

Technical Paper 7

Historic Heritage

South West Rail Link – Glenfield to Leppington Rail Line: Historic Heritage Impact Assessment

Prepared by Australian Museum Business Services
for Parsons Brinckerhoff Australia Pty Ltd



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Executive Summary

Australian Museum Business Services (AMBS) was commissioned by Parsons Brinckerhoff Australia Pty Ltd (PB) on behalf of Transport Infrastructure Development Corporation (TIDC) to prepare a Historic Heritage Impact Assessment (HIA) for the South West Rail Link (SWRL) – Glenfield to Leppington Rail Line project (the Project). The Project comprises Stage 2 of the SWRL (previously known as Stage B2). Stage 1 of the SWRL (previously known as Stage A and Stage B1) comprises the Glenfield Transport Interchange and was determined by TIDC in April 2009.

The Project has been designated a major project to which Part 3A, section 75B of the *Environmental Planning and Assessment Act 1979* (EP&A Act) applies. The Minister's Conditions of Approval (MCoA) for historic (non-Indigenous) Heritage for the project Concept Plan EA are as follows:

Non-Indigenous Heritage: for all aspects of the project (as relevant), review impacts to European heritage items and describe measures to minimise and/or appropriately manage impacts (including heritage view sheds).

In accordance with the MCoA, and the Statement of Commitments for historic heritage identified for the approved Concept Plan EA, the Historic Heritage Impact Assessment verified the preliminary findings contained in that report, and identified that the Project will have an adverse affect on the heritage values of the local environment.

- The Project will have an impact on the view corridors to the south of Hurlstone Agricultural High School, but a minor impact only on the only identified heritage item associated with the school, Clarke House.
- The Project will have an adverse impact on the historic and aesthetic significance of the State Heritage Register (SHR) listed Macquarie Field House, as a result of the construction of the railway across the original James Meehan Macquarie Fields grant, including the home paddocks associated with the house. The railway will have a significant adverse effect on the visual amenity and views to the north and as such will affect the SHR significance of the house. There will also be an adverse impact on the historic values of Macquarie Field House arising from the loss of the integrity of the historic alignment of Quarter Sessions Road. Although the diversion of the road is at a point outside the Macquarie Field House SHR curtilage, the road alignment demonstrates the historic association of the house with the original land grant.
- The Project footprint within Ingleburn Army Camp will have a significant impact on the form and layout of Ingleburn Village. Although the Riley-Newsum and Amals Sagverks Aktiebolag prefabricated cottages will not be directly affected, there will be an adverse impact arising from the loss of the rare urban streetscape within this military environment. There will be a significant impact on the identified CHL heritage values associated with the rarity of the cottages and the village layout.
- Construction of a bridge spanning the Upper Canal and Cowpasture Road will have an adverse impact on the historic and technical significance of the Upper Canal, and the historic and aesthetic significance of the associated Row of Bunya Pines.
- Although not identified on any heritage lists or registers, the historic road alignments of Campbelltown Road, Camden Valley Way and Cowpasture Road are important in

understanding the historic regional development. There will be an adverse impact on these roads arising from the Project.

In accordance with heritage best practice, this Heritage Impact Assessment has developed recommendations designed to protect and mitigate impacts to identified heritage significance and heritage values arising from the Project. The recommendations will be addressed in the Heritage Management Plan to be prepared to accompany the Construction Environmental Management Plan.

There will be a short term impact on the local rural environment arising from the locations of site compounds and stock piles which will be mitigated by rehabilitation and landscaping following completion of the Project. The railway corridor should be landscaped; however, variations in the species of trees and shrubs is preferred. Bunya Pines should be avoided, or used sparingly, because of their historic associations as property markers.

The effects of vibration during the Project construction have the potential to cause damage to historic structures. The potential for damage to the historic fabric of the Upper Canal and Ingleburn Village as a result of vibration during construction has been identified. As such the effects of vibration during the construction phase will be monitored. If measured vibration levels are found to have the potential to cause structural damage, construction equipment and methodologies would be altered so that vibration levels are reduced to a safe level.

Interpretation is a means of ensuring that the history and value of a place is not lost to future generations, and as such the following places have been recommended for interpretation:

- Glenfield Station;
- The Quarter Sessions Road diversion;
- Edmondson Park Railway Station; and
- The bridge spanning the Upper Canal and Cowpasture Road.

An integral part of interpretation is the evidence of change, and as such it has been recommended that an archival photographic recording of the following places is prepared prior to Project initiation:

- The Macquarie Field House home paddocks and Quarter Sessions Road;
- The Upper Canal; and
- Ingleburn Village.

To address the impacts on the SHR listed Macquarie Field House and Upper Canal arising from the Project, the Heritage Management Plan, to be prepared in conjunction with the Conservation Environmental Management Plan would provide appropriate management measures to mitigate or minimise impacts based on the detailed designs for the Project.

The Project will have a significant impact on the identified heritage values of the Riley-Newsum and Amals Sagverks Aktiebolag prefabricated cottages within the Ingleburn Village streetscape. Identification of appropriate management measures in this Heritage Impact Assessment include photographic recording of the village and cottages, which will contribute to mitigating this impact to this Commonwealth Heritage Listed place arising from the Project. However, as a heritage asset owned and managed by a Commonwealth agency, the Department of Defence, it may be appropriate to seek the advice of the Minister as to whether the significance of the impact should be considered in accordance with Sections 26 of the Act.

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1 Introduction

1.1 Preamble

Australian Museum Business Services (AMBS) has been commissioned by Parsons Brinckerhoff Australia Pty Ltd (PB) on behalf of Transport Infrastructure Development Corporation (TIDC) to prepare a Historic Heritage Impact Assessment (HIA) for the South West Rail Link (SWRL) – Glenfield to Leppington Rail Line project (the Project). This Project comprises Stage 2 of the SWRL (previously known as Stage B2). Stage 1 of the SWRL (previously known as Stage A and Stage B1) comprises the Glenfield Transport Interchange and was determined by TIDC in April 2009.

The Project has been designated a major project to which Part 3A, section 75B of the *Environmental Planning and Assessment Act 1979* (EP&A Act) applies. The Minister's Conditions of Approval (MCoA) for historic (non-Indigenous) Heritage for the project Concept Plan EA are as follows:

Non-Indigenous Heritage: for all aspects of the project (as relevant), review impacts to European heritage items and describe measures to minimise and/or appropriately manage impacts (including heritage view sheds).

TIDC's Statement of Commitments (SoC) for historic heritage identified for the approved Concept Plan EA are as follows:

Subject to property owner approval, areas that were not surveyed in relation to the assessment of non-Indigenous heritage (as included in the Environmental Assessment and Concept Plan) would be inspected as part of further assessment.

Corridor design development through the former Ingleburn Military Camp would consider the relevant policies and procedures outlined within the Heritage Analysis of Ingleburn Defence Site (Godden Mackay Logan 2001). If required a referral would be submitted to the Commonwealth Department of the Environment and Water Resources.

Where works have the potential to affect the Sydney Water Upper Canal and associated row of Bunya Pines, the design development would consider the relevant policies and procedures outlined in the Conservation Management Plan for the Upper Canal, Pheasant's Nest to Prospect Reservoir (Higginbotham 2002) in consultation with the Sydney Catchment Authority.

