lengthened to two and a half years due to wet weather delays, bricklayers' strikes and material shortages and the building was finally completed in September 1952.¹⁸² The washing and preparation of the cows took place in a separate enclosure and they then stepped into one of 50 stalls where, in the 12 ½ minutes it took for the Rotolactor to rotate, they were milked and fed. As

¹⁸¹ 'Milking merry-go-round solves a dairy farm labour problem', *Milk Board Journal* Vol. 1 No. 1, January 15, 1950, pp 6-7 and 'Rotolactor taking shape', *Milk Board Journal* Vol. II No. 3, March 15, 1951 p 127

¹⁸² *Camden Park Estate Australia's oldest Pastoral Property*, [nd but c. early 1950s], Halstead Press

the Rotolactor publicity brochure explained, the milk was not touched by human hands during the entire operation and within 90 seconds of being taken from the cow, the milk was on its way, through stainless steel pipes, to the Menangle Milk Depot. Nine hundred cows a day were milked in this way by 'the ultimate in modern milking technology'.¹⁸³

An important element of the system was the feeding regime, which did not involve pasture grazing but consisted instead of a 'balanced ration of concentrates' fed to the cow when on the Rotolactor and roughage (chopped green feed, hay or silage) available in the feeding yards between milking times. The liquid manure from the system was also harvested and held in an underground pit before being pumped in liquid form to be sprayed on the paddocks, an unpleasant by-product for those living nearby.

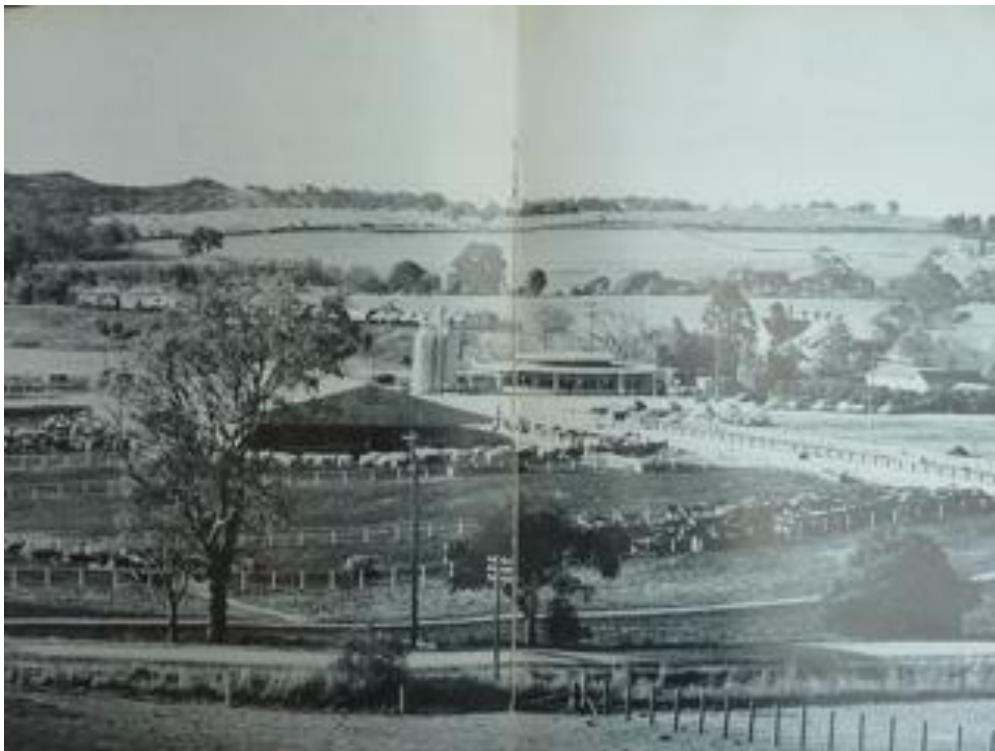


Figure 38 The Rotolactor at Menangle with milking in progress. To its right can be seen the Creamery buildings, with a goods train hauled by a steam locomotive on the main southern railway line in the background. (Reproduced from *Camden Park Estate 1795-1965. Australia's oldest pastoral property*, Camden Park Estate Pty Ltd, Menangle, 1965)

As 'the most modern Dairy Building in the world' and the focus of the largest dairy farm in Australia, the Rotolactor was not only a unique innovation but also a tourist attraction.¹⁸⁴ A modern milk bar at the entrance to the Rotolactor enabled visitors to sample the product while watching milking in progress.¹⁸⁵ There were also plans for a roadhouse with cabins by the river, swimming areas and dressing sheds¹⁸⁶ as well

¹⁸³ Camden Park Estate Pty Ltd: *Camden Park Estate 1795-1965. Australia's oldest pastoral property*, Camden Park Estate Pty Ltd, Menangle, 1965

¹⁸⁴ *Introducing The Rotolactor The home of ... the milk with the Golden Cap*, leaflet produced by Camden Park Estate Pty Limited, Camden Park papers MSS 4378, M Ser 4 000/1 (Mitchell Library)

¹⁸⁵ 'District Supervisors' Notes, The Rotolactor', *The Milk Board Journal* Vol. 3 No. 5, May 1952, pp 16-17

¹⁸⁶ PXD 507 Camden Park Estate miscellaneous plans fols. 67 & 69 (Mitchell Library)

as a residence for the Rotolactor superintendent, an amenities building and bachelors' quarters¹⁸⁷ but none of these additional facilities was built. From the 1950s and into the '60s as many as 2,000 visitors a week saw the Rotolactor in operation, while The Camden Vale Inn moved with the times, supplying not just wonderful morning and afternoon teas but also dinners, with wine.¹⁸⁸

Other developments at Camden Park in the '50s and '60s included irrigation, mechanised fodder collection and improvements in breeding. Like John Macarthur's sheep, the Camden Park cattle were protected by not bringing any animals from outside on to the estate. Artificial insemination was introduced, with Camden Park being the first estate in New South Wales to breed exclusively by this method.



Figure 39 The cows on the left are walking up the race to the revolving milking platform while those on the right are leaving after milking. The glass walls of the Rotolactor enabled visitors to see milking in progress. (Reproduced from *Camden Park Estate 1795-1965. Australia's oldest pastoral property*, Camden Park Estate Pty Ltd, Menangle, 1965)

¹⁸⁷ PXD 507 Camden Park Estate miscellaneous plans fols. 62, 65 & 66 (Mitchell Library)

¹⁸⁸ *Introducing The Rotolactor The home of ... the milk with the Golden Cap*, leaflet produced by Camden Park Estate Pty Limited, Camden Park papers MSS 4378, M Ser 4 000/1 (Mitchell Library)

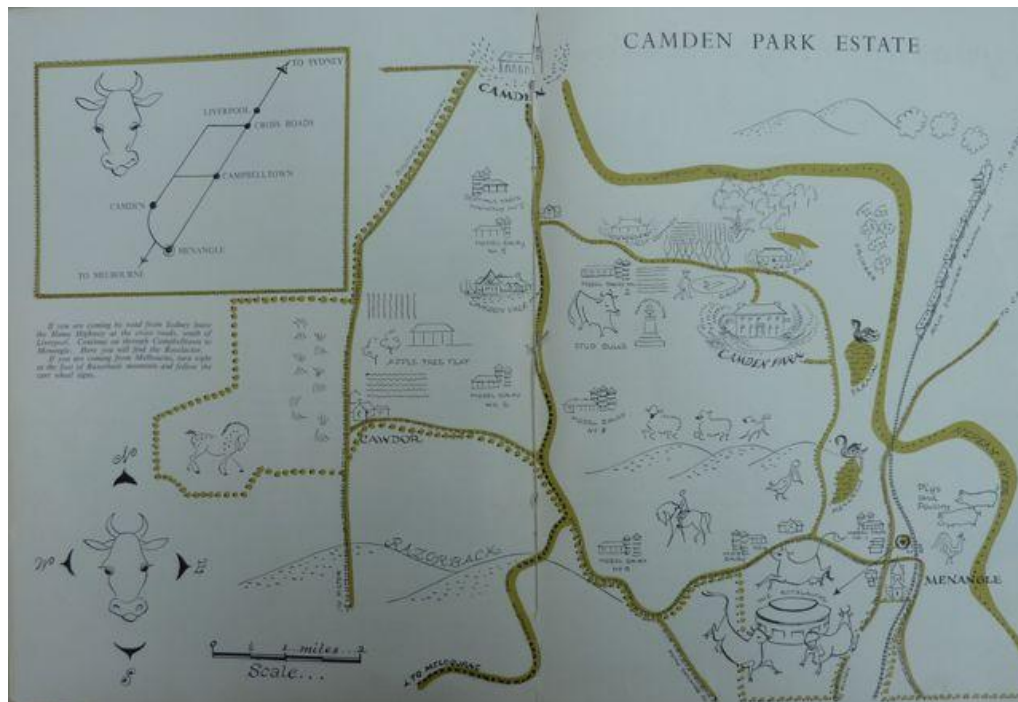


Figure 40 From its inception, the Rotolactor was a tourist attraction and the estate had its own visitors' map. Enterprises included Pig and poultry production between the railway line and the Nepean River at Menangle. (Reproduced from *Camden Park Estate. Australia's oldest pastoral property*, Halstead Press, 1958)

Two additional acres for the Menangle Public School were obtained from Camden Park Estate, a new brick residence and brick toilet block were built, the school building was painted and a new flagpole was erected.¹⁸⁹

While the Rotolactor dominated Menangle, there were still six model dairies, each with its own herd of 90 to 140 cows out to pasture. Stocking, fodder, pasturage, equipment and hygiene were dealt with by the general management, while the ordinary operation of each dairy was the responsibility of individual farmers who were paid a salary, with a bonus for calf rearing.

The orchard and its associated pig farm, run by a manager, remained a major enterprise and a substantial contributor to the income of the estate. In 1965 it occupied some 74 acres, with roughly 7,200 trees of which 3,300 were fruit bearing. Apples, peaches, pears and plums produced a dazzling array of blossom in springtime.¹⁹⁰ A detailed plan of the orchard, dating from the 1950s to the 1970s, gives the varieties of fruit and their year of planting: oranges, apples, grapefruit, nectarines, peaches, apricots, plums, cherries, pears and also some 'aged' trees, interspersed with a magnolia, camellias, japonica, an American live oak and a cork tree.¹⁹¹

¹⁸⁹ Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010

¹⁹⁰ Camden Park Estate Pty Ltd: *Camden Park Estate 1795-1965. Australia's oldest pastoral property*, published by Camden Park Estate Pty Ltd, Menangle, 1965,

¹⁹¹ Camden Park Estate plan of orchard, Macarthur Papers ML MSS 4378 ADD-ON 1731 Item 5 (6) (Mitchell Library)



Figure 41 The orchard in the 1960s looking south towards Menangle, with the riparian corridor of the Nepean River on the left. (Reproduced from *Camden Park Estate 1795-1965. Australia's oldest pastoral property*, Camden Park Estate Pty Ltd, Menangle, 1965)

3.1.26 'Drought-proofing' with the Keyline system

Insurance against drought was more difficult to achieve but was tackled by another major innovation, this time of Australian origin, the 'keyline' system, developed from the late 1940s by Percival Yeomans on his properties Yobarnie and Nevalan at North Richmond. Yeomans' scheme, a world first, published in 1954 in his book *The Keyline Plan*, was an integrated approach to sustainable cultivation and landscape management and was intended to make the landscape drought-proof, fire-proof and more fertile. With a combination of dams, water channels, contouring and specific ploughing techniques, the principal water storage was the soil itself, replenished by rainfall and topped up from the dams, working as a total irrigation system.

Major investment in new dams included; Razorback Dam (1961); Cameron Dam; Hawkey's Dam and finally the Bull Paddock Dam on the western side of the Hume Highway, completed in 1964, although drought precluded its immediate use.¹⁹² By 1965 a gravitational system of irrigation (devised after aerial survey) was being practiced in several parts of the estate and it was anticipated that 'ultimately every irrigatable acre will be artificially watered and cropped or pastured'.

¹⁹² Camden Park Estate Pty Ltd: *Camden Park Estate 1795-1965. Australia's oldest pastoral property*, Camden Park Estate Pty Ltd, Menangle, 1965



Figure 42 On the head watershed of Navigation Creek looking south-east: Hawkey's Dam (in the distance), Cameron's Dam (right) and Razorback (in the foreground), part of a keyline system installed in the early 1960s (Reproduced from *Camden Park Estate 1795-1965. Australia's oldest pastoral property*, Camden Park Estate Pty Ltd, Menangle, 1965)

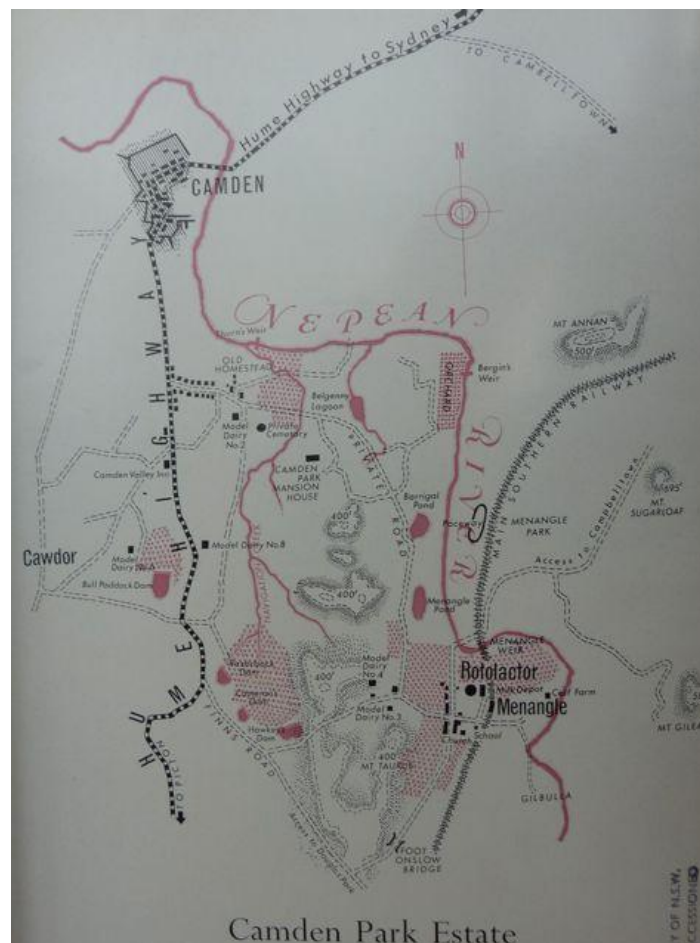


Figure 43 A simplified plan of the Camden Park Estate in the 1960s, after a keyline system had been installed, with irrigated areas shown in pink, including the river flats north of Menangle Village. (Reproduced from *Camden Park Estate 1795-1965. Australia's oldest pastoral property*, Camden Park Estate Pty Ltd, Menangle, 1965)

Heavy timber that might interfere with water flow and pasture growth was cleared and the irrigation drains were cut mechanically along a course devised by a Bunyip level, Yeomans' own invention.¹⁹³ Artificial contours on the lower levels prevented any overflow and the land was chisel ploughed in order to be sown with mixed pastures. The emphasis at Camden Park on drought proofing the property and its success in doing so in 1965, suggest that Yeomans' principles were being closely followed.

3.1.27 Paying for improvements: the 1950s to 1960s

From the early 1950s Camden Park Estate Ltd began to sell off land to the south of the town of Camden bounded by the Hume Highway, the Old South Road [Cawdor Road] and Wire Road, part of the area once owned by George Macarthur-Onslow. Private sale was initially tried, but later auctions were through established agents.¹⁹⁴ Several of the proposed subdivisions were private (that is, unregistered) and so were open to negotiation by individual purchasers. At the north end of what had been George's land, in close proximity to the town of Camden, much of the subdivision was for housing lots and some land was taken for use by the Housing Commission.¹⁹⁵ In the Elizabeth and Pindari development to the west of the Hume Highway, ready-made 'Craftsman' exhibition homes could be purchased for erection on any block.¹⁹⁶ In 1957 and 1958, as the result of the Camden Park sales, several subdivisions were created along the Nepean River and this development continued into the early 1960s.¹⁹⁷

Further to the south, away from the town boundaries, there was still an emphasis on the continuing potential for farming and dairying. An undated sale leaflet shows the area divided into ten lots including two dairy farms (probably dairy farms 5 and 7) one of which was still working; smaller blocks for 'farmlets'; and some potential residential subdivision. Each dairy farm had a three-room cottage, 8-bail dairy, associated sheds and paddocks. On the east side of the Hume Highway a subdivision of home and shop sites on the south side of Macquarie Road was also up for sale.¹⁹⁸

By July 1958 the southern part of the area had found buyers but the dairy farm in the northern half of the area had not. The premises seem to have been improved since they were previously advertised, as the dairy was now a 12-unit one. New lots were also added to the sale; some to the east of the Hume Highway including Kent Row Paddock and its entrance lodge, described in the sale leaflet as a 'Colonial type weatherboard Cottage' and three small lots with river frontages, two of which had semi-detached cottages on them. The remainder of what had been Arthur Macarthur-Onslow's land at Cawdor was also up for sale, comprising four lots that

¹⁹³ P A Yeomans: *Water for every farm. Using the keyline plan*, 1981, pp 170 & 206-207

¹⁹⁴ 'Subdivision of part of historic Camden Park Estate' about 1000 acres ... sales of land negotiated privately write to The Manager, M Ser 4 000/1 ML MSS 4378 / Item 156 (Mitchell Library)

¹⁹⁵ Vol. 7002 Fol. 221 (LPMA)

¹⁹⁶ 'Elizabeth and Pindari development at Camden' M Ser 4 000/1 ML MSS 4378/Item 160 (Mitchell Library)

¹⁹⁷ For example DP29251 Hawkey Crescent and Murrandah Avenue and DP29162 Christopher and Peter Avenues, also off Murrandah Avenue (LPMA) and Macquarie Avenue on Camden Heights M Ser 4 000/1 ML MSS 4778/Item 207 (Mitchell Library)

¹⁹⁸ L J Hooker Ltd: 'Disposal of ... part of Historic Camden Park Estate [nd], ML MSS 4378 M Ser 4 000/1 Item 205 sale leaflet (Mitchell Library)

had been cleared and partly fenced but did not have any buildings on them.¹⁹⁹ These had all been sold by 1959.²⁰⁰

In November 1958 land to the east of the Hume Highway was up for auction including two model dairies. According to the sale notice all of the structures on the dairies, one of which was still in production, were in first class order 'and have just been completely renovated'.²⁰¹

With these sales the Camden Park estate had largely contracted to the east side of the Hume Highway, with the main focus of economic activity at Menangle.

3.1.28 Declining returns: the 1960s to 1970s

The very considerable investment that had been undertaken at Camden Park in the 1950s and '60s had sought to keep the property at the forefront of modern developments in dairying and pasture improvement, with automation as an important contributor to the problem of a declining rural workforce. By the 1960s however there was a diminishing market for dairy products such as butter and cheese. In NSW generally the number of dairy farms fell by 60% between 1970 and 1980 as they failed to provide an adequate living for families, while still requiring arduous and constant work.²⁰²

At Menangle, the Rotolactor had its problems. It had been very costly to build and was expensive to maintain when its rotating mechanism broke down, as it did quite frequently. While it was productive in good times, in times of drought, feed for the largely feed lot cattle had to be brought in from other Macarthur properties and even further afield, with a consequent reduction in returns.²⁰³ Only the Milk Bar, which continued to provide a family day out, made a real profit. With the sale of lands near Camden, the Camden Park Estate had been reduced to its most productive core but it did not generate large profits. Meanwhile, the Macarthur-Onslow family's interest in dairying, while strong in the older generation, was diminishing among younger members who were restless about the return on their investment and wanted to realise their assets for other purposes. With some 65 shareholders Camden Park Estate Ltd was no longer a close-knit family firm.

In May 1971 the Menangle Public School celebrated its centenary.²⁰⁴

3.1.29 The sale of Camden Park Estate Ltd

In May 1973 a majority interest in the family company, Camden Park Estate Ltd was sold to Talga Ltd,²⁰⁵ a company whose activities included property investment, land development, pastoral investment and the operation of a lawn cemetery.²⁰⁶ After 168

¹⁹⁹ Elder, Smith & Co., Limited: Auction sale portion historic Camden Park Estate (in subdivision) RSL Hall, Camden, Friday 4th July, 1958, 11 am sharp', ML MSS 4378, M Ser 4 000/1 (Mitchell Library)

²⁰⁰ Vol. 4687 Fol. 85 (LPMA)

²⁰¹ Elder, Smith & Co., Limited: 'Auction sale portion historic Camden Park Estate (in subdivision) RSL Hall, Camden Friday, 21st November, 1958, 11am sharp', ML MSS 4378 / Item, M Ser 4 000/1 (Mitchell Library)

²⁰² A Curthoys, A W Martin & Tim Rowse (eds): *Australians from 1939*, Fairfax, Syme & Weldon Associates, 1987, pp 110-113

²⁰³ Information from John Wrigley

²⁰⁴ Menangle Action Group & Menangle Community Group Draft Submission to the Wollondilly Growth Management Strategy, June 2010

²⁰⁵ 'Historic property at Camden is sold', *Sydney Morning Herald* 28 May 1973, p 1

²⁰⁶ *Talga Limited 1973 Annual Report and Notice of Meeting* (Mitchell Library)

years of continuous ownership in one family, a substantial part of the Camden Park estate passed out of the Macarthur-Onslow family's hands.²⁰⁷ Its selling price was \$6.8 million.²⁰⁸ Camden Park Estate Ltd was now part of the portfolio of a property development company.

The reason for Talga's purchase soon became apparent. In July 1973 Talga's chairman noted that under the 1968 Sydney Region Outline Plan parts of the estate at Camden and Menangle were allocated for residential development and it became obvious that the company would soon seek a change of zoning from farming to housing. A statement that the company would undertake 'a thorough review of existing dairying and other operations at Camden Park to consider possible areas of change or improvement' did little to allay concerns that it was the property investment and land development aspects of Talga's activities that would now dominate at Camden Park and not pastoral interests.²⁰⁹

3.1.30 The State Government Steps In

A week later things changed dramatically when the State Planning Authority (SPA) announced its plan to make Camden, Campbelltown and Appin satellite cities by the year 2000. In its plan the Authority noted that the:

"Campbelltown and Camden New Cities are bounded on the south by the Camden Park Estates which have always been in the ownership of the Macarthur family. The rotolactor which is now used for milking some thousands of cows is a national tourist attraction. The conservation of these estates in their present form is regarded as an objective of national and State importance. It is understood that the Macarthur family also shares these objectives at present."

In January 1973, the Minister for Local Government had stated that 'in the event that circumstances in the future might make it difficult for the [Camden Park] Estates to continue in their present ownership, the Government would wish to consider measures to ensure that this outstanding national asset is preserved in the public interest'. The new plan was therefore based on the assumption that the Camden Park Estate would be preserved and so it had been set aside as a 'scenic protection area' and so remained zoned for farming. The plan had also identified the flood plain occupying much of the northern part of the Camden Park Estate as a natural constraint.²¹⁰

Talga advised it was unaware of the restriction imposed by the new plan but that it 'did not cut across their plans at this stage'.²¹¹ While Talga dissembled, concern for the protection of such an historic estate was growing and the Committee of Inquiry into the National Estate visited Camden Park. Talga agreed to preserve the historically important buildings on the estate and to spend no less than \$200,000 to maintain them and to protect the merino flock.²¹² However, there was growing concern about the future of what was publicly acknowledged to be an estate of national importance. Meanwhile Talga's first action as the new owner was to dismiss

²⁰⁷ 'Houses may be built at Camden Park' *Sydney Morning Herald* 11 July 1973 p 2e-h

²⁰⁸ 'Uren orders Camden Park inquiry', *Sydney Morning Herald* 18 July 1973 p 15b-c

²⁰⁹ 'Houses may be built at Camden Park' *Sydney Morning Herald* 11 July 1973 p 2e-h

²¹⁰ The State Planning Authority of New South Wales: *The new cities of Campbelltown Camden Appin Structure Plan*, 1973, p 84, p 43 plan showing natural constraints & p 109 plan showing zoning

²¹¹ 'Camden Park preserved', *Sydney Morning Herald* 19 July 1973 p 10c-e

²¹² 'Uren orders Camden Park inquiry', *Sydney Morning Herald* 18 July 1973 p 15b-c

all of the employees of Camden Park Estate, which did little to reassure workers that the estate would keep farming.²¹³

In September 1974, little more than a year after the takeover, Talga was placed in receivership by Cork Investments Ltd for failing to meet interest payments on the \$5 million that it had borrowed late in 1973. The loan was from a consortium of financiers who, as part of the loan agreement, had obtained a 30% interest in Camden Park Ltd. As opposition to residential development at Camden Park grew, Talga offered to donate half of the estate to the Federal or state government, but the plan had received little encouragement. Only \$4.8 million of the purchase price had been paid in cash, with the remainder to be paid after July 1976. In the meantime the vendors had been issued with shares in Talga, presumably a now valueless asset.

With this change in ownership, the new owner, Cork Investments Ltd was not bound by the promises that had been made by Talga concerning the provision of funds for the maintenance of historic buildings and elements of the estate. Its first action on taking over management was to plough in the 74-acre orchard, just as the harvest was about to begin.²¹⁴ The action was a public relations disaster and also robbed locals of a valued form of seasonal employment.

3.1.31 Government ownership

With the safeguards that had been established at the time of the original sale now gone, and the historical significance of the estate well established, the Macarthur Development Board purchased 782 hectares of the Camden Park Estate in April 1976. Funded by a Federal grant of \$800,000 and \$400,000 from the Sydney Region Development Fund, the purchase included Belgenny (the Home Farm), the former orchard and land to the south of Camden Park House and its associated 936 acres which remained in private ownership, separate from the family company, as Elizabeth Macarthur-Onslow originally intended.

The land purchased by government did not include a substantial area to the east of the Hume Highway that continued to be developed for residential subdivision.

Title to the land purchased by the state government was transferred to the NSW Planning and Environment Commission.²¹⁵ The 1976 sale contract included life tenancies on four cottages each with a weekly rental of \$5 comprising; Cottage 37 occupied by Ernest and Eileen May Holdsworth; Cottage 38 by Allan Leonard and Stella May Smith; Cottage 39 by Joseph William and Lilian Agnes Latham; and Cottage 40 by Edward George Holdsworth.²¹⁶ Meanwhile the rest of the estate continued to be appraised by both Federal and State governments for eventual acquisition as part of the nation's heritage.²¹⁷

²¹³ Leone Ziani de Ferranti: The legacy of Camden Park. Advanced Study Report for BArch, University of Sydney, 1979 (Architecture Department, University of Sydney)

²¹⁴ Leone Ziani de Ferranti: The legacy of Camden Park. Advanced Study Report for BArch, University of Sydney, 1979 (Architecture Department, University of Sydney)

²¹⁵ Vol. 10966 Fol. 214 comprising Lot 11 in DP531897 (LPMA)

²¹⁶ Sale contract in LGA Wollondilly – Camden Park Estate – Transfer to Dept of Agriculture, General matters W91/01269/001, File No. 84/2805, (File held at Office of Strategic Lands, Department of Planning, Parramatta)

²¹⁷ Leone Ziani de Ferranti: The legacy of Camden Park. Advanced Study Report for BArch, University of Sydney, 1979 (Architecture Department, University of Sydney)

Cork Investments and British merchant bankers, Kleinwort Benson Ltd continued in ownership of the remainder of the land purchased from the Macarthur-Onslow family,²¹⁸ a period of management that saw the gradual decline of the estate and its building stock. The Rotolactor closed on 14 January 1977, although some of the other dairies remained in production.²¹⁹ At the same time the Federal government declined to provide more funds to buy the remainder of the land held by Talga's mortgagees.²²⁰

In November 1983 the remainder of the estate was offered for sale, in three freehold titles: Navigation Creek (443.7 hectares); Barragul (410 hectares); and Mount Taurus (229.5 hectares), together with the dairy herd of 1000 milking cows, producing one of the biggest milk quotas in the State.²²¹ On Australia Day 1984 the State government announced the purchase of 850 hectares of the estate, Barragul and Navigation Creek, together with the flock of merino sheep descended from Macarthur's own flock.²²² The government's purchases were formally acquired in March 1984, again using the Sydney Region Development Fund. Mount Taurus, to the south of the road through Menangle was sold in 1988 to Len Peel Pty Ltd.²²³

Two substantial parts of the original Camden Park estate that had not been sold by the company in the 1950s and 1960s were not included in the government purchases. These were the land to the east of the road and railway at Menangle, and to the west of the Old Hume Highway, between Wire Road and Cawdor Road bounded on the west by the Great South Road [Cawdor Road]. The latter was sold to Milino Pty Limited.²²⁴

In July 1984 Cork Investments changed its name to Camden Park Estate Ltd and the company was delisted in March 1989.

3.1.32 A new agricultural purpose

While the northern part of the estate had been acquired in 1976 for its historical value, the government's second purchase had a pragmatic purpose, suitably related to the history of the estate. The Department of Agriculture's Veterinary Research Station at Glenfield had ceased to be viable as a livestock property to support its veterinary laboratories, because of urbanisation and flood mitigation works and in 1983 Cabinet decided to transfer Glenfield's functions to Camden Park.²²⁵ The Department of Agriculture was soon to be its main occupant. The dairy herd from Glenfield was transferred to Camden Park and the Department also undertook the care of some 350 sheep, the descendants of the merino flock established by the Macarthurs.²²⁶

²¹⁸ 'Macarthur's historic Camden estate goes up for sale', *Sydney Morning Herald* 8 November 1983 p 16

²¹⁹ Information from John Wrigley

²²⁰ 'Uncertain future for Camden Park. Aid refused by federal Govt', *Sydney Morning Herald* 6 January 1977 p 2 a-d

²²¹ 'Macarthur's historic Camden estate goes up for sale', *Sydney Morning Herald* 8 November 1983 p 16

²²² *Report of the Department of Agriculture for the year ended 30th June 1984*, p 1

²²³ Vol. 2728 Fol. 178 (LPMA)

²²⁴ Vol. 11009 Fol. 169 dated 18 March 1969, Lot 12 in DP531898 and current title Computer Folio 12/531898 (LPMA)

²²⁵ Cabinet Minute No. 405-83 in LGA Wollondilly – Camden Park Estate – Transfer to Dept of Agriculture, General matters W91/01269/001, File No. 84/2805, (File held at Office of Strategic Lands, Department of Planning, Parramatta)

²²⁶ *Department of Environment & Planning Annual Report 1983-84*, pp 44-46

3.1.33 Researching and preserving the heritage of Camden Park

In the years between the two government purchases at Camden Park, attention had turned to the need to document, research and maintain the estate's historic structures and landscape. In 1979 two architecture students undertook research on aspects of the history of the estate, Leone de Ferranti on the buildings and G V Wells on the landscape, including a detailed survey of the cemetery plantings and an inventory of its monumental inscriptions.²²⁷

In 1980 Howard Tanner and Associates prepared a conservation study of the Belgenny Farm group and in 1983 the Department of Environment and Planning commissioned a complete study of all of the property in public ownership 'to identify essential conservation and restoration works ... in line with the historic and technological importance of the Camden Park Estate'.²²⁸ This report, also by Howard Tanner & Associates, was completed in November 1983 and although it pre-dated the purchase of the southern part of the estate, included all of the land that was eventually consolidated in government ownership. As a part of the study, two areas were identified as 'suitable for future building development'. An immediate priority of the report were recommendations for urgent repair work required to prevent further degradation of the buildings, many of which were in bad repair.²²⁹

The Department of Agriculture also set to work, placing a chain wire quarantine fence around the property, doing extensive clearing up and pasture re-establishment as well as caring for the 'historic sheep flock'.²³⁰ In some cases its priorities were at variance with historic conservation and late in 1983 the Department sought permission to demolish several structures associated with the orchard area, including the piggery. With advice from the architects Howard Tanner and Associates these were eventually retained.²³¹ While not all of the work being carried out on the estate was in accordance with the recommendations of the 1983 study, several cottages were renovated and retained including; the gate house; Cottage 18; dairy, Cottage 9; Cottages 47 and 48; Cottage 51; and Cottage 50.²³²

By January 1985 the Department of Agriculture was enjoying the benefit of a \$1.2 million Commonwealth Government Community Employment Programme which it was using to develop the property (which had certainly deteriorated), to renovate

²²⁷ Leone Ziani de Ferranti: The legacy of Camden Park. Advanced Study Report for BArch, University of Sydney, 1979 and G V Wells: The landscape of the Camden Park Estate, Advanced Study Report for course Conservation & Restoration, Department of Architecture, University of Sydney, 1979 (both held in Room 426, Architecture Department, University of Sydney)

²²⁸ *Department of Environment & Planning Annual Report 1983-84*, pp 44-46

²²⁹ Howard Tanner and Associates: 'Camden Park Estate Report for the Department of Environment and Planning and Inventory of buildings, structures & significant landscape features, November 1983, plan

²³⁰ Note from Head, Land & Estates Division 2 September 1985 in LGA Wollondilly – Camden Park Estate – Transfer to Dept of Agriculture, General matters W91/01269/001, File No. 84/2805, (File held at Office of Strategic Lands, Department of Planning, Parramatta)

²³¹ Howard Tanner and Associates 15 January 1984 to Secretary, Department of Environment & Planning in LGA Wollondilly – Camden Park Estate – Transfer to Dept of Agriculture, General matters W91/01269/001, File No. 84/2805 (File held at Office of Strategic Lands, Department of Planning, Parramatta)

²³² Correspondence 3 January 1985 from Ron Neville, Clerk of Works, Department of Agriculture to B Mitchell, Department of Environment and Planning in LGA Wollondilly – Camden Park Estate – Transfer to Dept of Agriculture, General matters W91/01269/001, File No. 84/2805 (File held at Office of Strategic Lands, Department of Planning, Parramatta)

buildings, construct a shearing shed on the east side of Hawkey's Dam,²³³ modify the existing dairy and construct the security (quarantine) fence. In addition, the area along the Nepean River that was being sand mined and which was infested with Noogoora Burr was being sprayed. With funds for 53 positions for twelve months and six months employment for 106 people it had a substantial workforce.²³⁴ In November 1984 a proposal for a National Agricultural Museum at Camden Park had the support of New South Wales Premier, Neville Wran.²³⁵

By 1987 the conservation of the Belgenny (or Home Farm) group of buildings had been identified by the Department of Environment and Planning as one of its 'major contributions' to the Bicentennial celebrations and the Department commissioned the preparation of a conservation policy for the whole of the estate.²³⁶ This was completed in April 1989. Building on earlier studies, the report combined historical, archaeological, architectural and landscape evidence for the prehistory and history of the estate. Twenty-one distinctive landscape zones were identified '(i) to encourage consideration of the whole land surface of the study site, since it is essentially an agricultural property, rather than concentrating on individual structures and sites of concentrated heritage interest, and (ii) to provide a framework for discussion, comparison of separate discipline findings and the making of conservation recommendations'.²³⁷

In 1990 the management of Belgenny Farm became the responsibility of NSW Agriculture and in May 1993 the Belgenny Farm Agricultural Heritage Centre Trust was established 'with a charter to develop Belgenny Farm as a viable tourism and education resource, whilst conserving and enhancing the heritage integrity of the site.' On 28 September 1993 the whole of the area at Camden Park purchased by the government was transferred to the Department of Agriculture. In November 1994 and March 1995 the Belgenny Farm trust deed was amended to enlarge the area managed by the Trust from 5 hectares to 32 hectares, to include the Macarthur family cemetery, Cottages 38 and 39 and areas for car parking and animal presentation.²³⁸ In promoting the heritage of the Camden Park estate, Belgenny Farm 'Australia's most complete and authentic Georgian farm complex' is now managed by the Department of Industry and Investment and the Belgenny Farm Trust. Activities include a wide range of educational programs as well as commercial venue hire to fund the work of the Trust.²³⁹

3.1.34 The Elizabeth Macarthur Agricultural Institute

As work on the heritage of the estate continued, the Department of Agriculture's new facilities were being constructed at the south-west corner of the estate. Named The

²³³ Correspondence dated 26 and 31 October 1984 in LGA Wollondilly – Camden Park Estate – Transfer to Dept of Agriculture, General matters W91/01269/001, File No. 84/2805 (File held at Office of Strategic Lands, Department of Planning, Parramatta)

²³⁴ Director-General Department of Agriculture to Secretary to Treasury, 13 January 1985 in LGA Wollondilly – Camden Park Estate – Transfer to Dept of Agriculture, General matters W91/01269/001, File No. 84/2805, (File held at Office of Strategic Lands, Department of Planning, Parramatta)

²³⁵ LGA Wollondilly – Camden Park Estate – Transfer to Dept of Agriculture, General matters W91/01269/001, File No. 84/2805 (File held at Office of Strategic Lands, Department of Planning, Parramatta)

²³⁶ *Department of Environment & Planning Annual Report 1987*, pp 36-37

²³⁷ Howard Tanner & Associates: Camden Park Estate Conservation Plan prepared for the Department of Planning NSW, April 1989, p 51

²³⁸ NSW Agriculture: *Belgenny Farm Conservation Management Plan prepared for the Belgenny Farm Trust*, by Chris and Margaret Betteridge MUSEcape Pty Ltd, June 2000, p 11

²³⁹ Belgenny Farm website, viewed July 2009

Elizabeth Macarthur Agricultural Institute, the new world-class veterinary laboratory was opened by the Premier, the Honourable Nick Greiner on 25 April 1990. The new building complex, 'an agricultural showpiece', designed by the Department of Public Works and constructed by Belmadar Constructions, was 'largely concealed from the casual visitor' despite its considerable extent.²⁴⁰

In addition to the Glenfield laboratories, the Hawkesbury Research Unit at Richmond and the Advisory Service offices at Camden had all been relocated to EMAI, whose veterinary and animal production research laboratories, with a staff of about 180, had cost \$35 million. The Institute's mission was 'to improve the health, welfare and productivity of livestock through research and the provision of diagnostic services' and also 'to enhance and promote the heritage, environmental and agricultural characteristics of "Camden Park", and to provide educational and access opportunities for the community.' In order to do the latter, its aims included the need 'to commercialise the management of the non-research component of farm enterprises to generate funds for the maintenance of historic buildings on Camden Park'. In the first year of its existence the Institute also looked to develop: a landscaping program (especially around the new buildings); a program to regenerate mature timber trees across the property; and to maintain and develop riparian vegetation within Sawyers Wildlife Reserve and a section of the riverbank adjacent to the orchard.²⁴¹

The last of these objectives became a major program promoting the recovery and management of bushland across the property as an integrated part of large-scale farm management. From the mid-1980s areas have been fenced to form conservation corridors and revegetation works undertaken as part of the objective to make the EMAI a demonstration farm on sustainable agriculture. Restoration activities have included areas as Sawyers Reserve, Barragal Lagoon, Menangle Lagoon, the Institute Dam, on Ridgetop, riparian areas and grazing paddocks and along the western boundary. A revegetation program began in 2005 along boundary buffer zones where 2500 seedlings were planted in March-April 2005.²⁴²

The major priorities of the EMAI remain promoting animal and plant health and ensuring animal and plant biosecurity. In 2005 a new computerised dairy complex was built, a 21st century successor to the innovative Rotolactor, which enables cows to be milked and fed at any time without the stress of human contact. In July 2008, following the equine influenza outbreak, the New South Wales government announced that \$43 million would be made available over a five-year period to upgrade biosecurity facilities at EMAI.

Close to the boundaries of the EMAI, residential development continues to the east of the Hume Highway, including a land release at South Camden in 2000-2001 and the 2003-2005 Bridgewater Estate development on what was Dog Trap Paddock, west of Navigation Creek.

3.1.35 Recent Developments

In the late 20th and early 21st centuries the proposed subdivisions around St James' Church and to its south, with vehicular access from Station Street and from

²⁴⁰ NSW Agriculture & Fisheries: *Elizabeth Macarthur 'Camden Park' Agricultural Institute Opened 25 April 1990* [booklet for opening] (Mitchell Library)

²⁴¹ NSW Agriculture & Fisheries: *Elizabeth Macarthur Agricultural Institute "Camden Park" Strategic Plan 1 July 1990 to 30 June 1991*

²⁴² Department of Environment and Conservation (NSW): *Elizabeth Macarthur Agricultural Institute demonstration site*, July 2005

Menangle Road occurred, with new residential development controlled, with varying degrees of success, by DCP No.41 – Menangle Village.

In 2005 a peel of six bells was added to St James Church at Menangle, which became a stand-alone parish in 2008.

To the south of the Conservation Area, the Tulich Family Communities aged care company has developed Durham Green, described in their promotional literature as an “over-55s lifestyle village”.²⁴³

3.2 A Thematic Approach

The State Heritage Inventory identifies 36 themes which signify historical processes, but do not describe physical evidence or items in a study area. These State Themes are very general and many heritage items will relate to more than one theme. The themes however, do aid in understanding the historical context of individual items. These themes provide the context for assessment of heritage significance.

3.2.1 National, State and Local Themes

The following themes have been identified as being applicable to the site and its history. The potential ability of the place to demonstrate these themes is indicated.

Australian Theme	NSW Theme	Notes	Typical Examples	Study Area Examples
1 Tracing the natural evolution of Australia,	Environment - naturally evolved	There are two aspects to this theme: (1) Features occurring naturally in the physical environment which have significance independent of human intervention (2) Features occurring naturally in the physical environment which have shaped or influenced human life and cultures.	A geological formation, fossil site, ecological community, island, soil site, river flats, estuary, mountain range, reef, lake, woodland, seagrass bed, wetland, desert, alps, plain, valley, headland, evidence of flooding, earthquake, bushfire and other natural occurrences.	Remnant natural areas; Riparian corridor of Nepean River and tributaries; Lagoons and associated wetlands;

²⁴³ Durham Green website, accessed on 14 March 2012 at <http://www.durhamgreen.com.au/index.php/location.html>

Australian Theme	NSW Theme	Notes	Typical Examples	Study Area Examples
2 Peopling Australia	Aboriginal cultures and interactions with other cultures	Activities associated with maintaining, developing, experiencing and remembering Aboriginal cultural identities and practises, past and present; with demonstrating distinctive ways of life; and with interactions demonstrating race relations.	Place name, camp site, midden, fish trap, trade route, massacre site, shipwreck contact site, missions and institutions, whaling station, pastoral workers camp, timber mill settlement, removed children's home, town reserve, protest site, places relating to self-determination, keeping place, resistance & protest sites, places of segregation, places of indentured labour, places of reconciliation	Place names e.g. Barragal; Menangle; occupation sites; archaeological artefacts;
2 Peopling Australia	Convict	Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW (1788-1850) – does not include activities associated with the conviction of persons in NSW that are unrelated to the imperial 'convict system': use the theme of Law & Order for such activities	Prison, convict shipwreck, convict system document, ticket-of-leave and probationary living quarters, guards uniform, landscapes-of-control, lumber yard, quarry, gallows site, convict-built structure, convict ship arrival site, convict barracks, convict hospital, estate based on convict labour, place of secondary punishment.	Camden Park estate was established using convict labour.
2 Peopling Australia	Ethnic influences	Activities associated with common cultural traditions and peoples of shared descent, and with exchanges between such traditions and peoples.	Blessing-of-the-fleet site, ethnic community hall, Chinese store, place or object that exhibits an identifiable ethnic background, marriage register, Coat of Arms, olive grove, date palm plantation, citizenship ceremony site, POW camp, register of ship crews, folk festival site, ethnic quarter in a town.	Associations with farm workers e.g. German vineyard workers;

Australian Theme	NSW Theme	Notes	Typical Examples	Study Area Examples
2 Peopling Australia	Migration	Activities and processes associated with the resettling of people from one place to another (international, interstate, intrastate) and the impacts of such movements	Migrant hostel, customs hall, border crossing, immigration papers, bus depot, emigrant shipwreck, Aboriginal mission, quarantine station, works based on migrant labour, detention centre.	History of immigrant workers from England, Ireland and Germany
3 Developing local, regional and national economies	Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Hay barn, wheat harvester, silo, dairy, rural landscape, plantation, vineyard, farmstead, shelterbelt, silage pit, fencing, plough markings, shed, fish farm, orchard, market garden, piggery, common, irrigation ditch, Aboriginal seasonal picking camp.	Barns; Silos; dairies; Rural landscape; shelterbelts; fencing types; Rotolactor site
3 Developing local, regional and national economies	Commerce	Activities relating to buying, selling and exchanging goods and services	Bank, shop, inn, stock exchange, market place, mall, coin collection, consumer wares, bond store, customs house, trade routes, mint, Aboriginal trading places, Aboriginal ration/blanket distribution points, Aboriginal tourism ventures	The former Camden Park Estate included a dairy shop at the Rotolactor, Menangle and the General Store at Menangle.
3 Developing local, regional and national economies	Communication	Activities	Post office, telephone exchange, printery, radio studio, newspaper office, telegraph equipment, network of telegraph poles, mail boat shipwreck, track, airstrip, lighthouse, stamp collection.	The Menangle Store served as a Post Office

Australian Theme	NSW Theme	Notes	Typical Examples	Study Area Examples
3 Developing local, regional and national economies	Environment - cultural landscape	Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	A landscape type, bushfire fighting equipment, soil conservation structures, national park, nature reserve, market garden, land clearing tools, evidence of Aboriginal land management, avenue of trees, surf beach, fishing spot, plantation, place important in arguments for nature or cultural heritage conservation.	Landscape character units; settings of dairies; cottage settings, views and vistas; the battle to save Camden Park from residential subdivision in the late 1970s, continuing with efforts by the Menangle community to protect the village's setting.
3 Developing local, regional and national economies	Events	Activities and processes that mark the consequences of natural and cultural occurrences	Monument, photographs, flood marks, memorial, ceremonial costume, honour board, blazed tree, obelisk, camp site, boundary, legislation, place of pilgrimage, places of protest, demonstration, congregation, celebration.	Barragal monument; possible flood marks; historic photographs of events at the Rotolactor.
3 Developing local, regional and national economies	Exploration	Activities associated with making places previously unknown to a cultural group known to them.	Explorers route, marked tree, camp site, explorer's journal, artefacts collected on an expedition, captain's log, surveyor's notebook, mountain pass, water source, Aboriginal trade route, landing site, map.	Explorer's routes; Surveyors' notebooks; Barrallier's descriptions of Camden area
Australian Theme	NSW Theme	Notes	Typical Examples	EMAI Examples
3 Developing local, regional and national economies	Fishing	Activities associated with gathering, producing, distributing, and consuming resources from aquatic environments useful to humans.	Fishing boat, whaling station, marine reserve, fisher camp, seafood factory, fish shop, oyster lease, artificial reef, fishing boat wreck, mooring, dock, marina, wharf, fish farm, fish trap	Records of aborigines fishing for fish and eels in marshes at Menangle, etc.

Australian Theme	NSW Theme	Notes	Typical Examples	EMAI Examples
3 Developing local, regional and national economies	Forestry	Activities associated with identifying and managing land covered in trees for commercial timber purposes.	Forested area, forest reserve, timber plantation, forestry equipment, saw mill, mill settlement, arboretum, charcoal kiln, coppiced trees, forest regrowth, timber tracks, whim.	Forest regrowth in revegetation areas; arboretum near Camden Park orchard.
3 Developing local, regional and national economies	Health	Activities associated with preparing and providing medical assistance and/or promoting or maintaining the well being of humans		None known
3 Developing local, regional and national economies	Industry	Activities associated with the manufacture, production and distribution of goods	Factory, workshop, depot, industrial machinery, timber mill, quarry, private railway or wharf, shipbuilding yard, slipway, blacksmithy, cannery, foundry, kiln, smelter, tannery, brewery, factory office, company records.	Rotolactor site; Menangle Creamery; Former railway spur line to Creamery.
3 Developing local, regional and national economies	Mining	Activities associated with the identification, extraction, processing and distribution of mineral ores, precious stones and other such inorganic substances.	Mine, quarry, race, mining field or landscape, processing plant, manager's office, mineral specimen, mining equipment, mining license, ore laden shipwreck, collier, mine shaft, sluice gate, mineral deposit, slag heap, assay office, water race.	Evidence of past sand and soil extraction
3 Developing local, regional and national economies	Pastoralism	Activities associated with the breeding, raising, processing and distribution of livestock for human use	Pastoral station, shearing shed, slaughter yard, stud book, photos of prizewinning stock, homestead, pastoral landscape, common, fencing, grassland, well, water trough, freezer boat shipwreck, wool store.	Photos of prize-winning stock; pastoral landscapes; wells; early plans of Camden Park property showing paddock boundaries

Australian Theme	NSW Theme	Notes	Typical Examples	EMAI Examples
3 Developing local, regional and national economies	Science	Activities associated with systematic observations, experiments and processes for the explanation of observable phenomena	Laboratory, experimental equipment, text book, observatory, botanical garden, arboretum, research station, university research reserve, weather station, soil conservation area, fossil site, archaeological research site.	Records of field research projects; soil conservation areas; archaeological research sites; publications on dairying history
3 Developing local, regional and national economies	Technology	Activities and processes associated with the knowledge or use of mechanical arts and applied sciences	Computer, telegraph equipment, electric domestic appliances, underwater concrete footings, museum collection, office equipment, Aboriginal places evidencing changes in tool types.	Evidence of changing dairying technologies
3 Developing local, regional and national economies	Transport	Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	Railway station, highway, lane, train, ferry, wharf, tickets, carriage, dray, stock route, canal, bridge, footpath, aerodrome, barge, harbour, lighthouse, shipwreck, canal, radar station, toll gate, horse yard, coach stop.	Road and track network
4 Building settlements, towns and cities	Towns, suburbs and villages	Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	Town plan, streetscape, village reserve, concentrations of urban functions, civic centre, subdiv'n pattern, abandoned town site, urban square, fire hydrant, market place, abandoned wharf, relocated civic centre, boundary feature, municipal Coat of Arms	Menangle Village

Australian Theme	NSW Theme	Notes	Typical Examples	Study Area Examples
4 Building settlements, towns and cities	Land tenure	Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Fence, survey mark, subdivision pattern, land title document, boundary hedge, , stone wall, shelterbelt, cliff, river, seawall, rock engravings, shelters & habitation sites, cairn, survey mark, trig station, colonial/state border markers.	Fences, survey marks, subdivision patterns, land title document, boundary hedges, , shelterbelts, cairns, survey marks,
4 Building settlements, towns and cities	Utilities	Activities associated with the provision of services, especially on a communal basis	Water pipeline, sewage tunnel, gas retort, powerhouse, County Council office, garbage dump, windmill, radio tower, bridge, culvert, weir, well, cess pit, reservoir, dam, places demonstrating absence of utilities at Aboriginal fringe camps	Weirs, wells, dams, cess pits; garbage dumps
4 Building settlements, towns and cities	Accommodation	Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Terrace, apartment, semi-detached house, holiday house, hostel, bungalow, mansion, shack, house boat, caravan, cave, humpy, migrant hostel, cottage homestead, , house site (archaeological).	Cottages; sites of former residential buildings
5 Working	Labour	Activities associated with work practises and organised and unorganised labour	Trade union office, Bundy clock, time-and motion study (document), union banner, union membership card, strike site, staff change rooms, servants quarters, shearing shed, green ban site, brothel, kitchen, nurses station, hotel with an occupational patronage.	Records relating to employees on Camden Park estate

Australian Theme	NSW Theme	Notes	Typical Examples	EMAI Examples
6 Educating	Education	Activities associated with teaching and learning by children and adults, formally and informally.	School, kindergarten, university campus, mechanics institute, playground, hall of residence, text book, teachers college, sail training boat wreck, sportsfield, seminary, field studies centre, library, physical evidence of academic achievement (e.g. a medal or certificate).	Menangle School; School of Arts; Rotolactor site where thousands of school children visited on guided tours
7 Governing	Defence	Activities associated with defending places from hostile takeover and occupation	Battle ground, fortification, RAAF base, barracks, uniforms, military maps and documents, war memorials, shipwreck lost to mines, scuttled naval vessel, POW camp, bomb practice ground, parade ground, massacre site, air raid shelter, drill hall,	Use of Menangle School as accommodation for NCOs during WW2 training; Use of Gilbulla during WW2
7 Governing	Government and administration	Activities associated with the governance of local areas, regions, the State and the nation, and the administration of public programs – includes both principled and corrupt activities.	Municipal chamber, County Council offices, departmental office, legislative document, symbols of the Crown, State and municipal flags, official heraldry, ballot box, mayoral regalia, places acquired/disposed of by the state, customs boat, pilot boat, site of key event (eg federation, royal visit), protest site, physical evidence of corrupt practices.	Property acquired by NSW Government; Landcare programs.

Australian Theme	NSW Theme	Notes	Typical Examples	EMAI Examples
7 Governing	Law and order	Activities associated with maintaining, promoting and implementing criminal and civil law and legal processes	Courthouse, police station, lock-up, protest site, law chambers, handcuffs, legal document, gaol complex, water police boat, police vehicle, jail, prison complex (archaeological), detention centre, judicial symbols	None known
7 Governing	Welfare	Activities and process associated with the provision of social services by the state or philanthropic organisations	Orphanage, retirement home, public housing, special school, trades training institution, employment agency,	Proposals to establish special school on site of Menangle Public School.
8 Developing Australia's cultural life	Domestic life	Activities associated with creating, maintaining, living in and working around houses and institutions.	Domestic artefact scatter, kitchen furnishings, bed, clothing, garden tools, shed, arrangement of interior rooms, kitchen garden, pet grave, chicken coop, home office, road camp, barrack, asylum.	Cottages and their landscape settings
8 Developing Australia's cultural life	Creative endeavour	Activities associated with the production and performance of literary, artistic, architectural and other imaginative, interpretive or inventive works; and/or associated with the production and expression of cultural phenomena; and/or environments that have inspired such creative activities.	Opera house, theatre costume, film studio, writer's studio, parade tableau, manuscripts, sound recording, cinema, exemplar of an architectural style, work of art, craftwork, and/or public garden, bandstand, concert hall, rock art site, rotunda, library, public hall; and/or a, particular place to which there has been a particular creative, stylistic or design response.	Buildings designed by Sulman & Power - General Store, Gilbulla; Menangle Gate Lodge and its coats of arms; art works depicting Camden Park landscape; St James Church designed by J Horbury Hunt and, later, John Sulman

Australian Theme	NSW Theme	Notes	Typical Examples	EMAI Examples
8 Developing Australia's cultural life	Leisure	Activities associated with recreation and relaxation	Resort, ski lodge, chalet, cruise ship, passenger rail carriage, swimming pool, dance hall, hotel, caravan park, tourist brochures, park, beach, clubhouse, lookout, common, bush walking track, Aboriginal Christmas camp site, fishing spot, picnic place, swimming hole.	Use of School of Arts for community dances; fishing spots on river; swimming holes in river
8 Developing Australia's cultural life	Religion	Activities associated with particular systems of faith and worship	Church, monastery, convent, rectory, presbytery, manse, parsonage, hall, chapter house, graveyard, monument, church organ, synagogue, temple, mosque, madrasa, carved tree, burial ground	St James Anglican Church; St Patricks Catholic Church; Gilbulla as religious retreat,
8 Developing Australia's cultural life	Social institutions	Activities and organisational arrangements for the provision of social activities	CWA Room, Masonic hall, School of Arts, Mechanic's Institute, museum, art gallery, RSL Club, public hall, historical society collection, public library, community centre, Aboriginal mission hall or school room.	Menangle School of Arts; Material relating to Camden Park in Camden Museum collection; Material relating to Camden Park in EMAI Library collection;
8 Developing Australia's cultural life	Sport	Activities associated with organised recreational and health promotional activities	Oval, race course, swimming pool, bowling club, bowling green, trophies, calendar of fixtures, cricket set, yacht pens, tennis court, rugby field, speedway, sporting equipment, bocce court.	Historical records of sporting activities at Menangle

Australian Theme	NSW Theme	Notes	Typical Examples	Study Area Examples
9 Marking the phases of life	Birth and Death	Activities associated with the initial stages of human life and the bearing of children, and with the final stages of human life and disposal of the dead.	Birth control clinic, maternity hospital, nursery, baby clinic, baptism register, circumcision equipment, and Hospice, nursing home, funeral parlour, grave furnishings, cremation site, cemetery, burial register, disaster site, memorial plantings, shipwreck with loss of life,	Macarthur Family Cemetery contains graves of family members associated with Menangle.
9 Marking the phases of life	Persons	Activities of, and associations with, identifiable individuals, families and communal groups	A monument to an individual, a family home, a dynastic estate, private chapel, a birthplace, a place of residence, a gendered site, statue, Coat of Arms, commemorative place name, place dedicated to memory of a person (e.g. hospital wing).	Associations with members of the Macarthur family and their employees; Governors Macquarie and Hunter; Macarthur family tree

Editorial

- The table is arranged numerically in the order of the national themes, and then within each national theme alphabetically in order of the state themes – no other particular order is intended.

Thematic usages

- The inclusion of an example against one theme does not exclude its consideration against one or more of the other themes (e.g. asylum) to indicate that the physical development of an item can be shaped by more than one historical process of theme during its existence.
- Aboriginal histories can be analysed using any theme(s) relevant to the place or object being considered – it is not necessary to restrict analysis to the theme of 'Aboriginal cultures and interactions with other cultures' only
- The theme of 'Domestic Life' can be used to explore the historical contexts for interior or private, domestic spaces and objects.
- The theme of 'Forestry' can be used for the active management of natural and regrowth trees for timber production while the theme of 'Agriculture' can be used for the intensive cultivation of exotic trees for purposes other than timber production.