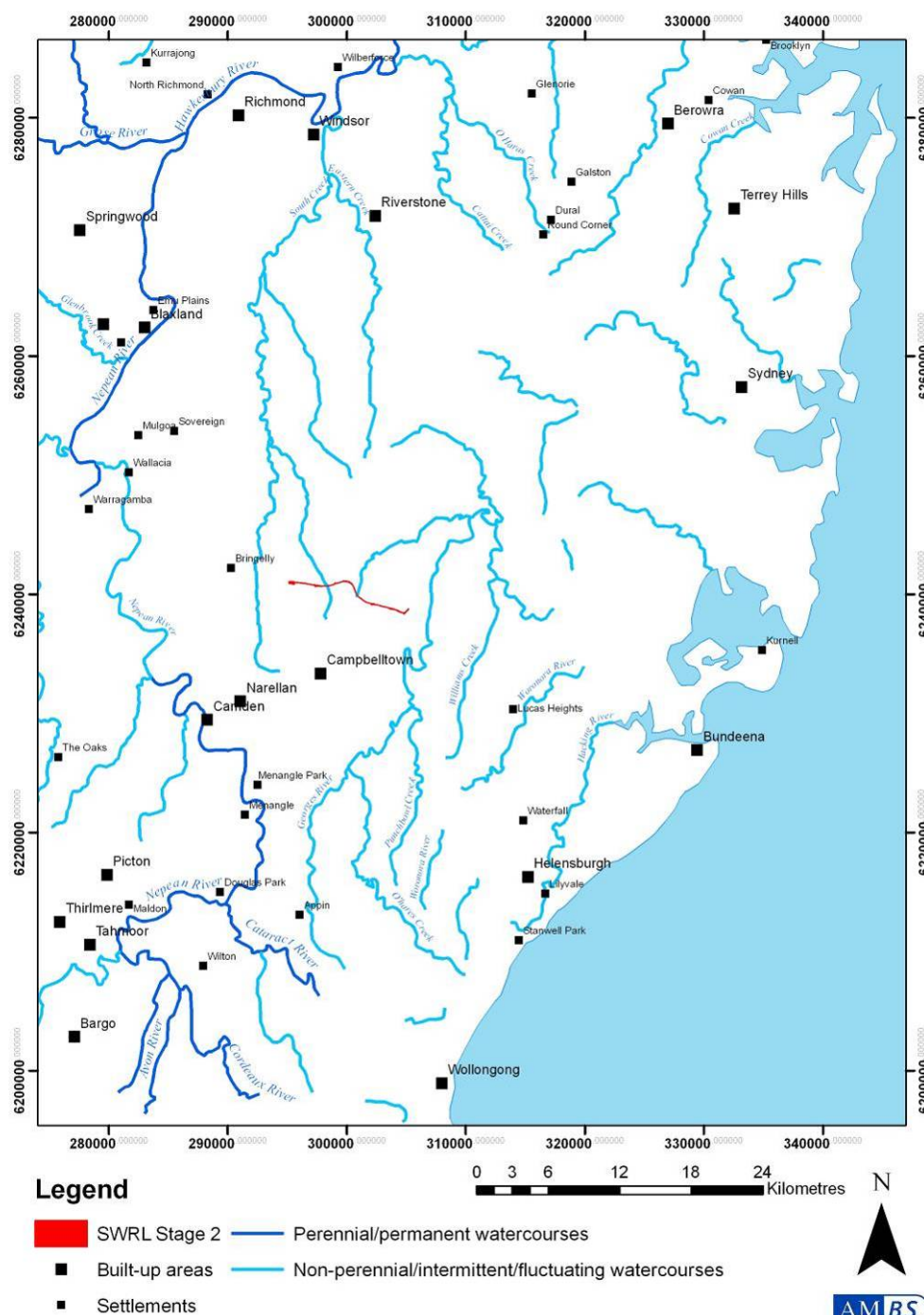
Future design development in the vicinity of Denham Court, Hurlstone Agricultural High School, and Macquarie Field House view sheds would take into consideration the heritage values of the landscape.

Design of road crossings at Old Cowpasture Road and Camden Valley Way would be carried out in consultation with the Roads and Traffic Authority to deal sympathetically with and minimise potential impact to the heritage values and view sheds.

This report addresses the historic heritage requirements of the MCoA and TIDC's SoC for the Concept Plan, and provides management recommendations for the Project.

1.2 Study Area

The study area for the Project comprises an approximately 11km rail corridor, which extends from south-west of the existing Glenfield Station to a proposed train stabling facility at Rossmore (see Figure 1.1 and Figure 1.2). The study area traverses the Campbelltown, Liverpool and Camden Local Government Areas (LGAs). The land through which the Project will pass is largely undeveloped and rural.



Settlement & Hydrology data © Copyright Commonwealth of Australia (Geoscience Australia) 2001
Horizontal datum: GDA94/MGA Zone 56

Figure 1.1 Regional map showing the location of the proposed South West Rail Link Stage 2 project.

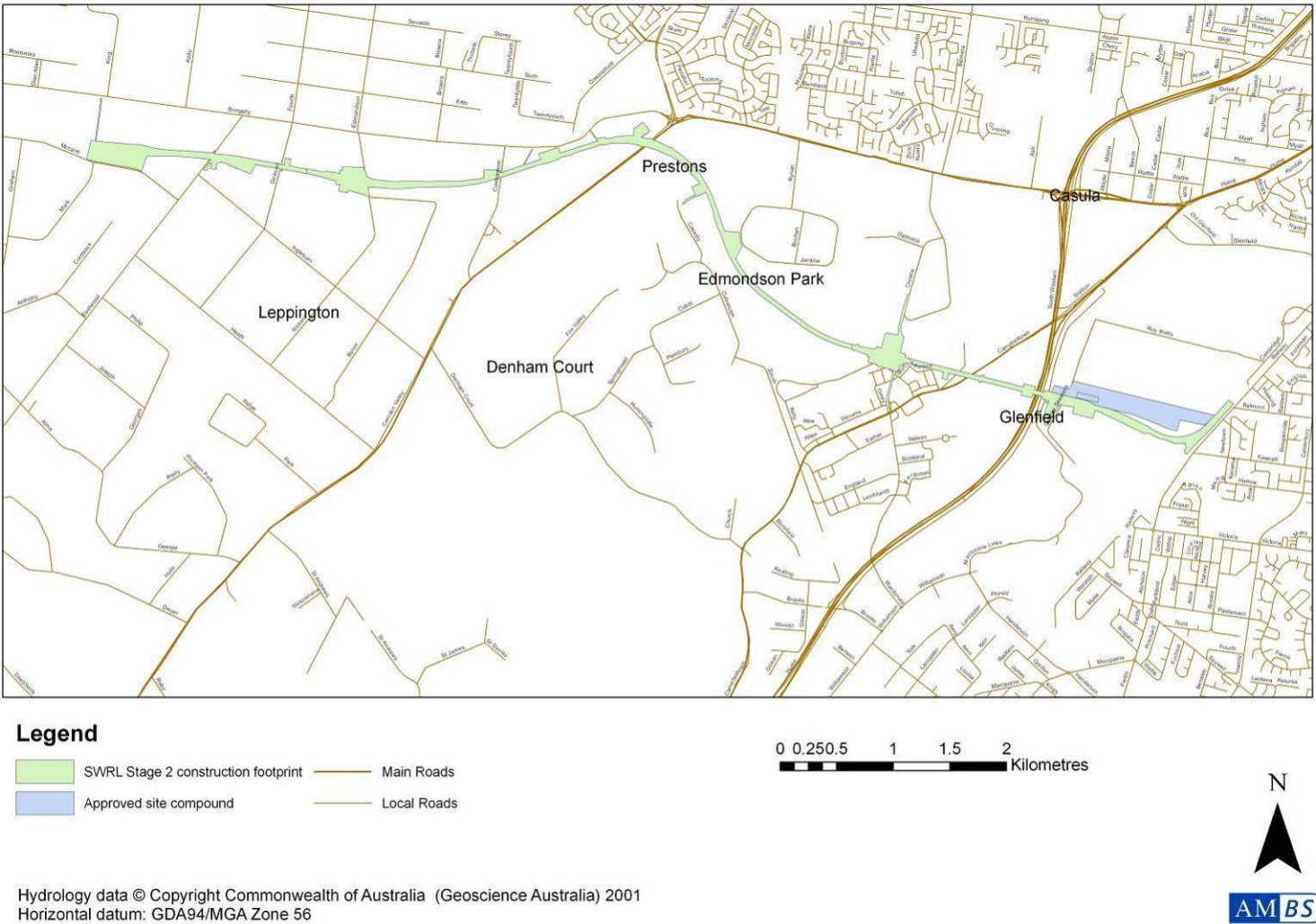


Figure 1.2 The South West Rail Link– Glenfield to Leppington Rail Line Project construction alignment.

1.3 Proposed Development

The scope of works for the Project is to include:

- a new dual track rail line and associated infrastructure between Glenfield Station and a train stabling facility at Rossmore, including construction of the stabling facility and grade-separated flyovers over the Main South and Southern Sydney Freight Lines;
- new stations and interchanges at Leppington and Edmondson Park; and
- ancillary facilities, including power supply, three electricity substations, sectioning huts, signalling structures, overhead wires, access roads, and other infrastructure required for the operation and maintenance of rail services and infrastructure;
- construction sites, including stockpile sites, compound sites, and temporary access roads.

1.4 Methodology

This report is generally consistent with the principles and guidelines of the Burra Charter (*The Australia ICOMOS charter for the conservation of places of cultural significance*). The report has been prepared in accordance with current heritage best practice guidelines as identified in the Heritage Branch, Department of Planning (formerly Heritage Office) publications *NSW Heritage Manual* and *Assessing Heritage Significance*.

This report represents the third stage in the assessment process for the South West Rail Link Project.

1.4.1 SWRL Concept Plan 2006

In 2006, Heritage Concepts assessed the heritage issues for the SWRL Concept Plan, and identified that the following identified and potential heritage items and places, and associated view sheds (hereafter view corridors) would be affected by the Project:

- Ingleburn Military Area;
- Sydney Water Upper Canal and associated row of Bunya Pines;
- a remnant historic fence alignment, Camden Valley Way, Edmondson Park;
- historic alignments of Old Cowpasture Road, Cowpasture Road and Camden Valley Way; and
- view sheds associated with
 - Hurlstone Agricultural High School;
 - Macquarie Field House; and
 - Denham Court.

1.4.2 Draft Heritage Impact Assessment 2008

In 2008 AMBS was commissioned by PB on behalf of TIDC to prepare a HIA for Stage B2 of the South West Rail Link (SWRL) Glenfield to Rossmore project, as the Project was then known.

One of the aims of the 2008 draft HIA was to verify and assess the heritage constraints identified by Heritage Concepts, and was able to determine that the following items are unlikely to be affected by the Project:

- Ingleburn Village;
- Forest Home, 1720 Camden Valley Way;
- Stuart Road (formerly Old Cowpasture Road);
- Denham Court and Chapel; and
- The remnant fence alignment, Camden Valley Way.

The study area was surveyed by car and on foot by Jenna Weston on Thursday and Friday 6–7 March 2008 and by Jennie Lindbergh and Jenna Weston on Friday 11 April and Tuesday 17 June 2008.

The aim of the current Project is to review and update the documentation prepared in 2008 in accordance with current heritage best practice requirements and the scope of the Project.

1.5 Authorship and Acknowledgements

This report has been prepared by AMBS Senior Project Manager, Jennie Lindbergh, and AMBS Project Officer, Jenna Weston. Jenna Weston prepared the Historic Context and Physical Assessment in Section 4. Jennie Lindbergh was responsible for all other sections of the report. The report has been reviewed by Libby Percival, AMBS Project Officer.

The authors would like to acknowledge the advice and assistance of Katie Shamas and Wendy Stevenson, Environment & Planning Managers TIDC, Stuart Read (Heritage Branch, Department of Planning), Robert Demkiw (Department of Education and Training) and Steve Bayliss (Sydney Catchment Authority).

2 Statutory Context

2.1 Preamble

Part 3A, Division 4, Section 75U of the EP&A Act describes those legislative approvals that do not apply to projects approved under Part 3A. The following are relevant to the heritage assessment for the Project:

- *approvals under Part 4 and excavation permits under section 139 of the Heritage Act 1977 (Heritage Act) are not required for an approved project; and*
- *Division 8 of Part 6 of the Heritage Act does not apply to prevent or interfere with the carrying out of an approved project.*

However, the Heritage Branch, Department of Planning (Heritage Branch), is given the opportunity to review Part 3A applications, and as such, the following statutory and non-statutory requirements are relevant.

2.2 Environmental Protection and Biodiversity Conservation Act 1999

In 2004, a new Commonwealth heritage management system was introduced under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) is responsible for the implementation of national policy, programs and legislation to protect and conserve Australia's environment and heritage and to promote Australian arts and culture. The National Heritage List (NHL) was established to protect places that have outstanding value to the nation. The Commonwealth Heritage List (CHL) was established to protect items and places that have significant heritage value, and which are owned or managed by Commonwealth agencies. Approval from the Minister is required for actions which will have a significant impact on matters of national environmental significance and the environment of Commonwealth land, which includes items and places included on the NHL or CHL. Actions deemed to have a significant impact on matters of national environmental significance or the environment of the Commonwealth are controlled actions.

The following items are included on the CHL and are within the vicinity of the Project:

Item	Primary Address	Listing No.
Ingleburn Army Camp	Campbelltown Road, Ingleburn Village, NSW, Australia	105649
Prefabricated Cottages Ingleburn Village	Bass Road, Ingleburn Village, NSW, Australia	105657

The gazetted historic heritage values for the Ingleburn Army Camp and the Prefabricated Cottages Ingleburn Village are associated with training military personnel for Australia's defence in wartime, including WWII and the Korean and Vietnam Wars.

The Summary Statement of Significance for the Ingleburn Village Prefabricated Cottages includes the following:

The cottages comprising Ingleburn Village are adjacent to and formed part of the post war development of Ingleburn Army Camp (Register No. 101050). An important aspect of post war development of the Ingleburn facility was the provision of a range of accommodation types, including married quarters. These were set in a street layout, which reflected as closely as possible suburban subdivisions, avoiding military stereotypes to create a normal community and suburban environment for army families.

The Riley-Newsum and Amals Sagverks Aktiebolag cottages in Ingleburn Village are rare survivors of their type. The Riley-Newsum and Amals Sagverks Aktiebolag cottages are important in illustrating the use of standardised designs and prefabrication influenced by prototypes developed in Britain and Sweden, in the immediate post war years of the 1940s and early 1950s to meet the post war shortages of materials and labour in Australia.