Correlations

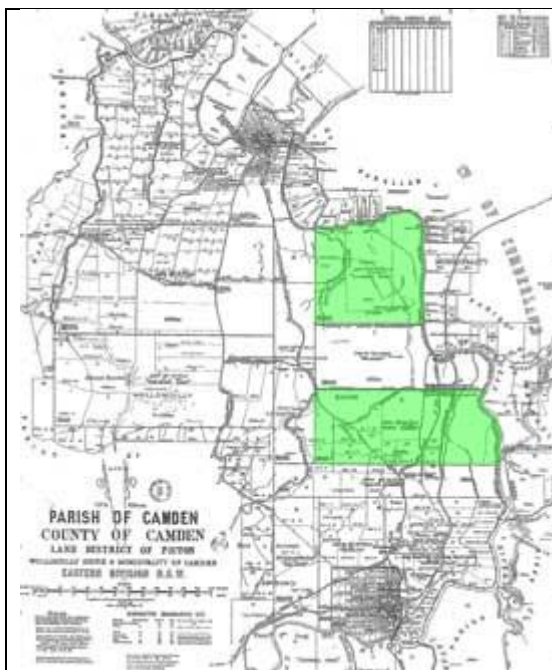
- The placement of the 36 State themes against the National themes was informed by the arrangement of the 84 national sub-themes and 116 national sub-subthemes developed by the AHC for each of its National themes – the placements are not random.
- The development of local themes is accommodated within this framework

with each local theme regarded as a correlation to a State theme in a similar manner to the relationship between the State and National themes

- Generally, local = local government area, but can also be used in other ways, such as a particular ethnic or social community, or a locality that is smaller than an LGA or straddles an LGA boundary, or a locality larger than an LGA such as a SHR historical region or an ecclesiastical diocese or an area smaller than the whole state but larger than an LGA, such as the area within an Aboriginal nation or Land Council.

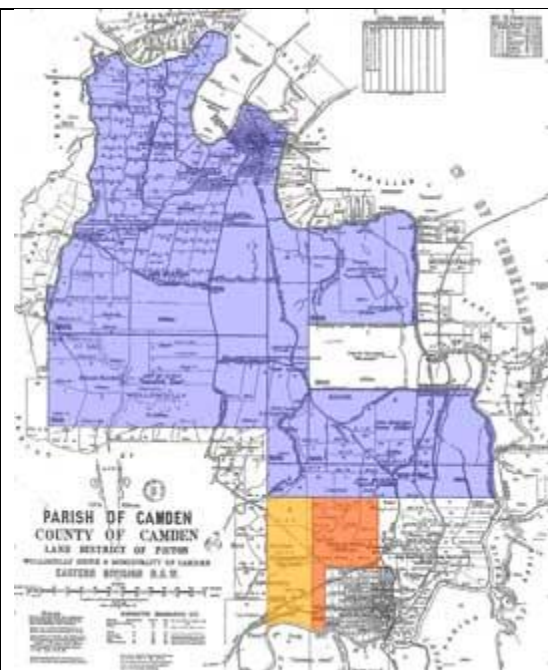
3.3 *Summary of changes to the Macarthur lands*

The following maps 1 to 11 show the development of the Macarthur lands from the initial grants to the present day.



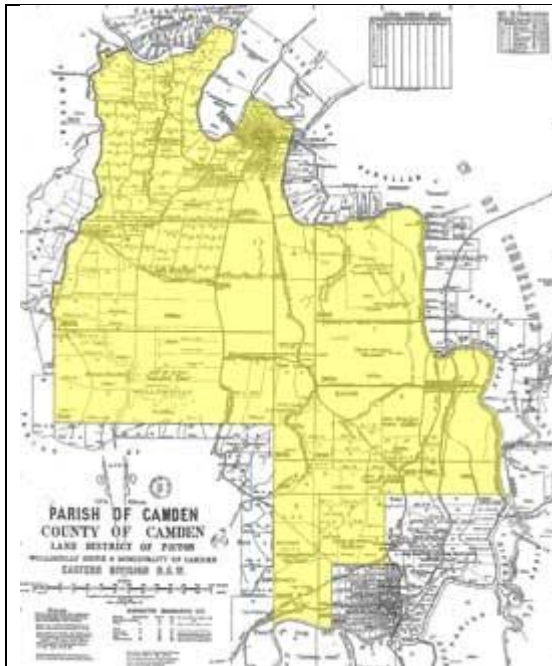
Map 1: 1805 to 1821

John Macarthur's first grants in the District of the Cowpastures: Lower Camden and Upper Camden. Walter Davidson's grant Belrose [Menangle] was in between.



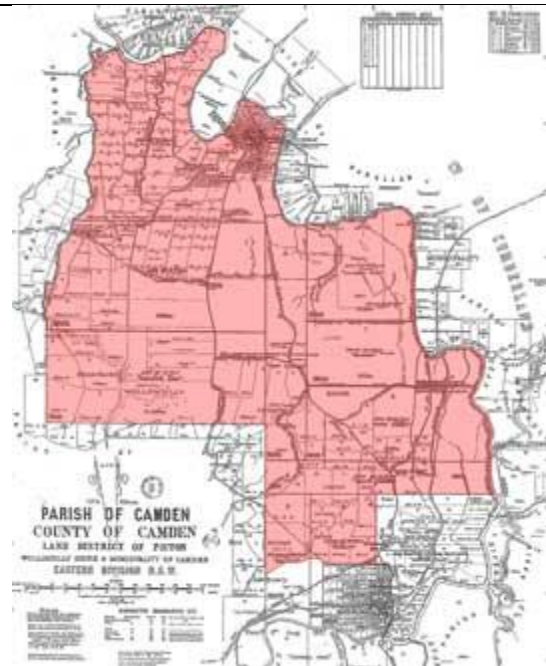
Map 2: 1822 to 1836

Between 1823 and 1825 John Macarthur obtained five more grants adjoining his existing holdings at the Cowpastures: Brisbane, West Camden and South Camden in 1823 and Lefevres Corner and Cawdor in 1825. In 1822 his sons William and James were given grants bordering Upper Camden: Melrose (yellow tint) and Rosslyn (orange tint).



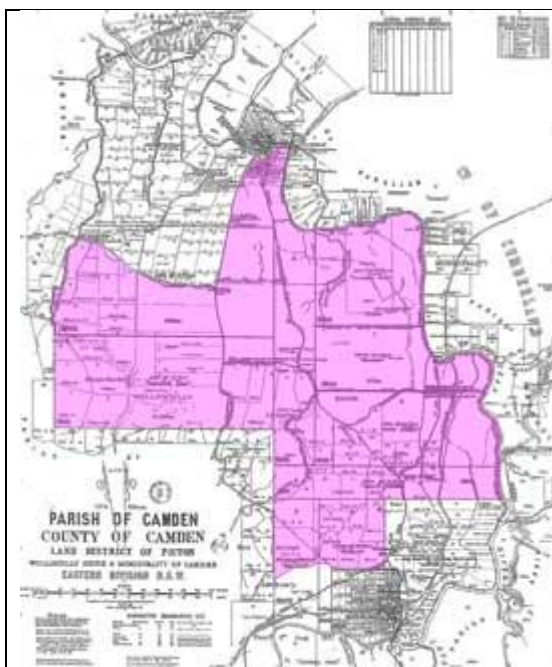
Map 3: 1837 to 1851

In 1837 James and William Macarthur, joint tenants of their late father's estate, purchased Walter Davidson's grant Belmont. With this addition the Macarthur estate at Camden reached its maximum extent, a total of 27,698 acres, including Menangle. From 1841 allotments were offered for sale in the village of Camden.



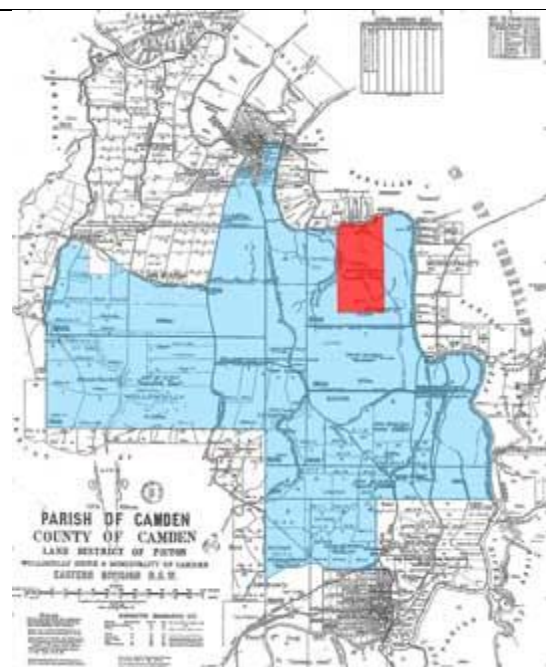
Map 4: 1852- 1881

In 1851 James and William Macarthur sold the southern part of their Rosslyn and Melrose grants to the adjacent landowner, Lachlan Macalister. With the exception of allotments in the village of Camden, only one other sale of land took place in the next thirty years, 95 acres on the Mt Hunter rivulet sold to James Wheeler in 1865.



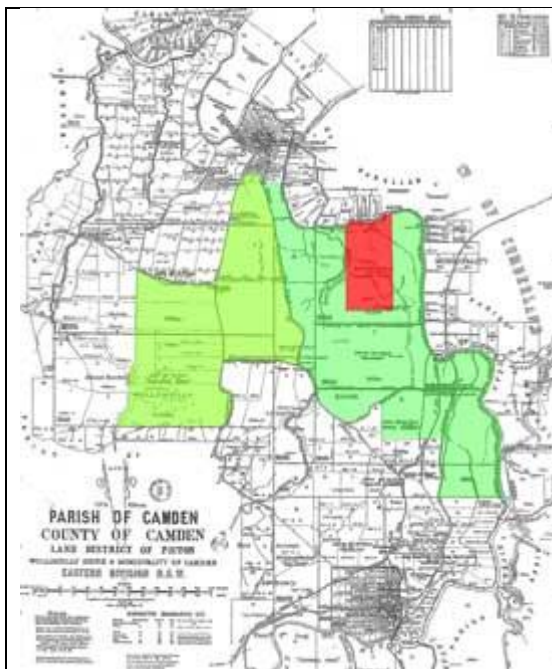
Map 5: 1882-1900

In 1881 William Macarthur contracted to sell over 5000 acres at the north-west corner of the estate, formerly tenanted farms, to a private syndicate, the first major sale of the Macarthur land holdings.



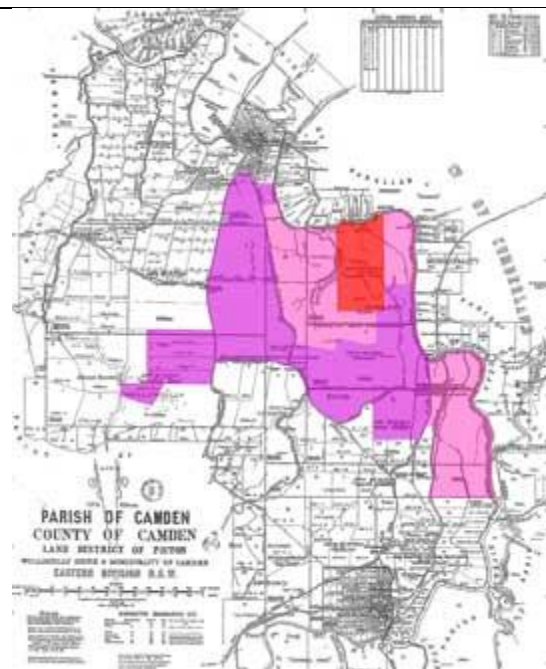
Map 6: 1901-1911

In 1901 the estate was brought under Torrens title. Camden Park House and its surrounding 956 acres (tinted red) were owned by Elizabeth Macarthur-Onslow and the remainder of the estate (blue), over 20,000 acres, by the newly formed family company, Camden Park Estate Ltd.



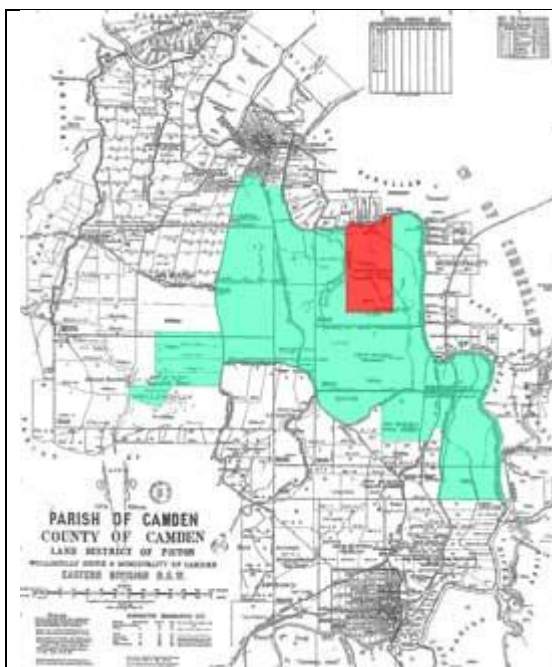
Map 7: 1912

By 1912 the sale and subdivision of peripheral, less fertile lands had begun while other parts of the estate (tinted pale green) had been conveyed to family members, Francis Arthur Macarthur-Onslow and George Macarthur-Onslow.



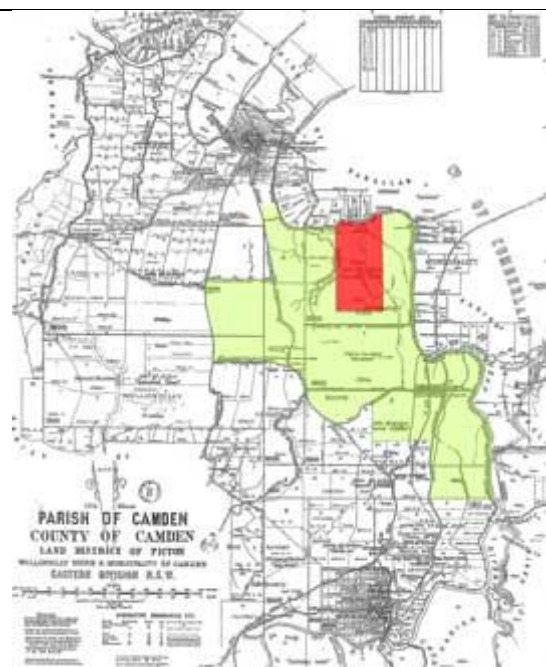
Map 8: 1912-mid-1930s

By the mid-1930s the land owned by Camden Park Estate Ltd (tinted mauve) had been further reduced by subdivision and sale while other parts of the company property (tinted purple) had been purchased by family members: Arthur, George, James and Denzil Macarthur-Onslow.



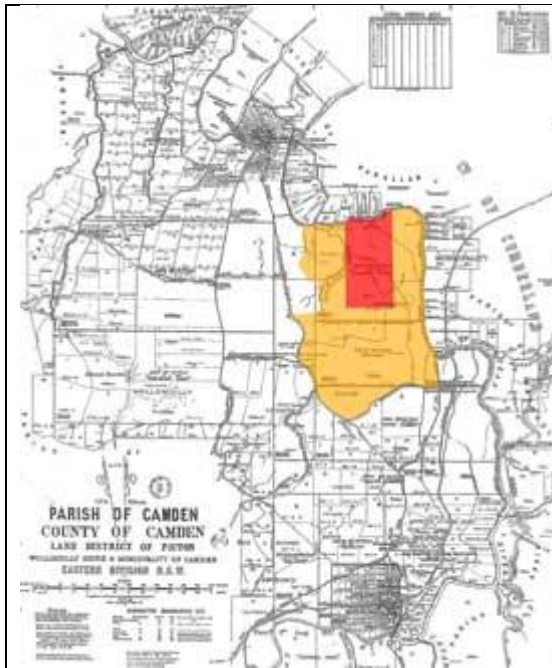
Map 9: Mid-1930s-1950

In the mid-1930s the land that had been sold to family members was transferred back to the Camden Park Estate Ltd. The company's land holdings then remained unchanged until the early 1950s.



Map 10: 1960s

Subdivisions and sales in the 1950s and early 1960s saw the contraction of Camden Park Estate Limited's holdings to the best lands around Menangle and Camden Park House, east of the Old Hume Highway. To the west of the Highway the company continued to hold the land between Wire Road and Cawdor Road bounded on the west by the Great South Road [Cawdor Road].



Map 11: 1976/1983 to the present

Following the takeover of Camden Park Estate Ltd by Talga, the NSW state government purchased part of the Camden Park Estate (tinted orange) in two lots in 1976 and 1983. Camden Park House and its 956 acres (tinted red) remained in the ownership of descendants of Elizabeth Macarthur-Onslow.

4.0 Description & Analysis of Physical Evidence

This section comprises the identification and analysis of the existing environmental and historic built fabric of the Study Area, including the landscape context, buildings and other structural elements, views and vistas. The documentary evidence for many of the built items is scarce or non-existent, as many of them were presumably not considered important enough to record. However, a number of plans and descriptions have survived in the Macarthur papers (unfortunately not always dated), and the fact that many of the built items are constructed to standard patterns enables useful comparison with similar patterns elsewhere.

4.1 The Environmental Context

The surface geology of the Study Area includes sedimentary rocks of the Wianamatta Group, comprising shale units, including claystone, laminites, and sandstones, overlying the Illawarra Coal Measures. In the floodplain of the Nepean River and its tributaries are Quaternary alluvial deposits of silt, sand and clay. The soil landscapes of the area reflect the underlying geology which is predominantly shale.²⁴⁴ Local soils include those of the erosional Luddenham group on the undulating to rolling hills and ridges that occur throughout the Wianamatta Shales and are often associated with occasional outcrops of Minchinbury Sandstone. These are generally shallow earthy clays on hill slopes, with moderately deep red and yellow podzolic soils on upper and lower slopes. Alluvial soils occur in the riparian zone of the Nepean River.

²⁴⁴ Hazelton & Tille, 1990

While much of the Study Area has been cleared since the first half of the 19th century for agriculture, transport corridors and village development, there are remnants of the original vegetation communities, or revegetation thereof, along the Nepean River and its tributaries and on parts of the Elizabeth Macarthur Agricultural Institute site. Three of the ecological communities to be found on the EMAI site are listed as endangered under the NSW Threatened Species Conservation Act 1995: Cumberland Plain woodland, Sydney Coastal River-flat Forest and Moist Shale Woodland.

4.2 Built Elements

The following sections discuss the locations and descriptions of the built items within the Study Area.



Figure 44 Map showing the location of built heritage items identified and assessed in the draft EMAI CMP, indicated by red dots, including a number within the Study Area (within thick red line). (Source: EMAI)



Figure 45 Undated (post 1896) oblique aerial photograph showing Menangle Village viewed from the north, with St James Church (with Sulman 1896 additions) in the background at far left. The row of estate cottages fronting Station Street is clearly visible, as is the cluster of cottages and farm buildings on the western side of Menangle Road, just north of its intersection with Woodbridge Road. (Source: WSC Planning Proposal).

4.2.1 Cottage 28, Menangle office and flats (EMAI OLB 001)

This building, an extended cottage on the western side of Menangle Road north of Woodbridge Road, is also known colloquially by EMAI staff as the 'Menangle Hilton'. It is a single storey structure with weather-board clad walls, timber-framed windows, and tiled roof. The south-eastern section of the building appears to be the original cottage, built as a residence using a traditional cottage plan probably in the 1940s, with fibrous plaster ceilings and cornices and face brick fireplaces in principal rooms, and asbestos cement linings in service areas. It has subsequently been extended to the west and north in the 1960s or 1970s, with similar external construction to the original but using plasterboard wall and ceiling linings internally. The building now appears to function mainly as offices. Its physical condition is fair, with evidence of water leaks through the ceiling of the room now used as a kitchen.



Figure 46 Cottage 28 exterior (left) and kitchen interior (right). *Photos: O P Phillips, 2009*

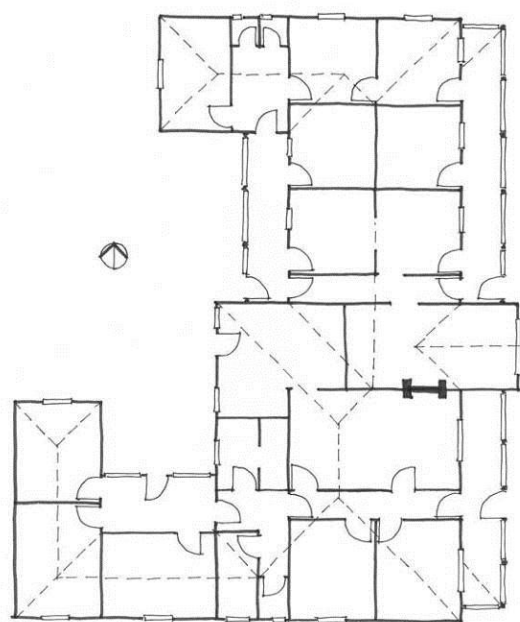


Figure 47 Plan of Cottage 28 (not to scale). *O P Phillips, 2009*

4.2.2 Cottage, 50 Menangle Road, Menangle (EMAI Cottage 29)

This early 20th century cottage, (on Lot 1, DP 1067320) on the western side of Menangle Road north of Cottage 28, was formerly known as Dairy No 1 cottage. Within EMAI it is now known as Cottage 29 and was formerly Cottage OLB 003. It is a timber framed building sheeted externally with asbestos cement joined with timber battens, and has a hipped and gabled galvanised iron roof and brick chimneys. The front corner verandah, partly infilled, has a weatherboarded balustrade, and there are decorative timber-framed hoods over windows in the gabled walls. Doors and windows are timber framed, and of a style indicative of a construction period around 1910. The rear (western) section of the building is evidently of later construction, possibly 1940s. Internally, principal rooms in the original part of the building have timber floors and walls lined with v-jointed boarding to dado height, and asbestos cement sheeting above, with timber picture rails and cornices and asbestos cement ceilings.



Figure 48 Cottage 29 exterior (left) and living room interior (right). *Photos: O P Phillips, 2009*

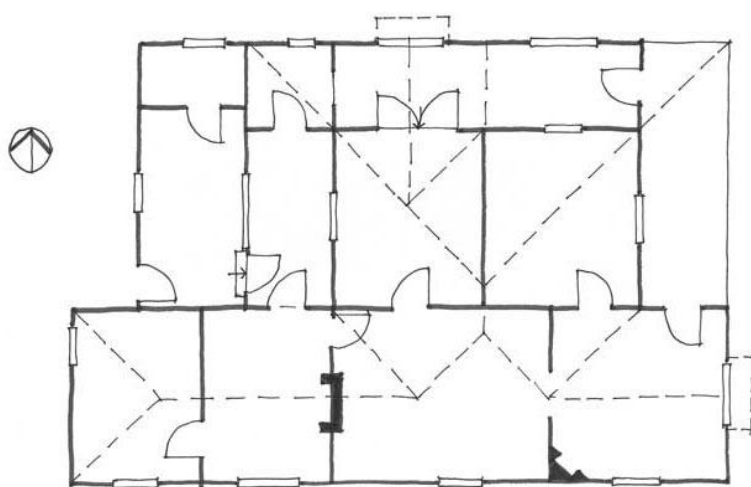


Figure 49 Plan of Cottage 29 (not to scale). O P Phillips, 2009

This cottage appears in the 1931 Paddock Book as No 1 Dairy House, No 67, fibro, iron roof. Comparison of the plan with Figure 49 above confirms that the western rooms are later additions, and that the front verandah was originally fully open.

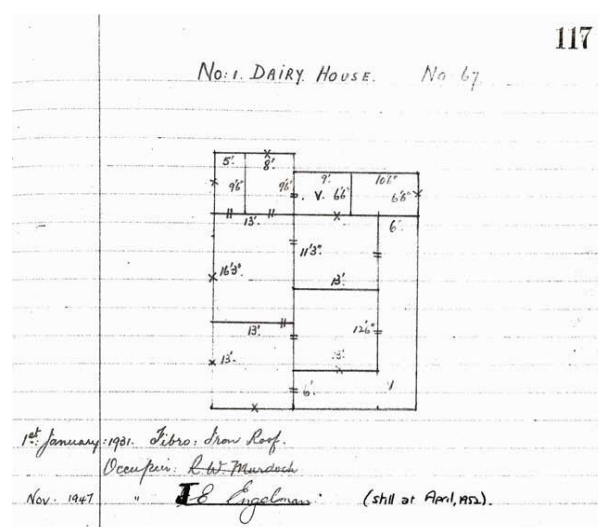


Figure 50 Extract from paddock book. Source: Macarthur papers, Mitchell Library.

The Statement of Significance in the 2009 draft revision of Wollondilly LEP is as follows:

“Cottage 29 has regional significance through its association with the EMAI and the former Camden Park Estate dairies. It is one of a group of similar dairy cottages, all reflecting the Arts and Crafts tradition prevalent at the time, making up the dairying establishment of the Camden park Estate. It is a good example of its type and an important component of the historical cultural landscape of Menangle and Camden.”

4.2.3 Storage shed, Menangle Yard (OLB 004)

This is the original milking shed for No. 1 Dairy, and appears from its style and construction materials to be one of the earliest of the dairy buildings. The building is of weatherboard, with some lower walls and the section at the eastern end of brick, and a large hipped roof of galvanised iron surmounted by a ridge vent. The cattle entrances have been bricked up but remain visible. Internally the building is lined with asbestos cement and has a concrete floor with a longitudinal drain. The former No. 1 Dairy complex, now known as Menangle Yard, also contains a pair of concrete silos (without roofs), and a number of later steel-framed sheds (including buildings numbered OLB 005 and OLB 008).



Figure 51 Former No 1 Dairy milking shed exterior (left) and interior (right). Photos: O P Phillips, 2009

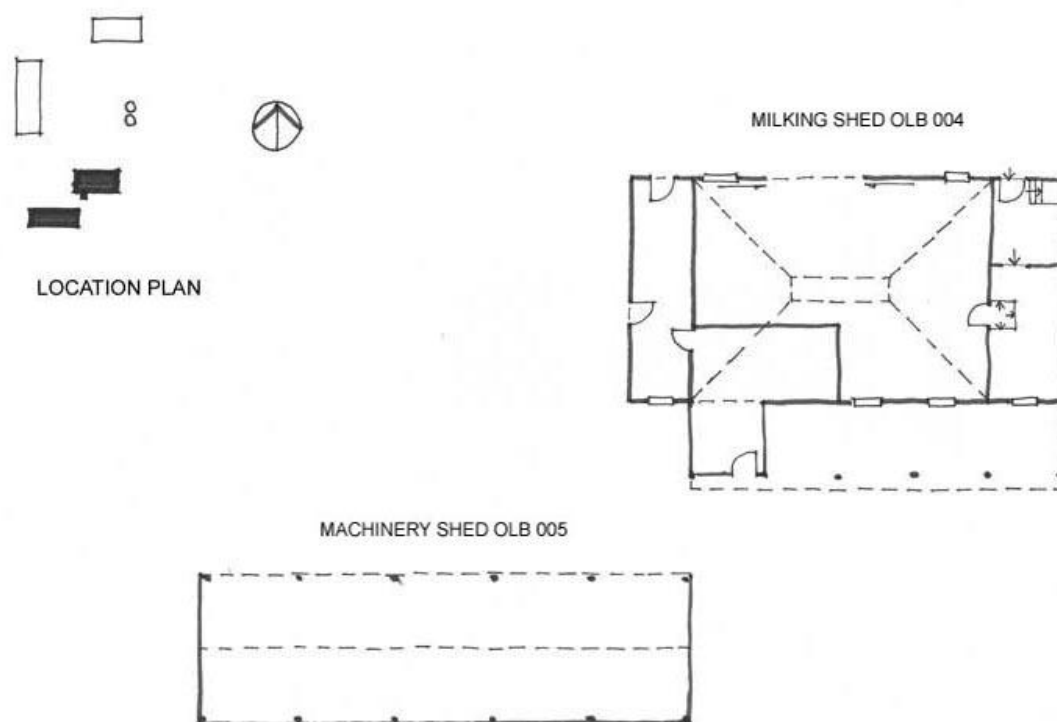


Figure 52 Plan of former No 1 Dairy complex (not to scale). O P Phillips, 2009

4.2.4 Menangle Gate Lodge / Cottage 27 (EMAI OLB 009)

This building is one of two former gate lodges on the Camden Park property; the other, on the old Hume Highway, was formerly known as the Camden Gate Lodge and is privately-owned and no longer within the EMAI boundary. The building is of Federation period construction, with weatherboard walls, brick chimneys, decorative half-timbered gables, and a terracotta tiled roof which has been replaced comparatively recently. Also of relatively modern construction are an addition at the south-west corner, with fibre cement walls and steel roof, and a timber framed porch on the western side. The east- and north-facing gables carry coats-of-arms of the Macarthur and Onslow families, one of the plaques removed from the former Camden Gate Lodge (now in private ownership), on Camden Valley Way. Internally the building has timber floors, and horizontal timber boarded wall and ceiling linings except in the kitchen, which has vertical boarding to dado height and asbestos cement sheeting above. Doors and windows are timber framed. The building is generally in good condition. The timber picket fence and posts at the entrance remain, although in poor condition, but the gate is of more modern steel construction. To the north of the cottage is a modern steel hay shed.



Figure 53 Former Menangle Gate Lodge exterior (left) and a bedroom interior (right). Photos: O P Phillips, 2009

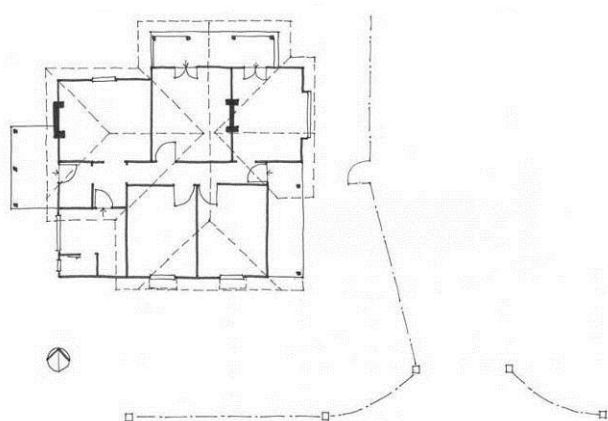


Figure 54 Plan of former Menangle Gate Lodge (not to scale). O P Phillips, 2009
The Menangle Gate Lodge was one of a pair designed for Elizabeth Macarthur-Onslow by John Sulman. The drawings for both lodges are in the Macarthur papers.

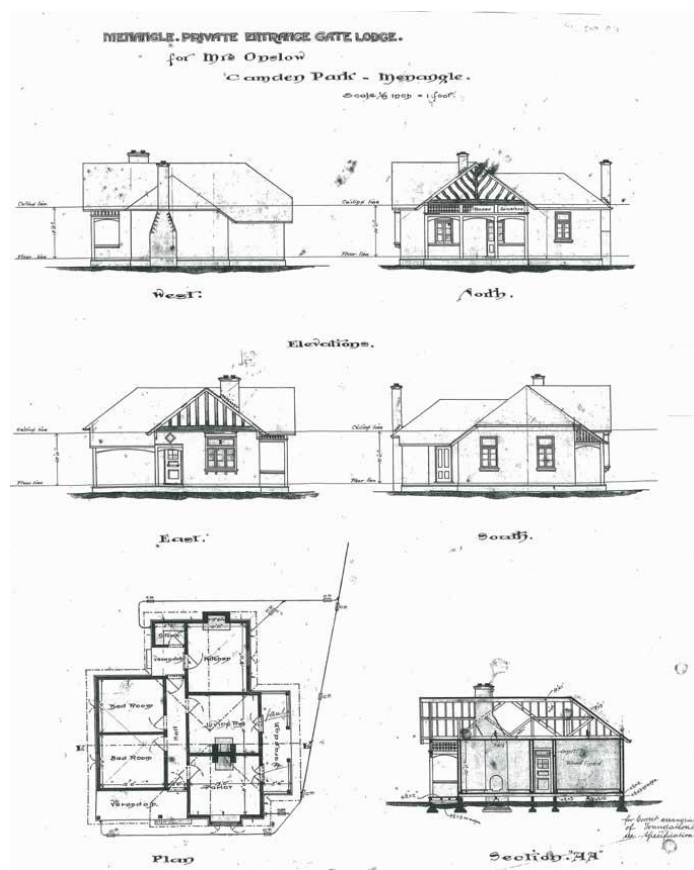


Figure 55 Drawing for Menangle Gate Lodge. Source: Macarthur papers, Mitchell Library.

The lodge appears to have been built as designed, as the original portion of it closely matches the drawings. Comparison with Figures 23 and 41 confirms physical evidence indicating that the bathroom enclosing the original back porch and the new porch at the rear are additions, built after 1931. The building carries two coats-of-arms, one of which was relocated from the Camden gate lodge on the old Hume Highway prior to its disposal. The fence and gateposts shown below are similar to the surviving elements at the Menangle gate lodge.

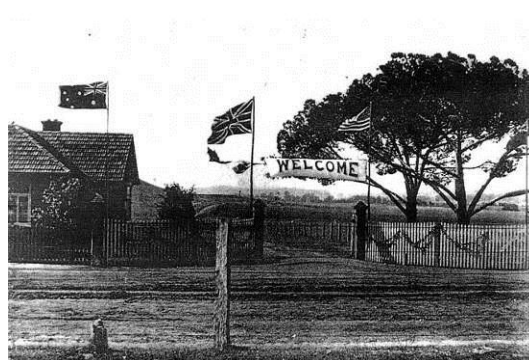


Figure 56 Camden Gate Lodge in 1960s (left), showing coat-of-arms and fence, and Menangle Gate Lodge in c1925. Source: Camden Historical Society.

4.2.5 No 4 Dairy Cottage, 65 Woodbridge Road, Menangle

This cottage, known in EMAI as No.4 Dairy Cottage (formerly OLB 041) is located on Woodbridge Road west of Menangle village, appears to consist of two separate weatherboard buildings from the late 19th century, of which the rear section (to the west) is probably the older. The central space has weatherboards on both long walls, indicating that they were originally external. The north-west extension is evidently of later construction; it has a concrete floor and fibro-clad walls. The earlier parts of the rear building have bead-jointed boarded walls and ceilings, and wider timber floor boards than the eastern wing of the cottage. The double fireplace suggests that this was a kitchen wing. The eastern section has walls lined in fibrous plaster, with bead-jointed boarded ceilings. The timber verandah has timber stumps and posts. The 12-pane window in the south-east room appears of earlier date than the remainder of the joinery and may have been reused from the western wing. The building is in very poor condition: most of the doors have been removed, the verandah is damaged and there is a considerable quantity of cattle dung throughout the building.



Figure 57 Cottage, No 4 Dairy. Photos: O P Phillips, 2009

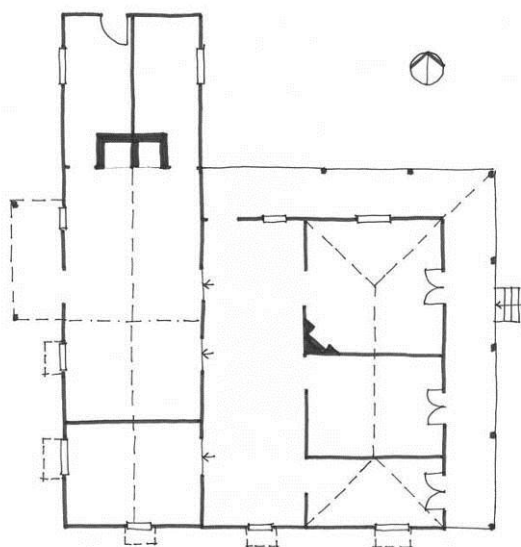
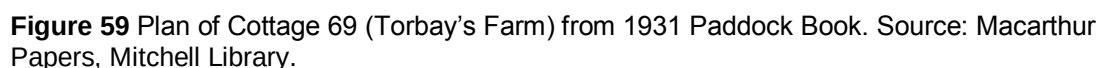


Figure 58 Plan of Cottage, No 4 Dairy (not to scale). O P Phillips, 2009

This cottage appears in the 1931 Paddock Book as No 4 Dairy House (No 28) – weatherboard, iron roof. Comparison with the existing configuration (Figure 79) indicates that the room at the southern end of the rear section has been demolished, while an extension has been added later to the northern end.



This complex is among the most complete of all those in the surviving EMAI dairies, as it retains its concrete silos as well as little-altered examples of sheds and feed stalls. These stalls have similar linked timber head bails and timber feed troughs to No 2 Dairy, and the central aisle also contains the wheeled bin used to supply the troughs from the storage shed at one end. The roof structure is similar to those at No 9 Dairy, and the large hay shed of the same pattern as that at No 8 Dairy. The whole complex is roofed and clad in painted corrugated iron sheeting.



Figure 60 Feed shed, hay shed and silos, No 4 Dairy. Photos: O P Phillips, 2009



Figure 61 Oblique aerial photograph circa 2009 of No.4 Dairy site (Source: EMAI)

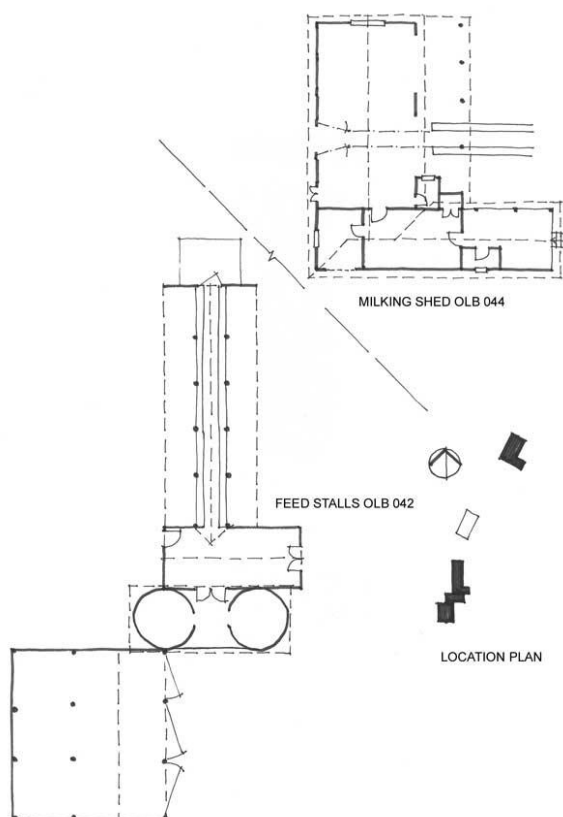


Figure 62 Plan of No 4 Dairy (not to scale). O P Phillips, 2009

4.2.7 Brick milking shed, No 4 Dairy (EMAI OLB 044)

The brick milking shed is also similar to others on the estate, but has been altered and extended with a large semi-enclosed verandah to the east. In addition, many of the former cattle exits and entrances have been bricked up, and a cattle race with elevated walkways either side has been built on the eastern side, leading to a cattle crush within the building. The former offices and stores at the southern end are comparatively intact. The building has face brick walls, concrete walls with a central drain in the main milking area, and a painted corrugated iron roof with skylights. Internally walls are rendered and painted and ceilings are painted fibro. The building is in fair to good condition.

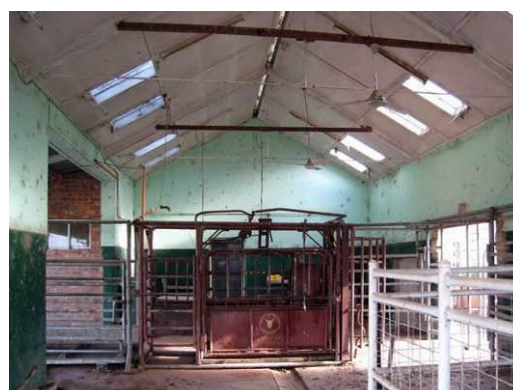


Figure 63 Former milking shed, No 4 Dairy. Photos: O P Phillips, 2009

Little documentary evidence of the dairy buildings has been located, although they were evidently built to a developing pattern (No 1 being the earliest). The design of the feed stalls was evidently established in the 1890s, as a plan from that period exists for Hay Sheds and Feed Pens at Farm No 18 (W Mills). This drawing shows the standard pattern for the sheds and feed stalls which exist with minor variations at all of the remaining dairies on the EMAI property. The concrete silos at a number of the dairies, and the brick milking sheds, were evidently 20th century additions.

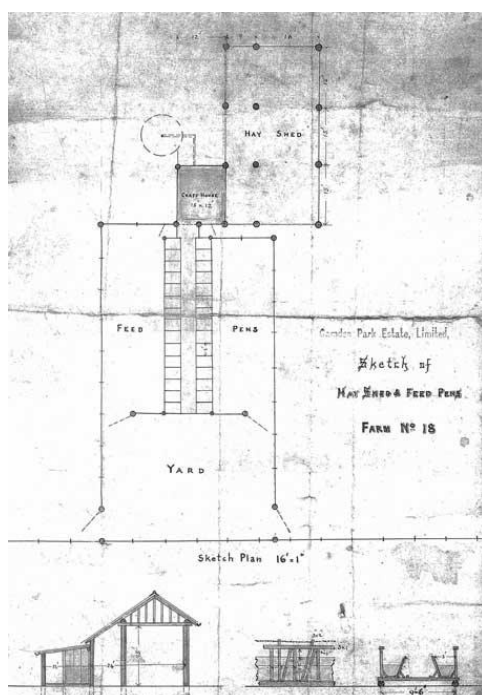


Figure 64 Sketch of Hay Sheds & Feed Pens, Farm No 18. Source: Macarthur Papers, Mitchell Library.

4.2.8 Mount Taurus Complex

This farm complex requires further investigation. The locality name has strong associations with Governor Hunter's naming of the high point from which he observed the escaped cattle in 'the Cowpastures'. The site was part of the Camden Park Estate.



Figure 65 Mount Taurus farm building complex viewed from Woodbridge Road. (Photo: Chris Betteridge 29 January 2009)

The Mount Taurus farm buildings complex includes a number of structures including a double silo with gabled roof of a type becoming rarer in the local government area and generally in NSW.

4.2.9 Former Camden Park Estate Cottages in Menangle Road & Station Street

A number of cottages and bungalows in Menangle Road and Station Street, Menangle have important associations with the development of the village as the Camden Park Estate's headquarters for its dairying operations after the construction of the 'new' Creamery in 1898. These residential dwellings provided accommodation for many of the estate's employees and are an integral part of the English-style rural enterprise established by the Macarthurs and Onslows.

Significant early residential dwellings include²⁴⁵:

Slab hut c1850, 40 Carrolls Road; Menangle (Lot 123, DP 809576);

Nos 50, 80, 92, 96, 98, 100, 102, 106, 119, 122, 124, 125, 128, 131, 135, 138, 149 and 151 Menangle Road, Menangle;

Nos. 8, 10, 12, 14, 16, 27 and 28 Station Street, Menangle and the dairy cottage on the corner of Station Street and Menangle Road, Menangle;

Lot 201, DP 590247, end of Stephen Street, Menangle (adjacent to Creamery and Rotolactor site).

4.2.10 Former Camden Park Estate Central Creamery

The Statement of Significance for the Menangle Creamery in the Wollondilly Heritage Study is as follows:

'The Camden Park Estate Creamery is significant as evidence of the scale of dairying activities carried out to supply Sydney's needs in the latter part of the 19th century and in the 20th century. It has associations with the Camden Park Estate and is part of the network of sites which provides a range of physical evidence of the commercial dairying industry in the Sydney region. With the removal [of] much of its equipment in recent times, it has lost its ability to demonstrate the operations of a creamery of this period but it is the most substantial and intact creamery building in Wollondilly.'

²⁴⁵ Oehm, Andrea 2006, WSC Heritage Study review.



Figure 66 Former Menangle Creamery (left). (Photo: Chris Betteridge, 4 May 2010)

The Menangle Creamery was listed as a heritage item in the Macarthur Region Heritage Study and is listed as Camden Park Estate – Central Creamery and Manager's Cottage, 15 Menangle Road, Part Lot 201, DP 590247, an item of local heritage significance (item I82) in Wollondilly LEP 2011.

4.2.11 Former Camden Park Estate Rotolactor remains

The Camden Park Rotolactor provides evidence of the post WWII phase of dairying activity in the Sydney Region. It represents the final advance in the mechanisation of commercial dairy farming in Australia and was the second facility of this type and scale in the world. Together with a range of physical evidence which survives in close proximity to Camden Park Estate, it is significant because of the opportunity it provides to interpret the history of dairy farming and production in the region for a period encompassing over 150 years of development.

The Rotolactor structure requires further investigation to ascertain its current condition and the feasibility of its adaptive reuse for interpretive or other purposes.

4.2.12 Menangle Store

The Menangle Store has historical significance as the only store in Menangle Village from the early 20th century to the present day and through its role in serving farmers in the rural hinterland and in provisioning the Camden Park Estate. It has links with the Macarthur family who sponsored the store. The building is unusual in the State as a particularly fine and relatively unusual freestanding example of a "Federation Arts & Crafts" style commercial shop. This significance is enhanced by the degree to which the building retains its original form & detailing. In addition, the store has aesthetic significance as a landmark building at the major intersection in Menangle village.



Figure 67 Menangle Store main elevation to Station Street. (Photo: 28 August 2009)

4.2.13 Menangle School of Arts

The following description and history of the School of Arts is taken from the Statement of Heritage Impact prepared in 2010 for Wollondilly Shire Council by Wayne McPhee & Associates to accompany a proposal for the building's demolition.

"The corrugated iron roofed single storey timber framed School of Arts Hall is sited adjacent to the Menangle Store, fronting Station Street. Its extant form and detailing although altered over time, shows evidence of construction c. 1890 although its exact date of construction, the name of the architect and builder is unknown. The only relevant information found in relation to the site is a newspaper article dating from 2002 stating that the Hall was built by 1893. Constructed by the Macarthur-Onslow family for use by the local inhabitants of the village, the School of Arts hall was an important social centre for Menangle. The building was used for fund raising for the Menangle Roman Catholic Church and the Australian Land Army used the Hall during World War 11.

*'36. Recreation Hall/School of Arts. There was a library and billiard room attached. Used for local dances, church bazaars, Agricultural Bureau meetings and shows of fruits, vegetables and flowers, voting day, wedding receptions, occasional cinema, public meetings and Christmas parties'*⁵

The Menangle General Store constructed in 1904, is adjacent and to the west of the School of Arts Hall. Activity generated by local trade at the corner shop, gave increased prominence to this area of the town.

Another community building of great importance in earlier times was the School of Arts. Buildings such as these date back to the early 1900s, when Government encouraged their formation to make for great community interaction. In the late 1920s and in the 1930s, certainly the School of Arts at Menangle was used for functions such as dances and for the production of plays and musicals. In 2005, the building externally appeared to be in reasonable condition, with a painted brick facade and side walls of timber. There are both front and side entrances. It still has a community noticeboard at the front where, presumably, events of interest to the people are displayed.

Following establishment of the *Theatres and Public Halls Act 1908*, the Hall was modified to provide additional side exits to improve safety to the occupants.

A number of changes were carried out to the building fabric of the Hall during the twentieth century as the local population increased, including:

- Alterations and Additions c.1960 to provide new double hung windows on the southern facade, damaged due to weather exposure;
- Major refurbishments to the hall during 1984 to provide new internal fibre linings, new male and female toilets, kitchenette and projection room;
- Alterations c.1994 to provide new hardwood tongue and groove flooring throughout the main body of the hall, concrete landings and steps to the western exit doors."



Figure 68 (Left): Menangle School of Arts; **(Right):** Memorial plaque to Frank Victor Veness on School of Arts gates. (Photos: Chris Betteridge, 28 August 2009).

4.2.14 Former Menangle Public School



Figure 69 Menangle Public School main building. (Photo: Chris Betteridge, 10 May 2000)

4.2.15 St James Anglican Church

St James Church, Menangle, is recognised within the state as an unusual and particularly fine example of a small country church of great architectural integrity, this significance being enhanced by the building's high degree of intactness and quality of

workmanship. It also has considerable significance as an important landmark by virtue of its form and siting on a prominent rise in the village and the surrounding screen of trees. This provides a romantic silhouette which is seen by travellers on the Southern Railway and from rural roads in the vicinity. The Church has historical significance through its links with the Macarthur-Onslow family of "Camden Park" and "Gilbulla"; its associations with two leading architects, J Horbury Hunt and Sir John Sulman; and, its more general association with the life and development of Menangle Village.

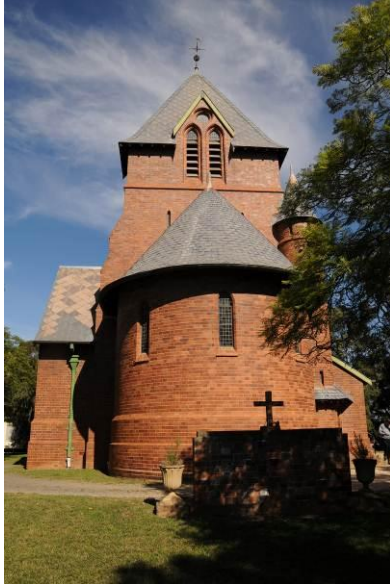


Figure 70 St James Anglican Church, Menangle. (Photo: Chris Betteridge, 1 May 2012)

4.2.16 St Patricks Catholic Church



Figure 71 St Patricks Catholic Church, Menangle Road, Menangle. (Photo: Chris Betteridge, 5 November 2003).

4.2.17 Gilbulla



Figure 72 Gilbulla. (Photo: Chris Betteridge, 11 August 2004)

4.2.18 Menangle Railway Station Group



Figure 73 Oblique aerial photograph of Menangle Railway Station Group with part of Menangle creamery site at right. (Photo: Australian Rail Transport Corporation).

4.2.19 Menangle Railway Viaduct



Figure 74 Menangle Railway Viaduct over Nepean River north of Menangle, with Menangle Road at left. (Photo: Australian Rail Transport Corporation).

4.2.20 Menangle Weir (concrete structure)

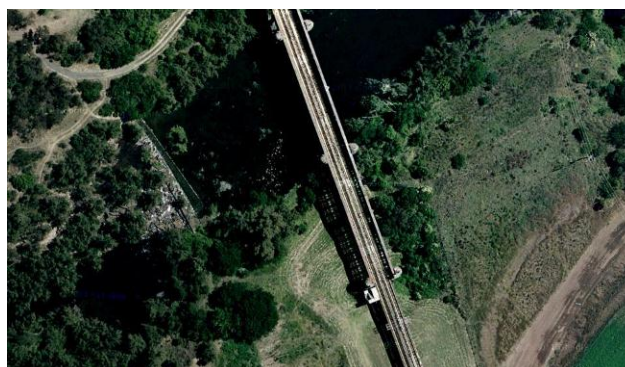


Figure 75 Menangle Weir and part of Menangle Railway viaduct. (Photo: Google Maps)

An important component of the Nepean River management system requiring further investigation.

4.2.21 Former Menangle Weir (timber structure)

The location and extent of the remains of the earlier timber weir require further investigation.

4.2.22 Remains of Menangle Road bridge over Nepean River

The sandstone foundations of the first road bridge, built in 1855 to replace fords, are located downstream of the existing road bridge and require further investigation of their historical and archaeological significance.

4.3 Cultural Landscape Units

The 1989 Camden Park Conservation Plan identified 21 'Landscape Zones' within the area now comprising EMAI and Camden Park as areas which have a distinct landscape character, assessed using the following criteria:

- Topography and natural features;
- Visual catchment;
- Existing vegetation and agricultural uses;
- Built environment;
- Ownership

The original rationale for this 'disaggregation' of the former Camden Park Estate into landscape character units was to encourage an holistic approach to the property and to provide a framework for discussion, comparison of separate discipline findings and the making of conservation recommendations.

The current EMAI lands include large areas of relatively poor country suitable for rough grazing and /or regeneration of native plant communities and areas of fertile alluvial flats of the Nepean River floodplain predominantly used for feed production for the Institute's dairy herds and sheep flocks. At various places there are concentrations of structures associated with agricultural and pastoral activities, including dairies, a former piggery, machinery and feed sheds, a former orchard packing shed, former bull pens, cattle yards, cottages and various other built elements, including the monuments in the Macarthur Family Cemetery.

The alluvial river flats between Menangle Road and the railway line are similar in character to the paddocks immediately west of Menangle Road.

4.3.1 Menangle Paddock

A group of cleared arable fields in the south-eastern corner of the EMAI site, bounded on the south by Woodbridge Road, on the east by properties fronting Menangle Road, on the west by the Exposed Hills and Eastern Slopes, an internal access road that enters the EMAI site immediately to the east of the Menangle Gate Lodge and on the north by the Nepean Plain and Mining Lands. The unit has gentle slopes and is slightly depressed along Foot-Onslow Creek.

The unit includes the Menangle Gate Lodge on Woodbridge Road and buildings and plantings along Menangle Road. The Woodbridge Road boundary is planted with a mature privet hedge and there are remnant exotic trees along the creek.



Figure 76 Menangle Paddock

4.3.2 Exposed Hills

An area to the west of Menangle Paddock flanking Woodbridge Road. It was largely cleared of tree cover apart from scattered specimens of *Eucalyptus crebra* but the lower slopes have been partly revegetated. This zone is the only one in which exposed hills can be viewed against the skyline. There are exotic plantings around the site of Dairy No.4.



Figure 77 Exposed Hills.

4.3.3 Ridge Top

A linear strip of ridgetop lands extending northwards from the northern boundary of the Exposed Hills to the southern boundary of Camden Park.

A two-hectare area to the east of the access road to the EMAI buildings was fenced and planted with 2000 tubestock seedlings in autumn 1992. Canopy and shrub species planted included *Eucalyptus crebra*, *E. tereticornis*, *E. amplifolia*, *Acacia floribunda*, *A. decurrens*, *Casuarina glauca*, *Bursaria spinosa*, *Dodonaea triquetra*, *Melaleuca stypheloides* and many more²⁴⁶.

Planting of steep cleared ridgetops is a priority in this area where mass movement and slumping is a major land erosion hazard. The planting also reduced infiltration of rainwater into recharge areas, thus lowering the watertable which had been causing a saline scald on the valley floor.

There are panoramic views from parts of this area east over Menangle Paddock and Menangle Village and sequential panoramic views west towards Top Paddock.



Figure 78 Ridge Top.

²⁴⁶ DEC 2005

4.3.6 Nepean Plain

This unit, comprising part of the Nepean River floodplain was completely cleared of tree cover and is slightly depressed towards Menangle Pond, which is the only significant feature. Includes sand and soil extraction sites on both sides of the river.



Figure 80 Nepean Plain

4.3.7 Mining Lands

This unit in the Nepean River floodplain was subject to sand and soil extraction operations, resulting in clearing of natural vegetation cover, lowering of the original land profile and destabilisation of the river banks.

Unlike the situation in more recent extractive operations along the Nepean River, the rehabilitation measures in this unit were minimal, resulting in a loss of original landscape character.



Figure 81 Mining Lands

4.3.8 Barragal

This unit comprises Barragal Lagoon and associated wetland and eucalypt woodland in the northern part of the Nepean River floodplain unit. It is important waterfowl habitat but was degraded by stock grazing. The diverse range of waterfowl using the lagoon varies with the seasons and fluctuating water levels. The lagoon diminished considerably in size during the extended drought of 2003-09. Barragal Lagoon was fenced and planted in March 1986 with eucalypts and casuarinas indigenous to the site²⁴⁷. Natural vegetation in this unit was of *Eucalyptus bauerana* fringing the lagoon itself, with *E. tereticornis* woodland and grassy understorey on the upper slopes.

From the hilltop above the lagoon there are panoramic views over the lagoon and swale in the foreground, the Nepean River Floodplain and Nepean River in the middle distance and to the village of Menangle beyond. On the top of this hill is a sandstone monument marking the spot where Governor Macquarie and his party camped in 1810 while on a visit to the Cowpastures area. One of the original plaques was removed from the stone but a new plaque was unveiled by Her Excellency Dr Marie Bashir, Governor of NSW, during her visit to the site in 2010 during the Macquarie Bicentenary celebrations.



Figure 82 Barragal Lagoon.

²⁴⁷ Ibid.

4.3.9 Rotolactor Paddock

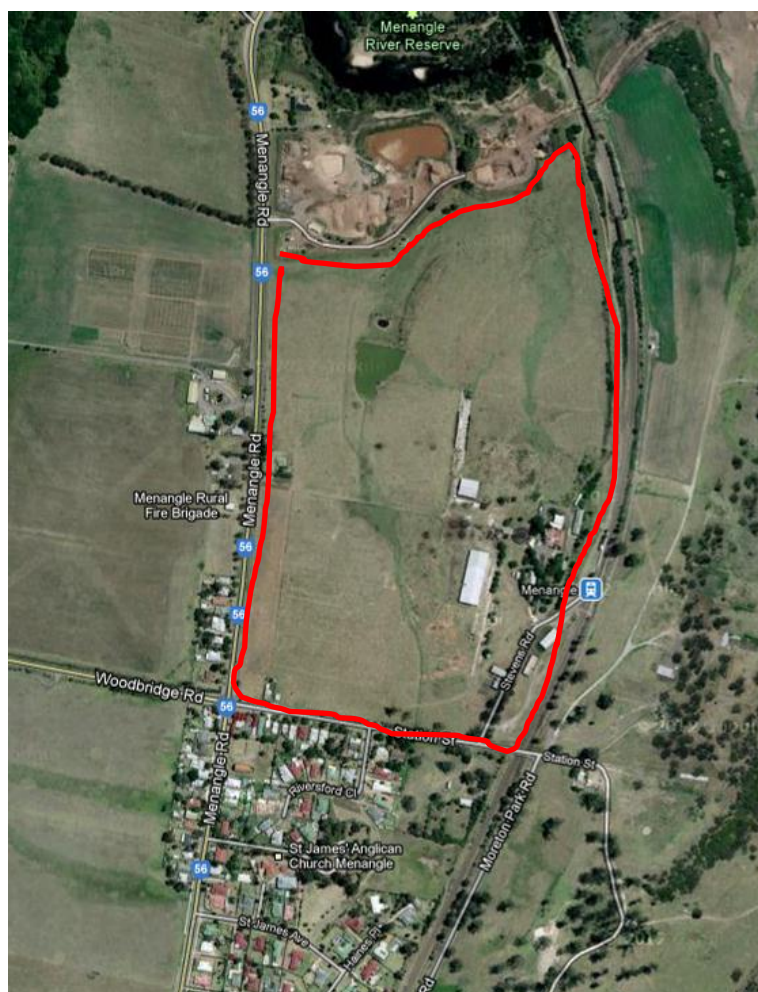


Figure 83 Rotolactor Paddock.

4.3.10 Menangle Village



Figure 84 Menangle Village.

4.3.11 Eastern Lands

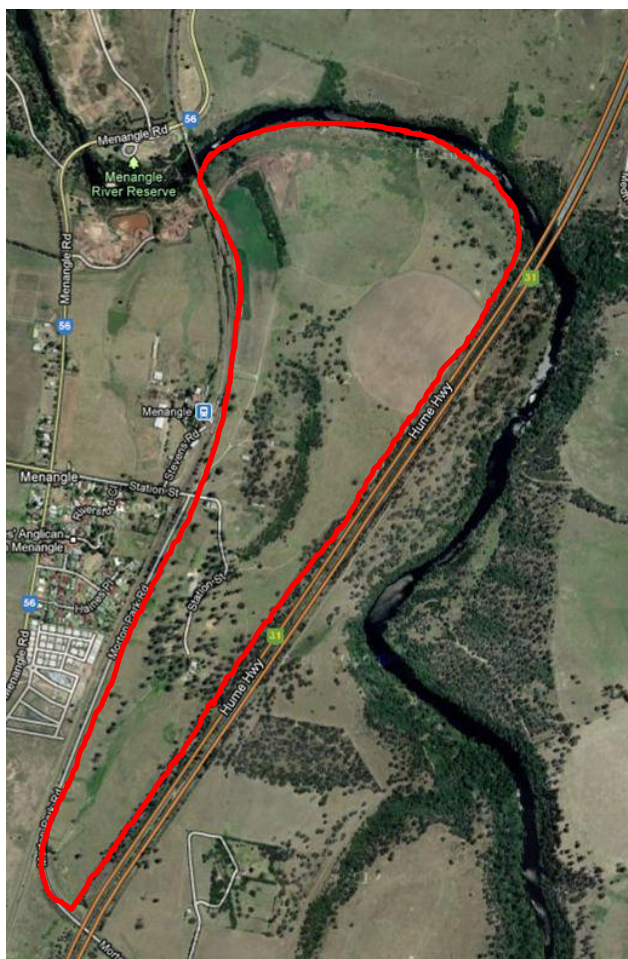


Figure 85 Eastern lands.

4.4 Views and Visual Absorption Capacity

Views and vistas can be significant elements within a cultural landscape, providing residents and visitors with panoramic views, restricted views, narrow vistas and glimpses of natural areas, geographic and historic landmarks and historic sites. There are existing and potential views and vistas from the public domain within the Study Area, from public roads, recreation areas and from the waterways themselves. Some of these views are panoramic while others are restricted to varying degrees by buildings, road and railway infrastructure, riparian vegetation and landscaping along roadsides and within properties. Within the Study Area there will be many existing and potential opportunities for motorists, train passengers, pedestrians and cyclists to gain visual access to a wide range of heritage items and their cultural landscape context.

Visual absorption capacity is an estimation of the ability of a particular area of landscape to absorb development without creating a significant change in visual character or a reduction in scenic quality of the area. The capacity of an area to absorb development visually is primarily dependent on landform, vegetation and the location and nature of existing development. A major factor influencing visual absorption capacity is the level of visual contrast between the proposed development and the existing elements of the landscape in which it is to be located. If, for example, a visually prominent development already exists, then the capacity of that

area to absorb visually an additional development of similar scale and grain is higher than a similar section of land that has no similar development but has a natural undeveloped visual character. Given the nature and extent of existing development within the Study Area, the visual absorption capacity for new developments will vary from very low to very high, depending on the location and the nature and extent of new development.



Arrows show the 4 most significant rural landscape view corridors.

From north, running clockwise, these are:

1. North: Railway, Rotolactor, Central Creamery with grazing and cropping land.
2. South: St James Hill to Gilbulla with grazing and cropping land.
3. West: Mt Taurus with grazing and cropping land.
4. North west: Menangle Pond and Barrigal lagoon with grazing and cropping land.

Figure 86 Major views into and out of Menangle.

4.5 Comparative Analysis

Time and budgetary constraints have precluded a detailed comparative analysis with other places of similar date and complexity but research carried out on the Menangle area suggests that there are relatively few comparable areas in terms of the variety and richness of cultural heritage values, period of European settlement and particular associations. Areas that come to mind include other villages established along English country estate lines, with or without tenant farms, and supporting an agricultural enterprise centred on a significant house and family / families.

4.5.1 Kameruka Estate

Kameruka Estate near Bega on the Far South Coast of New South Wales was established in the 1850s, and has been handed down through the Tooth brewing family line. The estate's name is synonymous with champion Jersey cattle, and its cheeses and butter won international awards after being shipped across the world over 100 years ago. In the mid-19th century Sir Robert Lucas-Tooth developed an entire agricultural community on the far south coast of NSW, bringing additional workers from Britain, Europe and America. He provided them with houses, recreational facilities, shops, schools, and a church. The Kameruka Group includes a store, hall, gate lodge, tower clock, homestead and outbuildings.

The estate originally spanned 200,000 acres. On it were built multiple share-farmed dairies named after villages in Kent, as well as a home dairy that still operates, with the oldest Jersey herd in Australia. In 2007 Kameruka owner Frank Foster, great grandson of Sir Robert Lucas-Tooth sold the property for an undisclosed figure to an English farmer, who would continue the traditional estate life of the farm. Asked about the reason for selling the historic 1600 hectares property, Mr Foster explained,

"A number of reasons, the main being that nobody can really carry on. My wife and I have no children, there are a number of beneficiaries to the place but none of them are interested in farming. So if it wasn't now, it would have been later."²⁴⁸

"It will be a tremendous wrench but on the other side, I think Kameruka will remain an icon". According to Frank, "We've been working [on the decision] for about 5 years, basically the place was sold through the grapevine. There was no advertising in Australia but we would have advertised here and the UK if this gentleman didn't pop out of the woodwork from the UK."

Frank stated, "One of the most important things as far as I was concerned with any sale... was that the person that bought it, first of all had the interest of Kameruka as the district has known it and hopefully not make too many radical changes and do the best thing for the staff and tenants (Twenty houses and 8 staff)."

Describing the buyer and his intentions, Mr Foster believed, "It seems that he's going to keep Kameruka in very similar condition to what it is at the moment. He wants to carry on with the jersey stud, plans to build a new dairy, will put in a dam for irrigation storage which I have a license to do, he's into race horses and I believe he'll keep horses here and develop a stable complex and carry on with sheep as well.

The buyer, who comes from a similar estate in England, spent a day and a half looking around the property, before negotiations took place by telephone. Details of the sale amount remained confidential between both parties.

²⁴⁸ 'Historic Kameruka Estate sold: A slice of the state's dairy history has sold for an undisclosed sum to an international farming and shipping operator', ABC South East NSW, 21 May 2007.

There are considerable similarities between Kameruka and Camden Park, particularly in the scale of dairying operations but Kameruka was established much later and is not on the outskirts of a major metropolis.

4.5.2 Brownlow Hill

Granted by purchase to Alexander Macleay, Colonial Secretary, in 1827. Macleay was a Fellow of the Royal Society, and had been Honorary Secretary of the Linnaean Society in London, but it was his son, George, who was responsible for the management of the farm and apparently for the architectural and gardening improvements. George returned to England in the early 1860s. Brownlow Hill was leased to Jeremiah Downes in 1857 and purchased by him in 1875. The Downes family still own the property.

This item is assessed as historically significant statewide aesthetically, rare statewide and historically representative statewide. In addition to the significance of the individual parts of Brownlow Hill, the group as a whole, encompassing alluvial flats and loop road, the homestead, gates, ornamental pond with stone causeway, entrance drive, flower garden, aviary, stable and roundhouse, is an excellent intact example of an early colonial country estate created by a notable colonial family.

Although an early colonial property relatively close to Menangle, in terms of size and complexity, Brownlow Hill does not compare with the scale of the Macarthurs' and Onslows' agricultural enterprises at Camden Park.

4.5.3 Tocal, Paterson, New South Wales

Tocal at Paterson is significant because it represents the complete range of human habitation in the Paterson Valley. There is evidence of its use by the Gringai Clan of the Wonnerau people through the name 'Tocal' and the presence of axe grinding grooves on site. The main significance of Tocal as a European site is the entire precinct which is a stud horse and cattle agricultural property from the 19th century. It is extremely rare to find such a complete complex of largely unaltered buildings. The fact that many are typical timber structures also demonstrates various construction technologies (Eric Martin and Cameron Archer 1998).

Tocal under James P. Webber is also significant for its association with the development of viticulture and the development of the Hunter Valley wine industry (Driscoll, 1969). The key element within this important precinct is the Homestead representing a very fine residence of which few of equal age and quality remain today. Also of exceptional significance is the original Webber's homestead and stables plus the barracks. The design of the homestead with the house, staff quarters and stables all part of one building but separately accessed plus the two storey town house type of accommodation (barracks) for farm workers are very rare, if not unique.

The Blacket-designed barn is a finely detailed building by one of Australia's prominent architects of the 19th century. There are many more elements of considerable significance including the cattle shed which represents a rare and special building to accommodate cattle. The other significant element is the generator and associated farm equipment. Although not old compared with Tocal, its completeness is an extremely valuable heritage asset. Most of the remaining elements have some significance in their own right.

The association of the Reynolds is also a very important one. They were pioneers in stud cattle and horses, who contributed greatly to stud breeding and recognition. Reynolds was a name synonymous with Hereford cattle in NSW for a nearly a century that remains largely as it was when they operated it.

While there are some similarities between Tocal and Camden Park, the former was never a tenant farm operation and did not encompass the scale of activities observed at Camden Park and Menangle.

4.5.4 Purrumbete, Weerite, Victoria

Purrumbete was settled by brothers Thomas, John and Peter Manifold who laid claim to 100,000 acres (40,000 hectares) around Lake Purrumbete in 1839 and the family subsequently became one of Victoria's largest landholders. The Purrumbete property developed into a highly prosperous and substantial farming complex during the latter half of the nineteenth century and the homestead grew from a core built in 1857-60, which was extended in 1882 and extensively altered in 1901. Successive generations of the Manifold family lived there until 1983..

By the early 1890s at least twenty outbuildings had been constructed at Purrumbete, all built in timber except for the bluestone men's quarters. The six predominantly intact buildings include the Coach House, House Stables and Dairy, Carpenter's (Blacksmith's) Shop, Manager's House and Cool Store, Men's Stables, Cart, Cow and Store Shed and Men's Quarters. Most of these were designed in a picturesque style, possibly by Alexander Hamilton, with gable roof forms, often with decorative features. Other contributory outbuildings, and the ruins of others, remain on the site.

The Manifolds made ample use of the lake as a water resource. A water reticulation system, including a network of underground cast iron water pipes, three tunnels, three above ground bluestone water tanks, steps to the lake and an early drain, remains from the 1870s and 1880s. Alexander Hamilton was largely responsible for the development and supervision of this work. A remnant turntable from the late nineteenth century rail system, used to run wood carts to the rear of the main house, also remains.

Some of the design elements of the homestead garden have been retained from the late nineteenth and early twentieth century, including the driveway, garden layout and the base of the former conservatory. A collection of plants and trees, representative of the periods of development, remain, as does ornamental planting in the wider landscape, in particular the areas known as the Wood and Picnic Point on Lake Purrumbete. A glass house, with original water reticulation system, situated to the west of the main house and probably dating from the early 20th century, also remains.

Purrumbete homestead is of historical significance for its association with the leading Victorian pastoralist family, the Manifolds. Developed from 1839 into one of the largest and most successful farming properties in Victoria, it remained in their ownership until 1983, and epitomises the pastoralist era in Victoria. It reflects the wealth and success of the Western District of Victoria pastoralists in the nineteenth and early twentieth centuries. The early recording of the property, by Captain Walter Synnot in 1842 and Eugene von Guerard in 1857-8, is also of note.

Purrumbete homestead is of architectural significance as an outstanding example of Arts and Crafts architecture in Victoria and as a highly important example of the work of architect, Guyon Purchas. The interiors, in particular the main hall, drawing room

and dining room, display highly developed, and highly significant, Art Nouveau interior design. The unique integration of six original paintings by Walter Withers, recording the development of Purrumbete, is also highly significant as is the intricate timber work produced by Murray and Crow.

Purrumbete homestead is of architectural significance for the involvement of Western District architect Alexander Hamilton in the development of the property in the 1870s and 1880s, and the retention of much of the form and some of the detail of his design in the 1901 remodelling of the homestead.

Purrumbete homestead is of architectural significance for its intact nineteenth century, picturesquely designed outbuildings which collectively illustrate the activities undertaken at the property.

Purrumbete homestead is of scientific (technical) significance for the remnants of the water reticulation system and railway turntable which represent unusual nineteenth century technology for a private farm complex. Together with the ruins of some outbuildings, they contribute to the understanding of the development of this property.

Purrumbete homestead is of aesthetic significance for its rare lake setting and the retention of the original driveway and circulation around the homestead, planting in the Wood and on Picnic Point and remnant trees, gardens, lawns, fences, pathways and steps.

There are similarities between Purumbete and Camden Park as large agricultural enterprises developed by prominent families. Comparisons can be drawn between the 1901 Arts and Crafts remodelling of Purumbete homestead with Gilbulla at Menangle, both substantial works of important architects for establishment landowners..

5.0 Assessment of Significance

This section describes the principles and criteria for the assessment of cultural significance and applies them to the study area.

The entire study area is an historic cultural landscape, including relict areas that demonstrate historic agricultural and horticultural practices and evolving areas that demonstrate the ongoing research and experimentation commenced by the Macarthur family and continued by the NSW agricultural agencies. Cultural landscapes by their name imply human intervention but they may also include substantial natural elements. "They can present a cumulative record of human activity and land use in the landscape, and as such can offer insights into the values, ideals and philosophies of the communities forming them, and of their relationship to the place. Cultural landscapes have a strong role in providing the distinguishing character of a locale, a character that might have varying degrees of aesthetic quality, but, regardless, is considered important in establishing the communities' sense of place."²⁴⁹

²⁴⁹ Pearson, Michael and Sullivan, Sharon (1995), *Looking After Heritage Places*, Melbourne University Press.

5.1 Principles and Basis for Significance Assessment

The concept of 'cultural significance' or 'heritage value' embraces the value of a place or item which cannot be expressed solely in financial terms. Assessment of cultural significance endeavours to establish why a place or item is considered important and is valued by the community. Cultural significance is embodied in the fabric of the place (including its setting and relationship to other items), the records associated with the place and the response that the place evokes in the contemporary community.

In Section 4A of the NSW Heritage Act 1977, as amended, "State Heritage 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. "Local heritage 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.

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.

The Heritage Council of New South Wales must notify the Minister of the proposed criteria for the making of decisions as to whether or not an item is of State heritage significance and of any proposed change to the criteria. If the Minister approves the criteria or any proposed change, the Minister is to cause notice of the criteria or any change to be published in the Gazette.

The Heritage Council must use only criteria published in the Gazette under this section for the making of decisions as to whether or not an item is of State heritage significance.

The *Burra Charter* of Australia ICOMOS and its Guidelines for Assessment of Cultural Significance recommend that significance be assessed in categories such as aesthetic, historic, scientific and social. The *NSW Heritage Manual* outlines the same broad criteria for assessing the nature of significance. These criteria are considered in addition to an item's rarity and / or representativeness, criteria that relate to comparative significance. The seven criteria adopted by the Heritage Council of New South Wales for the assessment of items for potential listing on the State Heritage Register apply equally well for items of local significance.

5.2 Current Heritage Listings

The Study Area includes parts of EMAI listed on the State Heritage Register, two railway heritage items also listed on the SHR, the Menangle Conservation Area and a number of other individual items listed on the Wollondilly LEP schedule. s has revealed a number of items, including historic industrial sites, archaeological sites and landscape areas. These items are identified in the following table.

5.3 Potential Heritage Items

Analysis of documentary and physical evidence relating to the Study Area has revealed a number of potential heritage items, archaeological sites and areas worthy of further investigation.

5.4 Application of Heritage Assessment Criteria

As a place the Menangle Village Landscape Conservation Area appears to satisfy most, if not all, of the seven criteria established under the *NSW Heritage Act 1977* (as amended) for assessment of heritage significance and potential inclusion on the State Heritage Register or an LEP heritage schedule.

5.4.1 Historical Significance (Criterion A)

An item is important in the course, or pattern, of NSW's or an area's cultural or natural history.

The Menangle cultural landscape is historically significant for its evidence of early 19th century rural settlement and for its location along Menangle Road and the Main Southern Railway Line, a major mid-19th century engineering work in the colony of NSW.

The historical significance of the landscape derives from the fact that it was part of the Macarthur family's rural enterprise and the routes of major road and rail links south of Sydney. The cultural landscape is considered to be significant for the presence of these transport corridors and development directly associated with them, together with the conspicuous response of the patterns of settlement and agricultural land use to the strong influences of the topography, soils, flooding and the availability of water.

5.5.2 Historical Associational 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 or an area's cultural or natural history.

Menangle Village and its landscape setting have strong associations with the surveying and construction of the main Southern railway Line, a major mid-19th century engineering work in NSW. Also strong associations with many individuals and families influential in the settlement and subsequent development of the area, particularly the extended Macarthur, Onslow and Stanham families and the many convicts, tenant farmers and others employed to develop and run the estate.

5.5.3 Aesthetic Significance (Criterion C)

An item is important in demonstrating aesthetic characteristics and / or a high degree of creative or technical achievement in NSW or an area.

Aesthetically significant are the visual contrasts of surrounding ridges and cultivated river flats. The placement of buildings generally above the flood prone lands reinforces the dual unity between the landscape and its powerful biophysical determinants. The landscape has aesthetic qualities derived from the mix of remnant natural features with active and relict agricultural landscapes that are evolving with new land uses such as residential development and aged care facilities.

The Study Area includes a number of buildings of outstanding architectural quality, designed by prominent architects.

5.5.4 Social Significance (Criterion D)

An item has strong or special association with a particular community or cultural group in NSW or an area's for social, cultural or spiritual reasons.

While this criterion has not been tested quantitatively by this author, submissions by members of the Menangle community in response to development proposals in recent years suggest that they have very strong views about the significance of the place, for a variety of reasons, including its European historic heritage values and its cultural landscape values. It is considered highly likely that the community would feel a great sense of loss if these values were threatened, diminished or destroyed by unsympathetic development. The social significance is also attested by the fact that the area and / or heritage items within it have been recognised as significant by the local government authority and by the NSW Government.

5.5.5 Technical Significance and Research Potential (Criterion E)

An item has potential to yield information that will contribute to an understanding of NSW's or an area's cultural or natural history.

Further research of the documentary evidence and existing heritage fabric of the Study Area is considered highly likely to yield more information on the European and Aboriginal cultural history and natural history of the place. Archaeological investigations could reveal information about the fabric and methods of construction of various structures including the road and rail bridges, the Railway Station, the former Menangle Creamery and the former Rotolactor, as well as cottages, dairies and other agricultural structures.

5.5.6 Rarity (Criterion F)

An item possesses uncommon, rare or endangered aspects of NSW's or an area's cultural or natural history.

The Menangle Village Landscape Conservation Area possess a rare mix of natural, indigenous and non-indigenous cultural heritage values arising from the local topography, geology, soils, streams and vegetation and the ways in which those environmental attributes influenced the occupation of the land by Aboriginal people, the construction of the Menangle Road and the Main Southern Railway Line, early European settlement and agriculture, decline following development of alternative land uses and transport routes and, more recently, rural lifestyle developments and residential subdivision.

5.5.7 Representativeness (Criterion G)

An item is important in demonstrating the principal characteristics of a class of NSW's or an area's cultural or natural places or environments.

Menangle is representative of villages established along English country estate lines to provide accommodation and services for rural estate workers and a focus for particular agricultural enterprises, in Menangle's case, the estate's dairying operations.

5.6 Archaeological Significance

No archaeological investigation has been undertaken for this assessment. However, the nature of the Study Area and the likelihood of Aboriginal cultural heritage sites and the number of 19th and early 20th century historic buildings and their settings suggests that the area has considerable archaeological potential.

5.7 Summary Statement of Significance

The following draft Statement of Significance is a distillation of the individual statements for each of the above criteria.

The Menangle cultural landscape is historically significant for its evidence of early 19th century rural settlement and for its location along Menangle Road and the Main Southern Railway Line, a major mid-19th century engineering work in the colony of NSW. The historical significance of the landscape derives from the fact that it was part of the Macarthur family's Camden Park rural enterprise and includes the routes of major historic road and rail links south of Sydney. The cultural landscape is considered to be significant for the presence of these transport corridors and development directly associated with them, together with the conspicuous response of the patterns of settlement and agricultural land use to the strong influences of the topography, soils, flooding and the availability of water.

Menangle Village and its landscape setting have strong associations with the surveying and construction of the main Southern railway Line, a major mid-19th century engineering work in NSW. Also strong associations with many individuals and families influential in the settlement and subsequent development of the area, particularly the extended Macarthur, Stanham and Onslow families and the many convicts, tenant farmers and others employed to develop and run the estate.

Aesthetically significant are the visual contrasts of surrounding ridges, hill slopes and cultivated river flats. The placement of buildings generally above the flood prone lands reinforces the dual unity between the landscape and its powerful biophysical determinants. The landscape also has aesthetic qualities derived from the mix of remnant natural features with active and relict agricultural landscapes that are evolving with new land uses such residential development and aged care facilities.

The Study Area includes a number of buildings of outstanding architectural quality, designed by prominent architects John Horbury Hunt and Sulman and Power.

While the criterion for social significance has not been tested quantitatively by this author, submissions by members of the Menangle community in response to development proposals in recent years suggest that they have very strong views about the significance of the place, for a variety of reasons, including its European historic heritage values and its cultural landscape values. It is considered highly likely that the community would feel a great sense of loss if these values were threatened, diminished or destroyed by unsympathetic development. The social significance is also attested by the fact that the area and/or heritage items within it have been recognised as significant by the local government authority and by the NSW Government.

Further research of the documentary evidence and existing heritage fabric of Menangle Village and its cultural landscape setting is considered highly likely to yield more information on the natural history of the place and its Aboriginal and non-indigenous cultural heritage. Archaeological investigations could reveal information about the fabric and methods of construction of various structures including the road and rail bridges, the Railway Station, the former Menangle Creamery and the former Rotolactor, as well as cottages, dairies and other agricultural structures.

The area possesses a rare mix of natural, indigenous and non-indigenous cultural heritage values arising from the local topography, geology, soils, streams and vegetation and the ways in which those environmental attributes influenced the occupation of the land by Aboriginal people, the construction of the Menangle Road and the Main Southern Railway Line, early European settlement and agriculture, decline following development of alternative land uses and transport routes and,

more recently, residential subdivisions and rural lifestyle developments. A limited comparative analysis with other similar rural estates in NSW and elsewhere in Australia supports this assessment of rarity.

Menangle is representative of villages established along English country estate lines to provide accommodation and services for rural estate workers and a focus for particular agricultural enterprises, in Menangle's case, the estate's dairying operations.

6.0 A Cultural Landscape Management Approach

6.1 *Some Definitions*

"A cultural landscape is fashioned from a natural landscape by a culture group. Culture is the agent, the natural area is the medium. The cultural landscape the result."

Carl Sauer²⁵⁰

"Landscape is never simply a natural space, a feature of the natural environment. Every landscape is the place where we establish our own human organization of space and time".

John B. Jackson²⁵¹

Cultural landscapes by their name imply human intervention but they may also include substantial natural elements. "They can present a cumulative record of human activity and land use in the landscape, and as such can offer insights into the values, ideals and philosophies of the communities forming them, and of their relationship to the place. Cultural landscapes have a strong role in providing the distinguishing character of a locale, a character that might have varying degrees of aesthetic quality, but, regardless, is considered important in establishing the communities' sense of place."²⁵²

A 2010 publication by the NSW Department of Environment, Climate Change and Water (DECCW) provides guidelines for managing cultural landscapes. It defines the cultural landscape concept as emphasising "the landscape-scale of history and the connectivity between people, places and heritage items. It recognises the present landscape is the product of long-term and complex relationships between people and the environment. On any given area of land, it is likely that some historical activity will have taken place. Evidence of that activity may be detectable in the vegetation or in landscape modifications as well as in archaeological evidence, historical documents or people's stories. Some places have 'touched the landscape only lightly', while some places of historical activity are marked by imposing built structures or are commemorated for their association with important events or people.

For the purposes of the DECCW guide, cultural landscapes are defined as: '... those areas which clearly represent or reflect the patterns of settlement or use of the landscape over a long time, as well as the evolution of cultural values, norms and attitudes toward the land.'

²⁵⁰ Sauer 1963, p.343

²⁵¹ Jackson 1984, p.156

²⁵² Pearson and Sullivan 1995

The elements of a cultural landscape are illustrated below;

Landscape = Nature + People
Landscape = The Past + The Present
Landscape = Places + Values

Figure 87 The Elements of a Cultural Landscape. (Source: Diagram after Guilfoyle 2006:2, based on Phillips 2002:5)

The DECCW Guidelines emphasise that cultural heritage management has, until recently, conceptualised heritage mainly as isolated sites or objects. For example, a hut, woolshed, fence, ground tank, bridge, scarred tree, grave, orchard or piece of machinery. A site-based approach is thus an 'easy' concept for land managers and heritage practitioners as it supports separating the natural and cultural for management purposes. However, this site-based approach has the unfortunate effect of reinforcing the notion of culture and nature as spatially separate and thus able to be managed independently. In a national park or nature reserve context, cultural heritage sites are seen as isolated points or pathways that are set in a natural landscape. The work of nature conservation can go on around these sites. The authors of the guidelines argue that the natural environment is part of these sites. Similarly, in an environment that has been highly modified by industrial activity in the past, the natural values may have been almost obliterated but can be recovered through well-planned rehabilitation measures. A cultural landscape approach offers an opportunity to integrate natural and cultural heritage conservation by seeing culture and nature as interconnected dimensions of the same space.

6.2 Application of a Cultural Landscape Approach to the Study Area

Some landscapes such as declared wilderness areas, perhaps the bulk of Antarctica, etc. remain ostensibly natural, although all landscapes on earth are now affected by human intervention to some degree, even if only through limited exploration, and atmospheric and marine pollution. At the other end of the spectrum, landscapes that have been highly modified by human activity, such as the industrial areas within the Study Area would have once appeared entirely cultural. Clearing of early land grants for grazing and agriculture, followed by subdivisions and changes of use sometimes had disastrous implications for both land and watercourses in terms of land degradation, pollution, loss of natural vegetation cover and changes to natural drainage patterns. However, in more recent years, changes to land use, strict environmental controls and well-planned rehabilitation measures have resulted in a more sustainable blend of natural and cultural values in the Study Area.

The Study Area displays a rich diversity of cultural landscape demonstrating a wide range of historical themes including but not limited to environment – naturally evolved; Aboriginal cultures and interactions with other cultures; agriculture; commerce; environment – cultural landscape; events; exploration; industry; technology; transport; towns, suburbs and villages; land tenure; accommodation; labour; creative endeavour; events; and persons.

The Study Area supports agricultural production, scientific research, extractive industry, transport corridors and limited residential development, with areas of wetland and riparian corridor vegetation. Applying a cultural landscape approach to

managing the Study Area must proceed on the basis of a number of general principles:

1. Landscape is a living entity, and is the product of change, dynamic patterns and evolving interrelationships between past ecosystems, history and cultures.
2. The interactions between people and landscape are complex, multi-layered and are distinctive to each different space and time.
3. Community engagement and dialogue, where all people's values are noted and respected, are characteristic of a cultural landscape mentality.
4. All parts of the Study Area cultural landscape have community connection and associated values and meanings.
5. A key element of cultural landscapes is the continuity of past and present.

The general acceptance of the above principles is central to, and will underpin, a practical approach to the management of the cultural landscape around Menangle.

In an operational sense, a cultural landscape approach involves asking three basic questions:

1. what is the history of the place?
2. who has social attachment and historical connection to the landscape?
3. what impacts will a management action have on the place and its cultural values?

If these questions cannot be answered, further investigation is required. When the relevant information is available, management can be planned in such a way that it promotes the goal of integrated landscape management as well as meeting the management objectives established to conserve the values of Menangle Village and its landscape setting. One of the positive outcomes likely to arise from the creation of a Landscape Conservation Area around Menangle is its potential to provide enhanced opportunities for the permanent community and visitors to gain a greater appreciation of the area's natural and cultural heritage values through improved access and better interpretation.

6.3 *Curtilage Considerations*

6.3.1 Some definitions

In the past, the term curtilage has been interpreted in various ways by landscape professionals and the courts, often as the minimal area defined by a building and its outbuildings. The current Heritage Council of NSW interpretation, embodied in its 1996 publication *Historic Curtilages*, may be summarised as the area around a heritage item that must be conserved to retain the significance of the item.

The curtilages for many properties now listed on the State Heritage Register or on Local Environmental Plan schedules were defined at a time when more emphasis was placed on the architectural qualities of buildings than on their landscape contexts. Since the early 1980s there has been an increase in community awareness of the need to protect adequate settings for buildings and places, including their environmental context and views and vistas to, from and within the

places. This enhanced appreciation of landscape is highlighted in the 1999 revision of the Burra Charter of Australia ICOMOS, placing greater emphasis on 'setting'. Article 8 of the Burra Charter now reads:

"Conservation requires the retention of an appropriate visual setting and other relationships that contribute to the cultural significance of the place. New construction, demolition, intrusions or other changes which would adversely affect the setting or relationships are not appropriate".

The Explanatory Notes to Article 8 are as follows:

"Aspects of the visual setting may include use, siting, bulk, form, scale, character, colour, texture and materials.

Other relationships, such as historical connections, may contribute to interpretation, appreciation, enjoyment or experience of the place."

In the Menangle example it is necessary to apply these considerations of 'curtilage' to the whole place and to consider what it is that we are trying to conserve within the landscape conservation area.

6.3.2 What is a (Heritage) Conservation Area?

The NSW *Heritage Act No.136, 1977* did not include the term "heritage conservation area" but does include in its definitions the term "precinct" which means:

- a) *"an area;*
- b) *a part of an area; or*
- c) *any other part of the State [of NSW],*

containing buildings, works, relics or places, the majority of which are items of the environmental heritage".

The current, amended Act deletes the last phrase.

The Heritage Act, as amended, in January 2010 defines "environmental heritage" as those places, buildings, works, relics, moveable objects, and precincts, of State or local heritage significance.

"place" means an area of land, with or without improvements.

"area" has the same meaning as it has in the *Local Government Act 1993*.

"area" means an area as constituted under Division 1 of Part 1 of Chapter 9 of the LGA Act, namely:

"(1) The Governor may, by proclamation, constitute any part of New South Wales as an area.

(2) The area is to have the boundaries determined by the Governor by proclamation.

(3) An area must be a single area of contiguous land."

If one searches the internet for definitions of a conservation area, there are subtle variations but general agreement across a variety of countries and planning legislations. Some sample definitions appear below.

A conservation area²⁵³ is a tract of land that has been awarded protected status in order to ensure that natural features, cultural heritage or biota are safeguarded. A conservation area may be a nature reserve, a park, a land reclamation project, or other area.

Conservation Area²⁵⁴ - an area given statutory protection under the [UK] Planning Acts, in order to preserve and enhance its character and townscape.

An area²⁵⁵ of high architectural or historical interest within towns, designated under the [UK] Planning (NI) Order 1991 and identified in Development Plans.

A zone²⁵⁶ where there are special regulations on building and development in order to maintain the historical characteristics of the area.

An area “designated²⁵⁷ to conserve and enhance the (usually) built environments of special historical or architectural importance or natural areas of particular nature importance, eg coastal.”

“An area²⁵⁸ of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance.”

In the NSW planning system “draft heritage conservation area²⁵⁹ means an area of land identified as a heritage conservation area, or a place of Aboriginal heritage significance in a local environmental plan that has been subject to public exhibition under section 66 of the *Environmental Planning and Assessment Act 1979*, other than an area that was exhibited prior to 1 March 2006 but has not been included in a plan before the commencement of the Codes State Environmental Planning Policy.

“Heritage conservation area” means “an area of land identified as a heritage conservation area or a place of Aboriginal heritage significance, including any heritage items situated on or within that area, in an environmental planning instrument.”

6.3.3 Wollondilly LEP 2011 and Conservation Areas

Clause 5.10 (Heritage conservation) of Wollondilly LEP 2011 contains the following:

Note. Heritage items, heritage conservation areas and archaeological sites (if any) are shown on the Heritage Map. The location and nature of any such item, area or site is also described in Schedule 5.

(1) Objectives

The objectives of this clause are:

- (a) to conserve the environmental heritage of Wollondilly, and
- (b) to conserve the heritage significance of heritage items and heritage conservation areas including associated fabric, settings and views, and
- (c) to conserve archaeological sites, and

²⁵³ en.wikipedia.org/wiki/Conservation_area

²⁵⁴ www.lawsonfairbank.co.uk/planning-glossary.asp

²⁵⁵ www.planningni.gov.uk/index/glossary/glossary_c.htm

²⁵⁶ www.eurogeographics.org/documents/toledo_terminology_bl_15Nov05.ppt

²⁵⁷ www.e-lindsey.gov.uk/localplan/text/app4.htm

²⁵⁸ old.torridge.gov.uk/local_plan/written/cpt28.htm

²⁵⁹ www.planning.nsw.gov.au/SearchResults/tabid/39/Default.aspx?Search=conservation+areas

(d) to conserve places of Aboriginal heritage significance.

(2) Requirement for consent

Development consent is required for any of the following:

- (a) demolishing or moving a heritage item or a building, work, relic or tree within a heritage conservation area,
- (b) altering a heritage item or a building, work, relic, tree or place within a heritage conservation area, including (in the case of a building) making changes to the detail, fabric, finish or appearance of its exterior,
- (c) altering a heritage item that is a building by making structural changes to its interior,
- (d) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,
- (e) disturbing or excavating a heritage conservation area that is a place of Aboriginal heritage significance,
- (f) erecting a building on land on which a heritage item is located or that is within a heritage conservation area,
- (g) subdividing land on which a heritage item is located or that is within a heritage conservation area.

(3) When consent not required

However, consent under this clause is not required if:

- (a) the applicant has notified the consent authority of the proposed development and the consent authority has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development:
 - (i) is of a minor nature, or is for the maintenance of the heritage item, archaeological site, or a building, work, relic, tree or place within a heritage conservation area, and
 - (ii) would not adversely affect the significance of the heritage item, archaeological site or heritage conservation area, or
- (b) the development is in a cemetery or burial ground and the proposed development:
 - (i) is the creation of a new grave or monument, or excavation or disturbance of land for the purpose of conserving or repairing monuments or grave markers, and
 - (ii) would not cause disturbance to human remains, relics, Aboriginal objects in the form of grave goods, or to a place of Aboriginal heritage significance, or
- (c) the development is limited to the removal of a tree or other vegetation that the Council is satisfied is a risk to human life or property, or
- (d) the development is exempt development.

(4) Effect on heritage significance

The consent authority must, before granting consent under this clause, consider the effect of the proposed development on the heritage significance of the heritage item or heritage conservation area concerned. This subclause applies regardless of whether a heritage impact statement is prepared under subclause (5) or a heritage conservation management plan is submitted under subclause (6).

(5) Heritage impact assessment

The consent authority may, before granting consent to any development on land:

- (a) on which a heritage item is situated, or
- (b) within a heritage conservation area, or
- (c) within the vicinity of land referred to in paragraph (a) or (b), require a heritage impact statement to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned.

(6) Heritage conservation management plans

The consent authority may require, after considering the significance of a heritage item and the extent of change proposed to it, the submission of a heritage conservation management plan before granting consent under this clause.

(7) Archaeological sites

The consent authority must, before granting consent under this clause to the carrying out of development on an archaeological site (other than land listed on the State Heritage Register or to which an interim heritage order under the *Heritage Act 1977* applies):

- (a) notify the Heritage Council of its intention to grant consent, and
- (b) take into consideration any response received from the Heritage Council within 28 days after the notice is sent.

(8) Places of Aboriginal heritage significance

The consent authority must, before granting consent under this clause to the carrying out of development in a place of Aboriginal heritage significance:

- (a) consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place, and
- (b) notify the local Aboriginal communities (in such way as it thinks appropriate) about the application and take into consideration any response received within 28 days after the notice is sent.

(9) Demolition of item of State significance

The consent authority must, before granting consent for the demolition of a heritage item identified in Schedule 5 as being of State significance (other than an item listed on the State Heritage Register or to which an interim heritage order under the *Heritage Act 1977* applies):

- (a) notify the Heritage Council about the application, and
- (b) take into consideration any response received from the Heritage Council within 28 days after the notice is sent.

(10) Conservation incentives

The consent authority may grant consent to development for any purpose of a building that is a heritage item, or of the land on which such a building is erected, even though development for that purpose would otherwise not be allowed by this Plan, if the consent authority is satisfied that:

- (a) the conservation of the heritage item is facilitated by the granting of consent, and
- (b) the proposed development is in accordance with a heritage conservation management plan that has been approved by the consent authority, and
- (c) the consent to the proposed development would require that all necessary conservation work identified in the heritage conservation management plan is carried out, and
- (d) the proposed development would not adversely affect the heritage significance of the heritage item, including its setting, and
- (e) the proposed development would not have any significant adverse effect on the amenity of the surrounding area.

6.3.4 How does the complying development code relate to heritage items and conservation areas?

Complying development under the General Housing Code is excluded in its entirety from the following items or areas.

1. Items of State heritage significance listed on the State Heritage Register under the *Heritage Act 1977*;
2. Draft or existing local heritage items;
3. Land subject to an interim heritage order under the *Heritage Act 1977*;
4. Land within a draft or existing heritage conservation area;
5. Land within 100 metres or within a world heritage area;
6. Land within aquatic reserves and marine parks.

6.4 Why is a Landscape Conservation Area needed for Menangle?

The value of conservation areas in the protection of environmental heritage is addressed in *Managing Historic Sites and Buildings: Reconciling Presentation and Preservation*²⁶⁰ the *Issues in Heritage Management Series* published by Routledge in association with English Heritage.

“Conservation Area designation provides a useful measure protecting those industrial buildings and complexes that individually do not merit listing, but collectively are worthy of preservation. Thus outbuildings and boundary walls within the Ironbridge Gorge World Heritage site are protected, within the boundaries of the Conservation Area, by Conservation Area legislation, rather than its status as a World heritage site, which currently provides no additional legislative protection”.....“Legislation alone does not provide adequate protection, unless it is effectively administered by central and local government, with the informed, active interest of the local community”.

Menangle Village and its setting are a special place, as evidenced by its long-term recognition on authoritative heritage registers and schedules and the fervour with which recognisable groups within the local and wider community have sought to have its heritage values protected and new development within the area controlled.

In NSW there is a wide range of mechanisms available for the statutory and non-statutory protection and management of places of heritage significance, including but not limited to the following:

- listing on an LEP heritage schedule;
- listing on the SHR;
- inclusion within a heritage conservation area;
- environmental management zoning;
- short-term protection under an Interim Heritage Order;
- acquisition and management by Historic Houses Trust of NSW;
- reservation under the National Parks and Wildlife Act;
- listing on the National Heritage List;
- listing on the Register of the National Trust of Australia (NSW).

Given the very high level of significance of Menangle Village and its landscape setting, it is considered that inclusion within a landscape conservation area around the existing (urban) heritage conservation area, combined with listing of particular heritage items on the LEP schedule or the SHR and application of appropriate environmental protection and management zones represent the most appropriate form of statutory protection and planning control.

²⁶⁰ Chitty & Baker (eds) 1999, p.143

Nonetheless, statutory protection and planning control will not achieve the desired outcomes without enforcement, advice and encouragement by Wollondilly Shire Council on the one hand, and community support, financial input and involvement on the other.

7.0 Recommended Boundary

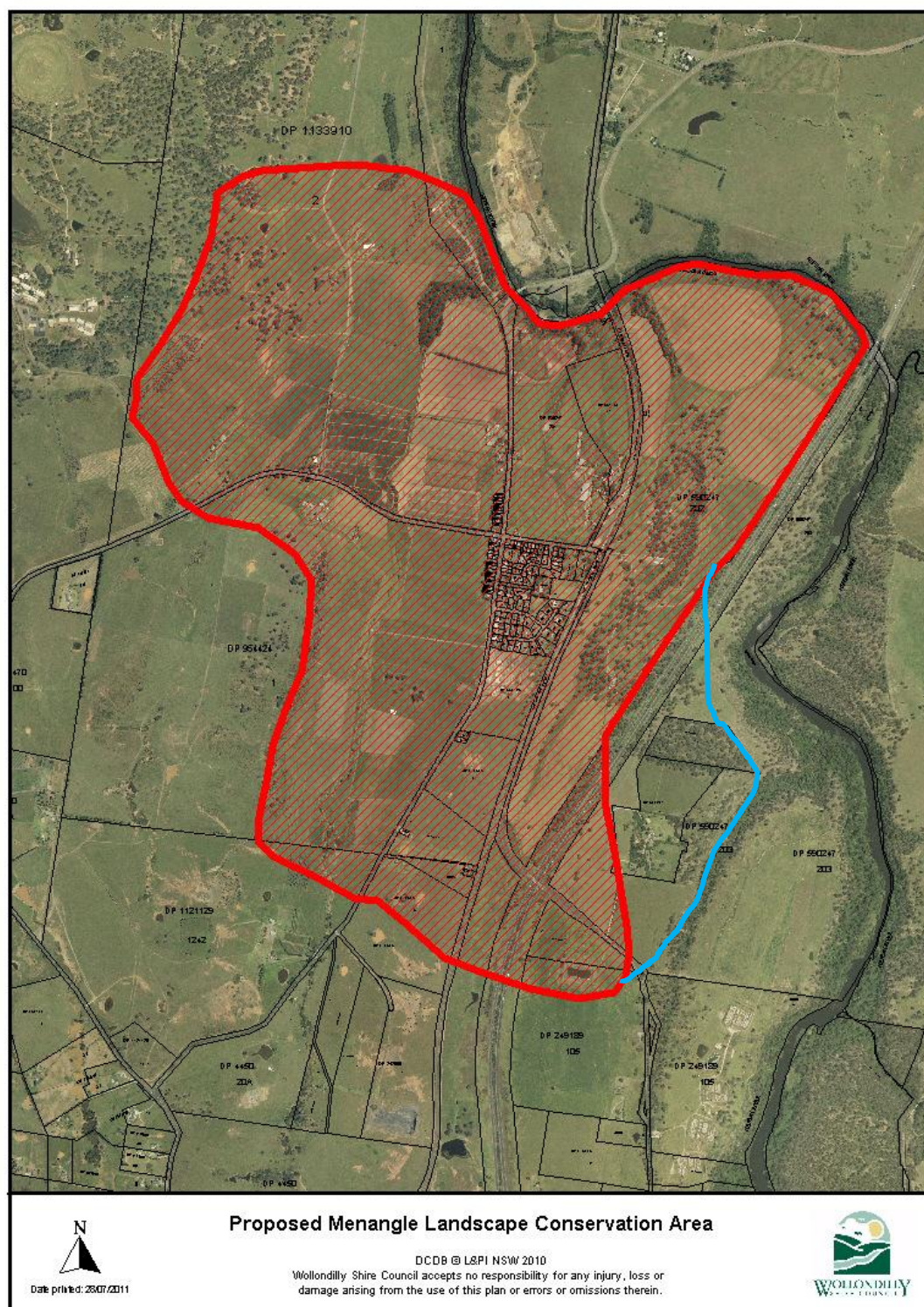


Figure 88 Proposed boundary for Menangle Landscape Conservation Area (hatched red) is as shown in WSC Planning Proposal with the addition of lands around Gilbulla (edged blue).

7.1 *Rationale for boundary of existing Menangle Conservation Area*

The original 1991 boundary for the Menangle Conservation Area was centred upon the hill where the landmark St James Anglican Church is located. The MCA included former Camden Park Estate cottages in Station Street and St Patricks Catholic Church as well as the School of Arts and the Menangle Public School. The northward extension in 2010 took in the Rotolactor site, Creamery and Railway Station as well as an area of agricultural land north of Station Street.

7.2 *Rationale for Extended Boundary*

The assessment of significance of the Study Area and application of a cultural landscape management approach suggests a Landscape Conservation Area around the existing Menangle Conservation Area is warranted to provide the recognition and greater statutory protection warranted by the area's considerable heritage values. The boundary is that shown in the Wollondilly Shire Council Planning Proposal: Amendment to Wollondilly LEP 2011 Menangle Landscape Conservation Area (Extension of Menangle Conservation Area) with the addition of lands around the former Macarthur property Gilbulla which not only has strong links to the family and the Camden Park estate but has high heritage significance in its own right derived from its aesthetic values as the work of noted architects Sulman & Power and strong religious associations as a retreat.

Parts of the former Camden Park Estate to the west of Menangle (comprising Camden Park and EMAI) are included on the State Heritage Register. It seems incongruous that equally significant parts of the former Camden Park Estate around Menangle are not so recognised or protected. While EMAI is NSW Government-owned, Camden Park is privately owned (by the Macarthur-Stanham family). Those parts of the former estate, including the hub of its dairying operations at Menangle deserve protection equal to SHR listing and further investigation may justify such listing. Inclusion within an expanded Landscape Conservation Area will at least provide further statutory protection and necessary controls over development.

8.0 Recommended Conservation Management Measures

The following measures are recommended to conserve the natural and cultural heritage values of the Menangle Landscape Conservation Area.

1. Listing of Menangle Landscape Conservation Area (as shown in Figure 88) in Schedule 5 to Wollondilly Local Environmental Plan 2011.
2. Consideration of appropriate land use zones within, and in the vicinity of the Menangle Landscape Conservation Area in the locations shown in Figure 89).
3. Amendment to the provisions of Wollondilly DCP 2011 such that they apply to Menangle Landscape Conservation Area.
4. Controls on subdivision to conserve historic settlement patterns as shown in Figure 90.
5. Location of subdivision in less visually sensitive areas as shown in Figure 91.
6. Development of complementary detailed design guidelines for new development and for sympathetic alterations and additions to existing buildings including adaptive re-use within the Menangle Landscape Conservation Area. Guidelines are to address siting, built form, materials, exterior finishes and landscaping similar to Article 22.2 of the Burra Charter of Australia ICOMOS and are to be added to Wollondilly DCP 2011.
7. Undergrounding of power lines wherever possible to reduce visual clutter and so as not to detract from visual landscape qualities.
8. Development of an Interpretation Plan for the Menangle Landscape Conservation Area and the Menangle Conservation Area that complies with the Interpretive Policy and Guidelines of the Heritage Council of NSW and current best practice in interpretation generally and provides culturally appropriate means of communicating significance to the community.
9. Integration of interpretation of Menangle Landscape Conservation Area and the Menangle Conservation Area with other places associated with the Macarthur family's agricultural enterprises in the Wollondilly, Camden and Campbelltown local government areas, both government-owned and privately-owned.
10. Additional provisions in Wollondilly DCP 2011 which discourage the introduction of discordant elements in the cultural landscape such as the following:
 - dense screens of fast growing conifers;
 - large farm sheds, particularly those of non-traditional design and with visually intrusive exterior finishes, in visually prominent locations;
 - solid fences such as metal panel types.

11. Additional 'urban - rural' interface design guideline provisions in Wollondilly DCP 2011 which encourage the following;
 - open form fencing with high ratio of voids to solids e.g. rural-style post and wire fencing;
 - perimeter roads separating urban land from rural land.
12. Controls in Wollondilly DCP 2011 for the location, size and design of way-finding, informational, interpretive and advertising signage to prevent a proliferation of unnecessary signs or insensitive signs.

Figure 89 Composite map based on Wollondilly LEP 2011 Land Zoning Maps 10B (top) and 11D (bottom) showing existing land use zones, with suggested deletion of 'Low Density Residential' north of Station Street and east of Menangle Road to retain views to historic core of Menangle Village. (Source: Wollondilly LEP 2011, **MUSEscape** Pty Ltd)

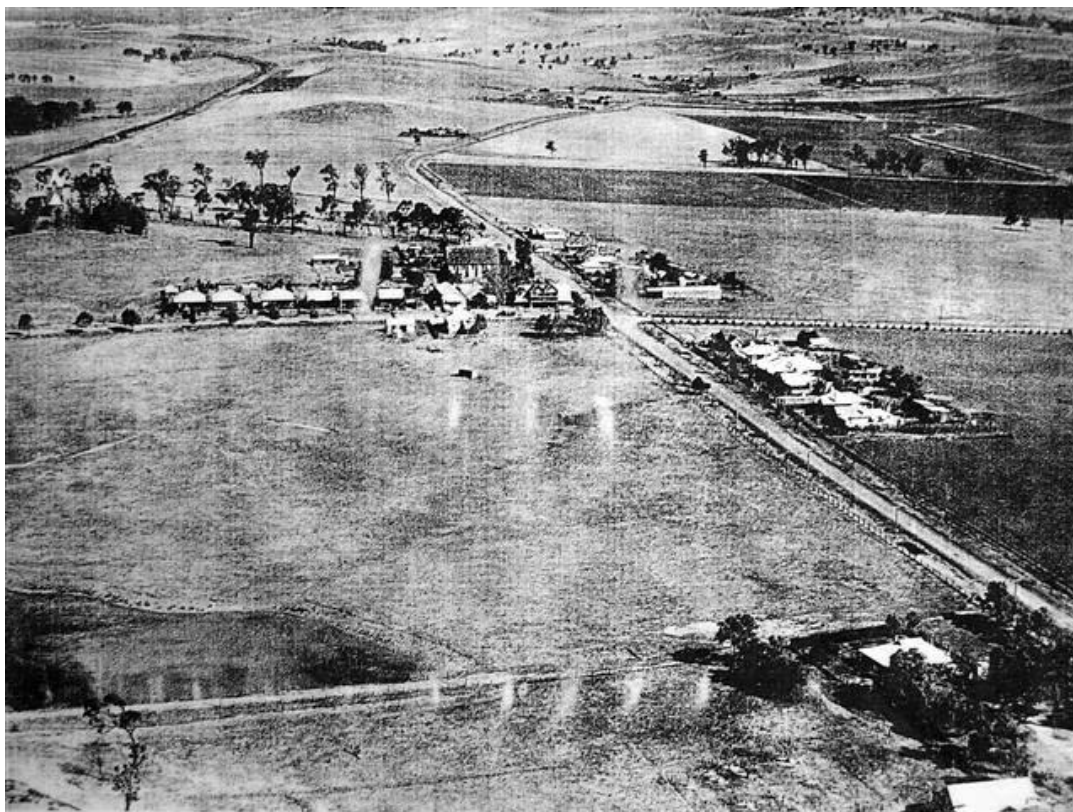


Figure 90 This aerial photograph shows the historic subdivision pattern of the village of Menangle post 1896. While there has been extensive residential subdivision south of Station Street in recent years, such subdivision north of Station Street would have a negative impact on the perception of the village as an historic settlement. If implemented, the approved residential strip subdivision along the northern side of Station Street and eastern side of Menangle Road would obscure the ability to read the historic cultural landscape. Visitors approaching from the north would be confronted by back fences, garden sheds and play equipment.

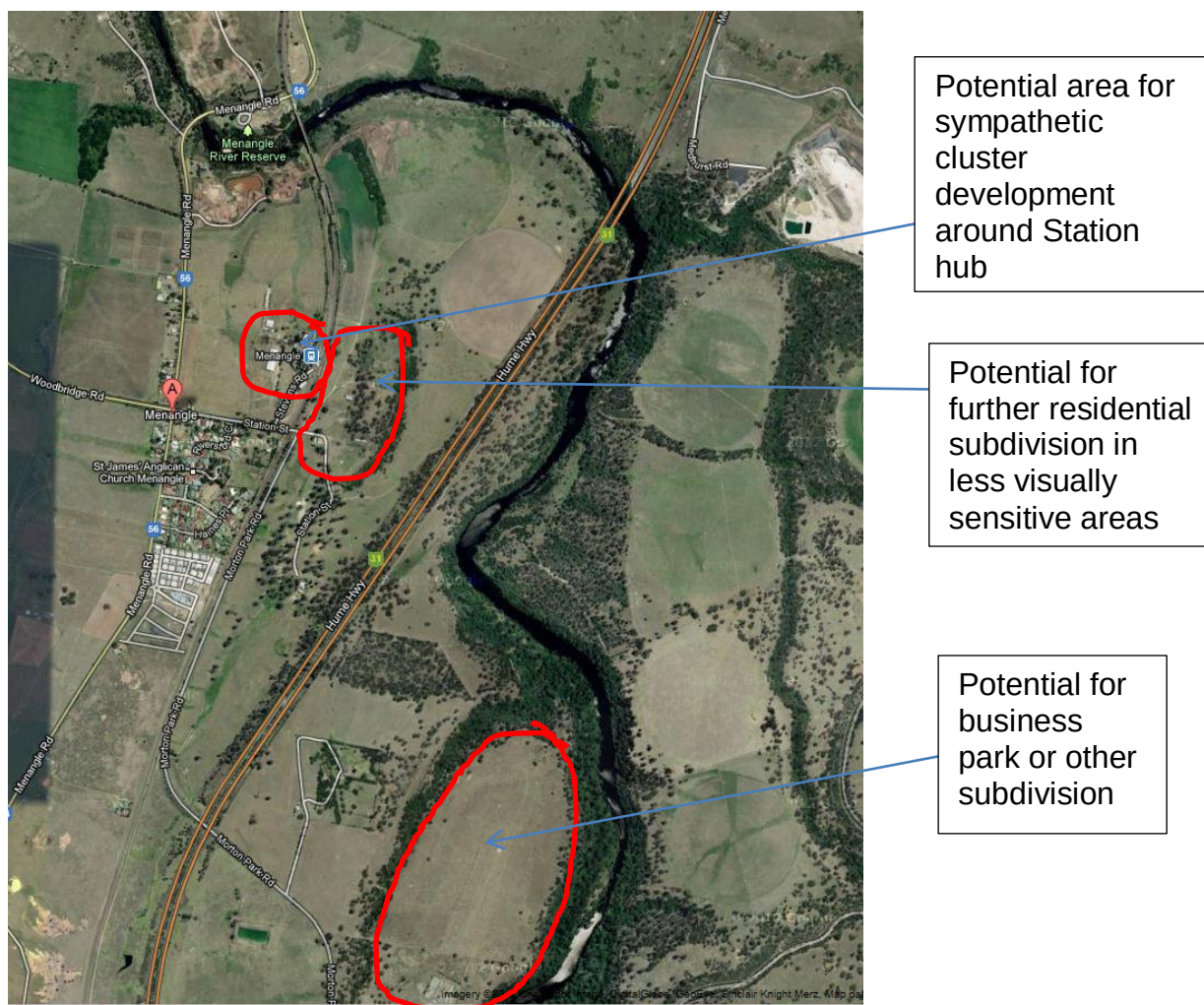


Figure 91 Aerial photo of area around Menangle showing potentially less visually sensitive areas for possible subdivision. (Source: Google Maps)

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9.5 Maps & Aerial Photographs

Wollondilly Shire Council provided the author with the following resources;
Map showing the locality and the Menangle Village Conservation Area as exhibited ; maps showing other potential boundaries for the landscape conservation area; aerial photographs of the area;
copies of State Heritage Inventory data sheets for listed items in the Menangle area;

9.6 Planning Instruments, Council Reports and Related Submissions

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BULLI SEAM OPERATIONS

APPENDIX H NON-ABORIGINAL HERITAGE ASSESSMENT

**BULLI SEAM OPERATIONS
NON-ABORIGINAL HERITAGE ASSESSMENT
(STATEMENT OF HERITAGE IMPACT)**

**A REPORT FOR
ILLAWARRA COAL HOLDINGS PTY LTD**

**BY
MICHAEL PEARSON
HERITAGE MANAGEMENT CONSULTANTS PTY LTD.**

MAY 2009

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1. INTRODUCTION

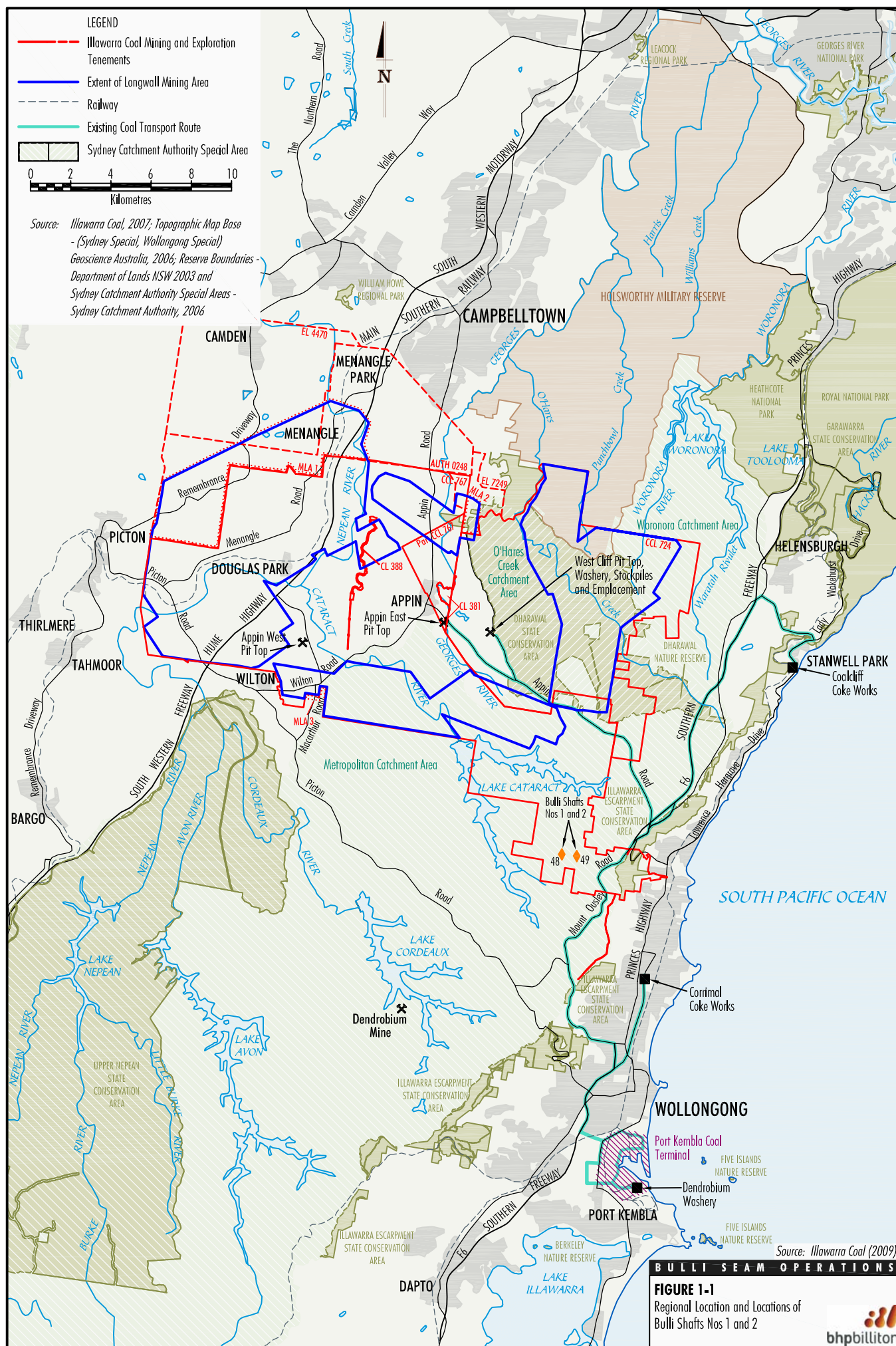
1.1 Background

Heritage Management Consultants Pty Ltd was commissioned by Illawarra Coal Holdings Pty Ltd (ICHPL) to conduct a Non-Aboriginal Heritage Assessment for the proposed Bulli Seam Operations (the Project).