The group of three Riley-Newsum prefabricated cottages in Bass Road illustrate the principal characteristics of the type in their original setting. As a group these cottages are important in illustrating the visual character of a village streetscape using the CA4 handed plans and varying setbacks, enhanced by a repetition of regular forms and design motifs including prominent gables, common fabric and uniform design creating a strong visual pattern on sloping terrain. The five Amals Sagverks Aktiebolag cottages in Flinders and Blaxland Road illustrate the principal characteristics and siting of their type including three different siting options, together with the simple rectangular form, pitched gabled roof and external brick chimney. The single storey Riley Newsum and Amals Sagverks Aktiebolag cottages are set in a park like landscape with mature plantings of native trees which highlight the simple geometry and vernacular materials of the cottages, which contribute to the suburban character. (Criteria A.4, B.2, D.2 and E.1) (see Appendix A for CHL Inventory).

Section 341ZC of the Act requires Commonwealth agencies, in this instance the Department of Defence, to avoid any action that will or is likely to, have an adverse impact on the CHL values of their heritage assets. Where such an action is unavoidable the agency should ensure that *all measures that can reasonably be taken to mitigate the impact of the action on those values are taken.*

It should also be noted that Section 26 refers to approvals required for activities on Commonwealth land, where the activity will have a significant impact on the environment, which includes identified CHL values. Where there is doubt regarding whether an action will have a 'significant impact' the Minister's advice should be sought, in accordance with Section 161.

2.2.1 The Register of the National Estate

The Register of the National Estate (RNE) was established under the *Australian Heritage Commission Act 1975*. Since the establishment of the NHL and CHL, there is now a considerable level of overlap between the RNE and heritage lists at the national, state and territory, and local government levels. To address this situation, the Register has been frozen since February 2007, meaning that no places can be added or removed. The RNE should be understood as an information resource only. Where an action has been referred to the Minister, in accordance with the EPBC Act, concerning World Heritage, National Heritage, Wetlands, endangered communities, or on Commonwealth land, the RNE may be used as a reference, where appropriate.

The following registered places are within the vicinity of the Project:

Item	Primary Address	Listing No.
Macquarie Field House	Quarter Sessions Road	3266
Macquarie Field Garden	Quarter Sessions Road	3267
Ingleburn Army Camp	Campbelltown Road, NSW, Australia	101050
Denham Court and St Marys Anglican Chapel	Campbelltown Road	3275
Church of the Holy Innocents	Church St, Rossmore	3297

2.3 Heritage Act 1977

In NSW the Heritage Act provides protection for heritage places, buildings, works, relics, moveable objects or precincts that are important to the people of NSW. These include items of Aboriginal and non-Aboriginal heritage significance. Where these items or places have particular importance to the State of NSW, they are listed on the State Heritage Register (SHR). The following are listed on the SHR (see also Appendix A for relevant SHR Inventories):

Item	Primary Address	Listing No.
Macquarie Field House	Quarter Sessions Road, Macquarie Fields	00424
Denham Court & Chapel	238 Campbelltown Road, Denham Court	00212
Upper Canal System (Prospect Reservoir)	Prospect, NSW	01373

The SHR curtilage of Macquarie Field House is identified in Figure 2.1

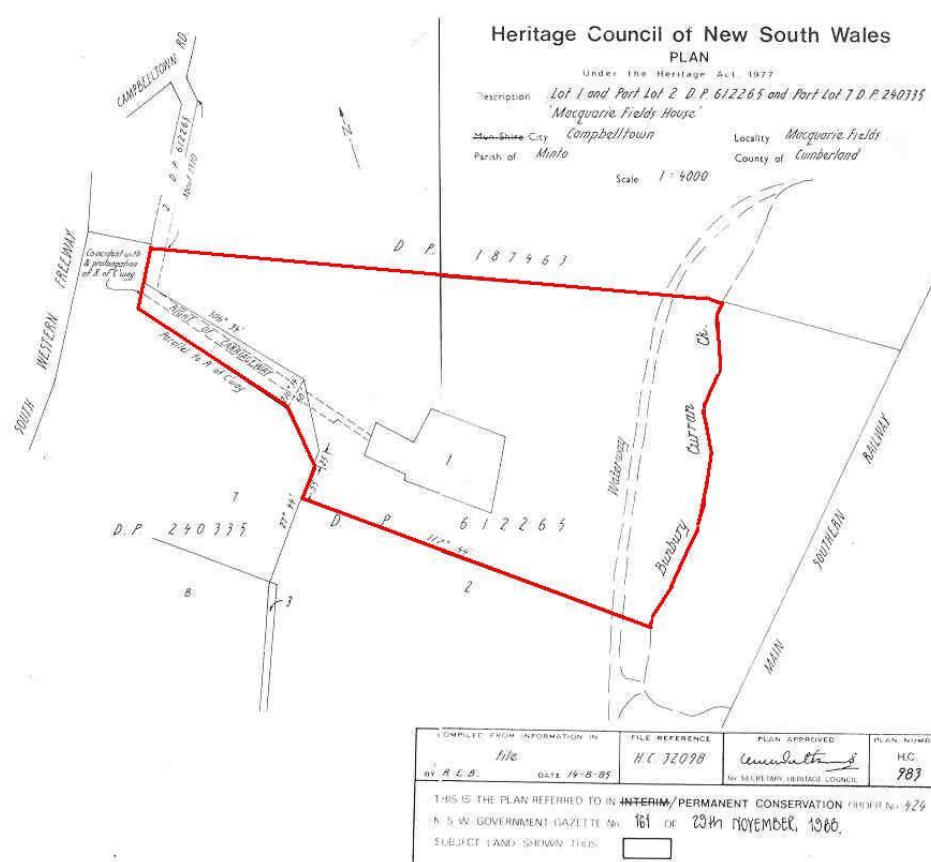


Figure 2.1 Macquarie Field House SHR curtilage (PCO Plan Number 424)

The Macquarie Field House heritage curtilage is defined by Lot 1 DP828871 which envelopes the house within Lot 1 DP 612265. The curtilage is discussed in Section 5.2.2.

The Act also provides statutory protection to relics, archaeological artefacts, features or deposits. Sections 139 to 146 of the Act requires that excavation or disturbance of land that is likely to contain, or is believed may contain, archaeological relics is undertaken in accordance with an excavation permit issued by the Heritage Council (or in accordance with a gazetted exception to this Section of the Act).

The Act defines an archaeological relic as *meaning any deposit, artefact, object or material evidence that:*

- (a) *relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
- (b) *is of State or local heritage significance.*

Under Section 170A(2) the government instrumentalities are required to maintain a register of heritage assets; a Heritage and Conservation Register, also known as a Section 170 Register. Items and places entered on a Section 170 Register are to be managed in accordance with State Owned Heritage Management Principles.

2.3.1 Sydney Catchment Authority draft Heritage and Conservation Register

The Sydney Catchment Authority (SCA) Section 170 Register has not yet been finalised and is in draft form. The following is listed on the Register:

Item	Planning Instrument	Status
Upper Canal System		State

A section of the Upper Canal System, between Bringelly Road and Camden Valley Way, Edmondson Park, is within the study area and is referred to in this report as the Upper Canal.

2.3.2 NSW Roads & Traffic Authority Heritage and Conservation Register

The RTA S170 Register does not include any items or road alignments within the vicinity of the proposed Project corridor.