ICHPL owns and operates the Appin Mine and West Cliff Colliery located approximately 25 kilometres (km) north-west of Wollongong in the southern coalfield of New South Wales (NSW) (Figure 1-1).

ICHPL is seeking approval under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) for the continuation and further development of the Appin and West Cliff mining operations. The Project would (if approved) extend the current life of the Appin Mine and West Cliff Colliery by 30 years and would include the following main activities:

- continued development of underground mining operations within existing coal leases and new mining leases to facilitate a total run-of-mine (ROM) coal production rate of up to 10.5 million tonnes per annum (Mtpa);
- on-going exploration activities within existing exploration tenements;
- upgrade of the existing West Cliff Washery to support the increased ROM coal production;
- continued mine gas drainage and capture for beneficial utilisation at the West Cliff Ventilation Air Methane Project and Appin-Tower Power Project;
- continued generation of electricity by the existing Appin-Tower Power Project (owned and operated by Energy Development Limited) utilising coal bed methane drained from the Bulli Seam;
- upgrade of existing surface facilities and supporting infrastructure (e.g. service boreholes, ventilation shafts, gas drainage equipment, waste water treatment and waste water disposal);
- continued and expanded placement of coal wash at the West Cliff Coal Wash Emplacement;
- continued road transport of ROM coal from the Appin East pit top to the West Cliff Washery;
- continued road transport of ROM coal from Appin East pit top and West Cliff pit top via the public road network to the Dendrobium Washery at Port Kembla;
- continued road transport of product coal from the West Cliff Washery via the public road network to BlueScope Steelworks, Port Kembla Coal Terminal, Corrimall and Coalcliff coke works and other customers;



- on-going surface monitoring and rehabilitation (including rehabilitation of mine related infrastructure areas that are no longer required) and remediation of subsidence effects; and
- other associated minor infrastructure, plant, equipment and activities.

A detailed description of the Project is provided in Section 2 in the Main Report of the Environmental Assessment (EA).

On 18 August 2008, the Director-General of the NSW Department of Planning (DoP) issued Environmental Assessment Requirements (EARs) for the Project under Part 3A of the EP&A Act. The EARs stated that the EA prepared for the Project should include:

Heritage – including the potential Aboriginal and Non-Aboriginal heritage impacts of the Project.

The EARs also made reference to the following two guidelines of relevance to non-Aboriginal heritage:

- NSW Heritage Manual (NSW Heritage Office and NSW Department of Urban Affairs and Planning [DUAP]); and
- Burra Charter (The Australian International Council on Monuments and Sites [ICOMOS] charter for places of cultural significance).

This Non-Aboriginal Heritage Assessment has been prepared in accordance with the EARs.

As outlined in the document *Statements of Heritage Impact* (NSW Heritage Office and DUAP, 2002) the NSW Heritage Council requests that every development proposal that requires Heritage Council consideration, be accompanied by a Statement of Heritage Impact (SOHI). A SOHI, together with supporting information, addresses (NSW Heritage Office and DUAP, 2002):

- why the item is of heritage significance;
- what impact the proposed works will have on that significance;
- what measures are proposed to mitigate any potential negative impacts; and
- why more sympathetic solutions are not viable.

Such a SOHI is provided below.

1.2 Authorship

The research, field recording and assessment for the SOHI have been undertaken by Dr Michael Pearson of:

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Dr Pearson has over 30 years of experience in heritage management and assessment and is a member of *Australia ICOMOS*; the *Australian Society for Historical Archaeology*; and the *Professional Historians Association (NSW) Australian Mining History*. He is Adjunct Professor in Cultural Heritage Management at the University of Canberra.

1.3 Acknowledgements

The assistance of the following people is gratefully acknowledged:

- Martin Cooper, Wollondilly Shire Council (WSC);
- Peter De Bono, Mine Subsidence Engineering Consultants (MSEC); and
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- Russell Halfpenny;
- Cathy Hoare;
- Helen Robertson;
- Paul Ryan; and
- Matthew Tyrrell.

2. HISTORICAL OVERVIEW

This section presents a historical overview of early European settlement (Section 2.1), development of key buildings and townships (Section 2.2), transportation and water management infrastructure (Section 2.3), and coal mining (Section 2.4) within the Project area and surrounds.

Heritage items within, or in close proximity to, the Project extent of longwall mining area or potentially affected by Project surface development are highlighted where relevant in **bold** below.

Figure 1-1 shows the extent of longwall mining area for the Project.

2.1 Early European Settlement¹

The area in which the settlements of Camden and Menangle were established had a very long involvement in the story of European settlement in NSW. A supply of cattle was brought to the new colony from the Cape of Good Hope with the First Fleet in January 1788, and by as early as July 1788 two bulls and four cows had strayed from the Government herd. The cattle moved slowly southwest, and finding good grazing land began to reproduce. The earliest explorers into the area, Tench, Dawes and Worgan in 1790, claimed to have reached the headwaters of the Nepean, but did not comment on the cattle (Tench 1979: 174-5).

Exploration parties led by Governor Hunter in 1795 and 1796 found abundant wild cattle near Campbelltown, and the area became known as the ‘Cowpastures’. Hunter was impressed with the quality of the soil, timber and water in the district.

In 1802 Francis Barrallier explored the area, and botanist George Caley mapped the Cowpastures and camped at Menangle. The area became a Government Reserve for the purpose of raising stock, and the first residence for constables minding cattle called ‘Cowpastures House’ was completed in early 1805 at Elderslie, near the ford crossing of the Nepean River near the present Narellan (Mylrea 2000; Sidman 1995: 5). Government stockyards were established at The Oaks, Picton and Cawdor in about 1818 (Mathias nd: 11).

During a visit to Britain during which he publicized the prospects for an Australian wool industry, John Macarthur was promised a land grant to encourage his pastoral endeavours, and on his return in 1805 he was granted 5,000 acres and fellow lobbyist Walter Davidson 2,000 acres at Cowpastures (Massy 1990: 27-28; Hardie & Pratt 1958: 89). Macarthur named his land on the banks of the Nepean *Camden Park*.

¹ This history draws in part on earlier work in the district, including Biosis Research 2006; Navin Officer 2006; and other sources as referenced.

Davidson later sold his grant, which he had named *Manangle*, to Macarthur who absorbed it into *Camden Park*. Macarthur made the first export of saleable wool to Britain when he dispatched 245 lbs in 1807 (Massy 1990: 30-32). Elizabeth Macarthur became de facto stud master of the flock during her husband's nine year absence following the Rum Rebellion (1808-1817). She introduced the first systematic breeding programs with the maintenance of good stud records, while John Macarthur handled the marketing in Britain after about 1811, and corresponded on the needs of the market (Massy 1990: 40-41).

When Governor Macquarie visited the area in 1810, he chose the site of Liverpool and named the district around present-day Campbelltown *Airds* after the family estate of his wife Elizabeth (an estate situated near the village of Appin in Scotland where Elizabeth was born). Between 1810 and 1820, most of the land made available was of a size deemed suitable for farming.

By 1811, there were 107 settlers in the district. Continuing expansion of the frontier to the south-west and the extent of local development suggested the need for centralised services and for a staging post to accommodate through-traffic. The road from Liverpool to Appin was surveyed by government surveyor James Meehan in 1815, and he probably reserved the town site that became Campbelltown at the same time. Campbelltown, named by Governor Macquarie in 1820 in honour of his wife's maiden name (Campbell), became a centre on the main route to the south-west grazing plains. The road also linked with the road through Appin to the Illawarra. The town of Camden was not established until the 1830s.

The farms surrounding Campbelltown engaged mainly in mixed farming, growing crops and grazing animals, supplying the Sydney markets. The larger holdings focused on the grazing of sheep and cattle. The growing of fruit and grapes for wine was common, though many of the vineyards were destroyed in the 1890s. From the 1840s to 1880s Campbelltown prospered from the production and milling of wheat (represented by the mill at Mount Gilead), initially on small holdings by the river, then on larger blocks, until floods and stem rot in the 1860s ravaged the crops. Grain production had ceased by the 1880s. Ploughlands and crop marks from wheat cropping are reported at Windmill Hill, Appin (Mathias nd: 12).

2.2 Development within the Study Area

Menangle

A later development on the **Camden Park Estate** was a series of dairies set up in the late nineteenth century, one of which, **Dairy No. 4**, is within the area under study. The Macarthurs also set up a small private village on this land in the late nineteenth century and named it Menangle after the original grant.

Camden Park Estate made application for a school in 1849, and a church school was established. The locality was initially known as Riversford, which later changed to Menangle. Pressure for a public school culminated in 1869-71 when a public school was opened, with an enrolment of 43 pupils. New school buildings were erected in 1906 (Menangle School 1961).

The construction of **St James Anglican Church** commenced at Menangle in 1876, as part of the **Camden Park Estate**, and the church was handed to the Diocesan Property Trust in 1923. The chancery sanctuary and tower were built to the design of John Sulman in 1898, to harmoniously blend with the earlier section of the church built to Horbury Hunt's design. The organ in the church was built in 1876 in London and purchased by Mrs Elizabeth Macarthur-Onslow for the church in 1902 (Parish of Camden 1975; Hawkey 1976.).

The **Menangle Railway Station** was built on the new line south from Sydney in 1863, and became a focus for village development. The **Camden Park Estate Central Creamery** was built by the Macarthurs adjacent to the railway station in 1898, as part of their development of a dairying industry. The Creamery initially separated milk for the sweet cream trade in Sydney, and from 1929 became the Depot for receiving whole milk for city distribution. The **Camden Park Rotolactor** was built near the Creamery in 1952, an innovative design that automated components of the milking process, and operated until 1983.

St Patrick's Catholic Church was built in 1895 to service the local Catholic community. The **Menangle Store**, built in 1904, to the design of the prominent architect firm Sulman and Power, acted as a buying agent for all provisions, stores, seed, fertiliser and fuels used on *Camden Park* right up to the 1970s, and, having a liquor license, was a centre for community gatherings. Sulman and Power also designed the 1895 **Menangle Gate Lodge** for *Camden Park*, west of Menangle on Woodbridge Road, one of a pair, the other being located at the northern end of the property, and **Gilbulla**, a large homestead built for Major-General the Hon. J.W. Macarthur-Onslow as a home for his family.

During the late nineteenth and early twentieth centuries a range of cottages were built at Menangle for those working in the various *Camden Park* enterprises. Many of these survive and are proposed by WSC for heritage listing individually and as part of the **Menangle Conservation Area** (see Attachment A).

Appin

Macquarie named Appin after his wife's birthplace in Scotland, and made the first land grant there, of 1000 acres, to Deputy Commissary General William Broughton in April 1811. At the same time John Kennedy (Broughton's brother-in-law) was granted 200 acres at *Teston Farm* (Browne 1949: 70; Whitaker 2005: 6). Broughton named his new holding *Lachlan Vale* after the governor. The following year Macquarie gave 400 acres to Andrew Hume (*Hume Mount*), and in all six settlers were given grants in the district in 1811-1812, and another 22 were made in 1815-1816 (Whitaker 2005: 6). Andrew Hume's sons, John and Hamilton, undertook local exploration in the area from Picton south to Moss Vale in 1814, and as far as Goulburn Plains in 1816. Hamilton Hume was granted 300 acres at Appin for this work, which he named '*Brookdale*', and in 1824 the Hume and Hovell expedition to Port Phillip left from this property on the Appin Road north of the village, near where the **Hume and Hovell Monument** now stands. The Hume Monument was erected in 1924 by the Royal Australian Historical Society to commemorate Hume's 1824 expedition (Parramatta & District Historical Society 1967).

The arrival of settlers in the region around Appin and new competition for resources began to restrict the freedom of movement of the Dharawal Aboriginal occupants from around 1813, made worse by severe drought in 1814 and 1816. By 1814 large numbers of displaced Aboriginal people had begun to congregate in the Appin area in search of food and other resources. They resorted to gathering maize crops as they ripened. In May 1814 three members of the Veteran Company militia fired on a group gathering corn and killed an Aboriginal boy. The Aboriginal men in the party attacked the militia members before they had time to reload, killing one of them. The survivors gathered local settlers and returned, killing a woman and two children while they slept. The next day the Aborigines retaliated, killing a male and female stockkeeper (Liston 1988: 19; McGill 1994, quoted in Biosis Research 2007).

Continuing trouble, with killings on both sides, resulted in Governor Macquarie sending a punitive military expedition in 1816. On 17 April 1816 the military found and pursued a group of Aborigines, and fourteen Aboriginal men, women and children were shot or driven over a cliff to their deaths, in an event known as the 'Appin Massacre'. The exact site of the massacre is not known, but it was on Broughton's land near Appin (Liston 1988: 19-23; Whitaker 2005: 11-12). Further information on Aboriginal heritage in the Project area is provided in the Aboriginal Cultural Heritage Assessment completed by Biosis Research (Appendix G of the EA).

The village of Appin was formally surveyed by surveyor Walker Davidson in 1834 (Whitaker 2005: 22). Grain was a major crop in the district from the 1820s, and mills were built at *Mount Gilead* near Menangle by Thomas Rose in 1836, and at *Windmill Hill* near Appin by Edward Larkin in 1846. Following the collapse of wheat in the region due to rust in the 1870s, dairying became a major landuse in the Appin area, introduced by Edward Hume Woodhouse, owner of *Mount Gilead* from 1867. The production of cream and oaten hay were primary landuses around Appin until about 1917, the cream being treated in a butter factory at Appin until 1898, thereafter being sent to the **Camden Park Estate Central Creamery** at Menangle (Whitaker 2005: 30-31). After 1917 milk was sent raw to the Dairy Farmers Co-Operative Milk Company in Sydney, by cart to Campbelltown then by train (Percival 1992: 29). The last dairy in Appin, Morrison Brothers Dairy located on Brooks Point Road (formerly *Teston*) closed in 2003 (Whitaker 2005: 32). Orchardng was a later development, peaking in the 1950s.

Douglas Park

Douglas Park was named after Arthur Douglass, the eight year old son of Dr Henry Gratin Douglass, who was granted 800 acres there in 1822. Dr Douglass came to Australia in 1821 and was the doctor in charge of the Parramatta Female Factory (the industrial prison housing female convicts). Douglass died in 1865 and was buried at St John's Church, Camden. Arthur Douglass named his estate Hoare Town and to fulfil the terms of the land grant lived there for three years with his mother (Mylrea 2000: 12, Wrigley 1988: 8). As the Hoare Town land grant was sold and sub-divided the area became known as Douglass's Park. This became Douglas Park, a name officially adopted by council in September 1904. (Sidman 1995: 53).

The second land grant in the area of Douglas Park was to Jean Baptiste Lehimaz De Arrietta (also known as D'arriete) on 9 July 1822. Governor Thomas Brisbane granted De Arrietta, a Spaniard, 2000 acres of land. The land was known as **Morton Park** (also Morton Park Estate) and was bounded to the northwest by the extensive land grants of John McArthur, to the west by Harris Creek, to the east by the Nepean River and to the southwest by the 320 acres granted to Arthur Douglass (Mylrea 2000: 10-12). Spaniards Hill, on the western side of Harris Creek, was named for Arrietta, and was the site of the first school in Douglas Park, a Catholic school established in 1862 (Douglas Park Public School 1983: 10).

Notes accompanying the Colonial Secretary's papers describe De Arrietta as a native of Spain who arrived in Sydney as a free settler on the *Duke of York* in 1821 (Colonial Secretary papers microfiche). It was also noted that De Arrietta was in Spain during the Peninsular War helping the British Army with stores and some spying. He went to England, asked for payment and was promised a grant of land if he came to NSW. The land grant was made to him in consideration of the amount of capital he brought to the country and to foster his intention to cultivate the vine (Sidman 1995: 8).

The conditions of the land grant were that the land not be sold or alienated for the period of five years and that he took 20 convicts to assist with the clearing and farming (Mylrea 2000: 8-9). Arrietta grew tobacco, but the crop was a failure, and he began to sell off his land by the 1830s (Wrigley 1988: 8).

In 1831 Samuel Terry, a former convict, bought up the land. In 1865 Ellen Rozetta Hughes (Terry's niece) and her husband J. Hughes built the existing *Morton Park* homestead. Ellen Rozetta Hughes married Franklin McMullen after her husband's death in 1868, and retained the property of **Morton Park** as well as other land holdings in the area. The homestead was renamed **Mountbatten** in the 1940s, after Lord Louis Mountbatten, but reverted to *Morton Park* in the 1980s.

In 1834-5 Sir Thomas Mitchell, Surveyor-General, acquired 3810 acres (1524 hectares) south of Douglas Park, with a frontage on the Nepean opposite Morton Park. Mitchell built a homestead on the land in 1842, after he returned from four years abroad. The Mitchell family occupied the house, named **Parkhall**, in 1845. Dr Richard Jenkins bought the property in 1860, and renamed it *Nepean Towers*. After Jenkin's death in 1883 the property was sold to John Wetherell, then in 1904 the land was subdivided and half the land went to the Missionaries of the Sacred Heart, who changed the name of the mansion to **St Mary's Towers**, the name it is still known by (Proudfoot 1977: 65).

The small village of Douglas Park grew up near Morton Park. The Post Office at Douglas Park was opened in 1860, and the railway reached there in 1863, the station opening in 1869. The telephone line was extended from Campbelltown to Douglas Park in 1904.

Wilton/Razorback

In 1822 Major Henry Colden Antill was granted 2,000 acres at Stonequarry Creek by Governor Macquarie. He called the property 'Wilton Cottage' and later 'Jarvisfield' after Macquarie's estate on the Isle of Mull which had in turn been named in memory of Macquarie's first wife, Jane Jarvis. The private village of Picton developed on Antill land before becoming a government town laid out in 1845.

The homestead complex of Jarvisfield, on the outskirts of Picton, is now a golf course, but the Antill property is represented by the surviving **Razorback Inn**, built in about 1850 on four acres sold by H.C. Antill to Oliver Whiting, ex-convict and servant of the Antill family. Another part of Jarvisfield in the study area is **Berkeley Lodge**, originally known as Rose Cottage Farm, or Farrington Lodge, the home of Dr. MacDonald, who was Clerk of Petty Sessions by at least 1841. Soon afterwards, William Berkeley Campbell was living there, having arrived to tutor the Antill children. The Razorback area was occupied in conjunction with the opening up of the Picton area, as the main road south then crossed the Razorback Range.

Wilton was on another road to the southern tablelands, and its development was influenced by the establishment of Thomas Mitchell's Parkhall (see under 'Douglas Park' above), the village being laid out in the late nineteenth century. **Wilton Park**, an area previously owned by colonial poet Charles Tompson, was bought by Samuel Hordern, of the Sydney merchant family, in the 1880s, and became the centre for Hordern's horse breeding, while Retford Park in Bowral, bought in 1887, was used to breed Jersey and Ayrshire cattle. The stables group at Wilton Park was built about 1892, the property becoming one of the leading horse breeding studs in Australia.

2.3 Transportation and Water Infrastructure

In October 1811, Macquarie proposed the construction of a road from Sydney to Liverpool. By 1814, this road had been constructed and soon extended to Appin (Liston 1988: 10). It was little more than a dirt track but was to become an important communication corridor to the area. Campbelltown became a cross roads for movements to Sydney, Appin, Illawarra, Picton, Narellan, Camden, Penrith and Nattai. Before the South Coast Railway linked the Wollongong to Sydney in 1887, Appin was a staging post for people travelling to the Illawarra, either by road or by train to Campbelltown (after 1858) or **Menangle Railway Station** (after 1863) then on by road.

The main southern road through the study area, which became the general line for the later Hume Highway, took a route over the Razorback, not recommended by Surveyor-General Mitchell, along the line of what is now Remembrance Drive. Mitchell's preferred route through Menangle was more-or-less revived for the Hume Freeway in the 1980s. **Wooden Mileposts** from 1926 remain along the road (one is near the Razorback Road/ Remembrance Drive junction).

The history of roads to the coast from Appin is a little more confused in the histories. Charles Throsby cut a rough track, regarded as unsuitable for cattle and wagons, from Appin to Bulli in 1815. A slightly better road from Appin to the Illawarra was initially a droving track marked by Cornelius O'Brien in 1821, and is probably the route shown on Surveyor-General Mitchell's 1834 map of the colony, that ended near Bulli (though Whitaker [2005: 14] claims O'Brien's track was via Mount Kiera). A new road was commenced by Mitchell in 1834 which ran from Appin through Broughton's Pass to Mount Kiera. The O'Brien's route appears to have been upgraded in 1838, after the discovery of a route down Bulli Pass to the coast, and became the favoured route from Campbelltown to the Illawarra. A daily mail service operated from Campbelltown to Wollongong via Appin and Bulli from 1838 (Whitaker 2005: 18).

The first section of the southern railway, from Redfern to Parramatta, was completed towards the end of 1855 and was extended to Campbelltown by May 1858, and Menangle in 1863. The railway reached Goulburn in 1869 with some substantial bridge constructions along the way but from 1858-1869 Campbelltown was the effective terminus. There were no established towns on the line. The line to Campbelltown was electrified in 1968. The line continues to be an important link for the development of the area for country and urban movements. Access to the railway line determined the viability of the **Maldon Cement Works** from 1948.

The Upper Canal, Upper Nepean Water Supply Scheme

By 1867 the Sydney water supply was in a precarious position, and a number of possible schemes were investigated. The Upper Nepean River was selected. The scheme was staged, with:

- a weir to be built at Pheasant's Nest just below the junction of the Avon and Cordeaux Rivers, a portion of the flow to be directed by tunnel (**Nepean Tunnel**) to connect with the Cataract River;
- a similar weir at Broughton's Pass (**Broughtons Pass Weir**) on the Cataract River to receive the water from Pheasant's Nest Weir, and from there to be directed into the 36 mile long **Upper Canal**, consisting of tunnels, open canals and aqueducts;
- a storage reservoir at Prospect, the end of the **Upper Canal**;
- a five-mile canal from Prospect to Guildford (now Pipe Head Reservoir) (the Lower Canal); and
- then iron pipelines to distribution reservoirs at Potts Hill and Crown Street (Aird 1961: 15-16).

The **Upper Nepean Scheme** commenced in 1880, and was completed in 1888 at a cost of £2,076,313. A temporary relief for Sydney was provided during construction by the Hudsons' temporary scheme, which built dams on side tributaries of the **Upper Canal** to provide temporary water flow to Prospect Reservoir, a scheme completed in 1886. The temporary dams were dismantled after the main scheme was completed (Aird 1961: 18-19).

From 1888, water was also supplied to Campbelltown from the scheme (Campbelltown City Council 1998:14).

The initial Upper Nepean Scheme was estimated to meet the requirements of a Sydney population of 540,000, but by 1902 the population had reached 523,000, and a severe drought was impacting on the water level in Prospect Reservoir, dropping it below the level of the Lower Canal and requiring construction of pumps to deliver water into the Canal. A new enquiry was held to find an augmented water supply. The solution was to build a dam at the Cataract River, and this was authorised in 1902, foundations were in place by the end of 1903, and the **Cataract Dam** was completed at the end of 1907 (Aird 1961: 26-27).

Because the rainfall from 1907 to 1911 was unusually low, the need for back-up storage became evident, and in 1911 the Board selected a site for a dam on the Cordeaux River. However, rainfall increased over subsequent years, and planning for the new dam was put on hold until 1918. At that time it was decided to proceed also with dams on the Avon and Nepean Rivers, in sequence. Cordeaux Dam was completed in 1926. Avon Dam was commenced in 1921 and completed in 1926 soon after the Cordeaux, and the Nepean Dam (Warragamba) was commenced in 1925, and completed in 1935 (Aird 1961: 28-30).

Care and maintenance of the **Upper Canal** in particular, was in the hands of inspectors and maintenance men. They were housed along the Canal in cottages, owned and maintained by the Sydney Water Board. Initially, the men walked or used horses to patrol the length of the Canal assigned to them. By the late 1890s, a gradual process of adding roadways along the Canals was under way. During the cooler months when demand for water was lower and requirements could be supplied from water impounded at Prospect, repairs and maintenance were carried out on the **Upper Canal**. The sides were regularly cleaned, and, by the 1900s, some lengths were being relined (Higginbotham *et al.* 1992:10-41; see also Aird 1961).

The **Upper Canal** of the Nepean Water Supply Scheme, which passes through parts of the study area, was built of a variety of materials and section profiles depending upon the nature of the country through which it was passing. Where the ground was soft, the Canal was 'V'-shaped and the sides were pitched with shale or sandstone slabs. In other sections, a 'U'-shape was utilised and the sides were walled with sandstone masonry, or, if cut into solid rock left unlined. Where the Canal crossed creeks or large depressions, such as Woodhouse and Nepean's Creeks, the water was carried across in wrought iron inverted syphons resting on stone piers. As well as bridges constructed over major roads, 'occupation bridges' were erected to allow property owners with land severed by the Canal access between parts of their holdings (Higginbotham *et al.* 1992: Navin Officer 2006).

2.4 Coal Mining

Coal deposits in the Illawarra, near Coalcliff, were first documented by George Bass in 1797. The extension of the seams to the Appin area was recognised in the proclamation of the State Coal Mine Reserve in November 1926, a reserve that encompasses the present West Cliff Colliery site, where mining commenced in 1976. The Appin Colliery commenced operations in 1962. Both mines have experienced change over time, and it is not considered that either has elements that are of substantial heritage significance.

Bulli Colliery commenced operations in 1859, supplying export coal to Shanghai by August of 1863. In 1925 **Bulli No. 1 Shaft** was commissioned and retained its role as the main upcast shaft until mine closure in 1987. (Note: The information in this section is drawn from Sheldrill Pty Ltd, 2008. *Bulli Colliery; Bulli Colliery shafts Nos 1, 2, 3 & 4, A review.*) Bulli No.1 Shaft was reported as being the first coal mining shaft in Australia to be concrete lined and the first in the world to utilise the method where the concrete falls direct from the mixer at the surface to the bottom for the total depth. Two lines of wooden boxes, each having a cross section of 64 square inches (413 square centimeters [cm²]), conveyed some 250 tons of cement from collar to shaft lining (Illawarra Merc. 24/07/1925).

On 14 January 1939, a bushfire ignited and subsequently destroyed the headgear and winding plant. It was replaced by a brick and steel structure (Mines Department, 1939). This apparently refers to the existing reinforced concrete and brick superstructure, complete with engine house (now defunct) and cage (still on site). Circa 1955/56 the original 98" Sirocco fan was replaced with the 157" Aerex axial flow fan from the Nebo Mine. This time frame is supported by several BHP Engineering drawings relating to the installation and dated 1955 and the fact that the two Nebo Calyx shafts were commissioned in 1955/56.

Due to deterioration caused by water and damage suffered during an earth tremor in April 1961 a 30' (9.14 metres [m]) section, some 70' (21.34m) above the Bulli Seam, was lined with 15'-6" (4.72m) diameter steel casing. In 1963 the shaft was relined by Cram and Sons Pty Ltd to 15' (4.57m) diameter with 6" (150 millimetres [mm]) of concrete.

In 1985, still equipped with the 157" Aerex axial flow fan from Nebo Colliery, it was the main source of ventilation for the colliery. The shaft was decommissioned in 1987, capped by BHP and a Certificate of Inspection as being "sealed to satisfaction" issued by the Department of Mineral Resources in March, 1988.

Australian Iron & Steel Ltd purchased the mine from the liquidators of the Bulli Colliery and Coke Works in 1936. 1940 saw the **Bulli No. 2 Shaft** commissioned as a downcast shaft however the sinking headframe still remains in place. The site was the location of a main 33/3.6kV substation supplying power to the underground workings via suspended cables within the shaft and the No.1 shaft site. It would appear that this may also have been the entry point for the machinery and equipment when the mine was mechanised in the 1950s. The shaft appears to have been repaired prior to the commencement of the sinking of No. 3 Shaft on 21 January 1964. The shaft was decommissioned in 1987, capped by BHP and approved by the Department of Minerals in 1988.

Bulli No. 3 Shaft was completed in 1964 and was initially intended as an upcast shaft to provide ventilation to the workings north of the 300' fault in ML6. Although equipped with a fan it is doubtful that it ever acted in its intended role. Upon cessation of production in 1987 the shaft was still equipped with this fan. This was also the proposed site of a new pit top to be established during 1983/4. Only conceptual plans were ever developed. The shaft was decommissioned in 1987, capped by BHP and approved by the Department of Minerals in 1988.

The sinking of Bulli No. 4 Shaft was aborted at 18m depth in 1985 with the decision to cease production at the mine. The shaft was backfilled and the site abandoned.

The Bulli Colliery closed in May 1987. Bulli Colliery entries were sealed and approved in 1988. In 2004 the pit top site was sold and subsequently the rehabilitation of the pit top sites was completed in 2005. Following the rehabilitation of the powerlines from Greenhills to Mt Ousley road it has been decided that the 23 km of redundant power lines from Mt Ousley road to the Bulli ventilation shaft sites undergo assessment for rehabilitation.

3. HERITAGE ITEMS POTENTIALLY AFFECTED BY THE PROJECT

Many items within the Project extent of longwall mining and surrounds have been previously listed in the Wollondilly Local Environment Plan (Wollondilly LEP). More have been identified for consideration in a review of the Wollondilly LEP in early 2009. These have been inspected, at least externally, as part of this Non-Aboriginal Heritage Assessment.

Table 3-1 lists the items with recognised heritage significance located within the Project extent of longwall mining area and surrounds and relevant heritage register listings (e.g. State Heritage Inventory Database [SHI DB]). No LEP listed items are located in the North Cliff area.

Table 3-1
Identified Heritage Items within 600m of the Project Extent of
Longwall Mining Area¹

Item Number	Item Name and Address	Heritage Register	Map Coordinates (MGA)	Summary of Heritage Significance ²
Menangle				
1	Menangle Rail Bridge and Viaduct, Nepean River, Menangle	- State Heritage Register Listing No. 01047. SHI DB No. 5012102. - Menangle Viaduct, Wollondilly LEP. SHI DB No. 2690059. - Wollondilly Heritage Study. - Menangle Underbridge, S.170 State Agency Heritage Register, State Rail Authority. SHI DB No. 4440315, 4440500. - Register of the National Estate No. 3284.	291900E 6222450N	1863, first large iron bridge in NSW and rare type, oldest bridge on rail system, of landscape value and historical association with economic development of southern part of colony. State and national significance.
2	Menangle Weir, Nepean River, Menangle	Sydney REP No. 20 - Hawkesbury-Nepean River. SHI DB No. 3032.	291850E 6222420N	Significant locally as an intact example of a simple weir structure for agricultural purposes, built in response to Upper Nepean Water Scheme taking water from the river upstream in 1886.
3	Menangle Railway Station Group, Station Street, Menangle	- State Heritage Register No. 01191. SHI DB No. 5012101. - State Rail Authority Section 170 Register, 4440267. - Wollondilly LEP. SHI DB No. 2690060 ('Railway Station'). - Wollondilly Heritage Study. WO0060.	291980E 6221610N	One of the earliest station complexes to survive in the state, and of important design. State and national significance in conjunction with Menangle rail bridge.
4	Menangle Store 57 Menangle Street, Menangle	- Wollondilly LEP. SHI DB No. 2690090. - Wollondilly Heritage Study.	291480E 6221400N	Local historical significance as the only 20 th century store in Menangle Village, serving local farmers and the Camden Park Estate. Unusual in the state as an unusual example of a "Federation Arts & Crafts" style shop. Aesthetic significance as landmark in Menangle.

Table 3-1 (Continued)
Identified Heritage Items within 600m of the Project Extent of
Longwall Mining Area¹

Item Number	Item Name and Address	Heritage Register	Map Coordinates (MGA)	Summary of Heritage Significance ²
Menangle (Continued)				
5	Elizabeth Macarthur Agricultural Institute (formerly Camden Park Estate) [part] Woodbridge Road, Elizabeth Macarthur Avenue, Menangle.	- State Heritage Register No. 00341. SHI DB No. 5045133 (Camden Park). - State Heritage Register No. 01697. SHI DB No. 5051536 (Camden Park Estate and Belgenny Farm). - Wollondilly LEP. SHI DB No. 2690002 (Elizabeth Macarthur Agricultural Institute). - Wollondilly Heritage Study. - S.170 State Agency Heritage Register (Dept of Agriculture). - Sydney REP No. 20 - Hawkesbury-Nepean River. - Register of the National Estate No. 3249.	289400E 6222500N	State and national social, historic, scientific and aesthetic significance. The oldest surviving sheep stud in Australia. Only parts of the place are in the Project area.
6	Menangle Gate Lodge (Camden Park) 46 Woodbridge Road, Menangle	- State Heritage Register No. 2690098 (part of Camden Park Estate). - Wollondilly LEP. SHI DB No. 3040024, 2690098. - Wollondilly Heritage Study. - S.170 State Agency Heritage Register (Dept of Agriculture).	290650E 6221710N	Local and regional historical significance as one of the pair of gate lodges built for the Camden Park Estate. Aesthetic significance as an attractive and largely intact example of an “Arts and Crafts” style estate cottage in an attractive rural setting.
7	Dairy No. 4 (Camden Park) EMAI Woodbridge Road, Menangle	- State Heritage Register No. 00341. SHI DB No. 5045133 (Camden Park). - State Heritage Register No. 01697. SHI DB No. 5051536 (Camden Park Estate and Belgenny Farm). - Wollondilly LEP. SHI DB No. 2690002 (Elizabeth Macarthur Agricultural Institute) 3040025 (Dairy No. 4). - Wollondilly Heritage Study. - S.170 State Agency Heritage Register (Dept of Agriculture). - Sydney REP No. 20 - Hawkesbury-Nepean River. - Register of the National Estate No. 3249.	290200E 6221820N	Locally historically significant in illustrating the changing nature of dairying activities on the Camden Park Estate in the late 19 th and early 20 th centuries. A landmark feature of aesthetic value.
8	Camden Park Estate Central Creamery Station Street, Menangle	- Wollondilly LEP. SHI DB No. 2690294 and 2690729. - Wollondilly Heritage Study.	291960E 6221710N	Regionally significant as evidence of the scale of dairying activities carried out to supply Sydney’s needs in the latter part of the 19 th century and in the 20 th century, and for its associations with the Camden Park Estate.
9	Camden Park Rotolactor Station Street, Menangle	- Wollondilly LEP. SHI DB No. 2690295. - Wollondilly Heritage Study.	291910E 6221710N	State historical significance as evidence of the post-WWII mechanised phase of dairying activity in the Sydney Region, being the second facility of this type and scale in the world.

Table 3-1 (Continued)
Identified Heritage Items within 600m of the Project Extent of
Longwall Mining Area

Item Number	Item Name and Address	Heritage Register	Map Coordinates (MGA)	Summary of Heritage Significance ²
Menangle (Continued)				
10	St James Anglican Church 131 Menangle Road, Menangle	- Wollondilly LEP. SHI DB No. 2690091. - Register of the National Estate No. 3301.	291630E 6221200N	Significant in the State as an unusual and particularly fine example of a small country church of great architectural integrity and quality. Historical associations with the Macarthur family, and of local landscape significance.
11	St Patricks Catholic Church 119 Menangle Road, Menangle	- Wollondilly LEP. SHI DB No. 2690097. - Wollondilly Heritage Study.	291490E 6221320N	Local social and historic significance through its associations with the Roman Catholic community in the Menangle area since 1895, and aesthetic contribution to Menangle landscape.
12	Gilbulla (Anglican Conference Centre) 710 Morton Park, Road Menangle	- Wollondilly LEP. SHI DB No. 2690092. - Wollondilly Heritage Study.	292100E 6220160N	Locally and regionally significant for its associations Macarthur family and as an outstanding example of a Federation Arts and Crafts residence on a grand scale.
13	Bungalow 92 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690727).	Centred around 291480E 6221400N	Local significance architecturally and as part of the important early 20 th century building stock making up Menangle's cultural landscape.
14	Bungalow 151 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690726).	Centred around 291480E 6221400N	As above
15	Bungalow 106 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690722).	Centred around 291480E 6221400N	As above
16	Bungalow 96 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690728).	Centred around 291480E 6221400N	As above
17	Cottage 124 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690723).	Centred around 291480E 6221400N	As above
18	Cottage 102 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690721).	Centred around 291480E 6221400N	As above
19	Cottage 138 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690725).	Centred around 291480E 6221400N	Regional significance for its association with the Elizabeth Macarthur Institute and the former Camden Park Estate dairies and as an important component of the historic cultural landscape of Menangle and Camden.

Table 3-1 (Continued)
Identified Heritage Items within 600m of the Project Extent of
Longwall Mining Area

Item Number	Item Name and Address	Heritage Register	Map Coordinates (MGA)	Summary of Heritage Significance ²
Menangle (Continued)				
20	Cottage 128 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690724).	Centred around 291480E 6221400N	Local significance architecturally and as part of the important late 19 th century building stock making up Menangle's cultural landscape.
21	Dairy Cottage 2 Station Street, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690730).	291980E 6221340N	Local significance for associations with the Camden Park Estate Central Creamery, as evidence of purpose-built worker's housing associated with the Creamery, and an important component of the historic cultural landscape of Menangle.
22	Dairy Cottage 65 Woodbridge Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690731).	290830E 6221450N	As above.
23	EMI Cottage 29 50 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690719).	Centred around 291480E 6221400N	Regional significance for its association with the Elizabeth Macarthur Institute and the former Camden Park Estate dairies and as an important component of the historic cultural landscape of Menangle and Camden.
24	House 100 Menangle Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690725).	Centred around 291480E 6221400N	Local significance architecturally and as part of the important late 19 th century building stock making up Menangle's cultural landscape.
25	Menangle Conservation Area Menangle Road Menangle (includes items 4, 10, 11, 13-20, 23 and 24)	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690277).	Centred around 291480E 6221400N	State significance as an unusually intact example of a rural service centre of this period and in particular, one that is associated with the dairying industry; has local & regional aesthetic significance as a cultural landscape entity. Historical associations with the Macarthur family and the Camden Park Estate.
26	Slab Hut 40 Carrolls Road, Menangle	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690718).	289030E 6219520N	Local significance as a remnant of the early settlement and as a locally rare example of the slab hut.
27	The Pines Menangle Road, Menangle Park	Not heritage listed, but see Proudfoot, H. 1977. <i>Colonial Buildings: Macarthur Growth Centre</i> . Macarthur Development Board (page 51).	291890E 6223070N	Locally significant as a very good, late example of the classical Colonial stone house.

Table 3-1 (Continued)
Identified Heritage Items within 600m of the Project Extent of
Longwall Mining Area

Item Number	Item Name and Address	Heritage Register	Map Coordinates (MGA)	Summary of Heritage Significance ²
Douglas Park				
28	Mountbatten Group (formerly Morton Park) 655 Menangle Street, (Off Duggan Street) Douglas Park	- Wollondilly LEP. SHI DB No. 2690085, 2690086, 2690087, 2690088. - Wollondilly Heritage Study.	289860E 6215600N	Regionally significant because of its historical associations with the early settlement of the Douglas Park area; its aesthetic significance as a collection of important architecture and as a landmark.
29	St Mary's Towers (formerly Parkhall) 415 Douglas Road Mt Kiewa Road, Douglas Park	- Wollondilly LEP. SHI DB No. 2690278, 2690089. - Wollondilly Heritage Study. - Register of the National Estate No. 3305.	289060E 6212420N	State significance through associations with the early settlement and Sir Thomas Mitchell; aesthetically significant architecture.
30	Railway Cottage 3 Camden Road, Douglas Park	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690714).	289050E 6215150N	Local significance as the only surviving example of a residence associated with the construction of the southern rail line in Douglas Park.
31	Warrangunyah 670 Menangle Road, Douglas Park	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690716).	289320E 6216950N	Local and regional significance as an outstanding example of a late Victorian period gentleman's country homestead.
Wilton				
32	Wilton Park (Wilton Park Stables) Wilton Park Road, Maldon	- State Heritage Register Listing No. 00257. SHI DB No. 5045546. - Wollondilly LEP. SHI DB No 2690190. - Wollondilly Heritage Study 1992. - Register of the National Estate No. 3304.	282560E 6211650N	State historical significance as Samuel Hordern's thoroughbred horse stud, with fine ensemble of the rural architecture with aesthetic significance.
33	Cottage 180 Wilton Park Road, Wilton	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690791).	283140E 6210460N	Local significance as a particularly good example of a 19 th century pastoral cottage.
34	Kedron 305 Wilton Park Road Wilton	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690797).	282380E 6211050N	Regional significance as an exceptional example of a Federation period homestead.
35	Nepean Tunnel and above ground structures	- State Heritage Register No. 01373 (as 'Upper Canal System [Prospect Reservoir]'). SHI DB No. 5051481. - S.170 State Agency Heritage Register. - Wollondilly LEP. SHI DB No. 2690008. - Wollondilly Heritage Study.	288150E 6209160N to 290500E 6209790N	State historical significance as part of Sydney's water scheme of the 1880s and an excellent example of 19 th century hydraulic engineering, including tunnels and the use of gravity to feed water along the canal.
36	Broughtons Pass Weir Wilton Road Wilton	- State Heritage Register No. 01373 (as 'Upper Canal System [Prospect Reservoir]') SHI DB No. 5051481. - S.170 State Agency Heritage Register. - Wollondilly LEP. SHI DB No. 2690008. - Wollondilly Heritage Study.	292016E 6210280N	State historical significance as part of Sydney's water scheme of the 1880s and an excellent example of 19 th century hydraulic engineering, including the use of gravity to feed water along the canal.

Table 3-1 (Continued)
Identified Heritage Items within 600m of the Project Extent of
Longwall Mining Area

Item Number	Item Name and Address	Heritage Register	Map Coordinates (MGA)	Summary of Heritage Significance ²
Wilton (Continued)				
37	Stone Ruin 45 Whitticase Lane, Douglas Park	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690717). - Wollondilly Heritage Study Review.	291030E 6210210N	Locally significant as a stone ruin historically associated with Sir Thomas Mitchell's tenant farmers.
Appin				
38	Upper Nepean Water Supply System Canal	- State Heritage Register No. 01373 (as 'Upper Canal System [Prospect Reservoir]'). SHI DB No. 5051481. - S.170 State Agency Heritage Register. - Wollondilly LEP. SHI DB No. 2690008. - Wollondilly Heritage Study.	292980E 6215010N to 293340E 6217090N	State historical significance as part of Sydney's water scheme of the 1880s and an excellent example of 19 th century hydraulic engineering, including the use of gravity to feed water along the canal.
39	Hume and Hovell Monument Appin Road, Appin	None.	296510E 6218720N	A monument of Local significance marking the homestead of Hamilton Hume and the starting point of Hume and Hovell's exploratory trip to Port Phillip.
40	Beulah Appin Road, Appin	- State Heritage Register No. 00368. - Campbelltown LEP. SHI DB No. 5045426.	294790E 6219820N	State significance as an entire cultural landscape containing early colonial structures - homestead group and stone bridge - remnant 19 th century farm and garden layout, an octagonal pavilion or summer house as a major focal element and a remnant spotted gum (<i>Corymbia maculata</i>) forest as a result of early conservation planning.
41	Cataract Dam Cataract River, Appin	- State Heritage Register No. 01359. - SHI DB No. 5051469. - S.170 State Agency Heritage Register. - Wollondilly LEP. SHI DB No. 2690211. - Wollondilly Heritage Study.	297750E 6206190N	State significance for its unusual design and construction, historical place in water schemes in Australia, and landmark values.
Razorback				
42	Wooden milepost, Razorback Road/ Remembrance Drive Junction, Razorback	- Wollondilly LEP. SHI DB No. 2690158. - Wollondilly Heritage Study.	284100E 6218300N	Locally and regionally significant as a now rare road marker of the original Great South Road.
43	Homestead ruins and trees 40 Mount Hercules Road, Razorback	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690880).	285280E 6219080N	Locally of scientific significance as an undisturbed archaeological site of a 19 th century rural residence.

Table 3-1 (Continued)
Identified Heritage Items within 600m of the Project Extent of
Longwall Mining Area

Item Number	Item Name and Address	Heritage Register	Map Coordinates (MGA)	Summary of Heritage Significance ²
Razorback (Continued)				
44	Razorback Inn Remembrance Way, Picton	- Wollondilly LEP. SHI DB No. 2690150. - Wollondilly Heritage Study 1992.	282030E 6217200N	Local significance in providing evidence of the nature of early settlement in the area and the importance of the early road link to the south, associations with early convict settlers and the prominent Antill family, and as a typical building of its type.
45	Berkeley Lodge 1545 Remembrance Way, Picton	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690348).	282180E 6217100N	Example of an extended and well-maintained 19 th century homestead. Local significance.
Maldon				
46	Maldon Cement Works Maldon Bridge Road, Maldon	- Draft revision of Wollondilly LEP, 2009. (SHI DB No. 2690142).	282000E 62137000N	Regionally historical significant as evidence of the growth of the Sydney urban area and its influence on the growth of the Wollondilly area, and as an example post-WWII industrial operations on a large scale.
47	Maldon suspension bridge Wilton Park Road, Maldon	- Wollondilly LEP. SHI DB No. 2690196. - Wollondilly Heritage Study 1992.	281860E 6212910N	Regionally significant as an example of an unusual bridge design.

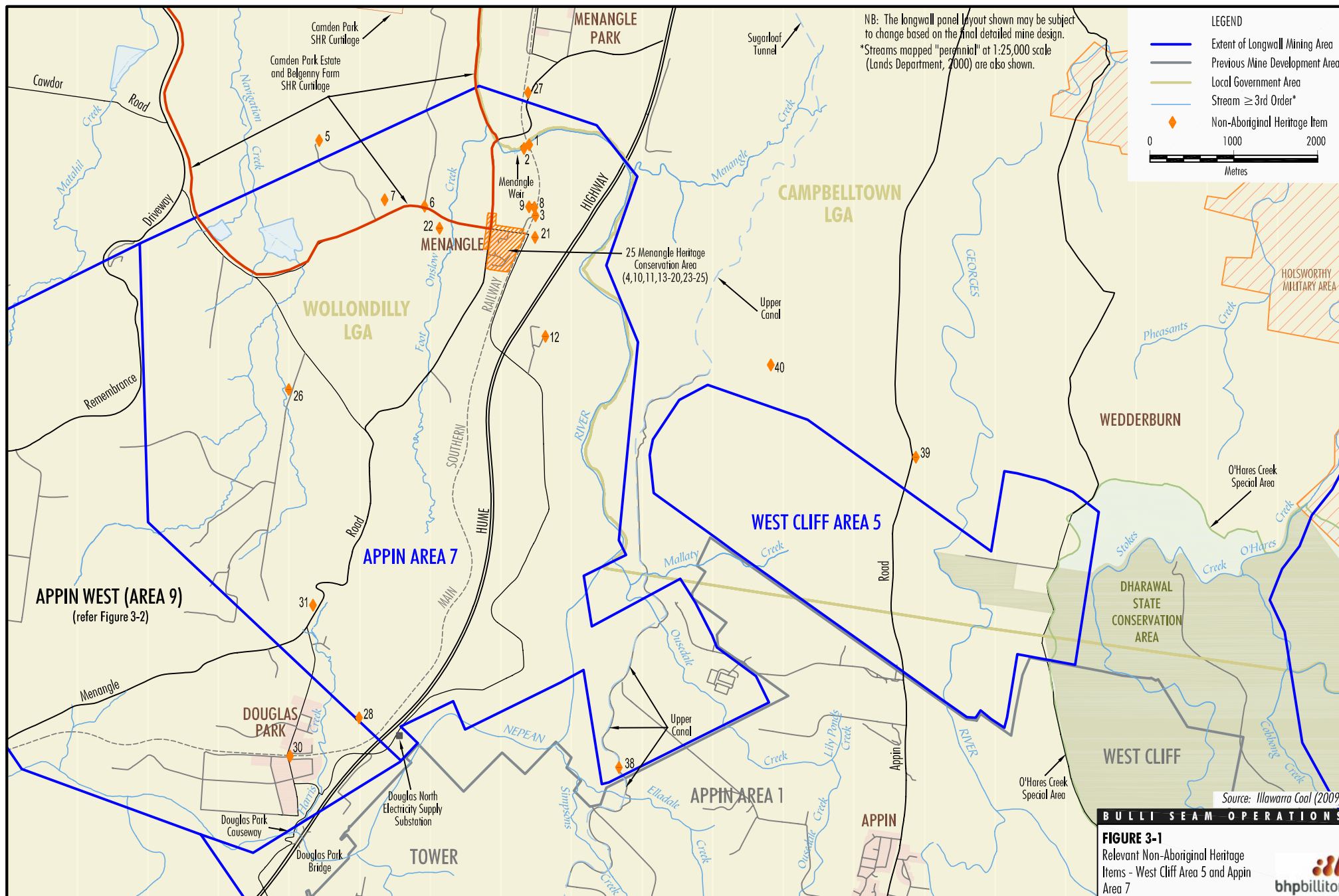
¹ See Figure 1-1 for the Project extent of longwall mining area.

² For a complete description of the listed heritage significance of each item refer to Attachment A.

The locations of the items described in Table 3-1 are shown on Figures 3-1 to 3-3.

Full citations and photographs of each of the identified items summarized in Table 3-1 are provided in Attachment A.

There are a number of LEP listed heritage items located in the general proximity of the Project extent of longwall mining area (but greater than 600m from the longwall extents). Structures can potentially experience horizontal movements up to large distances away from extracted longwalls. These movements are known as far-field horizontal movements, which have been observed at distances of up to approximately 2,000 m from extracted longwalls. Far-field horizontal movements tend to be bodily movements towards the extracted goaf area, and are accompanied by low levels of strain. The risk of impact to these items from Project related activities is expected to be extremely low (MSEC, 2009). A more detailed discussion of far-field horizontal movements is provided in the Subsidence Assessment report (Appendix A of the EA).







It is expected that there would be no impact to these items from Project related activities, however, they are listed below for completeness:

- Jarvisfield, Picton;
- Mt Gilead and Mill;
- Northampton Dale Group;
- Windmill Hill/Middle Farm, Appin (already assessed—Longwall 209 & buffer);
- Appin Village items;
- Camden Park Homestead;
- Menangle Park House;
- Barrigal Monument, Camden Park;
- Belgenny Farm and Cottage;
- Camden Park Orchard Cottages (Hamlet Cottages) and orchard;
- Elladale;
- Maldon Weir;
- Kings Falls Bridge; and
- Stone Cottages, 380 Douglas Park Road, Douglas Park.

In addition, Table 3-2 provides a summary of the listed heritage items located at the Old Bulli Shafts, which would be rehabilitated as a component of the Project.

Table 3-2
Identified Heritage Items at the Old Bulli Shafts

Item Number	Item Name	Heritage Register	Map Coordinates (MGA)	Summary of Heritage Significance ¹
48	Bulli No.1 Shaft	• Wollongong LEP and Illawarra REP. SHI DB No. 19139.	302760E 6200660N	Regionally significant as archaeological evidence.
49	Bulli No.2 Shaft	• Wollongong LEP and Illawarra REP. SHI DB No. 2700804. • Wollongong Heritage Study.	303489E 6200589N	Regionally significant as archaeological evidence.

¹ Summary only - for a complete description of the listed heritage significance of each item refer to Attachment A.

The Bulli No. 1 Shaft is located approximately 3.3km west of the Illawarra Escarpment and approximately 1km off the Sydney Catchment Authority (SCA) Fire Road #7C.

The Bulli No. 2 Shaft is situated approximately 2.6km west of the Illawarra Escarpment and immediately adjacent to SCA Fire Road #7C.

The location of Bulli Shaft Nos. 1 and 2 are provided on Figure 1-1. Both Bulli shafts are within lands controlled by the SCA (Metropolitan Special Area).

The heritage values at Bulli No.1 Shaft relate to the concrete base pads for the fan drive house and electrical switchgear, the concrete brick fan drift leading to the collar with its square concrete structure onto which is built a circular tower of brick/reinforced concrete/brick construction.

The heritage values at Bulli No.2 Shaft relate to the original sinking headframe, the remains of the winder mechanism and the original switch yard foundation slab.

Bulli No. 3 and 4 Shafts are not assessed as having heritage significance and are not considered further in this Report.

4. STATEMENT OF HERITAGE IMPACT

4.1 Aspects of the Proposal that Could Potentially Impact Heritage Values

The potential impacts on non-Aboriginal heritage arising from the Project are primarily related to indirect impacts associated with subsidence of the ground surface following longwall extraction of coal (consideration of alternative mining methods is provided in Section 7 in the Main Report of the EA). However, the decommissioning and removal of Bulli Shaft Nos. 1 and 2 structures (Figure 1-1) (i.e. direct surface works) would also potentially impact on heritage values in the Project Application area (see below).

Extraction of coal by longwall mining methods results in the vertical and horizontal movement of the land surface. The land surface movements are generically referred to as subsidence effects. The type and magnitude of the subsidence effects is dependant on a range of variables (e.g. mine geometry, topography and geology). Discussion of the development and propagation of subsidence effects above and adjacent to mined longwall panels and the potential impacts of mine subsidence on man made structures at the surface is provided in detail in the Subsidence Assessment (MSEC, 2009) which is included in Appendix A of the EA.

In summary, masonry structures are most likely to be damaged by movement and localised strains associated with subsidence, the impacts potentially ranging from minor cracking to substantial cracking of walls, as well as damage to internal services and building structural elements. Timber structures are generally less sensitive to damage than masonry structures.

Table 4-1 provides a classification of repair categories with respect to potential damage to building structures that have been adopted by MSEC and are based on relevant Australian Standards and international subsidence related building damage criteria (refer Appendix A of the EA).

An analysis of the sensitivity of the heritage listed buildings and the potential likelihood of mine subsidence causing damage that requires repair has been completed by MSEC for the Project extent of longwall mining (Appendix A of the EA). The results of this analysis indicate that (prior to detailed mine design and/or implementation of specific mitigation and management measures) three initial categories of repair requirement likelihood have been identified for the heritage buildings identified in Table 3-1. The initial repair likelihood categories are summarised in Table 4-2.

MSEC's analysis indicates that most heritage listed buildings in the Project extent of longwall mining area and surrounds would have some likelihood of damage (e.g. cracking) that requires some repair works. The potential for damage occurring that requires repair increases with the relative size of the structure, as well as for construction type (i.e. masonry is more sensitive than timber or fibro).

Table 4-1
Classification Based on the Extent of Repairs

Repair Category	Extent of Repairs
Nil	No repairs required.
R0 Adjustment	One or more of the following, where the damage does not require the removal or replacement of any external or internal claddings or linings: • Door, window or gate jams or swings, or • Movement of cornices, or • Movement at external or internal expansion joints.
R1 Very Minor Repair	One or more of the following, where the damage can be repaired by filling, patching or painting without the removal or replacement of any external or internal brickwork, claddings or linings: • Cracks in brick mortar only, or isolated cracked, broken, or loose bricks in the external façade, or • Cracks or movement < 5 mm in width in any external or internal wall claddings, linings, or finish, or • Isolated cracked, loose, or drummy floor or wall tiles, or • Minor repairs to any services or gutters.
R2 Minor Repair	One or more of the following, where the damage affects a small proportion of external or internal claddings or linings, but does not affect the integrity of external brickwork or structural elements: • Continuous cracking in bricks < 5 mm in width in one or more locations in the total external façade, or • Slippage along the damp proof course of 2 to 5 mm anywhere in the total external façade, or • Cracks or movement ≤ 5 mm in width in any external or internal wall claddings, linings, finish, or • Several cracked, loose or drummy floor or wall tiles, or • Replacement of any services.
R3 Substantial Repair	One or more of the following, where the damage requires the removal or replacement of a large proportion of external or internal claddings or linings, or affects the integrity of the external brickwork or structural elements: • Continuous cracking in bricks of 5 to 15 mm in width in one or more locations in the total external façade, or • Slippage along the damp proof course of 5 to 15 mm anywhere in the total external façade, or • Loss of bearing to isolated walls, piers, columns, or other load-bearing elements, or • Loss of stability of building elements.
R4 Extensive Repair	One or more of the following, where the damage requires the removal or replacement of a large proportion of external brickwork, or the replacement or repair of structural elements: • Continuous cracking in bricks > 15 mm in width in one or more locations in the total external façade, or • Slippage along the damp proof course of 15 mm or greater anywhere in the total external façade, or • Re-levelling of building.
R5 Re-build	Extensive damage to house that requires it to be re-built as the cost of repair is greater than the cost of replacement.

Source: MSEC, 2009.

Table 4-2
Initial Likelihood of Repair Being Required - Buildings

Likelihood of Repair Ranking	Repair Category (refer Table 4-1)	Likelihood
1	R0	90-95%
	R1 or R2	3-10%
	R3 or R4	1%
	R5	<0.1%
2	R0	80-85%
	R1 or R2	10-15%
	R3 or R4	3-5%
	R5	<0.5%
3	R0	70-75%
	R1 or R2	15-20%
	R3 or R4	7-12%
	R5	<0.5%

After: MSEC, 2009.

Further detailed subsidence assessment and site-specific structural assessments for each listed heritage item potentially impacted by the Project would be undertaken as a component of the Extraction Plan (EP) process², once the detailed design of longwall layouts and engineering management measures has been completed (refer Section 4.2).

Table 4-3 presents MSEC's analysis of potential subsidence effects of the Project based on the EA Base Plan Longwalls presented in Section 2 in the Main Report of the EA. MSEC assessed the likelihood of repair being required (Table 4-2) for the buildings and relevant items listed in Table 3-1.

It is ICHPL's general subsidence management philosophy that all occupied buildings are maintained in a safe condition during subsidence. Subject to the outcomes of site-specific subsidence and structural assessments, mitigation or management measures would be applied to minimise damage to occupied heritage buildings to ensure the safety and serviceability of the structures is not compromised. The implementation of ongoing subsidence monitoring and management/mitigation measures to maintain occupant safety would also limit the potential for significant damage to occupied heritage buildings.

In order to minimise potential impacts to buildings of higher heritage significance in the Project extent of longwall mining area, it is recommended that, subject to the outcomes of site-specific subsidence and structural assessments, mitigation or management measures should be applied where required to minimise damage to state and/or national significance heritage buildings. Table 4-4 provides initial recommendations for the management of the more significant heritage listed buildings of relevance to the Project. These initial recommendations would be reviewed and, where required, amended following the completion of structural assessments and individual SOHI for these items as a component of the EP process, as described in Section 4.2.

² In accordance with the precedent set by the Metropolitan Coal Project Approval, it is envisaged that the previous Mining Lease requirement for preparation of a Subsidence Management Plan prior to mining would be replaced by a requirement to prepare an Extraction Plan for the Project. Further discussion of the detail that would be provided in the Extraction plan is provided in Section 7.3.1 in the Main Report of the EA.

**Table 4-3
Potential Impacts/Initial Likelihood of Repair Ranking for Heritage Buildings
and Recommended Mitigation/Management Action**

Item Number	Heritage Item (Significance Level ²)	Structure Type	Location with Respect to Base Plan Longwalls	Potential Maximum Predicted Subsidence (mm/m)	Potential Maximum Predicted Tilt (mm/m)	Potential Maximum Predicted Radius of Hogging Curvature (km)	Potential Maximum Predicted Radius of Sagging Curvature (km)	Initial Likelihood of Repair Ranking ¹ (comment)	Additional Control - Mitigation/ Management
Menangle									
3	Menangle Railway Station Group (part) (State/National)	Brick	Goaf - over longwalls	1600	8	11	7	3	Structural assessment required. Develop built feature management plan (BFMP) in consultation with the Mine Subsidence Board (MSB) and heritage specialist. Record, monitor and where necessary repair.
3	Menangle Railway Station Group (part) (State/National)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	As above.
4	Menangle Store (Local/State in part)	Brick and Timber	Goaf - over longwalls	1600	8	11	7	3	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
5	Elizabeth Macarthur Agricultural Institute (formerly Camden Park Estate) [Part] (State/National)	House and cottages (brick assumed)	Solid Coal - ~80m to ~650m from nearest longwall	<200	<1	>75	-	1	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
5	Elizabeth Macarthur Agricultural Institute (formerly Camden Park Estate) [Part] (State/National)	Landscape	Solid Coal/Goaf - over longwalls	1600	8	11	7	N/A (Minor surface cracking. Significant impacts unlikely)	No mitigation required. Apply MSB standards to recording, monitoring and repair.
6	Menangle Gate Lodge (Camden Park) (Local/Regional)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.

Table 4-3 (Continued)
Potential Impacts/Initial Likelihood of Repair Ranking for Heritage Buildings
and Recommended Mitigation/Management Action

Item Number	Heritage Item (Significance Level ²)	Structure Type	Location with Respect to Base Plan Longwalls	Potential Maximum Predicted Subsidence (mm/m)	Potential Maximum Predicted Tilt (mm/m)	Potential Maximum Predicted Radius of Hogging Curvature (km)	Potential Maximum Predicted Radius of Sagging Curvature (km)	Initial Likelihood of Repair Ranking ¹ (comment)	Additional Control - Mitigation/ Management
Menangle (Continued)									
7	Dairy No. 4 (Camden Park) (Local)	Brick and weatherboard	Goaf - over longwalls	1600	8	11	7	3	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
8	Camden Park Estate Central Creamery (Regional)	Brick (2 storey)	Goaf - over longwalls	1600	8	11	7	3	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
9	Camden Park Rotolactor (State)	Concrete and cladding	Goaf - over longwalls	1600	8	11	7	3	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
10	St James Anglican Church (State)	Brick (2-3 storey)	Goaf - over longwalls	1600	8	11	7	3 (If unmitigated damage likely to be highly visible)	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
11	St Patrick's Catholic Church (Local)	Brick (2 storey)	Goaf - over longwalls	1600	8	11	7	3 (If unmitigated damage likely to be highly visible)	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
12	Gilbulla (Anglican Conference Centre) (Local/Regional)	Brick (2-3 storey)	Goaf - over longwalls	1600	8	11	7	3 (If unmitigated damage likely to be highly visible)	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.

Table 4-3 (Continued)
Potential Impacts/Initial Likelihood of Repair Ranking for Heritage Buildings
and Recommended Mitigation/Management Action

Item Number	Heritage Item (Significance Level ²)	Structure Type	Location with Respect to Base Plan Longwalls	Potential Maximum Predicted Subsidence (mm/m)	Potential Maximum Predicted Tilt (mm/m)	Potential Maximum Predicted Radius of Hogging Curvature (km)	Potential Maximum Predicted Radius of Sagging Curvature (km)	Initial Likelihood of Repair Ranking ¹ (comment)	Additional Control - Mitigation/ Management
Menangle (Continued)									
13	Bungalow 92 Menangle Road, Menangle (Local)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
14	Bungalow 151 Menangle Road, Menangle (Local)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
15	Bungalow 106 Menangle Road, Menangle (Local)	Brick	Goaf - over longwalls	1600	8	11	7	3 (If unmitigated damage likely to be highly visible)	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair. More difficult to repair than weatherboard.
16	Bungalow 96 Menangle Road, Menangle (Local)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
17	Cottage 124 Menangle Road, Menangle (Local)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.

Table 4-3 (Continued)
Potential Impacts/Initial Likelihood of Repair Ranking for Heritage Buildings
and Recommended Mitigation/Management Action

Item Number	Heritage Item (Significance Level ²)	Structure Type	Location with Respect to Base Plan Longwalls	Potential Maximum Predicted Subsidence (mm/m)	Potential Maximum Predicted Tilt (mm/m)	Potential Maximum Predicted Radius of Hogging Curvature (km)	Potential Maximum Predicted Radius of Sagging Curvature (km)	Initial Likelihood of Repair Ranking ¹ (comment)	Additional Control - Mitigation/ Management
Menangle (Continued)									
18	Cottage 102 Menangle Road, Menangle (Local)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
19	Cottage 138 Menangle Road, Menangle (Regional)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
20	Cottage 128 Menangle Road, Menangle (Local)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
21	Dairy Cottage 2 Station Street, Menangle (Local)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
22	Dairy Cottage 65 Woodbridge Road, Menangle (Local)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
23	EMI Cottage 29 50 Menangle Road, Menangle (Regional)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.

Table 4-3 (Continued)
Potential Impacts/Initial Likelihood of Repair Ranking for Heritage Buildings
and Recommended Mitigation/Management Action

Item Number	Heritage Item (Significance Level ²)	Structure Type	Location with Respect to Base Plan Longwalls	Potential Maximum Predicted Subsidence (mm/m)	Potential Maximum Predicted Tilt (mm/m)	Potential Maximum Predicted Radius of Hogging Curvature (km)	Potential Maximum Predicted Radius of Sagging Curvature (km)	Initial Likelihood of Repair Ranking ¹ (comment)	Additional Control - Mitigation/ Management
Menangle (Continued)									
24	House 100 Menangle Road, Menangle (Local)	Brick	Goaf - over longwalls	1600	8	11	7	3 (If unmitigated damage likely to be highly visible)	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair. More difficult to repair than weatherboard.
25	Menangle Conservation Area (State)	Varies	Goaf - over longwalls	N/A	N/A	N/A	N/A	2-3	Implement management solutions for each component heritage listed building (items 4, 10, 11, 13-20, 23 and 24). Refer also Table 4-4 for preliminary recommendations to maintain heritage values for relevant higher heritage significance buildings.
26	Slab Hut 40 Carrolls Road, Menangle (Local)	Timber clad	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
27	The Pines Menangle Road, Menangle Park (Local)	Stone	Solid coal - 650m to nearest longwall	<20	<0.5	>150	>150	N/A (None expected)	No mitigation required. Apply MSB standards to recording, monitoring and repair.
Douglas Park									
28	Mountbatten Group (formerly Morton Park) (Regional)	Brick/stone	Solid coal - ~240m to nearest longwall	<20	<0.5	>150	-	1	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.

Table 4-3 (Continued)
Potential Impacts/Initial Likelihood of Repair Ranking for Heritage Buildings
and Recommended Mitigation/Management Action

Item Number	Heritage Item (Significance Level ²)	Structure Type	Location with Respect to Base Plan Longwalls	Potential Maximum Predicted Subsidence (mm/m)	Potential Maximum Predicted Tilt (mm/m)	Potential Maximum Predicted Radius of Hogging Curvature (km)	Potential Maximum Predicted Radius of Sagging Curvature (km)	Initial Likelihood of Repair Ranking ¹ (comment)	Additional Control - Mitigation/ Management
Douglas Park (Continued)									
29	St Mary's Towers (formerly Parkhall) (State)	Stone (2-3 storey)	Goaf – over longwalls	<300	<3	>25	-	3 (If unmitigated damage likely to be highly visible)	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
30	Railway Cottage 3 Camden Road, Douglas Park (Local)	Weatherboard	Goaf - over longwalls	1600	8	11	7	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
31	Warrangunyah (Local/Regional)	Brick	Goaf – over longwalls	<1000	<4	>15	>15	3	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
Wilton									
32	Wilton Park (Wilton Park Stables) (State)	Brick	Goaf – over longwalls	<700	<3	>30	>30	2	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
33	Cottage 180 Wilton Park Road, Wilton (Local)	Weatherboard	Solid coal - ~220m to nearest longwall	<50	<0.5	>150	-	1	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.
34	Kedron (Regional)	Brick	Solid coal - ~220m to nearest longwall	<20	<0.5	>150	-	1	Structural assessment required. Develop BFMP in consultation with the MSB and heritage specialist. Record, monitor and where necessary repair.

Table 4-3 (Continued)
Potential Impacts/Initial Likelihood of Repair Ranking for Heritage Buildings
and Recommended Mitigation/Management Action

Item Number	Heritage Item (Significance Level ²)	Structure Type	Location with Respect to Base Plan Longwalls	Potential Maximum Predicted Subsidence (mm/m)	Potential Maximum Predicted Tilt (mm/m)	Potential Maximum Predicted Radius of Hogging Curvature (km)	Potential Maximum Predicted Radius of Sagging Curvature (km)	Initial Likelihood of Repair Ranking ¹ (comment)	Additional Control - Mitigation/ Management
Wilton (Continued)									
37	Stone Ruin 45 Whitticase Lane, Douglas Park (Local)	Stone	Solid coal - 550m from nearest longwall	<20	<0.5	>150	>150	N/A (None expected)	None
Appin									
39	Hume and Hovell Monument Appin Road, Appin (Local)	Stone monument	Solid coal - ~410m to nearest longwall	<20	<0.5	>150	-	N/A (None expected)	None.
40	Beulah (State)	Stone	Solid coal - 650m from nearest longwall	<20	<0.5	>150	>150	N/A (None expected)	No mitigation required. Apply MSB standards to recording, monitoring and repair.
Razorback									
42	Wooden milepost Razorback Road Remembrance Drive Junction (Local/Regional)	Wooden post	Goaf - over longwalls	1600	8	11	7	N/A (None expected)	None.
43	Homestead ruins and trees 40 Mount Hercules Road, Razorback (Local)	Ruins and trees	Goaf - over longwalls	1600	8	11	7	N/A (None expected)	None.

Table 4-3 (Continued)
Potential Impacts/Initial Likelihood of Repair Ranking for Heritage Buildings
and Recommended Mitigation/Management Action

Item Number	Heritage Item (Significance Level ²)	Structure Type	Location with Respect to Base Plan Longwalls	Potential Maximum Predicted Subsidence (mm/m)	Potential Maximum Predicted Tilt (mm/m)	Potential Maximum Predicted Radius of Hogging Curvature (km)	Potential Maximum Predicted Radius of Sagging Curvature (km)	Initial Likelihood of Repair Ranking ¹ (comment)	Additional Control - Mitigation/ Management
Razorback (Continued)									
44	Razorback Inn Remembrance Way, Picton (Local)	Stone	Solid coal - 700m from nearest longwall	<20	<0.5	>150	>150	N/A (None expected)	No mitigation required. Apply MSB standards to recording, monitoring and repair.
45	Berkeley Lodge 1545 Remembrance Way, Picton (Local)	Stone	Solid coal - 550m from nearest longwall	<20	<0.5	>150	>150	N/A (None expected)	No mitigation required. Apply MSB standards to recording, monitoring and repair.
Maldon									
46	Maldon Cement Works (Regional)	Industrial- iron clad sheds, silos	Solid Coal - ~60m to over~300m to nearest longwall	<100	<1	>150	-	Detailed assessment required	Structural assessment required. Management Plan required.

After: MSEC, 2009 (Appendix A of the EA)

¹ Refer Tables 4-1 and 4-2.

² Summary only - for a complete description of the listed heritage significance of each item refer to Attachment A.

Table 4-4
Relevant Higher Heritage Significance Buildings
Preliminary Recommendations to Maintain Heritage Values

Item Number	Heritage Item	Heritage Significance Level ¹	Structure Type	Condition	Preliminary Recommendations to Maintain Heritage Values (to be reviewed following detailed structural assessment and preparation of SOHI)
Menangle					
3	Menangle Railway Station Group	State/National	Brick/ Weatherboard	Fair	• Maintain structural stability and serviceability. • Minimise damage to external brickwork to repairable cracks in original walls. • Avoid damage to any key aspects of the heritage fabric that cannot be readily restored without loss of heritage values in the event of damage. • Avoid damage to services that may require substantial works to the heritage fabric to repair or replace. • Document the heritage values of the item and complete a detailed Statement of Heritage Impact for the management of mine subsidence effects with input from a Conservation Architect and Structural Engineer. • Manage any other key features of the heritage fabric that may be identified in the Statement of Heritage Impact investigations appropriately to maintain heritage values.
4	Menangle Store	Local/State in part	Brick/Timber	Poor to Fair	• Maintain structural stability and serviceability. • Minimise damage to external brickwork to repairable cracks. • Minimise damage to external timber upper floor so that shingle cladding is retained. • Avoid damage to any key aspects of the heritage fabric that cannot be readily restored without loss of heritage values in the event of damage. • Avoid damage to services that may require substantial works to the heritage fabric to repair or replace. • Avoid substantial damage to underground cistern in yard, and identify repair and remediation action should existing damage be worsened. • Document the heritage values of the item and complete a detailed Statement of Heritage Impact for the management of mine subsidence effects with input from a Conservation Architect and Structural Engineer. • Manage any other key features of the heritage fabric that may be identified in the Statement of Heritage Impact investigations appropriately to maintain heritage values.

Table 4-4 (Continued)
Relevant Higher Heritage Significance Buildings
Preliminary Recommendations to Maintain Heritage Values

Item Number	Heritage Item	Heritage Significance Level ¹	Structure Type	Condition	Preliminary Recommendations to Maintain Heritage Values (to be reviewed following detailed structural assessment and preparation of SOHI)
Menangle (Continued)					
5	Elizabeth Macarthur Agricultural Institute (formerly Camden Park Estate [Part])	State/National	House and cottages (brick assumed)	Varies	• Maintain structural stability and serviceability of built elements with heritage values. • Minimise damage to external brickwork to cracks in a small number of bricks only and any continuous cracking to be limited to the mortar only. • Avoid damage to any key aspects of the heritage fabric that cannot be readily restored without loss of heritage values in the event of damage. • Avoid damage to services that may require substantial works to the heritage fabric to repair or replace. • Document the heritage values of the item and complete a detailed Statement of Heritage Impact for the management of mine subsidence effects with input from a Conservation Architect and Structural Engineer. • Manage any other key features of the heritage fabric that may be identified in the Statement of Heritage Impact investigations appropriately to maintain heritage values.
9	Camden Park Rotolactor	State	Concrete and cladding	Very poor	• Monitor structural stability and introduce stabilization propping if required. • Document the heritage values of the item and complete a detailed Statement of Heritage Impact for the management of mine subsidence effects with input from a Conservation Architect and Structural Engineer.
10	St James Anglican Church	State	Brick (2-3 storey)	Good	• Maintain structural stability and serviceability. • Minimise damage to external brickwork to cracks in a small number of bricks only and any continuous cracking to be limited to the mortar only. • Avoid damage to leadlight windows, timber panelling and other key aspects of the heritage fabric that cannot be readily restored without loss of heritage values in the event of damage. • Avoid damage to services that may require substantial works to the heritage fabric to repair or replace. • Document the heritage values of the item and complete a detailed Statement of Heritage Impact for the management of mine subsidence effects with input from a Conservation Architect and Structural Engineer. • Manage any other key features of the heritage fabric that may be identified in the Statement of Heritage Impact investigations appropriately to maintain heritage values.

Table 4-4 (Continued)
Relevant Higher Heritage Significance Buildings
Preliminary Recommendations to Maintain Heritage Values

Item Number	Heritage Item	Heritage Significance Level ¹	Structure Type	Condition	Preliminary Recommendations to Maintain Heritage Values (to be reviewed following detailed structural assessment and preparation of SOHI)
Douglas Park					
29	St Mary's Towers (formerly Parkhall)	State	Stone (2-3 storey)	Good	- Maintain structural stability and serviceability. - Minimise damage to external brickwork and stonework to cracks in a small number of stones/bricks only and any continuous cracking to be limited to the mortar only. - Avoid damage to any key aspects of the heritage fabric that cannot be readily restored without loss of heritage values in the event of damage (such as brick detailing and stone carving, leadlight windows etc). - Avoid damage to services that may require substantial works to the heritage fabric to repair or replace. - Document the heritage values of the item and complete a detailed Statement of Heritage Impact for the management of mine subsidence effects with input from a Conservation Architect and Structural Engineer. - Manage any other key features of the heritage fabric that may be identified in the Statement of Heritage Impact investigations appropriately to maintain heritage values.
Wilton					
32	Wilton Park (Wilton Park Stables)	State	Brick	Good	- Maintain structural stability and serviceability. - Minimise damage to external brickwork to cracks in a small number of bricks only and any continuous cracking to be limited to the mortar only. - Avoid damage to any key aspects of the heritage fabric that cannot be readily restored without loss of heritage values in the event of damage. - Avoid damage to services that may require substantial works to the heritage fabric to repair or replace. - Document the heritage values of the item and complete a detailed Statement of Heritage Impact for the management of mine subsidence effects with input from a Conservation Architect and Structural Engineer. - Manage any other key features of the heritage fabric that may be identified in the Statement of Heritage Impact investigations appropriately to maintain heritage values.

¹ Summary only - for a complete description of the listed heritage significance of each item refer to Attachment A.

The implementation of mitigation measures may involve pre-mining measures, such as bracing/strengthening or repair of fragile or poorly maintained components prior to subsidence occurring, to reduce the risk of damage occurring.

In the case of major infrastructure heritage items that provide services to the wider community there is an obligation to maintain public safety and infrastructure security. The development of responses to potential impacts for these items would be subject to other processes focusing on these priorities. Protection of the heritage values of these infrastructure items would be an issue integrated into the subsidence management and response planning process. Table 4-5 details the major infrastructure items that are of heritage significance and recommended heritage management measures for these structures.

Table 4-5
Potential Impacts on Major Infrastructure with Heritage Values and Recommended Management Outcomes

Item Number	Heritage Item (significance level ¹)	Type	Potential Impact	Preliminary Mitigation/Management Summary	Recommended Outcome
Menangle					
1	Menangle Rail Bridge and Viaduct Nepean River, Menangle (State/National)	Bridge	Potential for upsidence, closure and differential far-field movements. Cosmetic damage. Structural assessment required for development of mitigation and/or repairs.	Management plan for infrastructure protection required - heritage protection to be integrated. Advice of a specialist Conservation Architect to be obtained with respect to any engineering works.	Maintain serviceability and safety. Minimise impact on heritage values in accordance with the management plan.
2	Menangle Weir Nepean River, Menangle (Local)	Weir (stone)	Potential for upsidence, closure and differential far-field movements. Cosmetic damage or leakage. Crest level may be altered. Detailed assessment required for development of mitigation and/or repairs.	Management plan for infrastructure protection required - heritage protection to be integrated. Advice of a specialist Conservation Architect to be obtained with respect to any engineering works.	Maintain serviceability and safety. Minimise impact on heritage values in accordance with the management plan.
Wilton					
35	Nepean Tunnel and above ground structures (State)	Tunnel	Potential for cracking and tunnel instability due to differential subsidence movements.	Management plan for infrastructure protection required - heritage protection to be integrated. Advice of a specialist Conservation Architect to be obtained with respect to any engineering works.	Maintain serviceability and safety. Minimise impact on heritage values in accordance with the management plan.
36	Broughtons Pass Weir Wilton Road, Wilton (State)	Weir (stone/brick)	Potential for cracking and leakage due to differential subsidence movements and differential far-field horizontal movement.	Management plan for infrastructure protection required - heritage protection to be integrated. Management to account for existing subsidence damage.	Maintain serviceability and safety. Minimise impact on heritage values in accordance with the management plan.
Appin					
38	Upper Nepean Water Supply System (State)	Canal	Potential for cracking and leakage due to differential subsidence movements. Cosmetic damage through to block wall damage	Management plan for infrastructure protection required - heritage protection to be integrated. Mined beneath before. Advice of a specialist Conservation Architect to be obtained with respect to any engineering works.	Maintain serviceability and safety. Minimise impact on heritage values in accordance with the management plan.

Table 4-5 (Continued)
Potential Impacts on Major Infrastructure with Heritage Values and Recommended Management Outcomes

Item Number	Heritage Item (significance level ¹)	Type	Potential Impact	Preliminary Mitigation/Management Summary	Recommended Outcome
Appin (Continued)					
41	Cataract Dam Cataract River, Appin (State)	Dam (stone)	Potential far-field horizontal movement.	Management plan for infrastructure protection required - heritage protection to be integrated.	Maintain serviceability and safety. Minimise impact on heritage values in accordance with the management plan.
Maldon					
47	Maldon suspension bridge Wilton Park Road, Maldon (Regional)	Bridge	Potential far-field horizontal movement.	Management plan for infrastructure protection required - heritage protection to be integrated. Complicated by redundancy of the infrastructure. Advice of a specialist Conservation Architect to be obtained with respect to any engineering works.	Maintain serviceability and safety. Minimise impact on heritage values in accordance with the management plan.

After: MSEC, 2009 (Appendix A of the EA).

¹ Summary only - for a complete description of the listed heritage significance of each item refer to Attachment A.

Further details on potential mitigation measures that could be applied, depending on the outcomes of detailed mine design and associated detailed subsidence predictions and structural assessments in the EP process are provided in Section 4.2 below.

Bulli Shaft Sites

The Bulli Colliery shaft sites are to be rehabilitated as part of the Project. The history of the shafts is described in Section 2 above. (Note: The information in this section is drawn from Sheldrill Pty Ltd, 2008. *Bulli Colliery; Bulli Colliery shafts Nos 1, 2, 3 & 4, A review*, report for BHP Billiton Illawarra Coal.)

The fan, metal fan ducting, drive house and electrical switchgear have been removed at Bulli No. 1 Shaft, leaving just the concrete base pads *in situ*. The concrete brick fan drift leading to the collar remains in place with access prevented by a concrete brick seal at the outbye end and another at the shaft collar. The collar is topped by a square concrete structure onto which is built a circular tower of brick/reinforced concrete/brick construction, estimated to be 9m in height and some 5m in diameter.

At Bulli No. 1 Shaft the *Appin Mine Closure Plan* (Cardno Forbes Rigby 2006) recommends the demolition and removal of all steel frames and shaft seal, concrete foundations and brick structures (only if recommended by heritage assessment); filling of the shaft and remediation and re-profiling of the site. While this action is recommended by the existing Closure Plan, ICHPL would undertake further consultation with the SCA to determine if the heritage listed components can be protected and conserved in-situ (Section 4.2).

At Bulli No. 2 Shaft, the original sinking headframe (surrounded by a chain mesh fence), the remains of the winder mechanism and the original switch yard foundation slab are the most obvious remnants. The earthing grid was located during a search for the power line stanchions in early 2007, as it was not immediately noticeable amongst the brush. The shaft was capped in 1988 but not filled. The switchyard and substation building are assumed to have been removed in the late 1980s.

At Bulli No. 2 Shaft the *Appin Mine Closure Plan* (Cardno Forbes Rigby 2006) recommends the demolition and removal of the steel frame (if approved by authorities) and shaft seal, concrete foundations; filling of the shaft and remediation and re-profiling of the site. While this action is recommended by the existing Closure Plan, ICHPL would undertake further consultation with the SCA to determine if the heritage listed components can be protected and conserved in-situ (Section 4.2).

4.2 Measures to be Taken to Minimise Impacts

As described in Section 4.1, an assessment of the likelihood of heritage buildings requiring repair has been undertaken by MSEC for the items in the Project extent of longwall mining area and surrounds (Table 4-3).

This assessment is based on the EA Base Plan Longwalls presented in Section 2 in the Main Report of the EA. As explained in the EA, alternative mine extraction and longwall layouts are expected to be developed over the life of the Project. Therefore, the above MSEC analysis is considered to be conservative, on the basis that it estimates the potential maximum subsidence, tilt and curvature assuming any potential reasonable longwall arrangement.

Further subsidence assessment and (where required) site-specific structural assessments and documentation of heritage values would be undertaken as a component of the EP process, once the detailed design of longwall layouts and mine engineering has been completed.

This would involve the following steps (as part of the EP process):

- A detailed subsidence assessment for each heritage listed structure on the basis of the final mine layout.
- For items that are of regional, state and/or national heritage significance or are occupied a detailed structural assessment would be undertaken, to determine the structure's sensitivity to the subsidence predicted for the final mine layout.
- All heritage items would be recorded and documented in detail to the standard required by the Heritage Branch (according to their heritage significance), prior to undermining.
- For heritage items of state and/or national significance that may be adversely affected by the Project, ICHPL would complete an individual SOHI.

According to the sensitivity and heritage values of the various sub-components of the listed item, where required, ICHPL would design and implement pre-mining management or mitigation measures for the item in consultation with the owner, utilizing the subsidence assessment and structural assessment findings and where relevant input from a Conservation Architect and/or Structural Engineer.

Options to manage or mitigate potential impacts on the heritage values would include the implementation of engineering measures (e.g. bracing/strengthening) on the advice of a suitably qualified Structural Engineer and Conservation Architect.

In the case that the heritage values cannot feasibly (either economically or technically) be maintained using engineering mitigation measures for items of state and/or national significance, adjustment to the mine plan would be considered to achieve the same. Informing that decision would be the management context and condition of the place, and the likelihood of long term conservation being achieved.

- Where relevant, for occupied heritage items of local and regional significance, ICHPL would design and implement management or mitigation measures in consultation with the owner to maintain safety and serviceability, utilizing the subsidence assessment and structural assessment findings.

The results of the above would be detailed in BFMPs for local and regional heritage items, and in addition, individual SOHIs for state and/or national heritage items, for approval by Government as a component of the EP.

The Conservation Architect and Structural Engineer would, where relevant, advise ICHPL on the following aspects during the preparation of BFMPs for items of local and regional significance and SOHIs for items of state and/or national significance:

- Identification of individual components or features of the heritage item that may be more robust and hence can tolerate greater subsidence effects (e.g. sturdy exterior walls), and conversely components or features that are at higher risk of damage due to their state of repair or construction (e.g. existing deteriorated render).
- The types of damage to the heritage fabric that can be repaired without loss of heritage values (e.g. cracks in internal painted masonry walls).
- Consideration of the risk of damage to individual components or features of the heritage item with the predicted subsidence effects, and whether stabilisation methods are available to readily reduce the risk of subsidence damage to that component or feature.
- Where engineering mitigation measures are to be implemented, the potential for the engineering measures to adversely affect heritage values and methods to minimise such impacts.
- The suitability of pre-mining repairs that could be undertaken to stabilise existing unstable or poorly maintained building elements, to reduce the risk of damage during mine subsidence.
- Repair methods that should be adopted for various components of the heritage item (e.g. methods for repair of cracked render, mortar, brick or stone work, internal plaster) such that heritage values are conserved in the event of subsidence damage.

- For items of state and/or national significance, a protocol for the ongoing monitoring, management, documentation and repair of subsidence impacts during mine subsidence that is appropriate for various components or features of the item, and its potential sensitivity to subsidence impacts.

The following discussion provides a summary of the management measures and processes that could be considered for service infrastructure items, and buildings that, on the basis of the assessment, potentially have a higher risk of damage occurring or repairs being required, that could adversely affect heritage values. A summary of the general subsidence management and monitoring processes that would be implemented for all heritage buildings that are subject to Project subsidence effects and recommended management measures for the Bulli Shaft sites are also provided.

Service Infrastructure Items

A number of items listed in Table 4-5, are important infrastructure items, and require structural assessments and the development of management plans to carry out assessment of specific risks, risk assessments with the infrastructure owners, and to design specific mitigation and response actions. The focus of this planning would be on issues of public safety and infrastructure security.

In addition, all state agencies have an obligation to manage the heritage values of their assets, so the protection, mitigation and repair of the heritage values of the items would be integrated into the wider impact management planning via a Heritage Management Plan.

It is envisaged that the development of detailed engineering structural assessments and Heritage Management Plans would be undertaken as part of the EP process in consultation with the infrastructure owner/managers and other relevant authorities (e.g. Heritage Council) to the satisfaction of the DoP.

This approach has been successfully adopted for the management of the Upper Nepean Water Supply System canal which has been undermined by previous ICHPL longwalls, and as part of the Longwall 409 SMP (not yet mined).

Additional Comments on Management of Specific Heritage Buildings

The state significant Camden Park Rotolactor is in very poor condition, and is not actively managed or conserved. The interior of the structure is dangerous to enter, as the ceiling and some equipment and roof members have totally or partially collapsed. It is recommended that pre-mining recording of cracking in the concrete lower walls and external columns, and monitoring of movement during and after mining be undertaken, and any observed subsidence induced damage be considered in conjunction with the owner and in consultation with the WSC. However, it is unlikely that repairs would be warranted, given its current condition.

Menangle Conservation Area is being recommended for State Heritage Listing by WSC in its 2009 revision of the LEP. The Menangle Conservation Area incorporates a range of buildings individually identified as having local, regional or state heritage values, these being items 4, 10, 11, 13-20, 23 and 24 (refer Figure 3-1 and Table 4-3).

While many of these items are individually of local significance, as a group (along with historical associations, the layout of the village, grouping of buildings, landscaping features and architectural character of the buildings) contribute to a whole which has a higher level of significance than its individual parts (i.e. state significance).

The recommended measures for the management of high significance buildings such as the St James Anglican Church (Table 4-4) would maintain the key contribution of these items to the heritage values of the Menangle Conservation Area. Local and regional heritage value buildings in the Menangle Conservation Area would be managed in accordance with the general measures to maintain safety and serviceability that are described above and in Section 4.1 and, if required, would be repaired sympathetically with their heritage values. It is not anticipated that Project mine subsidence would have an adverse impact on aspects of the Menangle Conservation Area such as the layout of the village, grouping of buildings and landscaping features, or on the architectural character of buildings if these measures are applied where required.

For individual items assessed as being of state and/or national heritage significance (whether recognised on the State Heritage Register or not), it is recommended that following finalisation of the mine plan, a detailed subsidence assessment and structural assessment is undertaken, and pre-mining mitigation or management measures are undertaken, if necessary, to maintain heritage values as described in Table 4-4.

This could be achieved by pre-mining repair and strengthening of unstable or fragile components of the structure to withstand predicted subsidence movements, and monitoring and repair such that heritage values are conserved in the event of subsidence damage.

In the case that it is not feasible (either economically or technically) to implement management or mitigation measures to maintain the heritage values of a state and/or national heritage significance item, adjustments to the mine plan would be considered to achieve the same. Informing that decision would be the management context and condition of the place, and the likelihood of long term conservation being achieved. The items where this level of management may particularly need to be considered as a component of the EP process are:

- St James Anglican Church, Menangle;
- St Mary's Towers (formerly Parkhall), Douglas Park; and
- Wilton Park Stables, Wilton.

While they are of lesser heritage significance, the Camden Park Estate Creamery, Gilbulla (Anglican Conference Centre) and St Patrick's Catholic Church (of regional, local/regional and local significance respectively) are also larger multistorey brick buildings. Subject to the outcomes of the detailed subsidence and structural assessments, these items may also require more detailed consideration of the potential implementation of mitigation or management measures during the EP process, due to their size and construction.

Where structural works are proposed as a mitigation measure, the advice of a Conservation Architect is required, to manage any impacts to heritage values from such works.

Locally significant heritage items (outside of the Menangle Conservation Area) would not warrant consideration of extensive management measures on the basis of the heritage values, however, occupied buildings would be managed to maintain safety of the structures and hence would be managed to ensure the safety and serviceability of the structures is not compromised. For all locally significant heritage items, pre-mining recording, monitoring during and after mining, and post-settlement repairs in accordance with the MSB requirements is recommended as the appropriate approach to conserve heritage values.

This approach is generally consistent with the *Mine Subsidence Compensation Act 1961* (MSC Act), as described below.

General Management Measures for all Heritage Buildings Being Subsided

The MSC Act is administered by the MSB. The MSB is a state government organisation funded by levies paid by coal mining companies. In accordance with the Act, the MSB provides compensation or repair services for man-made property improvements that are damaged by mine subsidence.

The MSB deals directly with the property owner in relation to the repair and management of property subsidence affects. However, where subsidence impacts are likely to affect an identified heritage item, ICHPL would arrange, with the owner's agreement, a pre-mining inspection and structural assessment of the building/structure.

On the basis of the pre-mining inspection and structural assessment results, a subsidence monitoring programme would be developed for the item in consultation with the owner. Subject to the nature of predicted subsidence effects, consultation with the owner and the heritage values of the item, this may include:

- Installing a suitable number of measuring/monitoring devices (e.g. crack width gauges) at suitable locations in the building to monitor for changes to the building.
- Installation of a survey monitoring grid around the site. If installed, survey monitoring grids would be read at regular intervals and ICHPL would distribute the periodic survey data to the owners and the MSB.
- A geotechnical investigation of the soils in the immediate vicinity of the item, where a geotechnical consultant would either excavate or auger test holes in order to sample the soils and strata that the structure is founded on. This would enable laboratory testing to be carried out to determine the soil properties and gain further insight to the ground conditions at the site.

ICHPL would co-ordinate the pre-mining inspection and structural assessment in consultation with the MSB. A record of the pre-mining inspection and structural assessment would be provided to the MSB and the owners.

ICHPL would also co-ordinate the installation and regular reading of any applicable subsidence/damage monitoring and distribute the data collected to the owners and the MSB.

In the event that review of the site specific subsidence assessment and structural assessment identify the requirement for the implementation of pre-mining engineering mitigation measures, such measures would be implemented in consultation with the MSB and the property owner. Where structural works are proposed as a mitigation measure, the advice of a Conservation Architect is required to manage any impacts to heritage values from such works.

If requested by the owner, a MSB officer would inspect the heritage item approximately one month prior to the commencement of mining to compile a MSB pre-mining condition report. The purpose of the inspection is to record the condition of the item before mining commences. The MSB would provide the property owner with a copy of the pre-mining inspection report.

ICHPL would provide notification to the property owner and Picton office of the MSB once mining is complete. If subsidence effects do impact the property, such impacts can be expected to occur within twelve months after the longwall face has passed under/adjacent or subsequent longwalls have passed adjacent to the property. ICHPL would continue to carry out subsidence survey monitoring at the property and distribute this information to the Picton Office of the MSB and the owners to assess the most appropriate time for the commencement of repairs to subsidence impacts.

If subsidence impacts have occurred, the property owner would liaise with the MSB staff and lodge a MSB claim form requesting repair of the subsidence damage in accordance with the MSB procedures.

On receiving notification, the MSB would inspect the property and determine any works necessary to repair subsidence damage. The MSB's pre-mining inspection report and relevant previous inspection reports and structural assessments would be used as a basis for comparison with the pre-subsidence condition.

Where repairs are to be undertaken, the MSB would arrange and pay for suitable contractors to complete repair works, in consultation with the property owner. In some cases the advice of a Conservation Architect may need to be obtained, where repair is beyond what might be regarded as simple maintenance.

The Bulli Shaft Sites

Given the regional heritage significance of the two Bulli Shaft items with identified regional heritage values (Bulli Nos.1 and No.2 Shafts), it is recommended that the heritage components remain on the sites and are not rehabilitated/removed, unless unresolvable public safety issues dictate their removal.

In the event that the items are retained, ICHPL and the SCA should liaise on the development of a Conservation Management Plan for the long-term conservation of the heritage listed items.

Should conservation of either or both of these items not prove to be feasible or prudent, full recording to the standard required by the Heritage Branch for items of regional significance should be carried out prior to removal of all or part of the items.

4.3 Statement of Heritage Impacts

The potential heritage impacts of the Project on items with heritage values are outlined in Tables 4-3 and 4-5 and in Section 4.1.

Forty-nine items with heritage values have been identified with the Project extent of longwall mining area and surrounds, including items on existing local government and state government heritage registers and lists, or proposed for inclusion during future amendments to those lists.

Actions are recommended as a component of the EP process to minimise potential adverse affects on heritage values, including recommendations for the management of state and/or national significance heritage items.

Measures to monitor and repair any damage that might occur are also outlined in Section 4.2. Such actions are consistent with those required by the MSB for buildings and structures impacted by mining.

These proposed management and mitigation measures are related to the level of potential risk of repairs being required on the basis of a conservative assessment by MSEC. Recommendations have been provided that should be adopted to minimise potential impacts on heritage values, once site-specific subsidence assessments and structural assessments have been conducted on the basis of the final mine design.

5 CONCLUSIONS

Tables 4-3 and 4-5 indicate the potential impacts of the Project on specific heritage items. Of the 49 items identified as having heritage values and potentially impacted by the Project, seven are major infrastructure items (Table 4-5) that require broader impact planning that should incorporate heritage considerations (three of these are specific components of the Upper Nepean Water Scheme).

Eight of the remaining 42 items are expected to experience no impacts. For the remaining 34 items, recommendations are provided that can be addressed as a component of the EP process, following completion of site-specific subsidence and structural assessments.

For a number of state and/or national heritage items it is recommended that individual SOHIs be completed as a component of the EP process. Where required for these sites, engineering measures (e.g. bracing/strengthening) would be employed based on the advice of a suitably qualified Structural Engineer and Conservation Architect to conserve heritage values. In the case that it is not feasible (either economically or technically) to implement management or mitigation measures to maintain the heritage values of a state and/or national heritage significance item, adjustments to the mine plan would be considered to achieve the same. Informing that decision would be the management context and condition of the place, and the likelihood of long term conservation being achieved. The items where this level of management may particularly need to be considered as a component of the EP process are:

- St James Anglican Church, Menangle;
- St Mary's Towers (formerly Parkhall), Douglas Park; and
- Wilton Park Stables, Wilton.

Where engineering mitigation measures are to be implemented, the advice of a specialist Conservation Architect would be obtained to minimise the potential for the engineering measures to adversely affect heritage values.

Of the four Bulli Shafts, two have been assessed in the Wollongong LEP/Illawarra REP as having regional significance, and the significant components should remain after rehabilitation of the sites unless unresolvable public safety issues dictate their removal.

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ATTACHMENT A

CITATIONS FOR RELEVANT ITEMS OF HERITAGE SIGNIFICANCE

ATTACHMENT A

CITATIONS FOR RELEVANT ITEMS OF HERITAGE SIGNIFICANCE

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1 MENANGLE RAIL BRIDGE OVER NEPEAN RIVER

1.1 Location

Main Southern railway, Menangle Road, Menangle.

The listing boundary is the area on which the bridge is located including abutments, supports, embankments and approaches and an area described by a line approximately 50 metres (m) from the bridge in all directions.

1.2 Heritage Listing Status

State Heritage Register Listing No. 01047. State Heritage Inventory Database (SHI DB) No. 5012102.

Menangle Viaduct, Wollondilly Local Environmental Plan (Wollondilly LEP).
SHI DB No. 2690059.

Wollondilly Heritage Study.

Menangle Underbridge, S.170 State Agency Heritage Register, State Rail Authority.
SHI DB No. 4440315, 4440500.

Register of the National Estate No. 3284.

1.3 History

The 1863 Menangle Rail Bridge is the first large iron rail bridge erected in New South Wales (NSW), whereas the first large rail bridge, an 8-span stone arch viaduct, was opened at Lewisham in 1855.

When John Whitton planned the railway extension from Campbelltown to Picton, he was under pressure from government to keep costs low by using as much local material as possible. A metal girder design had been proposed by contractors Peto, Brassey and Betts but Whitton substituted a timber bridge made from ironbark and other strong hardwoods, and a relatively short 151 m (496 feet), low level crossing.

However the flood of 1860, some 18.3 m (60 feet) above the proposed rail level, caused him to design a high level, large span bridge, flanked by long timber approach viaducts, a total of 582 m (1,909 feet). It was a massive structure for its time, comprising 5,909 cubic yards of masonry, 1,089 cubic yards of brickwork and 936 tons of wrought iron for a total cost of 94,562 pounds.

The iron superstructure was manufactured in England at the Canada Works, Birkenhead (opposite Liverpool) and shipped out in December 1861. One ship arrived in Sydney in April 1862 but the other was wrecked at the entrance to the Mersey River. However, the replacement ironwork was delivered to Sydney in December 1862.

Construction of the stone (quarried locally) abutments and piers were completed in October 1862 and the iron bridge was assembled ready for service by June 1863. Load testing, by three locomotives in full steam, followed and the line to Picton was opened on 1 July 1863.

The use of a continuous superstructure was technically significant because the analysis of such structures was a relatively new, sophisticated procedure. Also, it showed that Whitton and Fowler (London) appreciated the structural benefits that a continuous girder over three spans offered compared to three simply-supported spans.

The principal modification to the structure has been the building of the intermediate piers in 1907 which, by halving the original spans, greatly increased the load capacity of the bridge such that it is still in service carrying modern heavy, fast rail traffic. The original iron bridge was flanked by timber viaducts which were replaced by steel girders in 1923. In 1993 Consulting Engineers, Dames & Moore of North Sydney, recommended a number of actions for a general refurbishment of the main bridge, some minor repairs, cleaning up and painting, maintenance to the bearings and the like, but no major changes.

The sister bridge to the Menangle Bridge was the Victoria Bridge over the Nepean River at Penrith. Their sizes and design were such that they were featured in an international text book *Modern Examples of Road and Railway Bridges* by William H Maw and James Dredge, London, 1872.

LEP Citation

To cross the Nepean River at Menangle, the contractors for the Southern Railway, Messrs. Peto, Brassey & Betts, submitted a design for a three-span box-girder bridge to carry two railway lines. Their original proposal was considered too expensive, but the 1860 flood rose 60ft above normal river level and it was considered necessary to construct the larger bridge. Tenders were let for masonry in June, 1860, and for the iron work in December, 1860. The ironwork was fabricated at the Canada Works (Sir M. Peto) in Birkenhead (England) and shipped into two vessels which sailed in December, 1861. The first, with the middle span, arrived in April 1862, but the other was wrecked on the Mersey in January, 1862. The replacement spans arrived in October and December, 1862. Sandstone for the piers was quarried; construction of these was completed in October, 1862, and ironwork was erected by June, 1863. After testing, the bridge was opened as part of the extension of the Southern Railway from North Menangle to Picton on July 1st, 1863.

Various modifications have been made over time to accommodate rail traffic needs. A derailment of goods train wagons in 1976 damaged northern masonry piers, which were subsequently demolished.

1.4 Description

Since 1907, when intermediate piers were built in the middle of the 3 original 49.4 m (162 feet) spans, the bridge has been 6 x 24.2 m (79.3 feet) spans. Between the original stone abutments, these additional brick piers alternate with the original stone piers.

The superstructure consists of two massive, wrought iron, cellular (box) girders, continuous from abutment to abutment, no breaks at the piers. These 3.8 m (12.5 feet) deep girders are at 7.8 m (25.5 feet) centres which allows for double track between them, supported on a series of closely spaced cross girders.

On the outer surfaces of the girders there are pairs of curved angle iron suggesting the inclusion of an arch. These are purely decorative.

At the Sydney end, one of the ornamental tops to a pier was demolished by a derailment in 1976. The iron bridge received only localised superficial damage but the stonework was not replaced, thereby leaving the cellular cross section of the girder exposed.

Physical condition is good.

LEP Description

The viaduct is a three span box-girder rail bridge on four sandstone piers (24.4 x 6.1m at the base and 15.8 x 3.6m at top). Three spans of 60.3m, 7.8m apart and 3.9m deep, consist of two wrought iron box-girders sitting on expansion rollers and weighing 1080 tons, which in turn support girders supporting railway lines laid inside them. Ornamental masonry survives on southern end.

Although the bridge was constructed for two lines of railway, this was not used originally. After testing, one line was removed and not replaced until 1892. In order to support the weight of larger locomotives, additional piers were constructed to support the iron spans in the centre of each, and completed in 1907. Approach viaducts were renewed in steel in August, 1923. Further strengthening was carried out in 1930 for larger locomotives. Ornamental masonry piers on the northern end were demolished above rail level after they were severely damaged in the 1976 derailment.

1.5 Statement of Significance

From State Heritage Inventory Database

State Heritage Register Statement of Significance

The Menangle Rail Bridge constructed in 1863 over the Nepean River is one of the most historic bridges in Australia because (a) it was the first large iron bridge in NSW and the largest bridge until the 1889 Hawkesbury River Bridge (b) it has a dominant appearance in a rural landscape (c) it shares in the enormous benefits, social and commercial, that the Main South Railway has made to NSW in 140 years and (d) it was a technically advanced design for its time and received international recognition in 1872.

The Menangle and Victoria Bridges are the only bridges of their type in NSW. They are excellent examples of heavy duty, wrought iron girder bridges continuous over three spans. Apart from the inclusion of the intermediate piers in 1907, the 1863 Menangle Bridge retains most of its original fabric.

The Menangle rail bridge constructed in 1863 is the oldest surviving bridge on the State rail system and is of the highest significance in the development of railway technology in the State. It is an excellent example of early bridge construction. The bridge is one of two identical bridges constructed for the NSW Railways, the other being over the Nepean River at Penrith. The Penrith Bridge was opened in 1867 but has been used for road traffic since 1907.

The Menangle rail bridge is typical of British bridge engineering of the 1860s, the iron spans having been fully imported. Additional supporting piers were later erected under the spans so that heavier engines could be used on the main south line. The bridge is of national, if not international, significance as there are few such bridges still in use in the United Kingdom.

Date Significance Updated: 16 Apr 03

LEP Statement of Significance

The Menangle Railway Viaduct has important historical associations with the initial stages and subsequent growth of the Main Southern Railway Line. It is the oldest surviving rail bridge on the line and in the State. (The first in the State was at Lewisham, and has since been demolished.) Modifications to the bridge reflect changes in the type of traffic on the line and the bridge remains in everyday use for all trains en route to Goulburn, and the south.

1.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The 1863 Menangle Rail Bridge over the Nepean River is one of the most historic bridges in Australia. It was the first large iron bridge in NSW and the largest bridge until the 1889 Hawkesbury River Bridge.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The bridge has a dominant appearance in a rural landscape, partly obscured by excessive growth of adjacent trees. The Menangle Railway Viaduct has local significance as an excellent and early example of civil engineering and as a local landmark.

Criterion D: an item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

The Main South Railway has been an enormous benefit to the social and commercial development of the southern quarter of NSW for 140 years, and this bridge, part of the original railway construction, has shared in the significance of that contribution.

Criterion E: an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

The 3-span continuous girder design was, for the 1860s, a technically sophisticated design that was noted in an international 1872 text book. The cellular construction, whereby the top and bottom parts of the girders are made in the form of two boxes or cells, was a recent development for resisting lateral buckling arising from the famous experiments by Fairbairn and Hodgkinson for the 1849 Britannia Bridge in Wales.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

The Menangle and Victoria Bridges are the only bridges of their type in NSW.

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.

The Menangle and Victoria Bridges are excellent examples of heavy duty, wrought iron girder bridges continuous over three spans.

1.7 Photos



Menangle Rail Bridge
Photo: M. Pearson 2008



Menangle Rail bridge from Menangle Weir.
Photo: M. Pearson 2008

2 MENANGLE WEIR – BELOW RAIL BRIDGE

2.1 Location

Nepean River, Menangle.

2.2 Heritage Listing Status

Sydney Regional Environmental Plan (REP) No. 20 - Hawkesbury-Nepean River.
SHI DB No. 3032.

2.3 History

No detail in SHI DB.

Menangle Weir and others on the Nepean River are claimed to have been built to maintain the riparian rights of local landholders following the completion of the Upper Nepean Water Scheme in 1886 (Campbelltown Council web site).

2.4 Description

No detail in SHI DB.

The weir is a stone barrier across the Nepean River, situated between the Menangle Rail Bridge and a natural rock bar over which the river runs in a series of rapids and waterfalls. The stone weir is approximately a metre in height above the natural bar, and impounds a large shallow pondage that extends up the river some 1.5 kilometres (km) beyond the bridge.

2.5 Statement of Significance

There is no State Heritage Inventory statement of significance.

The following statement arises from this 2009 study:

The Menangle Weir is significant locally as an intact example of a simple weir structure for agricultural purposes. The Weir is also of local historical significance, as it was built to ensure water access by local landowners at the time the Upper Nepean Water Scheme was taking water from the river upstream.

2.6 Significance against Criteria

NSW State Heritage Register Criteria

The following statement arises from this 2009 study:

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Weir is of local historical significance, as it was built to ensure water access by local landowners at the time the Upper Nepean Water Scheme was taking water from the river upstream.

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;

The Menangle Weir is significant locally as an intact example of a simple weir structure for agricultural purposes.

2.7 Photos



Menangle Weir from north bank
Photo: M. Pearson 2008



Menangle Weir from north bank
Photo: M. Pearson 2008

3 MENANGLE RAILWAY STATION GROUP

3.1 Location

Station Street, Menangle.

The listing boundary extends along the outside of the down track commencing at the northern end of the platforms. At the south end of the station the boundary crosses the tracks below the platform to take in the sidings adjacent to the entry and parking area, extending across the entrance drive approximately 30m to the south of the buildings. It then extends north along the rear property boundary, behind the night officers residence and then returning east to meet the tracks at the end of the platforms.

3.2 Heritage Listing Status

State Heritage Register No. 01191. SHI DB No. 5012101.

State Rail Authority Section 170 Register, 4440267.

Wollondilly LEP. SHI DB No. 2690060 ('Railway Station').

Wollondilly Heritage Study. WO0060.

3.3 History

Built in 1864 on the Great Southern Railway Line at South Menangle, the station is one of the earliest in the district and pre-dates the construction of the Picton Loop Line and the Picton-Mittagong loop line. The construction of the rail line opened new markets to local farmers and businesses as well as allowing the influx of goods from other areas, including Sydney. The coming of the railway resulted in the social and economic growth of the region and ventures such as the Menangle Creamery were dependent upon it for the transport of their product.

3.4 Description

Buildings	Station building/residence - type 1, 1863 WC block - brick, 1863.

Structures	Platform face - brick, up side only, 1863.

A small, single storeyed building complex of painted brick and weatherboard components. The earliest buildings (in the centre of the group) include a square, planned, hipped roofed residence with central 4-flued chimney flanked by a pair of hipped roofed station buildings which front onto the main platform. The two wings are linked to each other by a skillion roofed verandah. All of these buildings are of painted brickwork with timber-framed sash windows (a mix of 4 x 12 pane sashes) and 4 panelled doors.

Later additions (generally of weatherboards) with a mix of hipped and gabled roofs have been added to the north, south and west of the original buildings. The station is said to retain an early cast-iron platform weighing machine by "W.T. Avery", London and Birmingham.

The complex appears in fair condition externally, but the interior is sealed and internal condition could not be assessed (2008).

Condition fair.

3.5 Statement of Significance

From State Heritage Inventory Database

State Heritage Register Citation

Menangle station group is one of the earliest station complexes to survive in the state. It is a combination station building and residence which has had substantial additions. Although the second platform and building have been demolished for a new platform the remaining up buildings and platform are of very high significance in the development of railway buildings. Significant features of this building are its lack of awning to the platform, the unusual planning of the building with detached wings, room for porters, no waiting room and the asymmetrical elevations. The remaining structures are of national significance in conjunction with the railway underbridge listed separately.

Wollondilly LEP Citation

Menangle Railway Station is significant through its historical associations as one part of the early stage of development of the Main Southern Railway Line. The location of the station at South Menangle also encouraged the growth of the southern village at the expense of the settlement on the northern side of the river.

The station also has aesthetic significance as a good typical representative example of a small 19th century country railway station building of the combined 'residence and station offices' type. This significance is enhanced by the high degree of intactness of the buildings form and fabric, including such features as the early platform weighing machine.

Additionally, the station has aesthetic significance as a notable and attractive landmark in views both to and from the adjacent Menangle Village.

3.6 Significance against Criteria

NSW State Heritage Register Criteria

State Heritage Register Citation

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

Menangle Railway Station is significant through its historical associations as one part of the early stage of development of the Main Southern Railway Line. The location of the station at South Menangle also encouraged the growth of the southern village at the expense of the settlement on the northern side of the river.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The station also has aesthetic significance as a good typical representative example of a small 19th century country railway station building of the combined 'residence and station offices' type. Additionally, the station has aesthetic significance as a notable and attractive landmark in views both to and from the adjacent Menangle Village.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as historically rare. This item is assessed as scientifically rare. This item is assessed as architecturally rare. This item is assessed as socially rare.

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.

The station is a good typical representative example of a small 19th century country railway station building of the combined 'residence and station offices' type.

3.7 Photos



Menangle Railway Station
Photo: M. Pearson 2008

4 MENANGLE STORE

4.1 Location

57 Menangle Road, Menangle (Lot 8, DP 531899).

4.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690090.

Wollondilly Heritage Study.

4.3 History

Built c1904, the store has noted similarities to *Gilbulla* (see Section 12) so it may be Sulman and Power design. It has been used by the Camden Park Estate right up to the 1970s as its buying agent for all provisions, stores, seed, fertiliser and fuels used on the farm. The store has always had a licence and served the village and the rural hinterland. It contains original ovens where the bread was baked and a coolroom for the butcher shop which provided for farmers when Menangle was more remote from Sydney. It continues to serve the community and is a tourist attraction.

4.4 Description

A two storey commercial building with "Federation Arts and Crafts" detailing located on the major intersection in Menangle Village. The main gabled roof (covering the whole of the second storey) is punctuated by an over-sized, twin-gabled porch with shingled gable ends and balustrade and turned timber posts. Tall, rendered chimneys with decorative strapwork also break the roof line in an asymmetrical arrangement. The ground level is brick with a timber framed second floor.

Inside there is a coolroom and bakers oven. The shelving in the current store is modern. A weatherboard building with shingled gable ends and corrugated iron roof to the east is identified as a former barn. A domed brick well is sunk into the back yard, and may be contributing to rising damp problems in the building.

At street level the face brickwork has been painted and alterations have been made to door/window openings.

Extension to south (fronting Menangle St); alteration of windows to main frontage; external steel stair to first floor on east elevation. Corrugated iron roof.

The building is in poor to fair condition, with rising and falling damp problems, and general interior decay.

4.5 Statement of Significance

From State Heritage Inventory Database

The Menangle Store has historical significance as the only 20th century store in Menangle Village and through its role in serving farmers in the rural hinterland and in provisioning the Camden Park Estate. It has links with the Macarthur family who sponsored the store. The building is unusual in the State as a particularly fine and relatively unusual freestanding example of a "Federation Arts and Crafts" style commercial shop. This significance is enhanced by the degree to which the building retains its original form and detailing.

In addition, the store has aesthetic significance as a landmark effectively marking the centre of Menangle village.

4.6 Significance against Criteria

NSW State Heritage Register Criteria

State Heritage Register Citation

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Menangle Store has historical significance as the only 20th century store in Menangle Village and through its role in serving farmers in the rural hinterland and in provisioning the Camden Park Estate. It has links with the Macarthur family who sponsored the store.

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;

It has links with the Macarthur family who sponsored the store, and was linked to the fortunes of the Camden Park Estate.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The building is unusual in the State as a particularly fine and relatively unusual freestanding example of a "Federation Arts and Crafts" style commercial shop. This significance is enhanced by the degree to which the building retains its original form and detailing.

In addition, the store has aesthetic significance as a landmark effectively marking the centre of Menangle village.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

The store's historical links to the large Camden Park Estate and the Macarthurs provide uncommon aspects in the context of the State's history.

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.

The building is unusual in the State as a particularly fine and relatively unusual freestanding example of a "Federation Arts and Crafts" style commercial shop. This significance is enhanced by the degree to which the building retains its original form and detailing.

4.7 Photos



Menangle Store
Photo: M. Pearson 2008



Menangle Store 'barn' to east
Photo: M. Pearson 2008

5 ELIZABETH MACARTHUR AGRICULTURAL INSTITUTE (FORMERLY CAMDEN PARK ESTATE)

5.1 Location

Woodbridge Road, Elizabeth Macarthur Avenue, Menangle (only a small part of the estate is within the study area for this report).