2.3.3 Department of Education and Training Heritage and Conservation Register

The NSW Department of Education and Training (DET) manage heritage buildings on 523 education sites across NSW, of which the following are listed on the Section 170 Register:

Item	Planning Instrument	Status
Hurlstone Agricultural High School	Campbelltown (Urban) LEP, 2002	Local
Rossmore Public School	Camden LEP No. 48	Local

This listing for the Hurlstone Agricultural High School is limited to the Campbelltown LEP Schedule 1 listing and does not refer to the school as a whole (see below Section 2.3.2). For information concerning Rossmore Public School see Section 2.3.5.

2.4 Environmental Planning and Assessment Act 1979

Under the provisions of the EP&A Act, Local Environmental Plans (LEPs) or State Environmental Planning Policies (SEPPs) can be made. LEPs, REPs and SEPPs include provisions for the protection of the environment, which includes Aboriginal and historic heritage; items, places, landscapes and archaeological sites which have been identified as having local heritage significance. Each LEP, REP or SEPP includes a Schedule of heritage items, which may also include heritage conservation areas.

The following are the environmental plans relevant to the Project.

2.4.1 SEPP (Western Sydney Parklands) 2009

The SEPP (Western Sydney Parklands) 2009 supercedes the Sydney REP 31 (Regional Parklands), which has been repealed. The SREP included Row of Bunya Pines, Bringelly Road, Austral on Schedule 3 'Heritage items'.

Schedule 1 of the new SEPP lists six Heritage items. The row of Bunyas is not included and none of the six items is within the vicinity of the Project.

2.4.2 Campbelltown (Urban Areas) LEP 2002

Schedule 1 'Heritage items and heritage conservation areas' lists the following items in the vicinity of the Project:

Item	Primary Address	Significance
Macquarie Field House	Lot 1 DP 612265 Quarter Sessions Road, Macquarie Fields	State
Hurlstone Agricultural High School --Original School Building, 1926	Lot 1 DP 175962, Glenfield Roy Watts Road	Local
Mess Hall, Ingleburn Army Camp	Part of Lot 2 DP 831150, Edmondson Park	National
Mont St Quentin Oval, including entry gates	Part of Lot 2 DP 831150, Edmondson Park	National

2.4.3 Campbelltown LEP No 112--Macquarie Field House

This plan specifically applies to Macquarie Field House and addresses the requirement for development within the vicinity of the house. The aims of the plan are to maintain the rural environment of Macquarie Field House. The objectives which are particularly relevant to the Project are:

- (c) to protect and enhance the role of the land to which this plan applies in providing a clearly perceived break between urban development in the City of Campbelltown and that in the City of Liverpool by preserving the visual character and landscape quality of that land,
- (d) to protect and enhance the role of the land to which this plan applies in providing a rural backdrop to the residential areas of Glenfield, Macquarie Fields and Ingleburn,
- (e) to protect the quality and nature of the view from the South Western Freeway where it passes through the land to which this plan applies,
- (f) to protect that part of the major urban drainage system for the City of Campbelltown situated on the land to which this plan applies,
- (g) to control, by means of a development control plan, the siting, height, bulk, scale and density of any buildings to be erected on the land to which this plan applies to achieve the objectives stated in paragraphs (c), (d), (e) and (f), and
- (h) to guide, by means of a development control plan, the future landscaping of the land to which this plan applies to achieve the objectives stated in paragraphs (c), (d), (e) and (f).

2.4.4 Liverpool LEP 2008

Schedule 2 'Heritage items' and Schedule 3 'Potential archaeological sites' lists the following which are within the vicinity of the Project:

Item	Primary Address	Significance
Sydney Water Supply Upper Canal	Denham Court to Cecil Hills Lot B, DP 392726; Lot 1, DP 596355; Lot 21, DP 1109551; Lot 12, DP 1055232; Lot 1, DP 613552; Lots 1 and 2, DP 1086645; Lot 2, DP	State

	596352; Lot 1, DP 725231; Lots 1-4, DP 596351	
Row of Bunya Pines	Lot 18, DP 19406, Bringelly Road, Leppington	Local
Ingleburn village site and lecture hall building (Nissen hut)	Part Lots 1 and 2, DP 831152 Campbelltown Road, Ingleburn	Local
Dwelling and rural (Forest Home)	Lot 6 DP205472, 1720 Camden Valley Way, Leppington	Local

2.4.5 Camden LEP No. 48

Schedule 1 'Heritage items' includes three items that are within the vicinity and to the northwest of the Rossmore Stabling yards.

Item	Primary Address	Listing No.
Rossmore Public School	629 Bringelly Road, Lot 2, DP 222510	138
Allenby Homestead Local 139	661 Bringelly Road, Lot 2, DP 546020	139
Church of the Holy Innocents	Church St, Rossmore	252*
Church of the Holy Innocents Churchyard & Cemetery	Church St, Rossmore	252*
Church of the Holy Innocents Group	Church St, Rossmore	252*

*The Church of the Holy Innocents, Churchyard & Cemetery, and Group was nominated to the SHR, but does not appear to have been successful.

The items at Rossmore are at a distance of between 1 and 2 kilometres to the northwest of the Rossmore Stabling Facility and as such have not been assessed as part of this Project. There will be no impact on these items arising from the current Project configuration.

2.4.6 The National Trust of Australia (NSW)

The National Trust of Australia has no statutory authority; however, it does have a role in raising public awareness of heritage issues. The following items have been classified by the Trust and are included on the National Trust Register:

Item	Primary Address	Listing No.
Macquarie Field House etc	off Quarter Sessions Road, Glenfield	8824
Denham Court etc	Campbelltown Road, Ingleburn	7313

3 Heritage Significance

3.1 Preamble

The physical evidence of past activities is a valuable resource that is embodied in the fabric, setting, history and broader environment of an item, place or archaeological site. The value of this resource to a community can be evaluated by assessing its cultural and natural heritage values. The criteria for assessing heritage value or significance are derived from the Burra Charter criteria of aesthetic, historic, scientific, social or spiritual value for assessing cultural significance for past, present and future generations.

The identification of items on heritage registers and lists demonstrates the value of those items to the community. The criteria for inclusion on the CHL, is based on the ability for an item or place to demonstrate 'significant heritage value', whereas the SHR criteria assesses the 'significance' of an item or place (see Appendix B for a Table of Correspondence of CHL and SHR criteria).

The value of each of these items has been further evaluated to demonstrate significance at the national, state or local level, as summarised in the table below.

Item	National	State	Local
Ingleburn Army Camp, Campbelltown Road, Ingleburn Village, NSW	✓		✓
Macquarie Field House (including Quarter Sessions Road)	✓	✓	✓
Upper Canal System (Prospect Reservoir)	✓	✓	✓
Denham Court & Chapel	✓	✓	✓
Row of Bunya Pines, Bringelly Road, Austral			✓
Hurlstone Agricultural High School 'Original School Building 1926' on Roy Watts Road (also known as Clarke House)			✓
Dwelling and rural lot (Forest Home), Lot 6 DP205472, 1720 Camden Valley Way, Leppington)			✓

The Heritage Concepts 2006 report included a preliminary significance assessment for the identified heritage items, as well as for a number of potential heritage items. The potential heritage items identified by Heritage Concepts are:

Item	State	Local
Cowpasture Road	✓	
Camden Valley Way	✓	
Denham Court view shed	✓	
Cowpasture Road view sheds	✓	
Camden Valley Way view sheds	✓	
Remnant fence alignment		✓

These items and attributes identified by Heritage Concepts and tabulated above have not been included on any heritage registers or lists. However, Cowpasture Road, Camden Valley Way and associated view corridors make an important contribution to an understanding of the heritage values of the landscape through which the Project traverses, and are considered in the following discussion to provide a context for understanding the heritage values of the local environment of the Project.