5.2 Heritage Listing Status

State Heritage Register No. 00341. SHI DB No. 5045133 (Camden Park).

State Heritage Register No. 01697. SHI DB No. 5051536 (Camden Park Estate and Belgenny Farm).

Wollondilly LEP. SHI DB No. 2690002 (or 2690800?) (Elizabeth Macarthur Agricultural Institute [EMAI]).

Wollondilly Heritage Study.

S.170 State Agency Heritage Register (Dept of Agriculture).

Sydney REP No. 20 - Hawkesbury-Nepean River.

Register of the National Estate No. 3249.

5.3 History

State Heritage Register Citation (No. 00341)

John Gould Veitch, esteemed English nurseryman described Camden Park on a visit in 1864: "Camden Park, the Seat of Sir William Macarthur, November 17, 1864 - Sir William Macarthur, who is now almost as well known in Europe as in Australia, is a most enthusiastic amateur in horticulture. Camden Park is situated in the centre of an estate of 30,000 acres of fine arable and pasture land. It is 40 miles from Sydney and easily accessible by rail, the station of Mena(n)gle being within 4 miles of the house. Camden House stands on an elevation of some 200 feet. The approach to it is poor, and not in keeping with the other portion of the grounds. The gardens are extensive and kept in good order. The collection of plants and fruits at Camden is by far the best I have seen in the colony. No means here have been spared to obtain the best varieties in each class. Even our (Veitch's) most recent strawberries are thriving here. The garden is divided into two parts, and is under the superintendence of two gardeners. That in immediate connection with the house is laid out in lawns and shrubberies, with an orange grove, the picture of health and luxuriance, and two greenhouses for the purpose of propagation, attached. Here may be found many rare plants. All the Californian and Japanese coniferae are doing well."

Veitch goes on to list many choice species of climbers including Bougainvillea spp., shrubs including oleander, lilac, rhododendrons and azaleas, roses 'in great perfection', trees including Magnolia spp., Chinese elm, Strawberry tree (Arbutus), and flowers, including annuals.

"A few of the specimens of coniferae (conifers) and of evergreen shrubs here are the largest in the colony. *Thuja aurea* is the largest I have seen, and measures 7' each way. *Araucaria bidwillii* (Bunya pine) is undoubtedly the finest in cultivation. It forms a beautiful pyramid of the darkest green glossy foliage, 40' high by 35' through. *Cedrus deodara* (Himalayan cedar), *Pinus halepensis* (Aleppo pine), *Ficus indica* (fig) and *Magnolia grandiflora* (evergreen magnolia or bull bay) are fine trees."

"The lower garden is devoted chiefly to vegetables and fruit, but also contains a number of flowering shrubs, and a large collection of bulbs. There is almost every variety of obtainable fruit suitable to the climate. Fruit is so plentiful that large herds of pigs are fed on it. Sir William has devoted special attention to bulbs. His collection contains numerous hybrids raised by himself, and the best imported varieties of hyacinth, tulip, crocus, anemone, ranunculus, alstroemeria, amaryllis, gladiolus, lily, iris etc."

"Camden Park is famed for its wine. Extensive vineyards are under cultivation. The principal grapes grown are those from Germany. The wine is made by men from the Rhenish wine districts."

"Mr Ferguson's Nursery is situated near the village of Camden. Mr F. learnt his business at Chatsworth and other large English gardens. He was then for several years in charge of Sir William Macarthur's establishment"(Morris, 1994).

The estate and Macarthur family were instrumental in establishing the Australian wine industry. Camden Park became world-renowned for the quality of its wine. Camden Park played a vital role in the fledgling Australian wine industry through its importation and distribution of vine cuttings throughout NSW and the Barossa Valley of SA. By 1853 Camden Park listed some 33 grape varieties for sale. By 1841 William & James were producing more than 5000 gallons and that vintage won Gold Medals in England. In 1844 24,000 vine cuttings were sent from Camden Park to Adelaide, setting South Australia on a path to becoming an internationally acclaimed wine growing district (Everett, 2004). Camden Park became world-renowned for the quality of its wine and by 1845 was producing around 10,000 gallons per annum as a serious vineyard and one of the most highly regarded in the colony and with quite a reputation overseas (Everett, 2004).

Wollondilly LEP Citation

The history of Camden Park and its founders, the Macarthur family, is well known and documented. During the last century they created at Camden an effective rural estate based on the British model. The chief focus was the mansion, designed by John Verge and completed in 1835. It is surrounded by extensive gardens and to the south were vineyards and a winery, to the north was the plant nursery established by William Macarthur and one of the chief centres of horticulture in 19th century Australia. Large orchards and plantations of economic species, such as olive and cork were located to the east adjacent to the Nepean River, and nearby were irrigated paddocks developed by James Macarthur. The extensive grazing lands, known as the Cowpastures carried the celebrated flocks of merino sheep as well as horses and cattle. Along the main drives much new planting was introduced to evoke the character of a British estate. Olive trees lined the drive while great belts of exotic species edged the river meadows.

Vistas were established through the landscape to church spires, a windmill, and natural prominences. Towards the end of the 19th century, the area adjoining a lagoon to the north of the plant nursery was restored as the pleasure grounds, which were in existence by 1824. Gate lodges designed by Sir John Sulman were built at the head of the Camden and Menangle drives. Dotted around the estate are groups of cottages, forming hamlets accommodating the numerous farm workers. The two chief groups are located overlooking the former plant nursery and the former orchard. The centre of the agricultural operation was located adjacent to the original cottage, on a ridge to the south west of the mansion. Known as Old Belgenny, the Belgenny Farm Group was well established when visited by Robert Scott of Glendon, Hunter Valley, during the 1820s. His sketch plan establishes that the buildings existing north and west of the courtyard were extant circa 1826. The group has been amended and extended during the ensuing years and is a most significant example of rural evolution, all of the key buildings being based on advanced British prototypes. During this century, the Estate was reorganised for dairying purposes. Numerous dairy buildings and eventually, in the 1950s, the Rotolactor, demonstrate the built manifestations of this pursuit. During the 1970s, the majority of the estate was sold to Talga Pty. Ltd. for suburban development. Approximately 1,000 acres around the mansion was retained by a member of the Macarthur family. Talga Pty. Ltd. failed, and the northern portions of the Talga Pty. Ltd. holdings were purchased by the NSW government in 1976. The southern portion of the Talga Pty. Ltd. holdings remained in private ownership until purchased by EMAI in 1984.

5.4 Description

State Heritage Register Citations (abstracted for those components in study area)

Camden Park Estate is a significant area of open space on the Nepean River system to the south-east of the town of Camden. As a man-modified cultural landscape it contains extensive cultural features (of heritage value), such as:

- tree lined river meadows (on flood plains);
- tree lined driveways;
- the relic orchard site; and
- extensive productive pastures.

Many structures and building groups are located on various parts of the estate. The major items are listed below.

Gate Lodges

The estate had a number of gate lodges mostly in Federation style, some of which survive and are of relevance to this study (refer to Section 6). The former lodge at Menangle, and two lodges on Remembrance Driveway (former Hume Highway/ Great Southern Road) are remaining examples. Designed by Sir John Sulman, built at the head of the Camden and the Menangle Farm estate drives.

The estate is the relatively intact 400 acre core of a once huge (30,000 acre) colonial land grant, still being actively farmed by descendants of the same, Macarthur Family, which established it. The SHR listing area is surrounded by another core remnant of the original family estate, which in 1975 the NSW Department of Agriculture purchased. The Department has managed this 1,583 hectares, now called the EMAI, since then for research purposes.

The township of Menangle (location of a former Macarthur Dairy and Factory and the famous 'rotolactor'), retains a number of estate buildings, including a cottage, a duplex and the Menangle Workshop (former Dairy building).

Landscape Zones in the Study Area

The following landscape zones fall entirely within the Project extent of longwall mining area.

Zone 1 - Menangle Paddock

Menangle Paddock is open and expansive in character. It is a group of cleared, arable fields, gently sloping around Foot-Onslow Creek. Significant structures include a Sulman-designed gatehouse on Woodbridge Road; a row of cottages, a post office, the Department of Agriculture buildings and associated plantings along Menangle Road. This architectural edge marries the zone visually to Menangle Village.

Planting within the zone occurs in a linear fashion. Willows delineate the creek, Lombardy poplars line one of the access roads and a privet hedge forms part of the southern perimeter. Similar hedging is located in the adjacent Rotolactor property.

Zone 2 - Exposed Hills

Flanking Woodbridge Road to the south of the Estate are steeply rounded grassy hillsides, almost entirely cleared of tree cover, save for one Olive tree on "One Tree Hill". A few scattered *Eucalyptus crebra*, a prominent feature of exotic plantings associated with Dairy No. 4 and is visible from Menangle. Zone 2 is the only example on site of exposed hills viewed against the skyline and semi-replanting on the lower slopes retains the bare character of the hilltops.

Zone 14 - Cummin's Flat

Hawkey's Dam, a shallow damming of Navigation Creek enclosed on the east and west by hills and on its perimeter by tree planting to prevent wind evaporation is a working example of Keyline practice. Perimeter planting carried out in 1960-61 include *Casuarina glauca*, *Eucalyptus grandus*, *E. maculata*, *E. moluccana*, *E. sideroxylon rosea*, *E. tereticornis*, *Pinus radiata* and *Populus nigra italica*.

Cummin's Flat is very open, flat and grassy with glimpses of water to be viewed through the trees and reflections of Flooded Gums in the northern part of the dam. Cummin's Flat is susceptible to evaporation and when the water volume is low, the flat is used for grazing.

The southern portions of landscape zones 3, 4, 5, 6, 7, 13 and 15 are also on the margins of the Project extent of longwall mining area. Section 5.8 includes extracts from the State Heritage Register identifying the landscape zones within the curtilage area.

Zone 3 - Ridgetop

Due to Ridgetop's height, its strong north-south axis and the steepness of the adjacent slopes, Ridgetop forms the dominant geomorphological and visual backbone of the site. The extensive views to the east and west across the property to neighbouring countryside, Menangle village and to the ridges in the middle and far distance gives an understanding of the site's regional landscape context. It has undergone only partial clearing and presents a sparse, yet fairly continuous cover of narrow leaved ironbark (*Eucalyptus crebra*).

Zone 4 - Top Paddock

Top Paddock comprises of steep slopes and minor ridgelines to the west of the main ridge. The two valleys are nearly bare of vegetation. The three ridges have been only partly cleared and retain a fairly generous cover of *Eucalyptus crebra* on the upper slopes. The lower slopes have been replaced by grey box (*E. moluccana*) and forest red gum (*E. tereticornis*) and she oak (*Casuarina glauca*) in areas of high soil salinity or impeded drainage. Top paddock is presently used for grazing and these steep slopes offer broad views downslope to Navigation Creek Valley. The character of this zone has changed since the completion of the Agricultural Research Station, however this site is visually contained within the landscape and is not too apparent beyond this catchment.

Zone 5 - East Slopes

Overlooking the Nepean Plain and river to the east, these vegetated pastoral East Slopes are very steep. Visual quality of this area is lessened by overhead transmission lines and the Department of Agriculture security fencing. The dominant species is again narrow leaved ironbark (*Eucalyptus crebra*).

Zone 6 - Nepean Plain

Zone 6 is fairly flat land and has been completely cleared of tree cover and the only significant feature is the slight depression towards Menangle Pond. The adjacent mining operations and associated clearing are highly visible.

Zone 7 - Mining Lands

As a result from Menangle Sand and Soil mining operations, the original land profile has been lowered and the river banks have been destabilised. Zone 7 was almost completely cleared of indigenous vegetation until rehabilitation, however weed growth has appeared and the natural river character has been lost. Without control, the river bank vegetation and visual qualities may be completely lost.

Zone 13 - Navigation Creek Valley

This is a broad, fairly flat, alluvial and flood-prone valley extending approximately north-south the length of the Estate, exhibiting erosion near the creek head to the south. In its northern extent it is open and pastoral in character, and largely bare of vegetation except for some she oaks (*Casuarina glauca*) along the creek. To the south, vegetation is diverse with *Angophora* hybrids and *Pimelea* spp.

Zone 15 - West Expanse

This West Expanse is flanked by the Hume Highway and Finns Road to the west of the Estate and has broad views across the site to the central ridge. Zone 15 is a hilly and pastoral terrain and comprises a fairly sparse canopy cover of *Eucalyptus crebra* and *E. moluccana*, and open woodland of *Casuarina glauca*.

Wollondilly LEP Citation

The EMAI is the current name of the property now owned by the NSW State Government, which was formerly known as Camden Park. EMAI was purchased as the remnant of the Camden Park Estate when Talga Pty Ltd failed. EMAI along with the 1,000 acres of Camden Park Estate still owned by the descendants of John and Elizabeth Macarthur are the remnants of the original property.

EMAI includes the Laboratory Complex and associated buildings which commenced construction in 1987, the Menangle Gate Lodge (former), Orchard site, Workmen's Cottages, Estate Cottages, Barrigal (Macquarie) Monument, Cemetery, Dairy No 8, Dairy No 9, Dairy No 4, Dairy No 2, Macarthur's original Bloodline Sheep Flock, Cottage Monument and Belgenny Farm Complex (which includes the Belgenny Cottage, Dovecote, Community Hall, Bell, Creamery, Stables, Granary, Slaughter House, Carpenter's Shop, Mill, Engine Room, Well, Fuel Shed, Blacksmith's Shop, Sheep Shed, Piggery, Workmen's cottages as well as several secondary buildings and structures that form the complete set of farm buildings). Each of the places listed above (excluding the Laboratory Complex and associated completed since 1987) has a separate State Heritage Inventory record.

5.5 Statement of Significance

From State Heritage Inventory Database

State Heritage Register Citation

The Camden Park Estate is of social, historic, scientific and aesthetic significance to NSW and Australia. It shows a high degree of technical and creative excellence being a rare, and still relatively intact, example of a model rural estate of the early 19th century (continuing to serve this function until the 1950s). It is the oldest pastoral sheep stud in Australia.

The estate's considerable social and historic significance is also due to its ability to demonstrate the way of life, tastes, customs and functions of a 19th - early 20th century rural establishment. From its establishment the site was a particularly fine example of a colonial rural estate and served as a prototype for other 19th century estates. The intactness of the site's structures and their landscape settings enhances its role as a relatively unique survivor and as a site of archaeological and scientific importance (LEP/Heritage Study).

The site also has significance thorough its historical associations with the Macarthur family - from its establishment by John and Elizabeth Macarthur in the early 19th century to the present day Macarthur-Stanham family - this relationship shown in both landscape and structures and being well documented and researched.

By the 1830s the estate of 28,000 acres included the greatest and most advanced mixed farm in NSW, at a time when Australian wools had almost ousted continental wools from British usage and the British manufacturers had a vast ascendancy in the world's woollen markets (Camden Park Estate, 1965).

Its extensive grounds planted in the tradition of 19th century English landscape parks holds a major botanical collection and its large, exceptional collection of rural buildings is especially important because of both the quality and rarity of the group.

The Camden Park orchard site and cottages area contains the remnants of an early commercial and scientific horticultural collection which was established by William Macarthur and made a contribution to commercial horticulture in NSW and other colonies such as South Australia. The cottages are an integral part of the orchard complex which continued to function commercially for 150 years and are important 19th century elements of the landscape.

Camden Park played a vital role in the fledgling Australian wine industry through its importation and distribution of vine cuttings throughout NSW and the Barossa Valley of SA. By 1853 Camden Park listed some 33 grape varieties for sale. By 1841 William & James were producing more than 5000 gallons and that vintage won Gold Medals in England. In 1844 24,000 vine cuttings were sent from Camden Park to Adelaide, setting South Australia on a path to becoming an internationally acclaimed wine growing district (Everett, 2004). Camden Park became world-renowned for the quality of its wine and by 1845 was producing around 10,000 gallons per annum as a serious vineyard and one of the most highly regarded in the colony and with quite a reputation overseas (Everett, 2004).

James & William Macarthur managed the estate with great enterprise, importing expert workers: Australia's first skilled wool-sorter from Silesia, shepherds from Scotland, vigneron from Nassau and dairymen from Dorset. They installed the first irrigation plant in Australia in 1830 and the first sheep wash and wool press. After changes of soil and climate in 1849 dictated sale of their merino stud, wheat was the staple until the mid 1860s. But rust and labour shortage led to a change to mixed farming - sheep and cattle fattening, mixed grains, wine, horses for India until 1857, and Australia's largest plant and tree nursery. The 2000 specimens of plants, shrubs and trees included the country's premier collections of domestic orchids and camellias, both of which William Macarthur was one of the first to introduce into Australia.

Two vineyards were planted in 1830 and 1841 and produced up to 16000 gallons a year including choice vintages, with as much as 30000 gallons in cellar sometimes. In 1832 the estate exported the first Australian brandy, and had 8 vintage and fortified wines varying from Muscat to Riesling at the Paris Exhibition of 1861. Also in the 1830s William Macarthur pioneered processes of drying fruit, "with which the British Isles were unacquainted". In 1857 Camden Park had a variety of all normal species of orchard fruits and nuts, 56 varieties of apple including cider making types, 31 kinds of pear, 23 citrus fruit varieties including Navel oranges, 16 table grapes apart from 32 wine varieties. Apricots, plums, cherries, quinces, figs, chestnuts, almonds and strawberries were also grown on the estate (Camden Park Estate, 1965).

The Camden Park garden and nursery is historically important as part of the original Macarthur family Camden estate. The garden is significant for its demonstration of the early 19th century estate garden design, including the following: The use of a hill site to take advantage of the views; the use of plantings to enframe views; and the planting of trees with ornamental form, demonstrating the influence of the early 19th century horticultural movement.

The area has historical significance as the original Macarthur nursery renowned for the introduction and propagation of exotic plants in early Australia. Significant features include the following: the area of olive and plumbago shrubbery; the brick edged gravel carriage loop; structured vistas from the house entrance and garden entrance; specimen plants of Araucarias and camellias reputed to be the oldest in Australia; well blended later additions of herbaceous beds and rose garden; and ruins of the gardener's lodge, potting sheds and hothouses from the original nursery period (Register of the National Estate, 1978).

Finally the estate is of major landscape and environmental significance as a significant area of open space lining the Nepean River with landmark landscape features including the tree lined river meadows, ridge top Belgenny Farm Group, the driveways and the relic orchard and plantations site on the flood plain north-east of the mansion.

- Rare - historic and aesthetic values;
- Representative - historic, aesthetic and scientific values; and
- Associative values - historic and aesthetic.

Camden Park House is of historic and aesthetic significance as one of the finest of the nation's early 19th century country homesteads. More particularly it is an outstanding exemplar of Australia's Colonial Regency style of architecture, this significance being enhanced by the quality of the design and craftsmanship and the degree to which it has retained important original fabric and features. The building is generally regarded as one of architect John Verge's finest achievements. The house's historic significance is also due in large measure to its role as the home of the Macarthur family from the days of John and Elizabeth, through a direct line of descendents to the present (State Heritage Inventory Public Presentation report, modified Stuart Read, 09/2004).

Wollondilly LEP Citation

Camden Park is of social, historical, scientific and aesthetic significance to the state and nation. It shows a high degree of technical and creative excellence being a rare, and still relatively intact, example of a model rural estate of the early 19th century (continuing to serve this function till the 1950s). It is the oldest pastoral sheep stud in Australia. Its extensive grounds planted in the tradition of 19th century English landscapes holds a major botanical collection and its large, exceptional collection of rural buildings is especially important because of both the quality and rarity of the group. The Estate's considerable social and historical significance is also due to its ability to demonstrate the way of life, tastes, customs and functions of a 19th - early 20th century rural establishment. From its establishment the site was a particularly fine example of a colonial rural estate and served as a prototype for other 19th century estates. The intactness of the site's structures and their settings enhances its role as a relatively unique survivor and as a site of archaeological and scientific importance. The site also has significance through its historical associations with the Macarthur family - from its establishment by John and Elizabeth Macarthur in the early 19th century to the present day - this relationship shown in both landscape and structures and being well documented and researched. Finally the estate is of major landscape and environmental significance as a significant area of open space lining the Nepean River with landmark landscape features including the tree-lined river meadows, ridge-top Belgenny Farm Group, the driveways and relic orchard site.

5.6 Significance against Criteria

NSW State Heritage Register Criteria (No. 00341)

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

EMAI is historically significant at a State level because it shows evidence of significant human activity in the agricultural industries and shows the continuity of that activity over the bulk of the non-Aboriginal history of NSW. It is representative since it has attributes typical of a particular way of life, and is outstanding because of its integrity, setting, condition and size. It contains elements that are at the same time rare because it provides evidence of a defunct way of life and agricultural practices, as well as being scarce examples of their type and showing unusually accurate evidence of significant human activities. As a significant cultural landscape the property demonstrates overlays of the continual pattern of human use and occupation associated with the evolution of rural life in this State.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

Aesthetically the property has strong visual and sensory appeal arising from its various landscape settings, the quality of its vernacular agricultural buildings and the continuing presence of farm animals. The buildings are aesthetically distinctive and have landmark qualities while the Macarthur family cemetery is a prominently sited graveyard with strong visual links to other important points within the Camden Park Estate and emotive qualities arising from its garden setting and historic atmosphere. The farm buildings are both rare and representative from an aesthetic viewpoint since they demonstrate distinctive attributes in their form and composition as well as demonstrating technical excellence and innovation for their period.

Criterion D: an item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

EMAI is socially significant at a State level because it is held in high esteem by significant groups within the contemporary community of NSW. Elements of the property including Belgenny Farm, the Macarthur family cemetery and adjoining lands have special cultural, social, spiritual, aesthetic and educational values and associations which set it apart from other sites. It is both representative as an optimal example of its type and rare because of its scarcity value and the unusual accuracy of the evidence it displays.

Criterion E: an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

EMAI satisfies all the Inclusion Guidelines for technical and research significance since it has yielded and has the potential to yield substantial historical, cultural, technical and archaeological information about the history of agriculture in this State and the lives and occupations of the people who worked there. As such it is an important reference site and shows evidence of past technologies at a representative and rare level. The property can have a useful research and educational role in helping us to understand our agricultural heritage.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

The property includes elements that are thought to be the oldest surviving items of their type some dating back to 1805.

Bibliography

Camden Park Estate P/L 1995. *Camden Park Estate 1795-1965*.

Morris, Colleen, 1994. *Through English Eyes, extracts from the journal of John Gould Veitch during a trip to the Australian colonies*.

Everett, David. 2004. 'Frere's Vineyard - Vine Pedigree X', in *Macarthur News*.

5.7 Photos



Camden Park Gatehouse

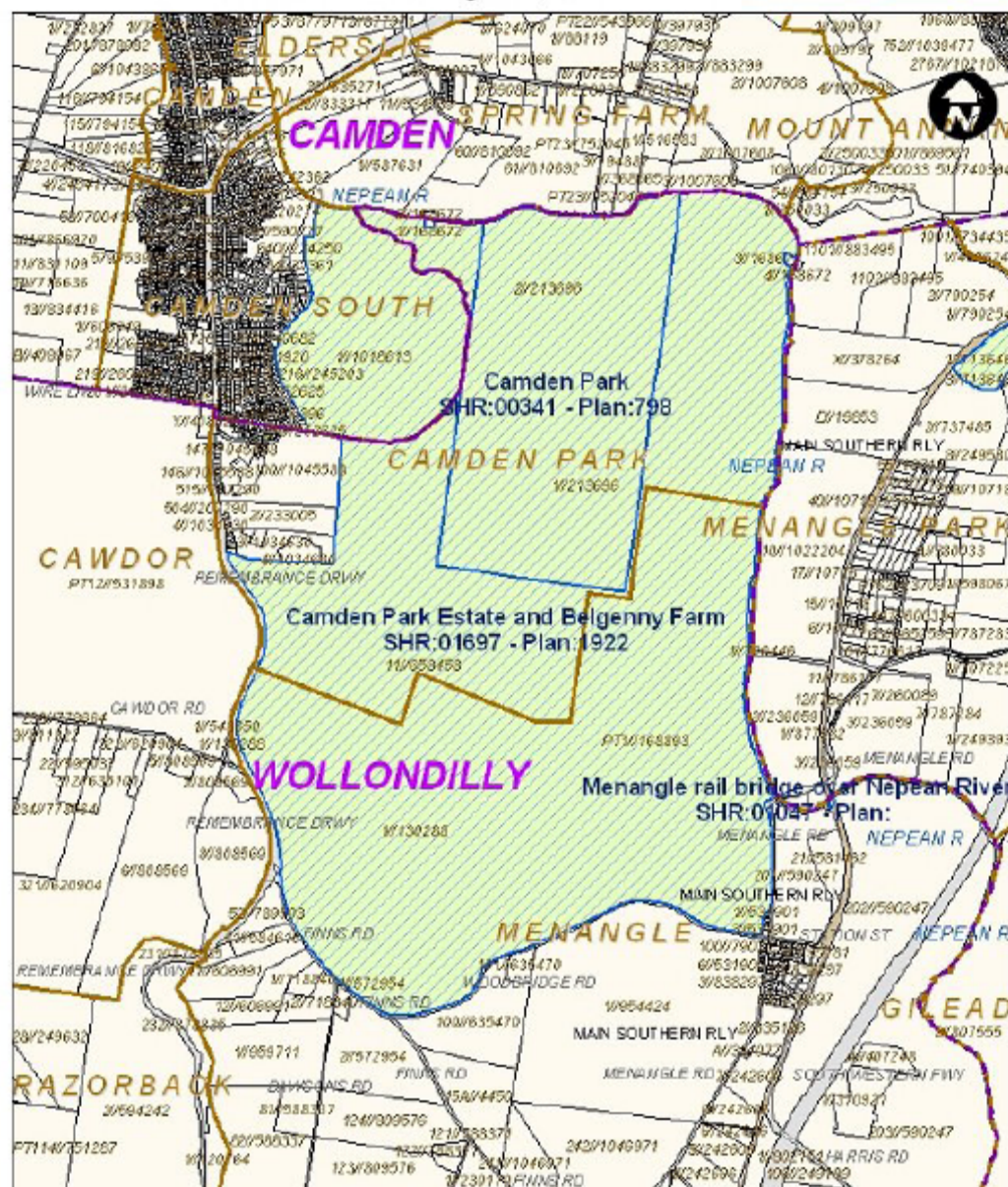


Camden Park Dairy No. 4.

5.8 Relevant State Heritage Register Diagrams

Heritage Council of New South Wales

Plan under the Heritage Act, 1977



State Heritage Register

Gazettal Date: 22 December 2006

0 360 700 1,400 2,100 2,800 Meters

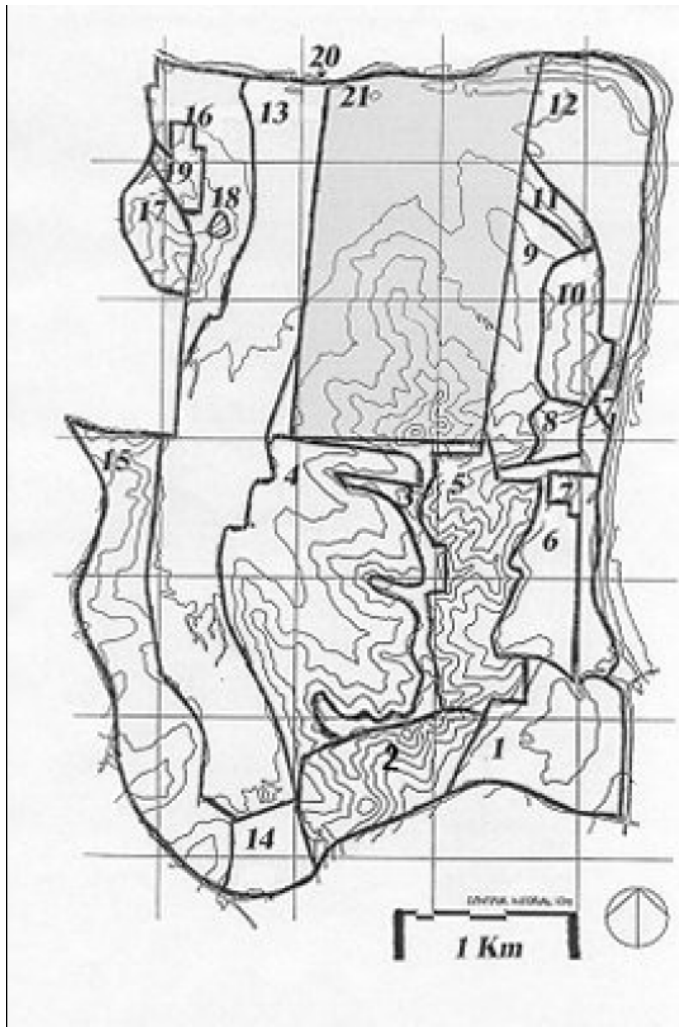
Scale: 1:40,000

Produced by: Stewart Waiters

Legend

- SHR Curtilage
- Historic Regions
- LGAs
- Suburbs
- Land Parcels
- Water
- Roads
- Railways
- NSW Reserves

Curtilage Boundaries



Landscape Zones

6 MENANGLE GATE LODGE (CAMDEN PARK)

6.1 Location

46 Woodbridge Road, Menangle (Cottage 27 EMI) (Lot 1, DP 1067320).

6.2 Heritage Listing Status

State Heritage Register No. 2690098 (part of Camden Park Estate).

Wollondilly LEP. SHI DB No. 3040024, 2690098.

Wollondilly Heritage Study.

S.170 State Agency Heritage Register (Dept of Agriculture).

6.3 History

One of a pair of gate lodges to design of Sulman and Power for Mrs Macarthur-Onslow in 1895 as part of the Camden Park Estate. It is now used as a residence within the EMAI. See EMAI record (Section 5) for general history.

6.4 Description

Single storey weatherboard cottage with hipped and gabled tiled roof and brick chimneys, one of which has a decorative patterned brick base. Gables have timber battening and the north gable covers a small porch with timber lattice work and frieze, while the eastern gable projects on brackets. Beneath the east gable is a corbelled bay window with a small pane panel at the top. Doors have small pane transom lights. The three panel, half-glazed front door is off a small porch at the south east corner. On the gables are plaques bearing (different) coats of arms and the mottos "FESTINA LENTE" (to the east) and "FIDE ET OPERA" (to the north). One of these plaques was moved from the gate lodge at the other entry to Camden Park. The property still retains a large part of the original picket fence but this is being renewed.

Fibro extension to rear (south west), original verandah flooring replaced (20/11/90), fibro replaced on northern lattice enclosed porch, roof retiled and, fence renewed.

One of a pair of gate lodges to design of Sulman and Power for Mrs Macarthur-Onslow in 1895 as part of the Camden Park Estate. It is now used as a residence within the EMAI.

6.5 Statement of Significance

From State Heritage Inventory Database

Menangle Gate Lodge has historical significance as one of the pair of gate lodges built by the Macarthur-Onslows for the Camden Park Estate and which today (together with the lodge at the entrance near Camden) provides evidence of the former extent of the Estate (one of the most significant colonial properties in Australia) as well as demonstrating the architectural embellishments thought appropriate to large estates in the late 19th century. The building also has aesthetic significance as an attractive and largely intact example of a "Arts and Crafts" style estate cottage in the region and also for its associations with the architectural firm of Sulman & Power, which designed many buildings on the Estate and in the adjacent Menangle Village. The cottage's aesthetic qualities are further enhanced by its attractive rural setting and siting adjacent to the remains of the original Estate gates and driveway.

6.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

Menangle Gate Lodge has historical significance as one of the pair of gate lodges built by the Macarthur-Onslows for the Camden Park Estate and which today (together with the lodge at the entrance near Camden) provides evidence of the former extent of the Estate (one of the most significant colonial properties in Australia) as well as demonstrating the architectural embellishments thought appropriate to large estates in the late 19th century.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The building also has aesthetic significance as an attractive and largely intact example of a "Arts and Crafts" style estate cottage in the region and also for its associations with the architectural firm of Sulman & Power which designed many buildings on the Estate and in the adjacent Menangle Village. The cottage's aesthetic qualities are further enhanced by its attractive rural setting and siting adjacent to the remains of the original Estate gates and driveway.

Criterion D: an item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

The building is an example of the work of Sulman & Power.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare statewide.

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;

Menangle Gate Lodge is an outstanding example of late 19th century gatehouses associated with large country estates.

6.7 Photos



Menangle (Camden Park) Gate Lodge
Photo: M. Pearson 2008



Menangle (Camden Park) Gate Lodge, detail of
crest
Photo: M. Pearson 2008

7 DAIRY NO. 4 (CAMDEN PARK)

7.1 Location

EMAI Woodbridge Road, Menangle.

7.2 Heritage Listing Status

Part of the Camden Park registered area.

State Heritage Register No. 00341. SHI DB No. 5045133 (Camden Park).

State Heritage Register No. 01697. SHI DB No. 5051536 (Camden Park Estate and Belgenny Farm).

Wollondilly LEP. SHI DB No. 2690002 (EMAI) 3040025 (Dairy No. 4).

Wollondilly Heritage Study.

S.170 State Agency Heritage Register (Dept of Agriculture).

Sydney REP No. 20 - Hawkesbury-Nepean River.

Register of the National Estate No. 3249.

7.3 History

The cottage was built in the later 19th century.

7.4 Description

The group of buildings consists of an estate cottage, feed sheds and silos. The cottage is a single storey dwelling with a galvanised iron roof and weatherboard walls with asbestos cement additions and infill.

The Dairy is of brick with galvanised iron roof, internal has been modified to incorporate a set of cattle yards for under-cover research work.

Feed Stalls are of timber and galvanised iron roof, some internal structure remains.

Silos are twin concrete towers.

Addition of shed 1990s. Derelict.

7.5 Statement of Significance

From State Heritage Inventory Database

The group of buildings at Dairy No 4 illustrates the changing nature of dairying activities and the importance of milk production on the Estate in the late 19th and early 20th centuries
A landmark feature of aesthetic value.

7.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The group of buildings at Dairy No 4 illustrates the changing nature of dairying activities and the importance of milk production on the Estate in the late 19th and early 20th centuries.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

Significant as a landmark feature as viewed from the township of Menangle.

7.7 Photos



Dairy No. 4 Camden Park
Photo: M. Pearson 2008

8 CAMDEN PARK ESTATE CENTRAL CREAMERY

8.1 Location

Stevens Road off Station Street, Menangle.

8.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690294 (and 2690729).

Wollondilly Heritage Study.

8.3 History

The creamery was built in 1898 by the Camden Park Estate. It initially separated milk for the sweet cream trade in Sydney. With the creation of the Milk Board in 1929 it became the Depot for receiving milk for city distribution.

It is now used as a junk storage shed and the boilers, ammonia compressor, refrigeration units have been removed.

8.4 Description

The creamery consists of two buildings connected to the main railway line by its own siding. One building is a two storey brick structure now painted white and with a terracotta tiled roof. The other single storey structure has corrugated iron walls and roof with interesting detailing. Two corrugated iron railway sheds are located adjacent to the former rail sidings serving the creamery.

The complex is in poor condition with deteriorated roof elements, water penetration and wall cracking.

8.5 Statement of Significance

From State Heritage Inventory Database

The Camden Park Estate Central Creamery is significant as evidence of the scale of dairying activities carried out to supply Sydney's needs in the latter part of the 19th century and in the 20th century. It has associations with the Camden Park Estate and is part of a network of sites which provides a range of physical evidence of the commercial dairying industry in the Sydney Region. With the removal much of its equipment in recent times, it has lost the ability to demonstrate the operations of a creamery of this period but it is the most substantial and intact creamery building in the Wollondilly LGA.

8.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Camden Park Estate Central Creamery is significant as evidence of the scale of dairying activities carried out to supply Sydney's needs in the latter part of the 19th century and in the 20th century. It has associations with the Camden Park Estate and is part of a network of sites which provides a range of physical evidence of the commercial dairying industry in the Sydney Region.

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;

It has associations with the Camden Park Estate and the Macarthur family prominent in the development of this part of the State.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

The creamery is a surviving example of a now uncommon type, large regional creameries, reflecting a now-past form of dairying once common in the State.

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;

With the removal much of its equipment in recent times, it has lost the ability to demonstrate the operations of a creamery of this period but it is the most substantial and intact creamery building in the Wollondilly LGA.

8.7 Photos



Camden Park Estate Central Creamery main building western side.
Photo: M. Pearson 2008



Camden Park Estate Central Creamery main building, eastern side (siding).
Photo: M. Pearson 2008



Camden Park Estate Central Creamery siding sheds.
Photo: M. Pearson 2008

9 CAMDEN PARK ROTOLACTOR

9.1 Location

Station Street, Menangle.

9.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690295.

Wollondilly Heritage Study.

9.3 History

The first stages of the rotolactor with the platform holding 50 cows at a time, were opened in 1952 after 3 years of planning and construction.

It was the second facility of this type and scale in the world and attracted many visitors, especially school children. The facility ceased operation in 1983.

Source: Andrea Oehm, 'Wollondilly Shire Council Heritage Study Review, 2690295', 2006.

9.4 Description

Built as a rotating milking platform associated with intensive feed lots housing approximately 2,000 cows. Built of rustless cladding materials on circular concrete walls. Vacant since 1983, and now in very poor condition with collapsing roof cladding and rotting roof structure.

Very poor condition.

9.5 Statement of Significance

From State Heritage Inventory Database

The Camden Park Rotolactor provides evidence of the post WWII phase of dairying activity in the Sydney Region. It represents the final advance in the mechanisation of commercial dairy farming in Australia and was the second facility of this type and scale in the world. Together with a range of physical evidence which survives in close proximity to Camden Park Estate, it is significant because of the opportunity it provides to interpret the history of dairy farming and production in the region for a period encompassing over 150 years of development.

9.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Camden Park Rotolactor provides evidence of the post WWII phase of dairying activity in the Sydney Region. It represents the final advance in the mechanisation of commercial dairy farming in Australia and was the second facility of this type and scale in the world. Together with a range of physical evidence which survives in close proximity to Camden Park Estate, it is significant because of the opportunity it provides to interpret the history of dairy farming and production in the region for a period encompassing over 150 years of development.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

It represents the final advance in the mechanisation of commercial dairy farming in Australia and was the second facility of this type and scale in the world.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

The Rotolactor is a rare example of the early mechanisation of dairying in Australia.

9.7 Photos



Rotolactor, Menangle.
Photo: M. Pearson 2008.



Rotolactor showing collapsing roof structure.
Photo: M. Pearson 2008

10 ST JAMES ANGLICAN CHURCH, MENANGLE

10.1 Location

131 Menangle Road, Menangle (Lot 1, DP 306367).

10.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690091.

Register of the National Estate No. 3301.

10.3 History

The Macarthur-Onslow family set aside a hectare of land overlooking the Menangle Village as the site for a church. Fund-raising to cover the cost of building was based on the sale of local eggs, with Captain Onslow donating the bulk of eggs sold. The nave and side porch built to J. Horbury Hunt's design in 1876 is typical of his work. The utilitarian design was a direct descendent of his Church of the Good Shepherd, a design intended to fulfil the basic needs of any country parish quickly. It was enlivened by the artful use of decorative brickwork, the characteristic Hunt massing and ostentatious buttressing. It was erected by contractor Mr Macbeth of Campbelltown and builder Mr C. Furner of Camden to replace earlier timber church-school. The chancel and tower were added in 1898 at the behest of Mrs Elizabeth Macarthur-Onslow of Camden Park, in memory of her husband and parents. Designed by Sir John Sulman the marriage of Hunt's earlier church with Sulman's addition is so successful that the tower and chancel are often mistaken for Hunt's work.

10.4 Description

A small picturesque church of face brick work with a mixture of slate and asbestos tiled roofs.

The southern nave, erected first to the design of John Horbury Hunt, has a steeply pitched gabled roof (with bellcast) and a small gable-roofed entrance porch on the western side. The windows are lancet headed and the building's corners are marked by modest brick buttresses. The blind arch on the south wall marks the location for which later additions were planned.

At the north end of the building are a large square tower with a pyramidal roof, a semi-circular apse and a skillion roofed porch and vestry all designed by Sir John Sulman (and added in 1896). The massing and detailing of these elements is particularly fine with features of interest including the smaller circular tower on the north-west corner, the rose window above the western porch and the gable roofed "dormers" which punctuate the roof of the main tower and enliven its silhouette.

The interior of the building has fine polished oak panelling. The roof was replaced in the 1990s.

The trees which surround the church and line the driveway are distinctive and include, tall eucalypts, bunya pines and olive trees.

Good condition, with minor cracking in the nave-end.

10.5 Statement of Significance

From State Heritage Inventory Database

St James Church, Menangle, is recognised within the state as an unusual and particularly fine example of a small country church of great architectural integrity, this significance being enhanced by the building's high degree of intactness and quality of workmanship. It also has considerable significance as an important landmark by virtue of its form and siting on a prominent rise in the village and the surrounding screen of trees. This provides a romantic silhouette which is seen by travellers on the Southern Railway and from rural roads in the vicinity.

The Church has historical significance through its links with the Macarthur-Onslow family of "Camden Park" and "Gilbulla"; its associations with two leading architects, J Horbury Hunt and Sir John Sulman; and, its more general association with the life and development of Menangle Village.

10.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Church has historical significance through its links with the Macarthur-Onslow family of "Camden Park" and "Gilbulla"; its associations with two leading architects, J Horbury Hunt and Sir John Sulman; and, its more general association with the life and development of Menangle Village.

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;

The Church has historical significance through its links with the Macarthur-Onslow family of "Camden Park" and "Gilbulla"; its associations with two leading architects, J Horbury Hunt and Sir John Sulman.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

St James Church, Menangle, is recognised within the state as an unusual and particularly fine example of a small country church of great architectural integrity, this significance being enhanced by the building's high degree of intactness and quality of workmanship.

It also has considerable significance as an important landmark by virtue of its form and siting on a prominent rise in the village and the surrounding screen of trees. This provides a romantic silhouette which is seen by travellers on the Southern Railway and from rural roads in the vicinity.

Criterion D: an item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

The church is associated with the life and development of Menangle Village.

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;

St James Church, Menangle, is recognised within the state as an unusual and particularly fine example of a small country church of great architectural integrity, this significance being enhanced by the building's high degree of intactness and quality of workmanship.

10.7 Photos



St James' Church, Menangle
Photo: M. Pearson 2008



St James' Church, Menangle
Photo: M. Pearson 2008

11 ST PATRICK'S CATHOLIC CHURCH, MENANGLE

11.1 Location

119 Menangle Street, Menangle (Lot 100, DP 790213).

11.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690097.

Wollondilly Heritage Study.

11.3 History

Built 1895 to design of R.T. Dennehy of Sydney. It relates to a period of economic and social growth in the village and coincides with the change in pastoral activities in the area from sheep to dairying.

11.4 Description

A simply detailed red face brickwork church building with steeply gabled roof clad with terracotta tiles. The apex of both east and west gables are surmounted by a small timber cross.

The western front to Menangle Road has a shallow lancet-arched porch with brick relief-work decoration below a trio of small louvred, lancet headed ventilators in the head of the gable. The corners of the building and north and south walls are marked by simple brickwork buttresses.

The ledged and boarded entrance doors feature decorative cast iron hinges.

The church building is set in a large open site below the hill on which St James' is sited. Rose plantings are currently maintained in the grounds (2008). Water tanks are located against walls (c.2006) for garden watering.

Good condition.

11.5 Statement of Significance

From State Heritage Inventory Database

St Patrick's Catholic Church has local social and historic significance through its associations with the Roman Catholic community in the Menangle area since 1895. The church also contributes to the stock of late 19th and early 20th century buildings which give the present Menangle Village much of its character, particularly those lining Menangle Road. It is a well maintained, typical example of a "Simplified Gothic Revival" country church of its time.

11.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

St Patrick's Church has local social and historic significance through its associations with the Roman Catholic community in the Menangle area since 1895. The church also contributes to the stock of late 19th and early 20th century buildings which give the present Menangle Village much of its character, particularly those lining Menangle Road.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

It is a well maintained, typical example of a "Simplified Gothic Revival" country church of its time.

Criterion D: an item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

St Patrick's Church has local social and historic significance through its associations with the Roman Catholic community in the Menangle area since 1895.

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;

It is a well maintained, typical example of a "Simplified Gothic Revival" country church of its time.

11.7 Photos



St Patrick's Church, Menangle
Photo: M. Pearson 2008

12 GILBULLA (ANGLICAN CONFERENCE CENTRE)

12.1 Location

710 Moreton Park Road, Menangle (Lot 1, DP 370921).

12.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690092.

Wollondilly Heritage Study.

12.3 History

Gilbulla was part of the Macarthur estates from the early years of the 19th century. From 1818 there was a small cottage on the property which was situated near an early Cobb & Co coaching route south. By the 1890s the cottage had been demolished to make way for a more imposing residence, the present Main House built by Major-General the Hon. J.W. Macarthur-Onslow as a home for his family. In 1932 he exchanged house with his unmarried sister, Sibella, who was then living at nearby Camden Park. She was the last Macarthur occupant of the house and was known as "The Lady of the Manor of Menangle". Sibella had wide community interests and worked actively for her 'causes' which included support for the Kimberley Plan for Jewish colonisation in Australia and Red Cross Activities. After her death in 1943, Gilbulla became one of the Red Cross's rehabilitation centres and during this occupation the Long House was constructed. In 1949 the Church of England acquired the house and present grounds from Camden Park Estate as a conference and retreat house which was also a memorial to the wartime work of the clergy of the Church of England, particularly the chaplains during WWII. Sydney clergy at the time provided the labour to build a log chapel. Local timber was used with the bark intact for all except the east wall which is plate glass, and the interior was furnished simply. Additional conference facilities were added in 1978 and a new dining wing in 1981.

Art & Architecture, Vol 1 No 3, 1904.

Miss Rook, Church House, 14 October, 1965.

Proudfoot, Helen, Campbelltown, Camden, Appin Survey.

JRC Planning Services, Wollondilly Heritage Study, WO0092, 1992.

Macarthur Region Heritage Study, Ref No. 90, 1985.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690092, 2006.

12.4 Description

An imposing two storey Federation Arts and Crafts residence set in extensive landscaped grounds. Gilbulla carries on the aesthetic tradition of eccentric country residences established by John Horbury Hunt with "Saumarez" (Armidale) and Booloombimba (Armidale). Horbury Hunt and Sulman became the chief proponents of the Arts and Crafts movement in Australia, both of them being heavily influenced by the work of Frank Lloyd Wright in America, and took the style to its apogee in NSW. The main house at Gilbulla comprises:

- a single storey, slate roofed verandah to the east, north and (part of) the west elevations supported on truncated columns;
- gabled and half gabled slate roofs with numerous tall chimneys finished with roughcast render;
- half-timbering detail to main north and east gables;
- projecting first floor balcony above ground floor porch to north elevation with truncated turned timber columns and timber shingles (similar to the Menangle Village Store);
- larger first floor balcony to east (garden front) elevation; and
- parapetted projecting bays to east and west elevations (with black edging contrasting with white roughcast render).

The building is characterised by asymmetrical massing punctuated by a variety of rendered chimneys with decorative terra cotta pots. The use of organic materials, such as timber shingling, provides a strong contrast the roughcast finishes and the variety of materials and finishes combine in an overall picture book eccentricity that is typical of both the Arts and Crafts style and the work of Sulman. The site also contains a gate house, dairies and a number of outbuildings, also in the Arts and Crafts style.

The Main House appears to be in good condition.

The Main House has been extended to provide dining facilities. The complex as a whole consists of buildings of different forms, components, materials and styles.

The landscape values of Gilbulla are identified in *Colonial Landscapes of the Cumberland Plain and Camden NSW*, Morris and Britton for the Heritage Council, 1997.

12.5 Statement of Significance

From State Heritage Inventory Database (as amended in draft 2009 LEP)

"Gilbulla" is significant through its associations with the initial pastoral expansion of the area ("Wild Cattle" were reputedly found in the vicinity). It has significant links with the Macarthur family extending back to its establishment as part of John Macarthur's estates in the initial decades of the 19th century. In the final years of the century it became home to the Macarthur-Onslows maintaining the family association for another four decades.

Gilbulla has additional significance arising from its various subsequent roles as a Red Cross centre during WWII and as an Anglican conference and retreat centre which commemorates the role of chaplains during the War. The Main House is an outstanding example of a Federation Arts and Crafts residence on a grand scale. Designed by the notable architect Sir John Sulman, it is part of an important group of Sulman designed buildings around Menangle and represents a body of work on a par with the work of John Horbury Hunt.

12.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

"Gilbulla" is significant through its associations with the initial pastoral expansion of the area ("Wild Cattle" were reputedly found in the vicinity). It has significant links with the Macarthur family extending back to its establishment as part of John Macarthur's estates in the initial decades of the 19th century. In the final years of the century it became home to the Macarthur-Onslows maintaining the family association for another four decades.

Gilbulla has additional significance arising from its various subsequent roles as a Red Cross centre during WWII and as an Anglican conference and retreat centre which commemorates the role of chaplains during the War.

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;

Gilbulla has State significance through its association with the Macarthur family and the establishment of their Camden and Menangle estate. The site has additional significance through its association with the architect Sir John Sulman.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

Gilbulla has state significance as an outstanding example of a Federation Arts and Crafts residence on a grand scale. Designed by the notable architect Sir John Sulman, it is part of an important group of Sulman designed buildings around Menangle and represents a body of work on a par with the work of John Horbury Hunt.

Criterion D: an item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

Gilbulla has regional significance for its role in the social, economic and pastoral development of Menangle and Camden.

Criterion E: an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

Gilbulla has state significance for its ability to provide information about the layout, design and construction of a grand 19th century home and farm complex. The site has high archaeological potential and provides insights into life over a period of more than a century.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare statewide.

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;

Gilbulla is an outstanding representative example of Federation Arts and Crafts residences on a grand scale.

12.7 Photos



Gilbulla Homestead.
Photo: M. Pearson 2008

13 BUNGALOW, 92 MENANGLE ROAD, MENANGLE

13.1 Location

92 Menangle Road, Menangle (Lot A, DP 940830).

13.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No. 2690727.

13.3 History

Early Menangle was a lightly populated parish of some 50 farms centred on the Nepean River. The creation of the village in the 1850s and 1860s was primarily the result of developments in communication: a road-bridge over the Nepean (1855-56); a rail bridge (1863) bringing with it construction gangs; a railway station and finally two inns serving both the railways gangs and the surrounding farms. By 1866 100 people were living in the village, on both sides of the river.

Farming was initially dominated by sheep but gave way to dairy cattle after the opening of the railway. The railway line became the commercial focus of the village and the growing dairy industry and the historic character of the village, as we see it today, is largely a reflection of the railway-related development that took place in the late 19th and early 20th centuries.

The Macarthurs of Camden Park patronised the village, which was also home to a number of their estate workers. Their considerable wealth helped the village to grow and the Macarthurs were directly responsible for many of the fine buildings in Menangle, including St James's Church (both the original 1876 Horbury Hunt building and the Sulman addition in 1898), the present General Store, the Camden Estate Central Creamery and eventually the Rotolactor, which brought modern technology to the local dairy industry. The General Store was initially used by the Camden Park Estate as its buying agent for all provisions, stores, seeds, fuel etc and it was only with the dwindling of the Estate and the Macarthur's iron grip on the district that it began to function as a general store for the village.

Built in 1915.

13.4 Description

A typical transitional bungalow addressing the main road from an elevated position. Key features: multiple offset gabled form; imitation half-timbered gablet detail; louvred gablet ventilator; timber framed construction with weatherboard cladding; asymmetric massing and fenestration; window hoods with decorative timber brackets; skillion return verandah; varied roof line; elevated position set back from road.

Poor condition.

13.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

92 Menangle Road has local significance as a good and locally rare example of an early 20th century bungalow reflecting the transitional period between the Edwardian California Bungalow idioms. It is part of the important early 20th century building stock of Menangle is an important component of the historic cultural landscape of the village.

13.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

It is part of the important early 20th century building stock of Menangle is an important component of the historic cultural landscape of the village.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

92 Menangle Road has local significance as a good and locally rare example of an early 20th century bungalow reflecting the transitional period between the Edwardian California Bungalow idioms. It is part of the important early 20th century building stock of Menangle is an important component of the historic cultural landscape of the village.

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;

92 Menangle Road is a good representative example of early 20th century transitional bungalows.

13.7 Photos



92 Menangle Road, Menangle.
Photo: M. Pearson

14 BUNGALOW, 151 MENANGLE ROAD, MENANGLE

14.1 Location

151 Menangle Road, Menangle (Lot 1, DP 838297).

14.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690726.

14.3 History

See history for 92 Menangle Road citation above.

14.4 Description

A typical transitional bungalow addressing the main road from an elevated position. Key features: multiple offset gabled form; imitation half-timbered gablet detail; louvred gablet ventilator; timber framed construction with weatherboard cladding; asymmetric massing and fenestration; window hoods with decorative timber brackets; skillion return verandah; varied roof line; elevated position set back from road.

Excellent condition.

14.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

151 Menangle Road has local significance as a good and locally rare example of an early 20th century bungalow reflecting the transitional period between the Edwardian California Bungalow idioms. It is part of the important early 20th century building stock of Menangle is an important component of the historic cultural landscape of the village.

14.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

It is part of the important early 20th century building stock of Menangle is an important component of the historic cultural landscape of the village.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

151 Menangle Road has local significance as a good and locally rare example of an early 20th century bungalow reflecting the transitional period between the Edwardian California Bungalow idioms. It is part of the important early 20th century building stock of Menangle is an important component of the historic cultural landscape of the village.

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;

151 Menangle Road is a good representative example of early 20th century transitional bungalows.

14.7 Photos



151 Menangle Road, Menangle.
Photo: M. Pearson

15 BUNGALOW, 106 MENANGLE ROAD, MENANGLE

15.1 Location

106 Menangle Road, Menangle (Lot B, DP 322713).

15.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690722.

15.3 History

See history for 92 Menangle Road citation above.

Built c. 1920.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

15.4 Description

A good local example of the California Bungalow type. Key features: prominent street-facing offset double gables; offset side-facing gabled bay (a later extension); imitation half timbered gable detail; masonry construction with liver facebrick to all elevations; entry porch with timber posts supported on masonry piers with rendered capping; painted masonry sills; bracketed eaves and narrow eaves overhang; bracketed window framed with timber purlins; asymmetric form, massing and fenestration; single masonry chimney with rough cast render finish.

Excellent condition.

15.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

106 Menangle Road has local significance as a good example of a California Bungalow, a building type that is rare in both Menangle and the Wollondilly LGA. It is representative of early 20th century development in Menangle and the growth of the village during that period, precipitated by the development of the Macarthur estate dairies.

15.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

It is representative of early 20th century development in Menangle and the growth of the village during that period, precipitated by the development of the Macarthur estate dairies.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

106 Menangle Road has local significance as a good example of a California Bungalow, a building type that is rare in both Menangle and the Wollondilly Shire.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare locally.

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;

106 Menangle Road is a good representative example of the California Bungalow idiom and early 20th century transitional bungalows.

15.7 Photos



106 Menangle Road, Menangle.
Photo: M. Pearson

16 BUNGALOW, 96 MENANGLE ROAD, MENANGLE

16.1 Location

96 Menangle Road, Menangle (Lot 1, DP 305932).

16.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690728.

16.3 History

See history for 92 Menangle Road citation above.

Built c.1915.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

16.4 Description

A typical transitional bungalow addressing the main road from an elevated position. Key features: multiple offset gabled form; imitation half-timbered gablet detail; louvred gablet ventilator; timber framed construction with weatherboard cladding; asymmetric massing and fenestration; window hoods with decorative timber brackets; skillion return verandah; varied roof line; elevated position set back from road.

Excellent condition.

16.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

96 Menangle Road has local significance as a good and locally rare example of an early 20th century bungalow reflecting the transitional period between the Edwardian California Bungalow idioms. It is part of the important early 20th century building stock of Menangle is an important component of the historic cultural landscape of the village.

16.6 Significance against criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

It is part of the important early 20th century building stock of Menangle is an important component of the historic cultural landscape of the village.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

96 Menangle Road has local significance as a good and locally rare example of an early 20th century bungalow reflecting the transitional period between the Edwardian California Bungalow idioms. It is part of the important early 20th century building stock of Menangle is an important component of the historic cultural landscape of the village.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare locally.

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;

96 Menangle Road is a good representative example of early 20th century transitional bungalows.

16.7 Photos



96 Menangle Road, Menangle.
Photo: M. Pearson

17 COTTAGE, 124 MENANGLE ROAD, MENANGLE

17.1 Location

124 Menangle Road, Menangle (Lot 1, DP 979893).

17.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690723.

17.3 History

See history for 92 Menangle Road citation above.

Built c.1880.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

17.4 Description

A typical late Victorian period timber cottage. Key features: moderately pitched half-hipped roof with corrugated iron cladding; decorative gablet bargeboards; half-bullnose verandah to front on turned timber posts; timber framed construction with weatherboard cladding; symmetrical fenestration to main elevation with central panelled door flanked by paired windows; timber framed and sashed double-hung windows; paired masonry chimneys with corbelled capping; single storey; overall modesty of scale and form; skillion addition to rear.

Fair condition.

17.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

124 Menangle Road has local significance as a good example of a late 19th century dwelling. It is typical of the small timber cottages that characterised Menangle in the mid to late 19th century and is an important component of the historic cultural landscape of Menangle.

17.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

124 Menangle Road is typical of the small timber cottages that characterised Menangle in the mid to late 19th century and is an important component of the historic cultural landscape of Menangle.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

124 Menangle Road has local significance as a good example of a late 19th century dwelling. It is typical of the small timber cottages that characterised Menangle in the mid to late 19th century and is an important component of the historic cultural landscape of Menangle.

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;

124 Menangle Road is a good representative example of late 19th century cottages in a rural setting.

17.7 Photos



124 Menangle Road, Menangle.
Photo: M. Pearson

18 COTTAGE, 102 MENANGLE ROAD, MENANGLE

18.1 Location

102 Menangle Road, Menangle (Lot A, DP 322713).

18.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690721.

18.3 History

See history for 92 Menangle Road citation above.

Built c.1870.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

18.4 Description

A typical mid 19th century timber cottage. Key features: steeply pitched half-hipped roof with ridge line oriented parallel to road; skillion verandah on squared timber posts; timber framed construction with weatherboard cladding; single externally expressed brick chimney; symmetrical fenestration with central front door flanked by paired windows; timber framed and sashed double-hung windows; single storey; simplicity and modesty of form; setback in heavily wooded garden.

Good condition.

18.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

102 Menangle Road has local significance as a good example of a mid 19th century dwelling. It is typical of the small timber cottages that characterised Menangle in the mid to late 19th century and is an important component of the historic cultural landscape of Menangle.

18.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

102 Menangle Road is typical of the small timber cottages that characterised Menangle in the mid to late 19th century and is an important component of the historic cultural landscape of Menangle.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

102 Menangle Road has local significance as a good example of a mid 19th century dwelling. It is typical of the small timber cottages that characterised Menangle in the mid to late 19th century and is an important component of the historic cultural landscape of Menangle.

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;

102 Menangle Road is a good representative example of mid 19th century rural cottages.

18.7 Photos



102 Menangle Road, Menangle.
Photo: M. Pearson

19 COTTAGE, 138 MENANGLE ROAD, MENANGLE

19.1 Location

138 Menangle Road, Menangle (Lot A, DP 963033).

19.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690725.

19.3 History

See history for 92 Menangle Road citation above.

Built c.1910.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

19.4 Description

A typical turn of the century bungalow with Arts and Crafts embellishment. Key features: steeply pitched hipped roof with offset street facing gabled bay; asymmetric form and massing; timber framed construction with fibro and weatherboard cladding; imitation shingled gable detailing; timber framed and sashed casement windows; window hoods supported on timber brackets; skillion verandah to front with turned timber posts; off-set side facing gable; setback from street; single storey; modest scale and form; fretted timber barge boards.

Good condition.

19.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

138 Menangle Road has regional significance through its association with the EMAI and the former Camden Park Estate dairies. It is one of a group of similar dairy cottages, all reflecting the Arts and Crafts tradition prevalent at the time, making up the dairying establishment of the Camden Park Estate. It is a good example of its type and an important component of the historic cultural landscape of Menangle and Camden.

19.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

138 Menangle Road has regional significance through its association with the EMAI and the former Camden Park Estate dairies. It is one of a group of similar dairy cottages, all reflecting the Arts and Crafts tradition prevalent at the time, making up the dairying establishment of the Camden Park Estate. It is a good example of its type and an important component of the historic cultural landscape of Menangle and Camden.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

138 Menangle Road is one of a group of similar dairy cottages, all reflecting the Arts and Crafts tradition prevalent at the time, making up the dairying establishment of the Camden Park Estate. It is a good example of its type and an important component of the historic cultural landscape of Menangle and Camden.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare locally.

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;

138 Menangle Road is a good representative example of early 20th century dairy cottages.

19.7 Photos



138 Menangle Road, Menangle.
Photo: M. Pearson

20 COTTAGE, 128 MENANGLE ROAD, MENANGLE

20.1 Location

128 Menangle Road, Menangle (Lot B, DP 398310).

20.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690724.

20.3 History

See history for 92 Menangle Road citation above.

Built c.1880.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

20.4 Description

A typical late Victorian period timber cottage. Key features: moderately pitched half-hipped roof with corrugated iron cladding; decorative gablet bargeboards; half-bullnose verandah to front on turned timber posts; timber framed construction with weatherboard cladding; symmetrical fenestration to main elevation with central panelled door flanked by paired windows; timber framed and sashed double-hung windows; paired masonry chimneys with corbelled capping; single storey; overall modesty of scale and form; skillion addition to rear.

Fair condition.

20.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

128 Menangle Road has local significance as a good example of a late 19th century dwelling. It is typical of the small timber cottages that characterised Menangle in the mid to late 19th century and is an important component of the historic cultural landscape of Menangle.

20.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

128 Menangle Road is typical of the small timber cottages that characterised Menangle in the mid to late 19th century and is an important component of the historic cultural landscape of Menangle.

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;

102 Menangle Road is a good representative example of late 19th century rural cottages.

20.7 Photos



102 Menangle Road, Menangle.
Photo: M. Pearson

21 DAIRY COTTAGE, 2 STATION STREET, MENANGLE

21.1 Location

2 Station Street, Menangle (Camden Park Estate Central Creamery) (Lot 202, DP 590247).

21.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690730.

21.3 History

The creamery was built in 1898 by the Camden Park Estate. It initially separated milk for the sweet cream trade in Sydney. With the creation of the Milk Board in 1929 it became the Depot for receiving milk for city distribution. It is now used as a junk storage shed and the boilers, ammonia compressor and refrigeration units have been removed. It is likely that other residences in Menangle were also associated with the Creamery, but this, 65 Woodbridge Rd and 27 Station St are the only securely identified Creamery houses.

Andrea Oehm, Thematic History Wollondilly Shire Council Heritage Study Review, 2006.

21.4 Description

A typical early 20th century dairy cottage based on the bungalow tradition. Key features: moderately pitched hipped roof with projecting gabled bay; skillion verandah; timber framed construction with weatherboard cladding; asymmetric form; timber framed and sashed double-hung windows; window hoods on timber brackets; single masonry chimney; single storey; modest scale and form with little embellishment; set back from street in heavily wooded garden.

21.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

The Dairy Cottage has local significance as a good example of an early 20th century dairy cottage associated with the operation of the Camden Park Estate Central Creamery. Along with the Manager's Cottage at 27 Station St it is the only visible evidence of purpose-built worker's housing associated with the Creamery. It is an important component of the historic cultural landscape of Menangle.

21.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Dairy Cottage has local significance as a good example of an early 20th century dairy cottage associated with the operation of the Camden Park Estate Central Creamery. Along with the Manager's Cottage at 27 Station St it is the only visible evidence of purpose-built worker's housing associated with the Creamery. It is an important component of the historic cultural landscape of Menangle.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare locally.

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;

The Dairy Cottage is a good representative example of early 20th century worker's housing associated with a large dairying operation.

21.7 Photos



2 Station Road, Menangle.
Photo: M. Pearson

22 DAIRY COTTAGE, 65 WOODBRIDGE ROAD, MENANGLE

22.1 Location

65 Woodbridge Road, Menangle (Camden Park Estate) (Lot 1, DP 954424).

22.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690731.

22.3 History

The creamery was built in 1898 by the Camden Park Estate. It initially separated milk for the sweet cream trade in Sydney. With the creation of the Milk Board in 1929 it became the Depot for receiving milk for city distribution. It is now used as a junk storage shed and the boilers, ammonia compressor and refrigeration units have been removed. It is likely that other residences in Menangle were also associated with the Creamery, but this, 2 Station St and 27 Station St are the only securely identified Creamery houses.

Built c.1910.

Andrea Oehm, Thematic History Wollondilly Shire Council Heritage Study Review, 2006.

22.4 Description

A typical early 20th century dairy cottage based on the bungalow tradition. Key features: moderately pitched hipped roof with projecting gabled bay; skillion verandah; timber framed construction with weatherboard cladding; asymmetric form; timber framed and sashed double-hung windows; window hoods on timber brackets; single masonry chimney; single storey; modest scale and form with little embellishment; pastoral setting.

22.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

The Dairy Cottage has local significance as a good example of an early 20th century dairy cottage associated with the operation of the Camden Park Estate Central Creamery. Along with the Manager's Cottage at 2 and 27 Station St it is the only visible evidence of purpose-built worker's housing associated with the Creamery. It is an important component of the historic cultural landscape of Menangle.

22.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Dairy Cottage has local significance as a good example of an early 20th century dairy cottage associated with the operation of the Camden Park Estate Central Creamery. Along with the Manager's Cottage at 2 and 27 Station St it is the only visible evidence of purpose-built worker's housing associated with the Creamery. It is an important component of the historic cultural landscape of Menangle.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare locally.

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;

The Dairy Cottage is a good representative example of early 20th century worker's housing associated with a large dairying operation.

22.7 Photos



65 Woodbridge Road, Menangle.
Photo: M. Pearson

23 EMI COTTAGE 29

23.1 Location

50 Menangle Road, Menangle (Lot 1, DP 1067320). EMAI, Camden Park.

23.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690719.

23.3 History

"The history of Camden Park and its founders, the Macarthur family, is well known and documented. During the last century they created at Camden an effective rural estate based on the British model.

The chief focus was the mansion, designed by John Verge and completed in 1835. It is surrounded by extensive gardens; to the south were vineyards and a winery, and to the north was the plant nursery established by William Macarthur, and one of the chief centres of horticulture in 19th century Australia. Large orchards and plantations of economic species, such as olive and cork were located to the east adjacent to the Nepean River, and nearby were irrigated paddocks developed by James Macarthur. The extensive grazing lands, known as the Cowpastures carried the celebrated flocks of merino sheep as well as horses and cattle.

Along the main drives much new planting was introduced to evoke the character of a British estate. Olive trees lined the drive while great belts of exotic species edged the river meadows. Vistas were established through the landscape to church spires, a windmill, and natural promenances. Towards the end of the 19th century, the area adjoining a lagoon to the north of the plant nursery was restored as the pleasure grounds, which were in existence by 1824.

Gate lodges designed by Sir John Sulman were built at the head of the Camden and Menangle drives.

Dotted around the estate are groups of cottages, forming hamlets accommodating the numerous farm workers. The two chief groups are located overlooking the former plant nursery and the former orchard.

The centre of the agricultural operation was located adjacent to the original cottage, on a ridge to the south west of the mansion. Known as Old Belgenney, the Belgenny Farm Group was well established when visited by Robert Scott of Glendon, Hunter Valley, during the 1820's. His sketch plan establishes that the buildings existing north and west of the courtyard were extant circa 1826. The group has been amended and extended during the ensuing years and is a most significant example of rural evolution, all of the key buildings being based on advanced British prototypes.

The estate extended to Menangle, which formed the commercial hub of the estate and became the residential centre of the estate workers. In the early 20th century, the Estate was reorganised for dairying purposes. Numerous dairy buildings and eventually, in the 1950s, the Rotolactor, demonstrate the built manifestations of this pursuit. Some 30 cottages were erected to house dairy workers, from the early 20th century through to the 1960s and most of these were eventually absorbed into the EMAI before being on-sold for private residences. During the 1970s, the majority of the estate was sold to Talga Pty. Ltd. for suburban development. Approximately 1,000 acres around the mansion was retained by a member of the Macarthur family. Talga Pty. Ltd. failed, and the northern portions of the Talga Pty. Ltd. holdings were purchased by the NSW government. The southern portion of the Talga Pty. Ltd. holdings is currently in private ownership."

(Extract from Report by H. Tanner and Associates, 1983).

Built c.1910.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

23.4 Description

A typical turn of the century bungalow with Arts and Crafts embellishment. Key features: steeply pitched hipped roof with offset street facing gabled bay; asymmetric form and massing; timber framed construction with fibro and weatherboard cladding; imitation half-timbered detailing; timber framed and sashed casement windows; window hoods supported on timber brackets; skillion verandah to front with weatherboard enclosure; off-set side facing gable; setback from street; single storey; modest scale and form.

Fair condition.

23.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

Cottage 29 has regional significance through its association with the EMAI and the former Camden Park Estate dairies. It is one of a group of similar dairy cottages, all reflecting the Arts and Crafts tradition prevalent at the time, making up the dairying establishment of the Camden Park Estate. It is a good example of its type and an important component of the historic cultural landscape of Menangle and Camden.

23.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

Cottage 29 has regional significance through its association with the EMAI and the former Camden Park Estate dairies. It is one of a group of similar dairy cottages, all reflecting the Arts and Crafts tradition prevalent at the time, making up the dairying establishment of the Camden Park Estate. It is a good example of its type and an important component of the historic cultural landscape of Menangle and Camden.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

Cottage 29 is one of a group of similar dairy cottages, all reflecting the Arts and Crafts tradition prevalent at the time, making up the dairying establishment of the Camden Park Estate. It is a good example of its type and an important component of the historic cultural landscape of Menangle and Camden.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare locally.

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;

Cottage 29 is a good representative example of the Camden Park Estate cottages and of early 20th century dwellings.

23.7 Photos



50 Menangle Road, Menangle.
Photo: M. Pearson

24 HOUSE, 100 MENANGLE ROAD, MENANGLE

24.1 Location

100 Menangle Road, Menangle (Lot 1, DP 587187).

24.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690725.

24.3 History

See history for 92 Menangle Road citation above.

Built c.1910.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

24.4 Description

A substantial dwelling and typical of the late 19th century, reflecting the particular character of Menangle. Key features: moderately pitched half-hipped roof with central gabled portico; roof extends to form skillion verandah to front elevation only; masonry construction with face brick to all elevations; verandah supported on turned timber posts; symmetrical fenestration; timber sashed and framed double-hung four-paned windows; single masonry chimney with rough cast render, centrally located; set back from street in heavily landscaped grounds; single storey. Currently forms a semi-detached cottage pair with 98 Menangle Road.

Excellent condition.

24.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

100 Menangle Road has local significance as a good example of a late 19th century dwelling. It is typical of the Arts and Crafts influenced buildings that make most of Menangle's historic building stock and is an important component of the historic cultural landscape of Menangle.

24.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

100 Menangle Road has local significance as a good example of a late 19th century dwelling. It is typical of the Arts and Crafts influenced buildings that make most of Menangle's historic building stock and is an important component of the historic cultural landscape of Menangle.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

100 Menangle Road is typical of the Arts and Crafts influenced buildings that make most of Menangle's historic building stock and is an important component of the historic cultural landscape of Menangle.

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;

100 Menangle Road is an excellent representative example of late 19th century housing in Menangle.

24.7 Photos



100 Menangle Road, Menangle.
Photo: M. Pearson

25 MENANGLE CONSERVATION AREA

25.1 Location

Menangle Road and Woodridge Road/Station Street, Menangle.

25.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690277.

25.3 History

Early Menangle was a lightly populated parish of some 50 farms centred on the Nepean River. The creation of the village in the 1850s and 1860s was primarily the result of developments in communication: a road-bridge over the Nepean (1855-56); a rail bridge (1863) bringing with it construction gangs; a railway station and finally two inns serving both the railways gangs and the surrounding farms. By 1866 100 people were living in the village, on both sides of the river.

Farming was initially dominated by sheep but gave way to dairy cattle after the opening of the railway. The railway line became the commercial focus of the village and the growing dairy industry and the historic character of the village, as we see it today, is largely a reflection of the railway-related development that took place in the late 19th and early 20th centuries.

The Macarthurs of Camden Park patronised the village, which was also home to a number of their estate workers. Their considerable wealth helped the village to grow and the Macarthurs were directly responsible for many of the fine buildings in Menangle, including St James's Church (both the original 1876 Horbury Hunt building and the Sulman addition in 1898), the present General Store, the Camden Estate Central Creamery and eventually the Rotolactor, which brought modern technology to the local dairy industry. The General Store was initially used by the Camden Park Estate as its buying agent for all provisions, stores, seeds, fuel etc and it was only with the dwindling of the Estate and the Macarthur's iron grip on the district that it began to function as a general store for the village.

The Macarthurs of nearby Camden Park patronised the Village which was home to a number of their estate workers. They paid for St James's church, Horbury Hunt's nave in 1876, Sulman's chancel and steeple in 1898, and in the 20th century they built the present General Store (used by the Estate as its buying agent for all provisions, stores, seeds fuel, etc.), the Camden Estate Central Creamery and ultimately the Rotolactor, which brought modern technology to local dairying.

Sources:

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

Bayley, W.A, History of Campbelltown, 1976.

JRC Planning Services, Macarthur Regional Environmental Study. Environmental Heritage. Working Paper No.3, 1986.

Sommerville, J., & Travis Partners Pty Ltd, Menangle Village Development Guidelines, February, 1991.

JRC Planning Services, Wollondilly Heritage Study, WO0277, 1992.

25.4 Description

Menangle Village is laid out around the crossroad of Menangle Road and Woodbridge Road/Station Street with most of the early cottages fronting Menangle Road. Block sizes vary but a frontage of 14 -15m is most common. The relationship of the street layout and the topography is an important one with most development spread along a low north-south running ridge giving views over lower surrounding farmland. The visual centre of the village is marked by a prominent knoll (slightly southeast of the main residential area) on which is situated St James' Church. This strikingly designed church with its picturesque tower, is the most notable component in views of the village from all surrounding areas. The knoll also features a "perforated screen" of trees around the church which is in turn encircled by open grass land before reaching the residential development along Menangle Road and Station Street. Street landscaping is of a simple nature with grassed verges and a random mix of trees including brush box, pepper trees and various Eucalypts. The significant features of the village include:

- the overall street and building layout;
- a group of important non-residential buildings including St James' Church, the General Store, St Patrick's Church, the Community Hall and the Public School;
- the Railway Station buildings, the former Camden Park Rotolactor and Creamery structures (Gilbulla and the former Camden Park Gate Lodge are located outside the village centre and are documented separately in the inventory but they are linked to the history of development of the village through their associations with the Macarthur family); and
- the informally arranged early landscaping features - notably mature trees and remnant hedging on both public and private land.

The architectural character of the residential buildings in the village is quite diverse with a mix of size and form, period, style and materials. Early 20th century buildings however, predominate.

The significant early residential buildings include:

- 40 Carrolls Road.
- 50, 80, 92, 96, 98, 100, 102, 106, 119, 122, 124, 125, 128, 131, 135, 138, 149 and 151 Menangle Road.

- 8, 10, 12, 14, 16, 27, 28 Station St and the dairy cottage on the corner of Station St and Menangle Roads.
- 46 Woodbridge Road.
- Lot 201 DP 590247 end of Stephen St (adjacent to Creamery and rotolactor site).

25.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

Menangle Village has remained essentially contained within the settlement boundaries formed by village development by the second decade of the 20th century. As such it is an unusually intact example of a rural service centre of this period and in particular, one that is associated with the dairying industry when new technologies were being introduced to transport and process dairy products and when new dairying techniques were introduced in the form of the Rotalactor. The location of the village reflects the strong influence of major road and rail construction activities on town development in the Region.

It also has local and regional aesthetic significance as a discrete landscape entity and notable landmark, with its cross streets lined with houses elevated above the surrounding farmlands and the whole village itself being visually dominated by St James' Church on the small rise in the centre of the settlement.

The village also has associational significance through its links with the Macarthur family and the Camden Park Estate, this being most clearly expressed in the major commercial, ecclesiastical and industrial buildings of the General Store, St James' Church, the Creamery and the Rotalactor as well as Estate workers' housing.

The village is also an important social entity with a strong sense of community and sense of place to a degree not reached in the other towns and villages of Wollondilly.

25.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

Menangle Village has remained essentially contained within the settlement boundaries formed by village development by the second decade of the 20th century. As such it is an unusually intact example of a rural service centre of this period and in particular, one that is associated with the dairying industry when new technologies were being introduced to transport and process dairy products and when new dairying techniques were introduced in the form of the Rotalactor. The location of the village reflects the strong influence of major road and rail construction activities on town development in the Region.

It also has local and regional aesthetic significance as a discrete landscape entity and notable landmark, with its cross streets lined with houses elevated above the surrounding farmlands and the whole village itself being visually dominated by St James' Church on the small rise in the centre of the settlement.

The village also has associational significance through its links with the Macarthur family and the Camden Park Estate, this being most clearly expressed in the major commercial, ecclesiastical and industrial buildings of the General Store, St James' Church, the Creamery and the Rotolactor as well as Estate workers' housing.

The village is also an important social entity with a strong sense of community and sense of place to a degree not reached in the other towns and villages of Wollondilly.

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;

Menangle Village has State significance through its close association with the Macarthur and Onslow families, who were instrumental in establishing the village and keeping it economically viable through financial support and the provision of jobs on their Camden Park Estate and the nearby Creamery.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

Menangle village has local and regional aesthetic significance as a discrete landscape entity and notable landmark, with its cross streets lined with houses elevated above the surrounding farmlands and the whole village itself being visually dominated by St James' Church on the small rise in the centre of the settlement.

Criterion D: an item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

Menangle Village has State significance through its ability to demonstrate the social development of a small village from the early 19th century through to the present day with the 19th century core of the village remaining intact.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare statewide.

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;

Menangle Village is an outstanding representative example of an intact 19th century estate village.

25.7 Photos



Menangle Conservation Area viewed from the west.

Photo: M. Pearson

26 SLAB HUT

26.1 Location

40 Carrolls Road, Menangle (Lot 123, DP 809576).

26.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690718.

26.3 History

See history for 92 Menangle Road citation above.

Built c.1850.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690722. 2006.

26.4 Description

A typical mid-19th century slab hut, most likely erected as a shepherd's hut as part of the Macarthur operations in the area. Key features: steeply pitched gabled roof; skillion verandah; timber framed construction with vertical sawn slab cladding; symmetrical and minimal fenestration; small timber framed windows; overall simplicity of form and modesty of scale.

Good condition. The roof has been replaced within the last 5 years.

26.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

The Slab Hut has local significance as a remnant of the earliest settlement of the Menangle area and is indicative of the crude housing available to the first settlers and workers on the Macarthur estate. It is a locally rare example of the slab hut, a building type that once typified stockmen's and shepherd's huts in the region, but whose ephemeral nature has resulted in the loss of most of them.

26.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Slab Hut has local significance as a remnant of the earliest settlement of the Menangle area and is indicative of the crude housing available to the first settlers and workers on the Macarthur estate. It is a locally rare example of the slab hut, a building type that once typified stockmen's and shepherd's huts in the region, but whose ephemeral nature has resulted in the loss of most of them.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare regionally.

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;

The Slab Hut is an excellent representative example of mid-19th century pastoral dwellings.

26.7 Photos



40 Carrolls Road, Menangle.
Photo: M. Pearson



40 Carrolls Road, Menangle.
Photo: M. Pearson

27 THE PINES

27.1 Location

Menangle Road, Menangle Park.

27.2 Heritage Listing Status

No heritage listing.

See Proudfoot, H. 1977. *Colonial Buildings: Macarthur Growth Centre*. Macarthur Development Board, page 51.

27.3 History

A sandstone residence built by Edward John Edrop about 1870.

27.4 Description

A very good, late example of the classical Colonial stone house, with symmetrical façade with French doors opening to the front verandah, a slate roof and two rear wings enclosing a small grassed courtyard.

27.5 Statement of Significance

A very good, late example of the classical Colonial stone house (local significance).

27.6 Significance against Criteria

NSW State Heritage Register Criteria

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;

A very good, late example of the classical Colonial stone house.

27.7 Photos



The Pines, Menangle Park. Google Earth image

28 MOUNTBATTEN GROUP (FORMERLY MORTON PARK)

28.1 Location

655 Menangle Street, Off Duggan Street, Douglas Park (Lot A, DP 421426; Lot1, DP 576136).

28.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690085, 2690086, 2690087, 2690088.

Wollondilly Heritage Study.

28.3 History

The original grant of 2000 acres was made in 1821 to Jean Baptiste Lehemaz de Arriete, a Spaniard who arrived in NSW as a free settler, with the intention of growing vines. He planted tobacco instead, the crop failed and the convicts escaped. He also had his convicts build the original cottage in which he resided and which was later extended to the current homestead, but Arrietta sold his land by the 1830s. The property has been used for pastoral activities since that time and has had a number of owners. Morton Park was renamed *Mountbatten* in the 1940s, after Lord Louis Mountbatten, and part of the property reverted to the name *Morton Park* in the 1980s. In recent years it has been used as boarding house and then a riding school. At one stage it was acquired by the Macarthur Development Board but it is now privately owned.

Mountbatten House

The original cottage was built on the original c1821 grant of 2000 acres to Jean Baptiste Lehemaz de Arriete. The mid-Victorian main house was built by a later owner.

28.4 Description

The Group consists of:

- the Main House and Garden (WO0086);
- a Stone Chapel (WO0087); and
- the Garden Building (WO0088).

There are also outbuildings and a silo associated with the farming activities.

The complex is on two separate land holdings, the chapel being on 'Mountbatten' under separate ownership from the homestead, cottage and garden which are on 'Morton Park'.

The Mountbatten group is located west of the F4 Freeway and east of the township of Douglas Park. The mature trees which have survived from the original garden planting and the early driveway form a distinctive vegetation group which is clearly visible from the freeway and screen the farm buildings. From Douglas Park however, the farm buildings which form a cluster on top of a knoll, are distinctive.

Mountbatten House

A single storey Colonial verandahed homestead of rendered brick with French windows opening onto the verandah. The former kitchen, now a billiard room creates a courtyard with the house which is enclosed by Moorish style iron gates at the open end. The former kitchen is constructed of stone and has two ovens set into the wall. The original cottage stands alone in an extended form at the back of the house.

The house was substantially modernised to accommodate post-war uses.

Chapel

A small stone chapel with a high circular window at each end. No longer used.

Garden Building

A small round brick garden building without windows.

Condition good.

28.5 Statement of Significance

From State Heritage Inventory Database

The Group

The Morton Park property (formerly Mountbatten) is significant because of its historical associations with the early settlement of the Douglas Park area and because of its unusual association with the convict era through its original owner, d'Arietta, and its convict labour force. The property has aesthetic significance as a landmark created by the planting and building cluster on a knoll which is highly visible from the surrounding area.

Morton Park House

Morton Park House provides evidence of early and subsequent settlement phases in the area generally, and more particularly of associations with the development of country estates. The house is also of local and regional aesthetic significance as a fine example of a substantial early residence, and more particularly as a good and relatively intact representation of a Georgian country homestead, this significance enhanced by the buildings's retention of much of its original fabric and features.

Chapel

The former Chapel building has regional historic significance generally as part of this important early homestead complex, and more particularly as a rare example of a private family chapel.

Aesthetically, the building is also locally significant as an interesting representative of the early stone buildings of the area generally and ecclesiastical buildings in particular. Its simplicity of form and detailing befit the nature of its original use, but its significance has been adversely affected by the building's extensive alterations and additions, change of use and deterioration / destruction of original fabric and features.

Garden building

The Morton Park Garden building is of social and historic significance generally as a component of the varied group of early structures making up the Morton Park group, and more particularly as an integral component of the early garden layout. Aesthetically the building is an interesting representative of early 20th century garden structures which retains much of its original form and fabric but whose change of use and altered context have affected its expression of its original role.

Draft 2009 LEP Citation

The Mountbatten Group has local significance through its historical associations with the early settlement of the Douglas Park area and through its association with the original owner and the use of convict labour. The property has aesthetic significance and is a typical Colonial layout of formal plantings and buildings clustered on a knoll. Morton Park House provides evidence of early and subsequent settlement phases in the area generally, and more particularly of associations with the development of country estates.

The house is also of local and regional aesthetic significance as a fine example of a substantial early residence, and more particularly as a good and relatively intact representation of a Victorian Georgian Revival country homestead; this significance is enhanced by the building's retention of much of its original fabric and features. The site's significance is enhanced by a relatively intact Colonial garden setting containing a series of structures representing the development of garden layouts in NSW from the Colonial period up to the early 20th century. The site also contains a stone chapel, one of few surviving private chapels in the district. Although somewhat altered and deteriorated, the chapel nonetheless provides an additional layer of understanding and interpretation to the place and is an important component of the overall complex.

The Morton Park Garden building is of social and historic significance generally as a component of the varied group of early structures making up the Morton Park group, and more particularly as an integral component of the early garden layout. Aesthetically the building is an interesting representative of early 20th century garden structures which retains much of its original form and fabric but whose change of use and altered context have affected its expression of its original role.

Morton Park's former Chapel building has regional historic significance generally as part of this important early homestead complex, and more particularly as a rare example of a private family chapel. Aesthetically, the building is also locally significant as an interesting representative of the early stone buildings of the area generally and ecclesiastical buildings in particular. Its simplicity of form and detailing befit the nature of its original use, but its significance has been adversely affected by the building's extensive alterations and additions, change of use and deterioration/destruction of original fabric and features. Items of significance include the house, chapel, cottage, garden building and the Morton Park (formerly Mountbatten), which in 2007 was operating as a horse stud property.

28.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Mountbatten Group has local significance through its historical associations with the early settlement of the Douglas Park area and through its association with the original owner and the use of convict labour. Morton Park House provides evidence of early and subsequent settlement phases in the area generally, and more particularly of associations with the development of country estates.

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;

The Morton Park property (formerly Mountbatten) is significant because of its historical associations with the early settlement of the Douglas Park area and because of its unusual association with the convict era through its original owner, d'Arietta, and its convict labour force.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The property has aesthetic significance and is a typical Colonial layout of formal plantings and buildings clustered on a knoll.

28.7 Photos



Mountbatten/Morton Park. Victorian homestead top left, expanded original cottage top right, chapel left.

Photos: M. Pearson 2008

29 ST MARY'S TOWERS (FORMERLY PARKHALL)

29.1 Location

415 Douglas Park Road, Douglas Park (Lot 1, DP. 250359).

29.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690278, 2690089.

Wollondilly Heritage Study.

Register of the National Estate No. 3305.

29.3 History

The Group

In 1834-5 Sir Thomas Mitchell, Surveyor-General, acquired 3810 acres (1524ha.) of land in East Bargo (now Douglas Park), with a frontage on the Nepean. But he did not build a homestead on the land until after he returned from four years abroad in 1841. The foundation stone of Park Hall was laid in 1842 by Mitchell with his friend, Dr Charles Nicholson, and the Mitchell family occupied the house in 1845.

Five years after Mitchell's death in 1855, Park Hall was purchased by Dr Richard Jenkins, a station owner in northern NSW and since 1857, a member of the Legislative Council. Jenkins renamed the property Nepean Towers and made substantial additions and alteration to the house. He also added new outbuildings: stone stabling, wine cellars and a coachhouse (all destroyed by bush fire in 1922). During the twenty years or so that Jenkins was resident at Nepean Towers he extended the vineyards pioneered by Mitchell and established a small, unsuccessful cotton plantation. The estate became noted for its Durham Shorthorn cattle introduced and bred by Jenkins and for its lawns and gardens and the Great Avenue of trees, the pine trees at the head planted by the Duke of Edinburgh in 1868.

After Jenkins died in 1883, the property was sold to John Wetherell, who does not seem to have made any structural changes.

In 1904 the grant was subdivided, with approximately half the land and the house going to the Missionaries of the Sacred Heart. The place again changed name, to St Mary's Towers, and was used initially as a seminary for prospective priests. In 1912 the Apostolic School for boys was opened and in 1915 the foundation stone of a new school building, made of locally quarried stone, was laid, adjacent to the main house. In 1935 a further wing of classrooms and dormitories (the Jubilee Wing) was opened.

The House

Built on the 1834 grant to Sir Thomas Mitchell, Surveyor General and explorer, who laid foundation stone in 1842 for Park Hall. Is similar to the design for a villa in the "cottage style" in Francis Goodwin's "Rural Architecture" (1835) but it is a Mitchell family tradition that it is the work of London architect, Edward Blore (who was responsible, by correspondence, for the design of the new Government House in Sydney). Blore may well have drawn up plans of a modified version of the villa in an Elizabethan "manorial" style. There were many differences in detail between the pattern and the finished Park Hall: the roof line, the front door and window detailing are all different, while Park Hall's high tower at the back is a calculated addition. Work on Park Hall was supervised by architect James Hume.

Five years after Sir Thomas Mitchell's death in 1855, Park Hall was purchased by Dr Richard Jenkins, a station-owner in northern NSW and since 1857 a member of the Legislative Council. Jenkins renamed the house Nepean Towers.

Before 1864 Jenkins added an extension at the south end of the east side of the house. This contained wine cellars, with a square, low tower at the extreme south end. The architect and builder are not known. The stone stables and coach-house were probably added at the same time. All these additions were destroyed by a bush fire in 1922.

In 1873 Jenkins commissioned Edmund Blacket to add a chapel at the south-east corner and also arcading on the north and east sides of the house. Blacket's drawings for versions of the improvements survive in the Mitchell Library and include a ground plan of the house as it was in 1873. He later embellished the new chapel with stained glass by William Macleod and, while retaining the Mitchell arms on the exterior, added his own motto over the dining-room mantelpiece.

After Jenkins died in 1883, the property was sold to John Wetherall, who does not seem to have made any structural changes.

In 1904 after the property changed hands, the house became the property of the Society of the Missionaries of the Sacred Heart and once again changed name to St Mary's Towers.

Jack R. Ian, St Mary's Towers, Douglas Park, u.p.ms., Univ. of Sydney, 1991.

Kerr, J. and Broadbent, J., Gothick Taste in the Colony of New South Wales, Sydney, 1980, pages 100,105.

29.4 Description

The Group

St Mary's Towers Group consists of the property as acquired by the Missionaries of the Sacred Heart in 1904 (1720 acres, approximately half of Mitchell's original grant of 1524ha.) It includes the main house; the Great Avenue of pine trees and the associated entry gates; the gardens, including its hedges and mature trees; the 1915 stone school building; and, the Jubilee Wing of classrooms and dormitories.

The House

A two storied residence of ashlar sandstone house with simple "Victorian Gothic" forms and detailing.

The main body of the house - the oldest section - comprises a multi-gabled building with a tall octagonal stone turret and "Victorian Tudor" chimneys punctuating the skyline. Windows are multi-paned timber framed casements with "gothick" glazing bars and hood moulds and there is some use of coloured glass.

The Mitchell coat of arms is featured on the east gable while inside there is a fine geometrical stone stair with iron balusters and several original chimney pieces.

Extensions to the southeast corner of the house in 1864 were subsequently destroyed by fire in 1922.

The small stone chapel added to the southeast corner of the building and adjacent colonnade along the east and north elevations date to 1873 and are in a more strongly "Victorian Gothic" idiom. The Chapel more particularly emulates the "English Collegiate" traditions of Oxford, Cambridge and Sydney University's Great Hall and contains some late 19th century stained glass.

The building is in generally good condition.

The landscape values of St Mary's Towers are identified in *Colonial Landscapes of the Cumberland Plain and Camden NSW*, Morris and Britton for the Heritage Council, 1997.

29.5 Statement of Significance

From State Heritage Inventory Database

The Group

St Mary's Towers Group is significant through its associations with the early settlement and patterns of pastoral and agricultural development in this part of the Sydney region. Half the initial grant remains with the core of the property to indicate the extent of the estate and complement the important structures and plantings which themselves provide evidence of the status of the estate and the aspirations of the owners in the 19th century. Though it is not known how much evidence remains of the 19th century agricultural practices such as viticulture, cotton growing and cattle breeding, the property provides an example of the changes in agriculture from the initial pastoral focus and subsequent diversification into new crops and livestock activities.

As well as the important 19th century links with important colonial figures such as Sir Thomas Mitchell and Dr Jenkins, the property has social significance through its associations with Catholic education in the State, both for the training of priests and as a school for boys. The group has aesthetic significance which relates to not only the substantial stone buildings but to the gardens and plantings, particularly the Grand Avenue and its gates which form an axis to the Nepean River and beyond to the Razorback Range.

The House

St Mary's Towers has statewide aesthetic significance as one of the last stylistically significant houses built before the depression of the early 1840's. The possible derivation of its design from an identifiable pattern book further adds to its aesthetic and historic interest. It is considered by J. Broadbent (NT Listing Proposal, 1976) to be less of a "folly" than 'Lindesay' and more convincing than 'Carthona' (Mitchell's other house). Its architectural integrity and quality of workmanship provide evidence of a genuine attempt to recreate an old English Manor house in "a land now almost divided from the world but which may one day equal in all the arts of civilization the illustrious regions of his native country". While the gothic arcade changed the 'manorial character it represents a further phase of taste and part of the history of the house. The buildings' good physical condition and retention of much original fabric enhances its considerable aesthetic significance.

The building also has considerable social and historic significance through its associations with numerous important early figures, most notably Surveyor General, Sir Thomas Mitchell, but also Dr Richard Jenkins, a politician and farmer, and architects such as James Hume and Edmund Blacket (and possibly the English architect Edmund Blore).

29.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

St Mary's Towers Group is significant through its associations with the early settlement and patterns of pastoral and agricultural development in this part of the Sydney region. Half the initial grant remains with the core of the property to indicate the extent of the estate and complement the important structures and plantings which themselves provide evidence of the status of the estate and the aspirations of the owners in the 19th century.

As well as the important 19th century links with important colonial figures such as Sir Thomas Mitchell and Dr Jenkins, the property has social significance through its associations with Catholic education in the State, both for the training of priests and as a school for boys.

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;

The building also has considerable social and historic significance through its associations with numerous important early figures, most notably Surveyor General, Sir Thomas Mitchell, but also Dr Richard Jenkins, a politician and farmer, and architects such as James Hume and Edmund Blacket (and possibly the English architect Edmund Blore).

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

St Mary's Towers has statewide aesthetic significance as one of the last stylistically significant houses built before the depression of the early 1840's. The possible derivation of its design from an identifiable pattern book further adds to its aesthetic and historic interest. It is considered by J. Broadbent (NT Listing Proposal, 1976) to be less of a "folly" than 'Lindesay' and more convincing than 'Carthona' (Mitchell's other house). Its architectural integrity and quality of workmanship provide evidence of a genuine attempt to recreate an old English Manor house in "a land now almost divided from the world but which may one day equal in all the arts of civilization the illustrious regions of his native country". While the gothic arcade changed the 'manorial character it represents a further phase of taste and part of the history of the house. The buildings' good physical condition and retention of much original fabric enhances its considerable aesthetic significance.

The group has aesthetic significance which relates to not only the substantial stone buildings but to the gardens and plantings, particularly the Grand Avenue and its gates which form an axis to the Nepean River and beyond to the Razorback Range.

Criterion D: an item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

The property has social significance through its associations with Catholic education in the State, both for the training of priests and as a school for boys.

29.7 Photos





St Mary's Towers, main building above and 1915 school wing to left.
Photo: M. Pearson 2007.

30 RAILWAY COTTAGE

30.1 Location

3 Camden Road, Douglas Park (Lot 1, DP. 828396).

30.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690714.

30.3 History

All of the towns in the Wollondilly area, and Picton particularly, have relied on passing traffic for their trade and for transport routes out of the district to open new markets for produce. The Great Southern Road fulfilled this role in the first half of the 19th century and the area's principle business was tourism – catering to the needs of travellers stopping over on their way south. Despite the presence of the great arterial road linking north and south, travel was still rough, tiring and often dangerous and the economic growth of the area, whilst steady, was by no means booming. The coming of the railway would provide the first real impetus to wider settlement and business growth.

Construction of the southern line resulted in an immediate and obvious population boom - fettlers and navvies and their families took up residence in Picton and boosted school enrolments and church congregations as a result. Initially housed in tents close to the railway line, these families were the catalyst for local builders and speculative developers to start real estate development in the area. More than half of Picton's surviving 19th century building stock relates to the railway boom of the 1860s. Most of the hotels and major public buildings were built at this time as was much of the housing stock and the 1860s remain a golden decade in the history of the area.

The first line of rail from Picton, known as the Loop Line, was constructed in 1867, however, construction of the southern line had commenced some years earlier and reached Menangle and Douglas Park in 1864. Today, Menangle Station, the canopy at Douglas Park Station, the line itself, and a small group of associated residences are the only tangible reminders of the first period of regional rail construction in the area, pre-dating the construction of the Loop Line and the Picton-Mittagong Deviation that followed.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review 2690714, 2006

30.4 Description

The railway cottage on Camden Rd is located next to the rail tracks at the level crossing. Timber weatherboard and tin, by 2007 it was painted pale green, but on the railway side there are indications of earlier original paint colours on walls.

A typical but locally rare mid-19th century fettler's cottage. Key features: steeply pitched gabled roof; timber-framed balloon construction with weatherboard cladding; symmetrical fenestration; eaves overhang forming front verandah, supporting on squared timber posts; timber framed and sashed double-hung windows; single-storey; overwhelming modesty of scale and form; position in relation to railway line and road alignment.

Condition Good - recently renovated and painted.

30.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

The Railway Cottage has local significance as the only surviving example of a residence associated with the construction of the southern rail line in Douglas Park. It is a typical fettler's cottage and was once part of a larger group of similar cottages in Douglas Park. Its proximity to the rail line enhances its significance and it is an important component of the historic cultural landscape of Douglas Park.

30.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Railway Cottage has local significance as the only surviving example of a residence associated with the construction of the southern rail line in Douglas Park. It is a typical fettler's cottage and was once part of a larger group of similar cottages in Douglas Park.

30.7 Photos



3 Camden Road, Douglas Park.
Photo: M. Pearson

31 WARRAGUNYAH

31.1 Location

670 Menangle Road, Douglas Park (Lot 8, DP 246706).

31.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No: 2690716.

31.3 History

Not known. However, the building is reminiscent of the numerous country homes owned by the Hordern family throughout the Wollondilly and Wingecaribee districts.

Built c. 1870.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690717, 2006.

31.4 Description

A grand and somewhat atypical country villa reflecting the economic prosperity of the mid-Victorian period. Key features: Weatherboard residence on high brick foundation walls, double-gabled facade with hipped roof behind; elevated position on hill; sweeping central stair leading to front door; elaborate verandah with central gabled portico, timber fretwork and balustrade; symmetrical massing and fenestration.

Good condition.

31.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

Local and regional significance as an outstanding example of a late Victorian period gentleman's country homestead. The unusual double-gabled form with sweeping central stair, elevated and picturesque position and high degree of ornamental detail are typical of the Romantic and Picturesque movements influencing architecture of the period. This villa occupies a prominent position in the landscape and is an important component of the historic cultural landscape of Douglas Park and its hinterland.

31.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Villa at 670 Menangle Road has local and regional significance as an outstanding example of a late Victorian period gentleman's country villa.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The Villa at 670 Menangle Road has local and regional significance as an outstanding example of a late Victorian period gentleman's country villa. Its unusual double-gabled form with sweeping central stair, elevated and picturesque position and high degree of ornamental detail are typical of the Romantic and Picturesque movements influencing architecture of the period.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare locally.

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;

The Villa is an outstanding representative example of Victorian period country villas.

31.7 Photos



Warrangunyah, 670 Menangle Road, Douglas Park.

Photo: M. Pearson

32 WILTON PARK

32.1 Location

370 Wilton Park Road, Wilton (also listed as Wilton Park Stables) (Lot 8, DP 243079).

32.2 Heritage Listing Status

State Heritage Register Listing No. 00257. SHI DB No. 5045546.

Wollondilly LEP. SHI DB No. 2690190.

Wollondilly Heritage Study 1992.

Register of the National Estate No. 3304.

32.3 History

The stables group was built about 1892 for Samuel Hordern, the grandson of the founder of the firm, and the builder of the Palace Emporium, Brickfield Hill. Although there is no definite evidence on hand, the architect for the stables group could have been Albert Bond, the Hordern family architect during the period 1876-1910.

Wilton Park became one of the leading horse breeding studs in Australia, contributing significantly to the quality of horses in the colony and producing many winners. After Samuel's death in 1909, Wilton Park remained in the Hordern family, until sold in 1927.

Hoare, R., Reynolds, P.L., Roxburgh, R, Wilton Park, Picton, manuscript in National Trust files.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690190, 2006.

32.4 Description

The stables group consists of stables, a building containing a coach-house and harness room, underground water tanks, stallion boxes, a covered yard and a quadrangle. The present house built in 1955 is not included. The stables consist of a group of structures sited on gently rising ground in a formal composition around a central quadrangle. They form an impressive vista when seen from the original main eastern approach to the property.

Three buildings of the group enclose a quadrangle which was originally of raked gravel (now grass).

The stables building, which faces north and which contains 12 loose boxes, is long and narrow in plan, built of sandstock brick, with a gable roof finished with iron ventilators and decorative fretwork barge boards. Floors vary from perforated plank floors over brick urine drains, to brick paving. In the centre, a gabled opening gives access to paddocks and rolling hills beyond.

Another similar building, facing east, contains the coach house and harness room with a fine original harness cupboard as well as the grooms' room and feed room.

The north side of the quadrangle is formed by two underground water tanks roofed with low hipped roofs and capped with iron ventilators. The original water tank and windmill have been removed.

Two detached stallion boxes, with details similar to the stables face away from the quadrangle.

The covered round yard is constructed of posts set in the earth to form a ring about 30 feet in diameter, lined internally with two layers of boarding. Encircling the post tops is a continuous, circular laminated wall plate to form a 'parasol', perforated at its apex by an iron ventilator. The collar ties radiate like spokes of a wheel from a central hub and four suspension rods link the hub and the apex. The roof of mitred corrugated iron is fixed to concentric rings of roof battens.

The present house, built in 1955, replaced the stud groom's house.

The buildings are in good condition with some restoration in the late 1970s.

The landscape values of Wilton Park are identified in *Colonial Landscapes of the Cumberland Plain and Camden NSW*, Morris and Britton for the Heritage Council, 1997.

32.5 Statement of Significance

From State Heritage Inventory Database

The Wilton Park stables group which remains much as it was when Samuel Hordern established his thoroughbred horse stud there, has historic significance because it forms a record of a significant part of the activities of a man who was a successful leader in Australian stud stockbreeding as well as a wealthy and successful businessman. The stables were built at a time when the horse was at its peak in Australian agriculture and stockbreeding was a developing skill and these buildings are fine examples of the rural architecture which developed in response to the needs of the bloodstock industry.

The stables group also has aesthetic significance derived from the fact that the individual buildings relate well to each other and to their environment. Their siting on gently rising ground in a formal composition around a central quadrangle creates an impressive vista when seen from the original main eastern approach and from Wilton Road. Individual buildings are themselves fine examples of rural architecture. In particular, the covered round yard is of rare architectural quality and an excellent example of highly skilled timber craftsmanship. (It may have been the model for the brick round yard at Retford Park, Bowral, another Hordern family property.) It also forms an interesting contrast, both visually and in form and materials, with the brick buildings of the group.

32.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Wilton Park stables group which remains much as it was when Samuel Hordern established his thoroughbred horse stud there, has historic significance because it forms a record of a significant part of the activities of a man who was a successful leader in Australian stud stockbreeding as well as a wealthy and successful businessman. The stables were built at a time when the horse was at its peak in Australian agriculture and stockbreeding was a developing skill and these buildings are fine examples of the rural architecture which developed in response to the needs of the bloodstock industry.

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;

The Wilton Park stables group which remains much as it was when Samuel Hordern established his thoroughbred horse stud there, has historic significance because it forms a record of a significant part of the activities of a man who was a successful leader in Australian stud stockbreeding as well as a wealthy and successful businessman.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The stables group also has aesthetic significance derived from the fact that the individual buildings relate well to each other and to their environment. Their siting on gently rising ground in a formal composition around a central quadrangle creates an impressive vista when seen from the original main eastern approach and from the Wilton Road. Individual buildings are themselves fine examples of rural architecture. In particular, the covered round yard is of rare architectural quality and an excellent example of highly skilled timber craftsmanship. (It may have been the model for the brick round yard at Retford Park, Bowral, another Hordern family property.) It also forms an interesting contrast, both visually and in form and materials, with the brick buildings of the group.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

The group is an uncommonly intact example of stud stabling of the period. The covered round yard is of rare architectural quality and an excellent example of highly skilled timber craftsmanship.

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;

The group is an important intact example of stud stabling.

32.7 Photos



Wilton Park Stables from the road
Photo: M. Pearson 2008



Wilton Park Stables wing
Photo: M. Pearson 2008



Wilton Park Stables quad and water tanks
Photo: M. Pearson 2008



Wilton Park Stables round house
Photo: M. Pearson 2008

33 COTTAGE, 180 WILTON PARK ROAD

33.1 Location

180 Wilton Park Road, Wilton (Lot 105, DP 794081).

33.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No. 2690791.

33.3 History

Built c.1900.

33.4 Description

Weatherboard clad with corrugated iron roof. A particularly charming small farm cottage. Key features: steeply pitched hipped roof rising to gables, front verandah.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review 2690791, 2006.

33.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

180 Wilton Park Road has local significance as a particularly good example of 19th century pastoral cottages and as one of a small number of surviving 19th century buildings in the Wilton area. It is a particularly charming example of the small farm cottages that once proliferated in the area and its significance is enhanced by its prominent siting on the brow of a small hill.

33.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

180 Wilton Park Road has local significance as a particularly good example of 19th century pastoral cottages and as one of a small number of surviving 19th century buildings in the Wilton area.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

180 Wilton Park Road is a particularly charming example of the small farm cottages that once proliferated in the area and its significance is enhanced by its prominent siting on the brow of a small hill.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare locally.

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;

An excellent example of late 19th century pastoral cottages in the district.

33.7 Photos



180 Wilton Park Road, Wilton.
Photo: M. Pearson 2008.

34 KEDRON

34.1 Location

305 Wilton Park Road, Wilton (Lot 2, DP 572157).

34.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP (WO 0297).
SHI DB No. 2690297.

34.3 History

Built c.1900.

34.4 Description

An exceptional Federation Queen Anne residence. Key features: complex roof form with central hipped section flanked by two offset gablets to the front; louvred timber gablet ventilator; timber infill and decorative bargeboards to roof gablets; encircling bullnosed verandah on turned timber posts with stop chamfers and decorative timber brackets; masonry construction with facebrick to all elevations and raised plaster string courses; symmetrical fenestrations featuring bay windows flanking a central panelled front door with hopper window above; multiple rendered masonry chimneys with decorative corbelling and terra cotta pots; set in mature garden.

JRC Planning Services, Wollondilly Heritage Study WO0297 1992; Andrea Oehm, Wollondilly Shire Council Heritage Study Review 26907912006.

34.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

Kedron has regional significance as an exceptional example of a Federation period homestead associated with a large and prosperous pastoral property. The main house is an outstanding example of Federation Queen Anne architecture and a locally rare example of the style.

34.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

Kedron has regional significance as an exceptional example of a Federation period homestead associated with a large and prosperous pastoral property.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

Kedron has regional significance as an exceptional example of a Federation period homestead associated with a large and prosperous pastoral property. The main house is an outstanding example of Federation Queen Anne architecture and a locally rare example of the style.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare regionally.

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;

An outstanding example of Federation period country houses in the district.

34.7 Photos



Kedron.
Photo: M. Pearson 2008



Kedron.
Photo: M. Pearson 2008

35 NEPEAN TUNNEL AND ABOVE GROUND STRUCTURES

35.1 Location

2.4 km section between Wilton village and halfway to Broughtons Pass (288150E 6209160N to 290500E 6209790N).

35.2 Heritage Listing Status

State Heritage Register No. 01373 (as 'Upper Canal System [Prospect Reservoir]')
SHI DB No. 5051481.

S.170 State Agency Heritage Register.

Wollondilly LEP. SHI DB No. 2690008.

Wollondilly Heritage Study.

35.3 History

Built in 1880-88 after more than a decade of investigation into schemes to provide Sydney's fourth water source.

Various works of improvement have been carried out since their construction but all major components are still in constant use and continue to be an essential part of the Metropolitan Water Supply System.

35.4 Description

The Nepean Tunnel diverting water from the Pheasant's Nest Weir to the Cataract River at Broughtons Pass is part of the Upper Nepean Water Supply System. Detailed physical descriptions for each of these elements are contained in National Trust and Water Board Listings (see also citation for Upper Nepean Water Supply System). The section subject of this study is a 2.4km section east from within Wilton village. The above ground features consist of rock-built cairns, some adjacent to former air shafts, marking the route of the tunnel. The tunnel route is a cleared easement.

35.5 Statement of Significance

From State Heritage Inventory Database

State Heritage Register Citation

(Note that the Nepean Tunnel forms part of the Upper Canal system.)

The Upper Canal is significant as a major component of the Upper Nepean Scheme. As an element of this Scheme, the Canal has functioned as part of Sydney's main water supply system for over 120 years. Apart from maintenance and other improvements, the Upper Canal has changed little.

As part of this System, the Canal is associated with Edward Moriarty, Head of the Harbours and Rivers Branch of the NSW Public Works Department.

The Canal is aesthetically significant, running in a serpentine route through a rural bushland setting as an impressive landscape element with sandstone and concrete-lined edges;

The Canal is significant as it demonstrates the techniques of canal building, and evidence of engineering practice. The Canal as a whole is an excellent example of 19th century hydraulic engineering, including the use of gravity to feed water along the canal. (BCubed Sustainability, 2/2006).

The Upper Nepean Scheme is significant because:

- In its scope and execution, it is a unique and excellent example of the ingenuity of late 19th century hydraulic engineering in Australia, in particular for its design as a gravity-fed water supply system.
- It has functioned as a unique part of the main water supply system for Sydney for over 100 years, and has changed little in its basic principles since the day it was completed.
- It represented the major engineering advance from depending on local water sources to harvesting water in upland catchment areas, storing it in major dams and transporting it the city by means of major canals and pipelines.
- It provides detailed and varied evidence of the engineering construction techniques prior to the revolution inspired by reinforced concrete construction, of the evolution of these techniques (such as the replacement of timber flumes with wrought iron and then concrete flumes), and of the early use of concrete for many engineering purposes in the system.
- The scheme possesses many elements of infrastructure which are of world and national renown in technological and engineering terms.
- Many of the structural elements are unique to the Upper Nepean Scheme.

Reference: Edward Higginbotham & Associates, SCA Heritage and Conservation Register.

Wollondilly LEP Citation

The Upper Nepean Water Supply System is historically significant as the scheme commenced, and progressively developed from the late 1880's to meet Sydney's Water Supply needs after supply from the Botany Swamps proved to be inadequate. The dams and other works are important examples of early Australian civil engineering and were all "State of Art" for their time. The catchment area and system is considered to provide one of the world's purest sources of water for human consumption.

35.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Upper Nepean Water Supply System is historically significant as the scheme commenced, and progressively developed from the late 1880's to meet Sydney's Water Supply needs after supply from the Botany Swamps proved to be inadequate. The dams and other works are important examples of early Australian civil engineering and were all "State of Art" for their time.

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;

As part of this System, the Canal is associated with Edward Moriarty, Head of the Harbours and Rivers Branch of the NSW Public Works Department.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The Canal is significant as it demonstrates the techniques of canal building, and evidence of engineering practice. The Canal as a whole is an excellent example of 19th century hydraulic engineering, including the use of gravity to feed water along the canal.

It provides detailed and varied evidence of the engineering construction techniques prior to the revolution inspired by reinforced concrete construction, of the evolution of these techniques (such as the replacement of timber flumes with wrought iron and then concrete flumes), and of the early use of concrete for many engineering purposes in the system.

35.7 Photos



Nepean Tunnel above ground structures consist of survey plinths near former air shafts (these ones at eastern side of Wilton village)

36 BROUGHTONS PASS WEIR

36.1 Location

Broughtons Pass, Wilton Road, Wilton (part of the Upper Nepean Water System).

36.2 Heritage Listing Status

State Heritage Register No. 01373 (as 'Upper Canal System [Prospect Reservoir]').
SHI DB No. 5051481.

S.170 State Agency Heritage Register.

Wollondilly LEP. SHI DB No. 2690008.

Wollondilly Heritage Study.

36.3 History

The Upper Nepean Water Scheme was built in 1880-88 after more than a decade of investigation into schemes to provide Sydney's fourth water source.

Various works of improvement have been carried out since their construction but all major components are still in constant use and continue to be an essential part of the Metropolitan Water Supply Scheme.

36.4 Description

The Broughtons Pass Weir is the transition point for water passing between the Nepean Tunnel, diverting water from the Pheasant's Nest Weir, and the Cataract Tunnel which feeds in turn into the open canal of the Upper Nepean Water Supply System at Brooks Point. Detailed physical descriptions for each of these elements are contained in National Trust and Water Board Listings. (see also citation in this report for Upper Nepean Water Supply System and Nepean Tunnel).

36.5 Statement of Significance

From State Heritage Inventory Database

State Heritage Register Citation

(Note that Broughtons Pass Weir forms part of the Upper Canal system.)

The Upper Canal is significant as a major component of the Upper Nepean Scheme. As an element of this Scheme, the Canal has functioned as part of Sydney's main water supply system for over 120 years. Apart from maintenance and other improvements, the Upper Canal has changed little.

As part of this System, the Canal is associated with Edward Moriarty, Head of the Harbours and Rivers Branch of the NSW Public Works Department.

The Canal is aesthetically significant, running in a serpentine route through a rural bushland setting as an impressive landscape element with sandstone and concrete-lined edges;

The Canal is significant as it demonstrates the techniques of canal building, and evidence of engineering practice. The Canal as a whole is an excellent example of 19th century hydraulic engineering, including the use of gravity to feed water along the canal (BCubed Sustainability, 2/2006).

The Upper Nepean Scheme is significant because:

- In its scope and execution, it is a unique and excellent example of the ingenuity of late 19th century hydraulic engineering in Australia, in particular for its design as a gravity-fed water supply system.
- It has functioned as a unique part of the main water supply system for Sydney for over 100 years, and has changed little in its basic principles since the day it was completed.
- It represented the major engineering advance from depending on local water sources to harvesting water in upland catchment areas, storing it in major dams and transporting it the city by means of major canals and pipelines.
- It provides detailed and varied evidence of the engineering construction techniques prior to the revolution inspired by reinforced concrete construction, of the evolution of these techniques (such as the replacement of timber flumes with wrought iron and then concrete flumes), and of the early use of concrete for many engineering purposes in the system.
- The scheme possesses many elements of infrastructure which are of world and national renown in technological and engineering terms.
- Many of the structural elements are unique to the Upper Nepean Scheme.

Reference: Edward Higginbotham & Associates, SCA Heritage and Conservation Register.

Wollondilly LEP Citation

The Upper Nepean Water Supply System is historically significant as the scheme commenced, and progressively developed from the late 1880's to meet Sydney's Water Supply needs after supply from the Botany Swamps proved to be inadequate. The dams and other works are important examples of early Australian civil engineering and were all "State of Art" for their time. The catchment area and system is considered to provide one of the world's purest sources of water for human consumption.

36.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Upper Nepean Water Supply System is historically significant as the scheme commenced, and progressively developed from the late 1880's to meet Sydney's Water Supply needs after supply from the Botany Swamps proved to be inadequate. The dams and other works are important examples of early Australian civil engineering and were all "State of Art" for their time.