3.2 Context of Significance

Criteria developed by the former NSW Heritage Office (now Heritage Branch, Department of Planning) were designed to assess and identify the heritage significance of items, places and archaeological sites in NSW. An item will be considered to be of State (or local) significance if, in the opinion of the Heritage Council, it meets one or more of the seven criteria:

Criterion a) an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local 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 (or the cultural or natural 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 (or the local area);

Criterion d) an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;

Criterion e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);

Criterion f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);

Criterion g) an item is important in demonstrating the principal characteristics of a class of NSW's Cultural or natural places or environments (or in the local area).

The Commonwealth and State government authorities have developed a series of Historic Themes to provide a framework for understanding the context of the significance of a place. The major historic themes that are identified as applying to the Project are provided in the table below:

National Theme	State Theme	Local Theme
Developing local, regional and national economies	Agriculture/Pastoralism	Remnant rural landscape comprising agricultural and pastoral fields and prominent houses
Building settlements, towns and cities	Transportation networks and Utilities	Constructing roads between regional urban areas Establishing the Upper Canal
Educating	Education	Establishing schools and a military training facility
Governing	Defence	Establishing the Ingleburn Army Camp to defend the country from invasion

These themes develop and expand on the historic themes identified in the Heritage Concepts report (2006:25-26). The historic themes are used here to provide a context for understanding the heritage values of the largely rural landscape through which the Project passes (see Section 4 for further historical background).

Developing local, regional and national economies – Agriculture and Pastoralism

The landscape through which the railway passes continues to reflect the early pattern of land grants and the development of pastoralism and agriculture and the later nineteenth century pattern of subdivisions and development of market gardens. The architect designed Macquarie Field House sitting within its landscaped gardens overlooking the rural landscape is a remnant of the colonial system of land grants and development of large estates. The establishment of large estates by Charles Throsby and James Meehan on their grant portions is reflected in the Hurlstone Agricultural High School and Macquarie Fields properties. Modifications to the landscape which reflect the changes in land use patterns are evident in the later nineteenth century subdivisions with smaller land holdings such as Forest Home, and the establishment of market gardens in the area.

The development of the early economies of pastoralism and agriculture were important in the growth and stability of the early colony. The rural landscape through which the railway passes remains as a reflection of the development of these economies, which has remained relatively unchanged since the late nineteenth century. Such rural landscape is becoming increasingly rare in the region, as urban development spreads out from Sydney.

The Edmondson family home, Forest Home, was where John Hurst Edmondson grew up in the early twentieth century. Edmondson attended Hurlstone Agricultural High School from 1928-1930, and trained for the AIF at Ingleburn Army Camp in 1940. The importance of Edmondson in the local area is demonstrated by the school building, memorial prize and the suburb of Edmondson Park, which are all named after him.

Complies with Criterion a; Criterion b; Criterion g

Building settlements, towns and cities – Transport and Utilities

Patterns of early land use and transportation networks are demonstrated by the alignments of the Campbelltown and Cowpasture Roads (formerly Old Cowpasture Road) and Camden Valley Way, which remain largely unchanged since surveyed by James Meehan early in the nineteenth century.

The need for a clearly defined and well made transportation system was resolved when the alignments were made to provide access within the local area and to the early major population centres of Sydney, Parramatta and Liverpool. Road networks, and the railway following its introduction from the 1860s, contributed to improvements in moving produce to the markets.

The Upper Canal is a technical achievement associated with the Upper Nepean Scheme and the transportation of a safe and reliable water supply to the city of Sydney. The Canal is demonstrative of the advances in engineering and technical skills that were required in its construction and an early use of concrete for such structures. The Upper Nepean Scheme, associated with Engineer-in-Chief of the Harbours and Rivers Branch of the NSW Public Works Department Edward Moriarty, was important in providing a reliable and safe water supply to the early colony. As an element of this Scheme, the Canal has functioned as part of Sydney's main water supply system for over 120 years, and has remained relatively unchanged since its construction in the 1880s.

New rail link is an extension of the existing Main South Line, and as such demonstrates a continuity of function.

Complies with Criterion a; Criterion b; Criterion g

Educating – Education

The establishment of Hurlstone Agricultural High School and Ingleburn Army Camp reflects the requirements of growing populations for education facilities and training for the military during a time of war.

Hurlstone Agricultural High School was established in 1926, with the aim of teaching agricultural practices. The school buildings within their setting at Hurlstone Agricultural High School are important in demonstrating aesthetic characteristics in the development of institutional buildings. Hurlstone Agricultural High School is demonstrative of technical achievements in agriculture, including the co-operation with the Glenfield Veterinary Research Station to produce the first calf in Australia born through artificial insemination of a Hurlstone Ayrshire cow.

Ingleburn Army Camp was established in 1939 to train military personnel for World War II, a function that continued at the site into the 1990s.

Complies with Criterion a; Criterion b; Criterion g

Governing – Defence

Ingleburn Army Camp, of which Ingleburn Village is a part, is demonstrative of the development and requirements of military training and preparations for war. Its establishment as a training ground for military personnel to defend the country from invasion in WWII and later wars reflects an important part of Australia's military history.

The original layout of Ingleburn Village is reflective of defence sites established in response to the need for trained military personnel in World War II, and later wars in Korea and Vietnam. Accommodation buildings reflect the standard defence modular buildings that were adaptable to a variety of functions; accommodation, administrative, training and recreational. Memorial areas at Ingleburn Army Camp are associated with the divisions and battalions that trained at the Camp, such as the 16th Battalion of the 6th Division, which was the first Australian overseas contingent. The Camp also has an association with John Hurst Edmondson, who trained there in 1940.

Complies with Criterion a; Criterion b; Criterion g

3.3 Summary Statement of Significance

The landscape through which the railway passes continues to reflect the early pattern of land grants and the development of pastoralism and agriculture, and the later nineteenth century pattern of subdivisions and development of market gardens. The architect designed Macquarie Field House sitting within its landscaped gardens overlooking the rural landscape is a remnant of the colonial system of land grants and development of large estates. Patterns of early land use and transportation networks are demonstrated by the alignments of the Campbelltown and Cowpasture/Old Cowpasture Roads and Camden Valley Way, which remain largely unchanged since surveyed by James Meehan early in the nineteenth century.

The new rail link continues the function of the Main South Line in providing transportation across the landscape. This landscape has heritage value for its ability to demonstrate the changing pattern of land use since European settlement in the local area.