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;

As part of this System, the Canal is associated with Edward Moriarty, Head of the Harbours and Rivers Branch of the NSW Public Works Department.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The Canal is significant as it demonstrates the techniques of canal building, and evidence of engineering practice. The Canal as a whole is an excellent example of 19th century hydraulic engineering, including the use of gravity to feed water along the canal.

It provides detailed and varied evidence of the engineering construction techniques prior to the revolution inspired by reinforced concrete construction, of the evolution of these techniques (such as the replacement of timber flumes with wrought iron and then concrete flumes), and of the early use of concrete for many engineering purposes in the system.

36.7 Photos



Broughtons Pass Weir, Google Earth image

37 STONE RUIN

37.1 Location

45 Whitticase Lane, Douglas Park.

37.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No. 2690717.

Wollondilly Heritage Study Review 2006.

37.3 History

None known but is highly likely to have been erected as housing for Sir Thomas Mitchell's tenant farmers, working on the St Marys Towers Estate, c.1840.

37.4 Description

An unusual building of coursed rubble-faced sandstone with rusticated margins. The original building was symmetrical in form with typically Georgian overtones and is most likely to have had a hipped roof. A single, substantial chimney survives, providing evidence of a double fireplace. In many respects the ruin is similar in construction and detail to the stone house at 380 Douglas Park Road (item 2690715) and links between the two are highly likely.

Ruin - appears to be generally stable but some capping would be beneficial to ensure long-term conservation.

37.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

Arguably the most substantial ruin in the Wollondilly Shire and one of a small handful of sandstone buildings of the period in the Douglas Park area. The building is likely to be associated with the provision of housing for Sir Thomas Mitchell's tenant farmers, working on the St Marys Towers Estate. The ruin has further value for its picturesque contribution to the landscape and is an important component of the historic cultural landscape of Douglas Park.

37.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

Arguably the most substantial ruin in the Wollondilly Shire and one of a small handful of sandstone buildings of the period in the Douglas Park area. The building is likely to be associated with the provision of housing for Sir Thomas Mitchell's tenant farmers, working on the St Marys Towers Estate. The ruin has further value for its picturesque contribution to the landscape and is an important component of the historic cultural landscape of Douglas Park.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

Local significance both for its aesthetic values as a former tenant farm cottage and for its current contribution to the cultural landscape as a picturesque ruin.

Criterion E: an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

The Ruin has high archaeological potential and has the ability to provide information about stone masonry techniques of the period in addition to any information gleaned from future archaeological investigation.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

This item is assessed as rare locally.

37.7 Photos



Stone Ruin, 45 Whitticase Lane, Douglas Park.
Photo Michael Pearson 2008.

38 UPPER NEPEAN WATER SUPPLY SYSTEM - CANAL

38.1 Location

Appin and Wilton.

Boundary: The Upper Canal forms a major component of the Upper Nepean Scheme, which also includes the Prospect Reservoir and the Lower Canal. The Upper Nepean Scheme supplies water from the Cataract River at Broughtons Pass to the Crown Street reservoir, a distance of 63.25 miles. The Upper Canal commences by tunnel from Pheasant's Nest Weir on the Nepean River and extends through the LGAs of Wollondilly, Liverpool, Holroyd, Fairfield, Campbelltown and Camden. The section of the canal subject of this study is 2.5km section south of the Devines Tunnel (292980E 6215010N to 293340E 6217090N) (see also citation for Nepean Tunnel).

38.2 Heritage Listing Status

State Heritage Register No. 01373 (as 'Upper Canal System [Prospect Reservoir]').
SHI DB No. 5051481.

S.170 State Agency Heritage Register.

Wollondilly LEP. SHI DB No. 2690008.

Wollondilly Heritage Study.

38.3 History

Built in 1880-88 after more than a decade of investigation into schemes to provide Sydney's fourth water source.

Various works of improvement have been carried out since their construction but all major components are still in constant use and continue to be an essential part of the Metropolitan Water Supply System.

38.4 Description

There are 3 of the 4 major storage dams in the systems in Wollondilly Shire. The dams and their main elements are:

- Cataract Dam (Wall, Valve House, Water Board Official Quarters (1910), adjacent gardens, parklands, picnic grounds, pathways and 4 cottages).
- Cordeaux Dam (Wall, Bywash and Valve Houses).
- Nepean Dam (Wall, Valve Houses).

Within Wollondilly Shire the rest of the system includes:

- Diversion Weirs below the junctions of the Nepean with the Cordeaux and Avon rivers (Pheasant's Nest Weir) and at Broughtons Pass.
- Nepean Tunnel diverting water from the Pheasant's Nest Weir to the Cataract River at Broughtons Pass.
- Upper Canal System - A system of tunnels, aqueducts and open canals collectively known as the Upper Canal, which enable water diverted through the Nepean Tunnel to flow a distance of 64km to the major distribution reservoir at Prospect. It has a capacity of 680 megalitres per day, and in addition to supplying water to Prospect Reservoir, also provides supply to a number of localities en route. Three of the tunnels: Cataract, and Devines No's 1 and 2 are in Wollondilly Shire.

The canals are lined for the most part with dry rubble masonry, elsewhere with concrete or rubble in cement.

Detailed physical descriptions for each of these elements are contained in National Trust and Water Board Listings.

An extensive system of Dams, Tunnels, Weirs, Aqueducts, Canals, Reservoirs and Pipelines delivering water from the catchment of the Nepean River to Crown Street Reservoir, a distance of just over 62 1/2 miles (108 km). Devised in 1867 by E.O. Moriarty of the PWD it consists of 24 miles Upper Canal system of open canals interspersed with 13 tunnels and covered sections, 9 wrought iron inverted siphon aqueducts and small brick aqueducts delivering water to Prospect Dam and then to Crown Street Reservoir.

38.5 Statement of Significance

From State Heritage Inventory Database

State Heritage Register Citation

The Upper Canal is significant as a major component of the Upper Nepean Scheme. As an element of this Scheme, the Canal has functioned as part of Sydney's main water supply system for over 120 years. Apart from maintenance and other improvements, the Upper Canal has changed little.

As part of this System, the Canal is associated with Edward Moriarty, Head of the Harbours and Rivers Branch of the NSW Public Works Department.

The Canal is aesthetically significant, running in a serpentine route through a rural bushland setting as an impressive landscape element with sandstone and concrete-lined edges;

The Canal is significant as it demonstrates the techniques of canal building, and evidence of engineering practice. The Canal as a whole is an excellent example of 19th century hydraulic engineering, including the use of gravity to feed water along the canal. (BCubed Sustainability, 2/2006).

The Upper Nepean Scheme is significant because:

- In its scope and execution, it is a unique and excellent example of the ingenuity of late 19th century hydraulic engineering in Australia, in particular for its design as a gravity-fed water supply system.
- It has functioned as a unique part of the main water supply system for Sydney for over 100 years, and has changed little in its basic principles since the day it was completed.
- It represented the major engineering advance from depending on local water sources to harvesting water in upland catchment areas, storing it in major dams and transporting it the city by means of major canals and pipelines.
- It provides detailed and varied evidence of the engineering construction techniques prior to the revolution inspired by reinforced concrete construction, of the evolution of these techniques (such as the replacement of timber flumes with wrought iron and then concrete flumes), and of the early use of concrete for many engineering purposes in the system.
- The scheme possesses many elements of infrastructure which are of world and national renown in technological and engineering terms.
- Many of the structural elements are unique to the Upper Nepean Scheme.

Reference: Edward Higginbotham & Associates, SCA Heritage and Conservation Register; Edward Higginbotham & Associates, 2002, Conservation Management Plan for the Upper Canal, Pheasant's Nest to Prospect Reservoir

Wollondilly LEP Citation

The Upper Nepean Water Supply System is historically significant as the scheme commenced, and progressively developed from the late 1880's to meet Sydney's Water Supply needs after supply from the Botany Swamps proved to be inadequate. The dams and other works are important examples of early Australian civil engineering and were all "State of Art" for their time. The catchment area and system is considered to provide one of the world's purest sources of water for human consumption.

38.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Upper Nepean Water Supply System is historically significant as the scheme commenced, and progressively developed from the late 1880's to meet Sydney's Water Supply needs after supply from the Botany Swamps proved to be inadequate. The dams and other works are important examples of early Australian civil engineering and were all "State of Art" for their time.

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;

As part of this System, the Canal is associated with Edward Moriarty, Head of the Harbours and Rivers Branch of the NSW Public Works Department.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The Canal is significant as it demonstrates the techniques of canal building, and evidence of engineering practice. The Canal as a whole is an excellent example of 19th century hydraulic engineering, including the use of gravity to feed water along the canal.

It provides detailed and varied evidence of the engineering construction techniques prior to the revolution inspired by reinforced concrete construction, of the evolution of these techniques (such as the replacement of timber flumes with wrought iron and then concrete flumes), and of the early use of concrete for many engineering purposes in the system.

38.7 Photos



Upper Nepean canal, empty for maintenance.
Photo: M. Pearson 2008.

39 HUME AND HOVELL MONUMENT

39.1 Location

Appin Road, Appin (296510E, 6218720N).

39.2 Heritage Listing Status

Not listed.

39.3 History

Stone erected by the Royal Australian Historical Society in 1924 to commemorate 100 years since Hamilton Hume and William Hovell set out on their exploratory journey to Port Phillip Bay. The stone for the memorial is reputed to have been retrieved from the ruin of the Hamilton Hume's house at Brookdale Farm that stood adjacent to the monument.

39.4 Description

A simple rectangular stone block with two marble plaques inscribed:

To Commemorate
the Hume and Hovell Expedition
Site of the home of
Hamilton Hume
Starting point of the expedition to Port Phillip
October 2. 1824
R.A.H.S.

A small Campbelltown City Council plaque on the side indicates that the monument is a Heritage Item of Campbelltown.

39.5 Statement of Significance

A monument marking an historic site and event: the homestead of Hamilton Hume and the starting point of Hume and Hovell's exploratory trip to Port Phillip. The monument itself is also significant as a reflection of the efforts of the RAHS to commemorate and celebrate the historical events in NSW's history.

39.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

A monument marking an historic site and event: the homestead of the Hume family and the starting point of Hume and Hovell's exploratory trip to Port Phillip. The monument itself is also significant as a reflection of the efforts of the RAHS to commemorate and celebrate the historical events in NSW's history.

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;

A monument marking an historic site and event: the homestead of the Hume family and the starting point of Hume and Hovell's exploratory trip to Port Phillip.

39.7 Photos



Hume and Hovell Monument.
Photo: M. Pearson 2008



Hume and Hovell Monument.
Photo: M. Pearson 2008

40 BEULAH

40.1 Location

Appin Road, Appin (Lot 23, DP 1132437) (294790E 6219820N).

40.2 Heritage Listing Status

State Heritage Register No. 00368.

Campbelltown LEP. SHI DB No. 5045426.

40.3 History

From State Heritage Register

Beulah is comprised of 4 separate lots (200 acres) granted in 1823, although the grants were promised in 1821 and may have been occupied prior to that date: Portions 71(Henry Sears, 30 ac.), 77 (Francis Rawdon Hume, 80ac.), 78 (Cornelius Ryan (O'Brien) 40ac.) and 79 (Patrick Pendergrass (50 ac.)). At the time of the Commission of Inquiry in 1983, all of these four lots comprised Beulah. Portion 78 was that portion which was the subject of the inquiry and upon which the major built structures are located although the bridge, thought to have been constructed 1830-40 is on the boundary between Lots 77 and 78. Confusion as to the early history of the grant rises from the misspelling of the original grantee's name - Cornelius O'Brien - who is said to have moved to the Yass plains with members of the Hume family. Evidence presented by Beulah Investments at the Commission of Inquiry based on a Land Titles Office search argued that in 1837 portions 71 and 78 were owned by Cornelius Boland (or Connor Bowling).

If we accept that the original grantee was Cornelius O'Brien there is evidence that the place was operating as a farm in 1822. Due to the roughness of the roads Governor Macquarie arranged for his heavy baggage on a dray and a curricule to be sent back to Cornelius O'Brien's farm at Appin in his tour to the Illawarra in 1822. O'Brien also owned property at Dapto which Macquarie visited and had been responsible for constructing the road to the Illawarra from Appin with six assigned convicts. On his return, after visiting the Broughtons at Lachlan Vale, he proceeded to O'Brien's and after collecting his tandem, he noted, "I left my travelling companions Mr Meehan, Mr David Johnston and Mr O'Brien at the house of the latter, where they were engaged to dine previous to their proceeding to their respective homes." This documents the fact that a house existed on the site in 1822. It seems that the correlation between O'Brien's road-building skills and available convict labour and the construction of the bridge over Woodhouse Creek at Beulah has not been made in previous studies but is worthy of further investigation.

Historical evidence prepared by Helen Proudfoot for the Dept. of Environment and Planning in 1985 is as follows:

"Sometime between 1831 and 1839 Duncan Cameron owned the site and the main buildings were erected by that date. It was leased to Lachlan McAlister in that year for 800 pounds, indicating substantial improvements." The estate of Cameron then sold it to Helenus Scott in 1845, who sold it to John Kennedy Hume in the following year, 1846. The property was known as "Summer Hill" and consisted of 120 acres.

John Kennedy Hume was only 9 years old at the time, so it is thought that his father, Francis Rawdon Hume (brother of Hamilton Hume and co-explorer with him in the earlier years) bought the property on his behalf. It adjoins the other original grant in the area to Andrew Hume, father of Hamilton and Francis and called "Hume Mount Farm". John Kennedy Hume married Emma Johnson Clayton of Rockwood, Appin in 1873 and arranged that the property form a marriage settlement in trust for his wife. It is assumed that they lived there then.

In 1885 the name of the place was changed to Beulah. The reason is not known. J.K. Hume died in 1905 leaving the property to his wife. She died in 1920, leaving it to her daughter Ellen Clayton Hume.

Ellen Hume and Beulah were featured in "The Australian Home Beautiful" in 1934 with photographs of the garden taken by Harold Cazneaux and descriptions of the furniture belonging to the Hume family. The forest which Miss Hume treated as a private sanctuary - The Hume Sanctuary - received special attention. It was Ellen Hume's wish that her trees would be left to the nation. This forest has been variously referred to as Humewood although the accuracy of the name was disputed at the Commission of Inquiry. As it is Portion 77 granted to F.R. Hume and since that date had been in the Hume family or in trust until recent times it would seem likely to be a valid name for the forest, which was described in the inquiry as being regenerated. Evidence was also cited that according to the 1833 "NSW Calendar & Directory", Hume Wood was the estate of Andrew Hamilton Hume and therefore refers to Hume Mount Farm, or a part thereof. A photograph from 1934 indicates that the character of the spotted gum (*Corymbia maculata*) forest has remained constant. The garden close to the house was described as conforming to no special pattern:

"...but wanders around the house at its own sweet will, trailing after it a cloud of loveliness. All the old favourites are there: phlox and hollyhocks, larkspur, lemon-scented verbenas, marigolds and lupins, cosmos so large that at a distance they look like asters, rhododendrons, Chatham Island lilies (NB: probably N.Z. renga-renga lilies, *Arthropodium cirrhatum*, Stuart Read, pers. comm.) and another kind of lily which is green with brilliant red seed pods. A little flagged path winds round to a rose pergola, and kurrajong trees shelter the flowers from the sun with their delicate and graceful leaves, although they do not monopolise all the decorative effects. Last year the ironbarks (*Eucalyptus crebra*) blossomed and tossed crowns of white all around the edge of the clearing."

A photograph of the garden shows a shade house on the south-east corner of the front garden, roses, a small palm (the extant *Phoenix dactylifera*/date palm?) and the encircling wooden fence with the forest beyond.

Ellen Clayton Hume died in 1936, leaving the property to the RSPCA but instructing that it provide a home for her companion and friend Sarah Papworth and her husband David. Sarah died in 1960 and David in 1967. In 1969 the property was conveyed to the RSPCA and sold to Beulah Investment P/L. It has since been neglected and left to be ransacked. Early post and rail fencing has been removed and sold for firewood. A plan of the remnant garden by John Tropman in 1983 documents the extant plant material from that time in the immediate vicinity of the house although the layout is more formal than suggested in the 1934 article. The garden has continued to deteriorate and the summerhouse has now completely collapsed (Morris & Britton, 2000, 71-72).

Homestead

Built in c 1830s on Portion 78, which appears to be grant promised 1821 to Cornelius Ryan and notified in 1831. Series of occupants then the property of 120 acres sold to John Kennedy Hume in 1846 (is thought that his father Francis purchased the property of on his behalf). Remained in Hume family until 1936, indirectly until 1967. Conveyed to the RSPCA. Sold it to "Beulah Investment" in 1971 (LEP).

Built by John Kennedy Hume in the 1830s. 19th Century outbuildings.

Remains of (later) extensive picket fence and carriage loop. The majority of these buildings on this site were built between 1835-38. They were described in contemporary descriptions in 1839 and 1840. This house and its associated buildings were purchased in August 1846 for John Kennedy Hume by his father Francis Rawson Hume whose brother was Hamilton Hume the explorer and owner of Cooma Cottage, Yass. It was owned by the Hume Family until 1969 (National Trust [NSW]).

40.4 Description

From State Heritage Register

The property is broadly rectangular running away from Appin Road on its eastern side towards the Upper Canal water supply for Sydney to its west. A driveway winds from Appin Road over Woodhouse Creek through an area of forest, pas a former dam and bore and an area of remnant formal planning layout to the homestead group with remnant plants, outbuildings and fence lines. To the north of the homestead group is a dairy. To its south-west is an octagonal summer house ruin. This was deliberately sited in an area giving both the best views and summer breezes. It has a clear relationship to the homestead group and to adjoining Meadowvale homestead group to its south-west - on axis.

On both sides of the driveway which continues west of the homestead group were cultivated paddocks - visible in a 1947 aerial photograph - patterns indicating possible former orchards or pasture improvement in this area. Dams and another area of cultivation patterns in the farm's south-west. Beulah adjoins Meadowvale to its south, another colonial farm estate and this boundary is marked by remaining post and rail fencing (Morris & Britton, 2000, figure 4.19 site plan).

The timber beam bridge over Woodhouse Creek on 'Beulah' is believed to be the only example of its type in private ownership and the only one known to retain a full set of stringer girders intact. It is a rare remnant of Australia's oldest surviving form of bridge construction. It is approximately 150-200m from the homestead, negotiating a steep rocky creek. It is believed to be contemporary with the house (1830-1840). Its style of construction is not unlike that employed in some earlier bridges in the Great North Road, North of Wisemans Ferry. It consists of stone masonry abutments approximately 3m apart with hardwood stringer girders spanning that distance for a width of approximately 6m. The original decking no longer exists. The remains of some hand railing exist lying in the grass adjacent to the causeway. The invert of the creek bed is stone faced for the width of the bridge and 1.5m upstream and downstream. Downstream, it discharges into a natural rock pool formation. There is some scouring of the creek bed upstream of the paving. The abutment walls are coursed rubble stone masonry lime mortar jointed using sandstone blocks. This construction returns along the wing walls which form the sides of both approach causeways. At a distance along the causeway the mortar jointed masonry gives way to dry walling roughly coursed. At the top of the abutment walls and for a distance along the causeway walls a course of stone is recessed forming a shelf to carry a 225 square broad axed (or adzed) timber plate. At the abutments this is used to land the timber bridge stringers and along the causeway it is used to support the handrail posts. The stringers extend beyond the abutment headstock approximately 900mm along the causeway. Seven stringers 225 x 225 at 900 centres form the width of the bridge. These were originally decked with 150 x 60 hardwood planks all of which have been removed between abutments and have been replaced with a modern carriageway consisting of timber decking over railway lines as stringers occupying the centre 3m width of the bridge. The remains of a handrail lie in the grass on the South side of the wrought iron strap securing the rail to the top of the post clearly visible. The wrought iron fish plate connecting the butted ends of the side plates is also lying on the site. The remains of bolts between stringers, side plates and headstock are also in place in corroded form as are a number of wrought iron spikes and nails.

Building Material: stone masonry abutments, hardwood stringer girders.

House and Garden

Remains of (later) extensive picket fence and carriage loop. (National Trust [NSW]). A clump of an old rose, possibly Scotch rose (*Rosa spinosissima*) is to the rear of the house (Morris & Britton, 2000, figure 4.19.11). A kurrajong (*Brachychiton populneum*), date palm (*Phoenix dactylifera*) and peppercorn tree (*Schinus molle* var. *areira*) are to the front/east of the house. A formal garden was/remains on the eastern side of the house and outbuildings to its west or rear. (ibid, figure 4.19.4).

A single storey, 3 bay symmetrical homestead of coursed random stone construction. Double pitched roof (now iron) and stone flagged verandah. Rear flat roofed addition has a slit window (for defensive reasons?). Attached dairy and the picket fence have been destroyed in recent years. House, weatherboard outbuildings and the gazebo have deteriorated to ruinous state in recent years (LEP).

Built by John Kennedy Hume in the 1830s. Single storey 3 bay symmetrical homestead of coursed random stone rubble construction, stuccoed to front. Central corridor, 2 principal rooms with fireplaces, reeded or fluted chimney pieces intact (Sept, 1977), back hall, two back rooms, stone paved verandah to front returning on sides to two small corner verandah rooms, all under a double pitched hipped roof (now covered with corrugated galvanised iron).

The majority of these buildings on this site were built between 1835-38. They were described in contemporary descriptions in 1839 and 1840.

Building Material: coursed random stone rubble (stuccoed in part), reeded or fluted chimney pieces (National Trust [NSW]).

House: derelict, vandalized (National Trust [NSW]). Bridge over Woodhouse Creek: The western headstock has been damaged by termite infestation and has collapsed. The Eastern headstock has probably been damaged as is evident by inspection of the ends but collapse has not occurred. The 'second' headstocks are buried and could not be inspected beyond the ends which show some evidence of termite damage. Further exploration would be required to confirm this. The top surface of the stringers shows moderate to extensive weathering forming vertical fissures typical of water damage at the interface between decking and girders. The condition of all timbers is remarkably good considering their age.

The landscape values of Beulah are identified in *Colonial Landscapes of the Cumberland Plain and Camden NSW*, Morris and Britton for the Heritage Council, 1997.

40.5 Statement of Significance

From State Heritage Register

The Beulah estate is important as an entire cultural landscape containing early colonial structures - homestead group and stone bridge - remnant 19th century farm and garden layout, an octagonal pavilion or summer house as a major focal element and a remnant spotted gum (*Corymbia maculata*) forest as a result of early conservation planning.

40.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The Beulah estate is important as an entire cultural landscape containing early colonial structures - homestead group and stone bridge - remnant 19th century farm and garden layout, an octagonal pavilion or summer house as a major focal element and a remnant spotted gum (*Corymbia maculata*) forest as a result of early conservation planning.

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;

The Beulah estate is important as an entire cultural landscape containing early colonial structures - homestead group and stone bridge - remnant 19th century farm and garden layout, an octagonal pavilion or summer house as a major focal element and a remnant spotted gum (*Corymbia maculata*) forest as a result of early conservation planning.

40.7 Photos



Beulah. Google Earth image

41 CATARACT DAM

41.1 Location

Cataract River, Appin (297750E 6206190N).

41.2 Heritage Listing Status

State Heritage Register No. 01359.

SHI DB No. 5051469.

S.170 State Agency Heritage Register.

Wollondilly LEP. SHI DB No. 2690211.

Wollondilly Heritage Study.

41.3 History

The Upper Nepean Scheme was commenced in 1880 after it was realised that the Botany Scheme was insufficient to meet Sydney's water supply needs. The Nepean project consisted of the construction of a weir across the Nepean River to divert of the rivers, Cataract, Cordeaux, Avon and Nepean, to the Prospect Reservoir.

By 1902, the population had grown to 523,000 and a severe drought caused the water level in Prospect Reservoir to drop below the limit of gravitational flow to the canal. This drought was the worst experienced by the Water Board since its inception in 1888. The seriousness of the situation moved the Government in March 1902, to appoint a Royal Commission to inquire into and report upon the Sydney water supply system. The major finding was that a storage dam be constructed to a point just below the junction of Cataract Creek with Cataract River. The Act authorising the construction of the dam was passed in 1902, providing for a wall 48.7m high.

The dam was built by the Public Works Department and the construction contract was let to Lane and Peters. The Principal Assistant Engineer, EM DeBurgh, was given special responsibility for construction. By June 1903, much of the area to be submerged had been cleared of timber and by the end of the year the foundation excavations were in progress.

41.4 Description

The dam is built of cyclopean masonry, composed of sandstone blocks weighing from two to four and a half tons. These were quarried at the site and bedded in cement mortar. The vertical joints were filled with basalt or sandstone concrete.

The upstream face consisted of basalt concrete moulded blocks set in a cement mortar. The downstream face was of basalt concrete, 1.8m thick in the lower section and 0.9m thick in the upper section. There were two lines of 122cm diameter pipes which passed through the dam and discharged water into the river.

The flow is controlled by a Larner Johnson Needle valve. The dam wall was given a decorative finish. The upstream parapet was castellated with sandstone blocks while the top of the downstream wall was corbelled in concrete. In approximately the mid section of the dam, stands the valve house. This is finished in quarried sandstone blocks with ashlar coursing. It features a steeply pitched slate covered pipped roof topped with finials and gables at either side.

The total cost of construction was 329136 pounds (\$658,272) when the dam was handed over to the Metropolitan Water Sewerage and Drainage Board.

The reservoir was filled to capacity for the first time on 13 January 1911.

However, it was realised that the spillway should be widened to avoid the risk of floodwaters overtopping the wall. This work was completed in 1915.

During the construction of the dam, extensive use was made of electricity on site, and production line techniques for the quarrying of stone blocks were used for the first time. The water from cataract is discharged into the Cataract River downstream to Broughtons Pass. From here it is diverted into the Cataract tunnel, the first of the Upper Canal structures by which it is conveyed to Prospect Reservoir.

41.5 Statement of Significance

From State Heritage Inventory Database

The Cataract Dam was completed in 1907 and is the first of the four water supply dams in the Metropolitan Catchment Area constructed between 1903 and 1936 to provide a secure water supply to satisfy the demands of industrial, commercial and residential development of metropolitan Sydney up to c.1960.

The dam wall is unique in Australia in regard to its construction, its high and straight upstream face, construction of cyclopean masonry, crest parapet, concrete valve house superstructure, and screen tower precast concrete facing blocks.

The Cataract Dam is part of a group of like structures which are the State's largest and most intact ensemble of large dams completed prior to the Snowy Mountains Hydro-Electricity Scheme.

The dam contains in-situ items of Federation era water delivery technologies developed by the Public Works Department that are unique such as the lengths of iron discharge pipes, and system of penstocks, and valve tower water inlet system.

The site of the Cataract Dam contains a number of resident maintenance men's cottages and a residence used by board members of the Water Board that collectively continue to evoke the manner in which the dam was maintained and emphasise the importance of the dam to successive generations of management of the Water Board.

The dam is a landmark that has engendered beautification works undertaken from the 1910s and again in the 1960s for the general visiting public through the picnic areas and for the management hierarchy of the Water Board in the Manor (former Official Quarters).

The setting of the dam's picnic grounds within the plantations of pine trees amidst native bushland of the catchment is one of the most attractive of the Metropolitan Dams.

The site of the Cataract Dam contains areas which with archaeological examination may reveal new information about the construction era of the dam.

The Cataract Dam is associated by sections of the wider community as an integral part of the history of water supply for metropolitan Sydney. The grounds of the dam being associated with the local and regional community as a place of passive recreation.

The four dams of the Metropolitan Catchment were completed between 1907 and 1936 and collectively represent the largest major water supply scheme undertaken in NSW in the first half of the twentieth century, and are one of the major engineering feats undertaken in Australia at any time.

The construction of the system of dams marked a natural progression from the Upper Nepean Water Supply Scheme which was inaugurated in the 1880s as the principal water supply source for metropolitan Sydney. The construction of the dams in providing for security of water supply ensured the continued industrial, commercial and residential development of metropolitan Sydney up to the 1950s.

The design and construction of the dams was principally under the one Government authority - the Water Supply and Sewerage Branch of the NSW Department of Public Works. This Branch was led at different periods by two of Australia's leading water supply engineers - Leslie A.B. Wade and Ernest M. de Burgh. The dams present a major legacy for present and future generations of the work of this Branch and the role of the Public Works Department in general played in the development of the State.

The effective long-term management of the Metropolitan Dams by the Water Board, expressed through continuation of water supply use and on going development of the grounds for passive recreational use, represents a major episode in the history of this government department.

The completion of the dams necessitated the introduction of overseas derived forms of construction technologies that were subsequently developed as standard practice in major civil engineering works. Similarly, the technologies of water delivery required for the dams were on a scale and complexity hitherto unseen in NSW. Collectively there is no larger resource for the investigation of such pre Second World War era technologies and construction methods in NSW.

41.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Cataract Dam is located within the Upper Nepean Catchment Area which was developed with the completion of the Cataract and Nepean tunnels in 1888, as the fourth source of water supply for Sydney. The potential of the Upper Nepean Catchment Area to supply water was fully developed through the construction of four major dams between 1903 and 1936. Cataract Dam is the first of these dams to have been completed. The Upper Nepean Catchment Area continues to supply the regions of Sydney and the Illawarra, with Cataract Dam providing a supply to the Sydney, region.

Cataract Dam was the first of the major water supply/irrigation dams constructed in NSW. The completion of the dam necessitated the introduction of methods of construction hitherto unseen in NSW in regard to dam engineering. The practices of construction developed at Cataract Dam set the pattern for the completion of all subsequent dams in NSW up to the 1940s.

Up until the completion of Cordeaux Dam in 1926, the impounded water of the Cataract Catchment Area provided the main reserve source of water for domestic and industrial consumption in metropolitan Sydney, the largest city in NSW.

In providing water for metropolitan Sydney during this era the dam, in ensuring security of supply, contributed to the extensive residential, commercial and industrial development of Sydney during the first decades of the twentieth century.

Cataract Dam is one of five dams situated in the Wollondilly LGA, representing a major theme in the historical development of the area.

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;

The design and construction of Cataract Dam was undertaken by the Water Supply and Sewerage Branch and Harbour and Rivers Branch of the NSW Public Works Department. The construction of the dam necessitated the dedication of the knowledge and experience of a number of engineers employed in the branches at the time including Cecil W. Darley (NSW Inspecting Engineer in London), Leslie A.B. Wade (Principal Engineer, Water Supply and Sewerage Branch), Henry H. Dare and Ernest M. de Burgh (Supervising Engineers).

The successful completion of the dam and its continuation of use as a water supply dam are a lasting testament to the professional capabilities of the late Victorian/Edwardian era generation of engineers of the Public Works Department. The association of Thomas W. Keele with the initial dam proposal, and the subsequent problems associated with the cost and the ongoing Royal Commissions into the project was immortalised through Banjo Patterson's poem 'The Dam that Keele Built'.

The Manor was purpose built in 1910 as the quasi-private domain of the board members of the Water Board. The building and its grounds have particular associations with past identities of the Board.

The island and inlets of Lake Cataract are associated with past identities of the Water Board through memorialisation of their surnames. A well known example is Keele Island named after Thomas Keele, the president of the former Metropolitan Board of Water Supply and Sewerage at the time of the dam's construction.

The construction of Cataract Dam between the years 1903 and 1907 necessitated the employment of a large body of labourers and tradesmen who lived at the construction sites with their families. The number of residents at 'Cataract Village' was upward of 1500, a number which represents a major influx to the local, predominantly rural, population of the local area.

The ongoing maintenance and supervision of Cataract Dam has been undertaken by generations of resident maintenance men. It is a pattern of working life that is of considerable interest in regard to the history of the local area.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The wall of Cataract Dam is an engineering work imbued with a sense of high aesthetic value expressed through a well proportioned high and straight wall set within the gorge of the Cataract River.

The design and finishes of the crest house, albeit substantially reconstructed c.1953, parapet and abutments were undertaken by the Government Architect's Branch of the Department of Public Works, at that time under Walter Liberty Vernon. It exhibits stylistic traits which evoke the era of its construction and impart a park-like appearance to the dam.

The Manor, completed in 1910, is dramatically set within the platform of the cableway and quarry used in the construction of the dam. The sense of elevation and axial relationship to the wall is accentuated by the adjoining drive which is flanked by an avenue of Phoenix palms and Jacarandas and the flight of concrete and stone steps which provide the principle means of access to the wall. There is a high level of design and awareness in the planning of the grounds and the association with the Botanic Gardens in the layout and selection of species is of considerable note.

The Manor, which is constructed in stone and finished internally to a very high (almost vice-regal) standard, is complemented by four near contemporary stone workmen's family cottages and a 1920s brick resident officer's residence which are equally designed and finished to a high quality.

The dam is set within the valley of Cataract River; upstream of the dam wall there is a substantial area of native bushland characterised by the broad expanse of the pool of water bordered by the crests of the valley sides and Keele Island. Downstream of the dam wall the setting is characterised by the steeper inclines that graduate into the gorge created by the river's flow over time. This topography in times of high water level imparts a picturesque scene viewed from selective vantage points above and on the dam wall.

The adjoining hill of approach to the dam is laid out with a plantation of Monterey pines, which in juxtaposition with the paths, drives, culverts, steps and cottages impart a park-like setting.

The grounds of the dam retain a major repository of planting and design which is evocative of post 1960s urban landscape practice in the local area, and are a reflection of the requirements of evolving recreation patterns undertaken in a manner which respects former construction era landscaping patterns.

Criterion D: an item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

The dam and grounds are recognised by the National Trust of Australia (NSW) as being a place which is part of the cultural environment of Australia which has aesthetic, historical, architectural, archaeological, scientific, social significance for future generations as well as for the present community of NSW.

The dam and grounds are recognised by the Heritage Council of NSW as a place which is of significance to NSW in relation to its historical, scientific, cultural, social, archaeological, natural and aesthetic values.

The dam wall is recognised by as an engineering feat of national significance by the Institution of Engineers Australia.

The dam wall and to a lesser extent the grounds are recognised on the Register of the National Estate as a place which is a component of the cultural environment of Australia that has aesthetic, historic, scientific and social significance for future generations as well as for the present day local community.

The dam and grounds are recognised by Wollondilly Shire Council as being part of the historic built environment of the local area.

The grounds of the Cataract Dam have provided a centre of recreational amenity for the region for a considerable period of time (from c.1910s). The picnic and lookout areas of the dam represent one of the major tourist destinations in the local area.

Criterion E: an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

The grounds of the dam contain a yard of valves removed from Cataract and Woronora Dams, and items of plant and machinery used during the construction and maintenance of the Upper Canal.

The hillside overlooking the dam was the site of the original construction village and retains steps and engravings cut within the rock outcrops dating from this era. The cyclopean masonry of the dam is an excellent example of this type of gravity dam construction and demonstrates the principle characteristics of this technology. The lower valve house completed in 1907 and extended in 1913 is a unique early example of its type and demonstrates the principle characteristics of the design of such structures.

The water supply system completed in 1907 retains its gallery and rising main chamber in the dam wall which demonstrate the principle characteristics of the design of such a delivery system. The grounds of the dam retain numerous tree plantings undertaken from the time of the completion of the dam and Manor in 1910. Collectively the diversity of these trees is an invaluable record of past horticultural practices. Terraces and platforms adjoining the dam abutments demarcate the location of plant used in the construction of the dam, in particular the location of the cableway head tower.

The submerged basin of the reservoir is likely to retain remnant plant and equipment used during the construction of the dam, such as cuttings and terraces of the tramway.

The site of the dam retains a number of known archaeological sites which are associated with the dam construction and later upgrading of the spillway. These sites include a large curved masonry dam on a tributary of Cataract Creek off the Appin/Bulli Road, a potential stone quarry, the formation of a roadway adjacent to the road of access, powder magazines on Keele Island and on the adjoining west abutment of the dam wall, and fireplaces, horse yard drains and powder magazines on the abutment adjoining the spillway.

The catchment area in being relatively untouched bushland in close proximity to a major urban area has a high potential for further research into natural ecosystems.

The museum and associated records and displays provide an important interpretative role in the local area for an understanding of the historical development of the Upper Nepean Catchment Area and Upper Canal.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

Cataract Dam was the first major dam situated within a large water supply catchment area constructed in NSW. Cataract Dam is the oldest large cyclopean masonry dam constructed in Australia, and is believed to have been the largest work of its kind at the time of completion in the Southern Hemisphere.

The straight cyclopean masonry wall is unique within the context of other large cyclopean masonry dams constructed in NSW. The lower valve house (completed in stages up to 1915) is the earliest and largest structure of its type constructed in NSW. The screen tower (completed in 1907) is the earliest structure of its type constructed in NSW and includes a unique water intake system. The crest house and valve tower retain unique penstock gate and operating gear (capstan connecting shafts and gate) examples of this type of machinery in NSW.

The terraces used in the construction of the dam represent the first of their type in NSW and are associated with a number of technological innovations such as the first cableways used in NSW.

The plant and equipment used in the construction was electrically driven, which was unique in NSW in regard to the date, extent of the installation and remoteness. The dam retains items of ironwork which are part of the original water delivery system which are unique in NSW in regard to their date. The building of the dam represents a unique episode in the history of NSW in being the subject of a number of Royal Commissions made into the building and cost of the project. The Commissions are likely to have influenced the method of construction of later dams.

The latter stages of the construction of Cataract Dam were completed by contractors Land and Peters. Cataract Dam is the only cyclopean masonry dam designed by the Public Works Department but completed under contract.

Cataract Dam is arguably the most decorative of all the major dams constructed in NSW in regard to its high standard of rusticated stone finishes on the crest wall, abutments and crest house, the ashlar pattern imparted by the precast concrete blocks on the straight upstream face of the wall, the unadorned functionality of the concrete facing to the inclined downstream face and lower valve house, and the setting of the high straight wall within the landscape of the Cataract River gorge.

The crest house and complementary elements such as the articulated arches on the crest wall in their innate sense of scale and composition rank with the best of all public works in NSW undertaken in the Federation era.

The four stone workmen's family cottages constructed in 1912, and the 1929 brick officer-in-charge residence, consciously sited on the hillside overlooking the dam wall, impart a village like appearance which is unique within the context of dams in NSW.

The four stone maintenance men's cottages are likely to be rare, within the context of a non-urban environment, Federation era examples of model working men's houses.

The grounds of the dam contain an early 36 inch (0.9m) diameter gate valve (manufacturer not known) which was used to regulate the outlet flow of water which is considered the only extant example of such a valve in NSW.

The upgrading works to the spillway and dam between 1981 and 1989 to make the dam meet modern day safety requirements were undertaken in consideration of the unique heritage significance of the dam in NSW ensuring no visual impact on the dam, a milestone in remedial engineering works on this scale.

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;

The Cataract Dam is representative of a type of dam (cyclopean masonry gravity dam) constructed in NSW by the Water Supply and Sewerage Branch of the Public Works Department during the first half of the twentieth century. Key representative attributes of the dam's design and construction include the use of cyclopean masonry bedded in sandstone concrete, use of blue metal concrete facing, use of a spillway offset from the gravity wall, valve/crest houses attractively designed and finished to a high standard.

The upgrading of the valves within the dam wall and ancillary monitoring and operating equipment is representative of modern day safe operating practice.

The construction technologies used at Cataract Dam came to be the norm for all subsequent dams constructed in NSW well into the twentieth century. Key representative attributes of the dam's construction techniques include the use of cableways, the building of temporary camps to house labourers and tradesmen, building of semi permanent cottages to house salaried staff, the construction of terraced platforms for plant and machinery, mechanisms of concrete production, the construction of a purpose built road of access to transport men, supplies and materials from the nearest railhead to the construction site, the building of permanent infrastructure such as water supply for plant and men and horses, and the use of electricity to power plant and equipment.

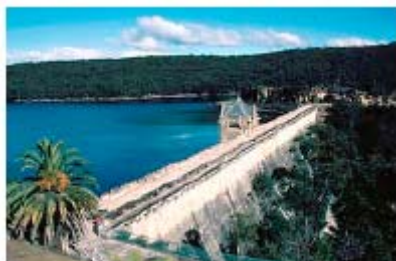
The rehabilitation of tracts of land scarred in the construction processes employed at Cataract Dam through beautification work is representative of practices undertaken at other dams throughout NSW. Key representative attributes of this practice include utilising the former camp as a picnic area, utilising the former terraced construction platforms as picnic areas and lookouts, and utilising the former construction roads and tramway for vehicular access to the dam site and dam wall.

The practice of ongoing maintenance of the Cataract Dam wall by resident staff and workshop facilities is representative of procedures undertaken at other dams and weirs constructed prior to and after Cataract.

The provision of public amenity at the dam site is representative of the use of large water supply and irrigation dams in NSW as places for recreation by the greater community.

Cataract Dam is one of about twelve items of recognised heritage significance associated with the provision of water supply to metropolitan Sydney located in the Wollondilly LGA. This comparatively high number results from extensive tracts and sections of the Upper Nepean Catchment Area and Upper Canal and the Warragamba Catchment Area being located within this LGA.

41.7 Photos



Cataract Dam

42 WOODEN MILEPOST

42.1 Location

Razorback Road/Remembrance Drive junction, Razorback.

42.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690158.

Wollondilly Heritage Study.

42.3 History

Built in 1926.

Other timber mile-posts were located in 1984, when an inspection identified the 1 mile, 2 mile, 2.5 mile, 3 mile and 4 mile-posts. The mile-posts were 12" square, hardwood timber and the 0.5 mile posts were 7" square. They are thought to have been placed there by Camden Council in 1926-27.

The Great South Road: The centre-piece for road heritage in the area is evidence of the Great South Road, in particular the Old Razorback/Cawdor Road, where the alignment and width have not greatly altered since construction by chain gangs. Even though the stone macadamising was recently coated in hotmix, some of the post and rail fencing, stone culverts and wooden mile posts survive. One section of Cawdor Rd was the alignment of the Great South Rd which left the Cawdor Public School, climbed the north face of Mt Prudhoe and descended Apps Gully along Racehorse Creek. A major variation re-aligned the Port Phillip Road (called the Hume Hwy since 1928) early in the twentieth century and the Great South Rd lapsed into the minor Cawdor Rd. The road relics document the main road artery between Melbourne and Sydney, from the period of early exploration to the realignment and renaming in 1928, which saw the Hume Highway replace this section as the main route.

Wrigley, J, Camden Interim Heritage Study, CHS, 1985.

JRC Planning Services, Wollondilly Heritage Study, WO0158, 1992.

Andrea Oehm, Wollondilly Shire Council Heritage Study Review, 2690158, 2006.

42.4 Description

Timber mile-posts and half-mile posts remain along the Cawdor Rd/Old Razorback Rd. In this survey, "MR51" situated beside the original alignment of the Great South Rd, north-east of Picton at the base of the Razorback Range, was photographed. It is 12 inches square and made of hardwood timber with the inscription still clearly visible. No paint remains.

The milepost and adjacent fence post are now located behind a barbed wire fence. Other mile-posts and half mileposts are also known to exist.

42.5 Statement of Significance

From State Heritage Inventory Database

The timber mile post is significant because it marks the alignment of the original Great South Road. While it is part of a line of relatively recent (1920's) markers, it is evidence of the continuing importance of the Great South Road which remained a major transportation route until the minor realignments and finally the construction of the Freeway, diminished its importance. As visible reminders of the alignment, this mile post and the others which remain on Old Razorback/Cawdor Rd have significance because of their great interpretation potential. The mile-posts are also significant relics because they demonstrate a particular phase of municipal road building in the region.

42.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The timber mile post is significant because it marks the alignment of the original Great South Road. While it is part of a line of relatively recent (1920's) markers, it is evidence of the continuing importance of the Great South Road which remained a major transportation route until the minor realignments and finally the construction of the Freeway, diminished its importance.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

Timber milestones are a rare item in the landscape of NSW.

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;

The mile-posts are also significant relics because they demonstrate a particular phase of municipal road building in the region.

42.7 Photos



Milepost at junction of Old Razorback Road and
Remembrance Way, Razorback.
Photo: M .Pearson 2008.

43 HOMESTEAD RUINS AND TREES

43.1 Location

40 Mount Hercules Road, Razorback (Lot 222, DP 828453).

43.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.
SHI DB No. 2690880.

43.3 History

No information provided for LEP.

43.4 Description

No information provided in LEP.

The site appears to be a 19th century rural residence with surrounding landmark plantings of palms and trees on a prominent ridge of the Razorback Range. The house has completely collapsed, with brick rubble, roofing iron and other remains on the ground. A partially collapsed dairy is nearby.

43.5 Statement of Significance

From State Heritage Inventory Database

No information provided (assumed reason for listing). The site is a relatively undisturbed archaeological site of a 19th century rural residence.

43.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion E: an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

The site is a relatively undisturbed archaeological site of a 19th century rural residence.

43.7 Photos



Homestead ruins and trees, 40 Mount Hercules Road, Razorback.

Photo: M. Pearson 2008.

44 RAZORBACK INN

44.1 Location

Remembrance Way, Picton.

44.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690150.

Wollondilly Heritage Study 1992.

44.3 History

Built on four acres sold by H.C. Antill to Oliver Whiting ex-convict and servant of the Antill family. It appears that the inn was completed in 1850 and a licence issued for that date. Continued to operate until Whitings moved to an inn at Picton when the railway opened. A Mr. Turner who later lived in the building found two English pennies dated 1850 under the foundations of the place when renovating it. Later used as a guest-house and residence named "Brookside", also as a restaurant. It is now used in association with the Woolshed complex for functions.

44.4 Description

From State Heritage Inventory Database

A simple, two storey stone "Colonial Georgian" building, now painted. Retains form and hipped roof line and some original sash windows. Also retains a pair of original chimneys with simple neck mouldings. A two storeyed verandah lines the front elevation but this has been extensively altered and now features modern concrete columns to ground and first floor. The main elevation is also so heavily covered with vines that its form and detailing are almost totally obscured. It has dormer windows in the rear roof and a detached former kitchen. A large woolshed has been relocated behind the Inn and linked to a late Victorian residence which is next door to the Inn.

Rear kitchen building connected to main building with a pergola. Adjoining house to north side of one storey. Woolshed relocated to rear of building and extended with weatherboard addition along north side. New utility rooms to north side.

44.5 Statement of Significance

From State Heritage Inventory Database

Razorback Inn has local significance as an early Colonial Inn providing evidence of the nature of early settlement in the area and the importance of the early road link to the south. It is also historically significant through its associations with early convict settlers and the prominent Antill family. The building has local significance as a typical representative of an "Old Colonial Georgian" Inn, this significance being enhanced by its prominent location on a major thoroughfare but compromised by the loss of original fabric and extensive alterations.

44.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

This item is assessed as historically significant regionally.

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;

This item is assessed as aesthetically representative locally.

44.7 Photos



Razorback Inn.

45 BERKELEY LODGE

45.1 Location

1545 Remembrance Way, Picton.

45.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP.

SHI DB No. 2690348.

45.3 History

1545 Remembrance Drive, Razorback. The property was part of the Jarvisfield grant of 1822 to Major Henry Antill. According to local historian Jan Ross, this property was originally known as Rose Cottage Farm, or Farrington Lodge, the home of Dr. MacDonald, who was Clerk of Petty Sessions in 1841, and possibly earlier. Soon afterwards, William Berkeley Campbell was living there. He had arrived to tutor the Antill children in the early 1840s. In the 1850s he had the mail contract between Campbelltown and Picton, and grew potatoes and fruit on the property for local sale. The Campbells rented first from the Antills, and then from a Mrs. Moggeridge. Their daughter Roseanne bought Rose Cottage Farm from Mrs. Moggeridge in 1892. William Berkeley Campbell died in 1904, but two of his daughters lived in the house until their deaths in the 1930s, and the name Berkeley Lodge dates from their occupation. It then passed to Mr. & Mrs Turner, and when Rita Turner sold it to the Sheil family in 1980, she had lived there for 49 years (further ownership unknown).

45.4 Description

House with recent extensions and outbuildings

45.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

Example of an extended and well-maintained 19th century homestead.

45.6 Significance against Criteria

NSW State Heritage Register Criteria

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;

Example of an extended and well-maintained 19th century homestead.

45.7 Photos



Berkley lodge bottom right, Razorback inn top left. Google Earth image.

46 MALDON CEMENT WORKS

46.1 Location

Maldon Bridge Road, Maldon (Lot 2, DP 216580; Lots 1 and 2, DP 231892' Lot 1, DP 608195; Lot 3, DP 748675).

46.2 Heritage Listing Status

To be considered in 2009 revision of Wollondilly LEP (WO 0142).
SHI DP No. 2690142.

46.3 History

This area had been suggested as a suitable site for cement manufacture as early as 1905, but the present site dates from September 1948, when an 800,000 pound project was announced. Maldon was chosen as it was on the railway line (with limestone coming from Marulen, and coal from Medway) and was just inside the Sydney Metropolitan area and thus exempt from heavy road tax. The proximity of the Nepean River and suitability of local clay shales would also have influenced the siting.

There was a scarcity of cement in Australia in the 1940s, and with the planned construction of Warragamba Dam, supplies were needed urgently. A plant in Detroit, USA was for sale, and as it would be quicker to re-erect it than start from scratch. It was bought by the newly formed Metropolitan Portland Cement Ltd (with a Federal Government loan of \$US 1,190,000). The plant arrived in Sydney in January 1949, by which time preliminary work had begun on the site, and the first cement left the plant in July 1951.

Financial difficulties saw the company taken over by the Commonwealth Portland Cement Co. in 1960; the plant was expanded in 1965, and in 1966 BHP joined to form Blue Circle Southern Cement Ltd. Further expansion in 1976 meant that some of the original buildings were demolished, but in 1978 many workers were stood down with foreign cement being dumped in Australia. Blue Circle became a subsidiary of Boral in 1987.

Apart from Warragamba Dam, Maldon cement has been used in other major projects such as the Sydney Opera House and the Sydney Harbour Tunnel. It has been a major employer for Picton, although it seems the original plant contained a lot of asbestos material and the reconstruction was a very dusty job (personal comment D. Hilder).

Staff housing was built 1949, slightly west of the plant, which still survives.

References

Featon, Bill 1948 Onwards The History of Blue Circle Southern Cement, Maldon NSW published by the company in 1995 (contains many photographs). Jan Ross series of articles in The Picton Post, February 7th –March 20th 1996.

Bayley, William, A, Wollondilly Shire History.

Peter Kabaila and Kate Holmes, Database Updating by Council Heritage Advisor and Picton Historical Society, 2007.

46.4 Description

Industrial buildings and equipment. Generally large multi-storeyed corrugated iron clad sheds, includes silo like buildings, chimneys and feeders/hoppers.

46.5 Statement of Significance

From draft 2009 revision of Wollondilly LEP

The Maldon Cement Works is evidence of the influence of the needs of the Sydney urban area and the consequent influence on the growth of the Wollondilly area. It is also an example post WWII industrial operations on a large scale.

46.6 Significance against Criteria

NSW State Heritage Register Criteria

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The Maldon Cement Works is evidence of the influence of the needs of the Sydney urban area and the consequent influence on the growth of the Wollondilly area. It is also an example post WWII industrial operations on a large scale.

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;

It has high level representativeness of post WWII industrial operations on a large scale. Highly representative

46.7 Photos



Maldon Cement Works.
Photo: M. Pearson 2008



Maldon Cement Works.
Photo: M. Pearson 2008

47 MALDON SUSPENSION BRIDGE

47.1 Location

Wilton Park Road, Maldon.

47.2 Heritage Listing Status

Wollondilly LEP. SHI DB No. 2690196.

Wollondilly Heritage Study 1992.

47.3 History

The bridge was built in 1903 to replace Harvey's Crossing, a stone causeway situated a couple of hundred metres upstream. A bushfire in January 1939 severely damaged the bridge and the original timber towers were replaced with identical steel ones. Maldon Suspension Bridge was closed to vehicle traffic with the opening of the F5 Freeway and the new Picton Road from Wilton in 1980.

47.4 Description

The Maldon bridge differs from the normal suspension bridge in that the main cables leading from the towers are carried upwards to an anchorage in the sandstone cliffs above the bridge instead of downwards to ground level. It also has unique curved timber approaches.

The bridge is now in very poor condition.

47.5 Statement of Significance

No statement in State Heritage Inventory Database.

Maldon suspension bridge is significant as an example of an unusual bridge design.

47.6 Significance against Criteria

NSW State Heritage Register Criteria

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;

Maldon suspension bridge is significant as an example of an unusual bridge design.

47.7 Photos



Maldon suspension bridge 2009.
Photo: Michael Pearson

48 BULLI SHAFT NO. 1

48.1 Location

Located approximately 3.3 km west of the Illawarra Escarpment at approximately E302760 N6200660 (MGA co-ordinates), the shaft is located some 1km off SCA Fire Road #7C.

48.2 Heritage Listing Status

Wollongong LEP and Illawarra REP. SHI DB No. 19139.

48.3 History

Bulli Colliery commenced operations in 1859, supplying export coal to Shanghai by August of 1863. In 1925 **Bulli No. 1 Shaft** was commissioned and retained its role as the main upcast shaft until mine closure in 1987. (Note: The information in this section is drawn from Shedrill Pty Ltd, 2008. *Bulli Colliery; Bulli Colliery shafts Nos 1, 2, 3 and 4, A review*, report for BHP Billiton Illawarra Coal.) Bulli No.1 Shaft was reported as being the first coal mining shaft in Australia to be concrete lined and the first in the world to utilise the method where the concrete falls direct from the mixer at the surface to the bottom for the total depth. Two lines of wooden boxes, each having a cross section of 64 square inches (413 square cm), conveyed some 250 tons of cement from collar to shaft lining. (Illawarra Mercury 24/07/1925).

On the 14th January 1939, a bushfire ignited and subsequently destroyed the headgear and winding plant. It was replaced by a brick and steel structure (Mines Department, 1939). This apparently refers to the existing reinforced concrete and brick superstructure, complete with engine house (now defunct) and cage (still on site). Circa 1955/56 the original 98” Sirocco fan was replaced with the 157” Aerex axial flow fan from the Nebo Mine. This time frame is supported by several BHP Engineering drawings relating to the installation and dated 1955 and the fact that the two Nebo Calyx shafts were commissioned in 1955/56.

Due to deterioration caused by water and damage suffered during an earth tremor in April 1961 a 30’ (9.14m) section, some 70’ (21.34m) above the Bulli Seam, was lined with 15’-6” (4.72m) diameter steel casing. In 1963 the shaft was relined by Cram and Sons Pty Ltd to 15’ (4.57m) diameter with 6” (150mm) of concrete.

In 1985, still equipped with the 157” Aerex axial flow fan from Nebo Colliery, it was the main source of ventilation for the colliery. The shaft was decommissioned in 1987, capped by BHP and a Certificate of Inspection as being “sealed to satisfaction” issued by the Dept. of Mineral Resources in March, 1988.

Sources: Shedrill Pty Ltd, 2008. *Bulli Colliery; Bulli Colliery shafts Nos 1, 2, 3 and 4, A review*, report for BHP Billiton Illawarra Coal.

48.4 Description

Bulli No. 1 Shaft The fan, metal fan ducting, drive house and electrical switchgear have been removed leaving just the concrete base pads in situ. The concrete brick fan drift leading to the collar remains in place with access prevented by a concrete brick seal at the outbye end and another at the shaft collar. The collar is topped by a square concrete structure onto which is built a circular tower of brick/reinforced concrete / brick construction, estimated to be 9m in height and some 5m in diameter.

48.5 Statement of Significance

From State Heritage Inventory Database

A rare and intact fine example of a poppet head frame, displaying technology of coal mining.

48.6 Significance against Criteria

NSW State Heritage Register Criteria

From State Heritage Inventory Database

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The item has historic value.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The item has aesthetic value.

Criterion E: an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

The item has scientific, technological and archaeological value.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

The item has rarity

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;

The item has representative value.

48.7 Photos



No. 1 Shaft site post mine closure. (Sheldon).



No. 1 Shaft site (Cardno Forbes Rigby).

49 BULLI SHAFT NO. 2

49.1 Location

Located approximately 2.6 km west of the Illawarra Escarpment at approximately E303489 N6200589 m (MGA co-ordinates), the shaft is located immediately adjacent to SCA Fire Road #7C.

49.2 Heritage Listing Status

Wollongong LEP and Illawarra REP. SHI DB No. 2700804.

Wollongong Heritage Study.

49.3 History

Bulli Colliery commenced operations in 1859, supplying export coal to Shanghai by August of 1863. Australian Iron & Steel Ltd purchased the mine from the liquidators of the Bulli Colliery and Coke Works in 1936. 1940 saw the **Bulli No. 2 Shaft** commissioned as a downcast shaft however the sinking headframe still remains in place. The site was the location of a main 33/3.6kV substation supplying power to the underground workings via suspended cables within the shaft and the No1 shaft site. It would appear that this may also have been the entry point for the machinery and equipment when the mine was mechanised in the 1950s. The shaft appears to have been repaired prior to the commencement of the sinking of No. 3 Shaft on 21st Jan, 1964. The shaft was decommissioned in 1987, capped by BHP and approved by the Dept. of Minerals in 1988.

49.4 Description

At Bulli No. 2 Shaft the original sinking headframe (surrounded by a chain mesh fence), the remains of the winder mechanism and the original switch yard foundation slab are the most obvious remnants. The earthing grid was accidentally located during a search for the power line stanchions early in 2007 not being immediately noticeable amongst the brush. The shaft was capped in 1988 but not filled. The switchyard and substation building are assumed to have been removed in the late 1980s. The fan evase has been removed and is now in operation in New Zealand.

49.5 Statement of Significance

From State Heritage Inventory Database

A significant mine shaft able to demonstrate past mining technology.

49.6 Significance against Criteria

NSW State Heritage Register Criteria

From State Heritage Inventory Database

Criterion A: an item is important in the course, or pattern, of NSW's cultural or natural history;

The item has historic value.

Criterion C: an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

The item has aesthetic value.

Criterion E: an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

The item has scientific, technological and archaeological value.

Criterion F: an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

The item has rarity

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;

The item has representative value.

49.7 Photos



Bulli No. 2 Shaft site 29/03/2006 (Sheldon)



Bulli No. 2 Shaft – Winding equipment
25/10/2006 (Sheldon)



Bulli No. 2 Shaft – Switch yard foundations
10/03/2003 (Sheldon)