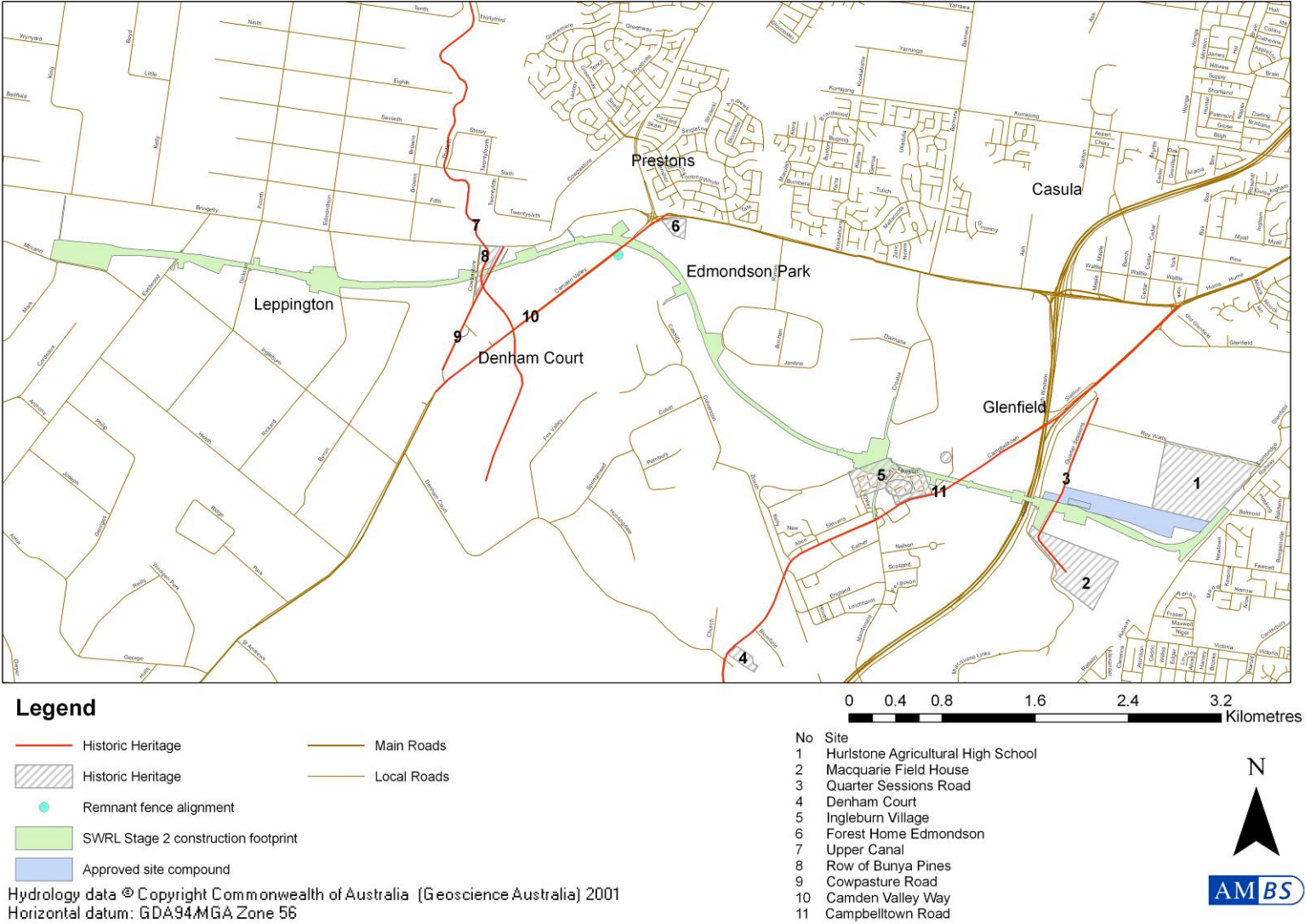


Figure 3.1 Map identifying the historic heritage context of the Project.

4 Historic Context

4.1 Preamble

Captain Arthur Phillip established the first permanent British settlement in Sydney on 26 January 1788. However, the land in this area was too sandy for farming, so explorations to find arable lands were undertaken along the coast and into the hinterland later that year. The following year, cultivation was underway in Parramatta, and in 1791 Phillip granted lands for farming to the first emancipated convicts. By the 1790s, the fertile alluvial soils along the Hawkesbury, Nepean and Georges Rivers, and the area around South Creek and the head of the Parramatta River, were being farmed for wheat and maize. However, these areas often flooded, and throughout the 1790s the colony was under the ever-present threat of famine. Imported food came predominantly from Britain and Norfolk Island, but this was over 1,600km away and its soil was not ideal for crop cultivation either (HLA 2003:3-4).

Despite their difficulties, by 1801 these early farms were providing most of the colony's grain. Also by this time, the Cumberland Plain was settled, and the search for suitable farming land continued. In 1804, Governor King began to look to the west for lands to cultivate. The area known as "Cow Pastures" had been reserved for grazing by wild cattle, which had escaped from the early colony and headed west. These cattle were being kept as a reserve source of food and the area had therefore remained unoccupied (Keating 1996:8).

4.2 European Settlement and Land Use

Settlement on the alluvial soils of creeks and rivers in the "forest land" of Cabramatta-Minto began in 1809, after serious flooding of the Hawkesbury. Initially, the settlers were pastoralists, grazing cattle, sheep and pigs, with agriculture developing with the cultivation for wheat, maize, barley and oats. In 1806, Charles Grimes produced a map of New South Wales, which showed a track from Prospect south to Cowpastures, which later became Old Cowpasture Road (now Cowpasture Road) (Heritage Concepts 2006b:13; HLA 2003:4; Keating 1996:15; Proudfoot 1987:12).

Governor Macquarie sought to continue the settlement and cultivation of the area, and offered larger grants for broad-acre grain production. This resulted in increases in wheat production and sheep grazing, and the wool industry soon developed. Extensive clearing of land for grazing in the Cowpastures had occurred by the 1830s. In 1838-1840, a drought affected crops in the region, and economic depression followed in the 1840s. This led to many large landholders leasing portions of their land to tenant farmers, including former convicts and less fortunate settlers. Wheat cultivation and cattle dominated these small tenant farms. An outbreak of stem rust on the Cumberland Plain resulted in the decline of the pastoral and agricultural industry after the 1860s, to be replaced by dairying as the major industry (HLA 2003:5-6; Keating 1996:22, 49).

4.3 Early Land Holdings

The earliest land grants in the Parish of Minto were granted in 1810 and the pattern of land grants across the study area is characterised by large properties held by prominent landowners in the colony. Grantees within the Parishes of Cook and Minto include Charles Throsby, James Meehan, Dr Robert Townson, Richard Atkins Robert Bostock, Henry Kitchen, Charles Parker, Graham Blaxcell and Simeon Lord (Figure 4.1). Throsby raised cattle and sheep on his land and called it Glenfield (Keating 1996:29).



Figure 4.1 Undated parish maps of Cook (above) and Minto (below) showing the pattern of large land grant portions across the study area, including Meehan's Macquarie Fields (circled) (PMapMN03 14069601 and PMapMN04 14064301 Parish Map Preservation Project, NSW Department of Lands).

4.3.1 Macquarie Fields

James Meehan had been transported to the colony in 1798 for being a sergeant in the United Irishmen, but his skills as a surveyor were in high demand. From 1802, as Deputy Surveyor General, Meehan undertook major surveying work in Tasmania and NSW. Meehan surveyed Cowpasture Road in 1805, Campbelltown Road (also called Southern Road, linking Liverpool to Campbelltown) in 1817, and Camden Valley Way by 1820, at least between Crossroads and Cowpasture Road. Meehan built Meehan's Castle on his grant of 2020 acres at Macquarie Fields (HLA 2003:5). By 1822, when Governor Macquarie stayed at Macquarie Fields, the house was occupied by Reverend Reddell and his family, and was being used as a private school (Morris & Britton 2000:76; Wrigley 2001:9).

Macquarie Field House

Macquarie Field House was built on Meehan's original grant to a design by Samuel Terry in c. 1838-1840. The house stands on a prominent hilltop with expansive views of the surrounding area, particularly to the north and east (Figure 4.2). The house is an Australian colonial country style Regency sandstone building. There is a small, 1840s Arcadian style homestead garden with stylised gates and piers. A bay window in the north elevation overlooks the valley to north, where the home paddocks, previously part of the farm with paddocks still defined by hedges and fencing. There is also an elliptical apsidal garden seat alcove built in c. 1870s on the site of an even earlier structure. This is now in ruins. The house is also surrounded by exotic plantings, including African olives, oleanders, araucarias and pepper trees. Meehan's 1806-1810 Farm House (the Castle), a barn, wall, early rubbish dump, possible early school house, two early wells, and the possible remains of a flour mill and water race (on Bunbury Curran Creek) are also identified on the land. Quarter Sessions Road is the main historic access to the Macquarie Field House estate.



Figure 4.2 Watercolour of Macquarie Field House by F. Terry 1858-1862 (slnsw SVSp CollTerry2).

In 1831, the Meehan estate was sold by James' son Thomas to the 'Botany Bay millionaire', ex-convict Samuel Terry. In 1838, it passed to Terry's daughter Martha Hosking, the wife of first Mayor of Sydney, John Hosking. Martha leased the property while she and Hosking lived on the Mt Pleasant property, also inherited from Terry. From 1858-69 the house and 1500 acres was again used as a school, by George Fairfowl Macarthur. The Main South Line to Campbelltown was opened in 1858 and Macquarie Fields contributed to the beauty of the scenery along this line, which included elegant cottages and substantial homesteads (Liston 1988:71; Morris & Britton 2000:76).

In 1877, Martha Hosking died and the Macquarie Fields Estate was sold. The house was retained on 1660 acres and sold to James Ashcroft. In 1881, the rest of the land was subdivided. In 1904, the Ross family purchased the southern part of the Estate, including Macquarie Field House. This was then purchased in 1924 by Sydney solicitor J. C. Kershaw and managed by his brother Frank as a

dairy farm. The northern half of the Estate was sold to the government, and the Hurlstone Agricultural College, the Glenfield Park Special School and a veterinary research station were established on this land. In 1940, the army took possession of the land. In 1944, Kershaw died and the house and land was purchased by the Department of Agriculture. The house fell into disrepair until 1960, when David Jamieson began restoration works in return for a 50-year lease. The house is currently owned by Paul and Caroline Hutchinson who are restoring it. The plantings surrounding the house, particularly African Olive and Hoop Pines, remain as prominent landmarks (HLA 2003:5, 7; Morris & Britton 2000:76-77).

4.3.2 Edmondson Park

By 1817, Parker's Farm had been established on Charles Parker's 300 acre land grant in the Edmondson Park area. Part of Parker's land was occupied by the Rolfe family until 1919, and 13 acres were occupied by the army during World War II.

In 1819 Henry Kitchen, an architect who had designed and constructed several well-known Sydney churches (including St Matthews Anglican Church at Windsor in 1818), was granted 840 acres in the Edmondson Park area which he called Clermont. Also in 1819, Robert Bostock was granted 200 acres. Parts of the lands originally granted to Bostock (portion 64), Kitchen (portion 63) and John Drummond (portion 8) were purchased by Joseph Edmondson in 1906 (HLA 2003:5, 7).

The Edmondsons and Forest Home

In 1916 Joseph Edmondson's son, Joseph William, his wife Maude and son John Hurst Edmondson moved to the property. By 1918 the land was transferred to Joseph William. The same year, Joseph William's brother John Gordon Edmondson purchased two properties in portion 8. Another of his brothers, Alexander Keith Edmondson occupied part of portions 63 and 64.

John Hurst Edmondson was educated at Austral Public School and Hurlstone Agricultural High School (the latter from 1928-1930), before beginning work on the family property. He enlisted as an army reserve soldier in 1939 and was promoted to corporal in July 1939, volunteering for full-time duty when World War II broke out in September. John was transferred to the Australian Imperial Force (AIF) in 1940 and trained at Ingleburn Army Camp before leaving for the Middle East later that year. He died at 26, while saving his commanding officer in the Battle of Tobruk in Libya on 13 April 1941. He was the first soldier of the Empire in World War II to be awarded the Victoria Cross for Bravery (Pollock 2007:21). Edmondson Park is named in his honour, as is the school hall (built in 1981), memorial tablet and memorial prize at Hurlstone Agricultural High School.

Until the 1950s, the Edmondson family lived in a weatherboard farmhouse on their property known as Forest Home, near the junction of Bringelly Road and Camden Valley Way (HLA 2003:8). Forest Home was sold in 1958 after the death of Maude Edmondson.

4.3.3 Denham Court

In 1810, Judge-Advocate Richard Atkins was granted land in the area, which he named after his home in Middlesex, England, Denham Court. However, having participated in the rebellion against Governor Bligh, he was recalled to England. In 1812 the property came into the hands of Captain Richard Brooks in settlement of debts that Atkins owed to him. Brooks was a trader and former master of the convict transports *Atlas* and *Alexander*. Brooks arrived with his family in Australia as a free settler in 1814, moving to Denham Court in the early 1820s (Parsons 1966). Brooks had earned a great deal of money through whaling, and successfully turned his hand to grazing at Denham Court, raising cattle and sheep, and running a horse-powered threshing machine (Keating 1996:29, 44). Brooks, as the magistrate held local sittings at his home, Denham Court (Keating 1996:60).

The three main wings of the house built in the early 1820s are brick with hipped roofs and verandahs, forming a single storey in the colonial Georgian style. The 1832-33 addition is a central two storey wing flanked by single storey bow fronted pavilions in the Grecian style (Figure 4.3). A Doric portico marks the entrance. The exterior is painted white, with dark roofing. Attractive timber boundary fencing, a landscaped driveway, lawn and garden are also present.



Figure 4.3 Undated photograph of Denham Court (Campbelltown & Airs historical Society 001580).

The outbuildings at Denham Court were probably built before 1820. The family house was originally single-storeyed, but was enlarged in 1832 with a John Verge designed two storey wing at the front and two flanking low-fronted single-storey wings, to replicate the original 1670 home in England. In 1833, Captain Brooks was gored by a bull and died. He was buried in a vault at Denham Court and the church of St Mary the Virgin was built to enclose his remains (Parsons 1966). This Gothic Revival-style chapel was also designed by Verge, is now located at some distance on the far side of Campbelltown Road and is one of the oldest private chapels in Australia. The chapel was handed over to the Church of England in 1844 (Keating 1996:72).

Upon Brooks' death, the property was inherited by his daughter Christiana and her husband, army lieutenant Thomas Valentine Blomfield, both of whom died in the 1850s. It is reported that a windmill was operated by T. V. Blomfield at Denham Court (Keating 1996:70). For the next several years the property was used for a ladies boarding college, run by Sarah Eliza Lester, before becoming the home of son Richard Blomfield.

Most of the original 500 acre land grant was subdivided and sold after the 1860s, and in 1890 the house and remaining land was bought by John Mayne. Mayne was a widower who married Maud MacDonald in 1901, and the property was then inherited by their niece Gowan Flora MacDonald. In 1974 the house was purchased by Dr Keith Okey, who restored it as a private home.

Denham Court overlooks the Georges River valley, and early plough lines from wheat and grapes are still visible on the slopes below the house.

4.3.4 The Main South Line

The first railway in the Colony opened in 1855, between Central and Parramatta. The following year, a line between Parramatta and Liverpool was opened, and the Main South Line from Liverpool to

Campbelltown was operating from 4 May 1858 as a single track with no intermediate platforms. The Glenfield and Ingleburn platforms were established in 1869 (Heritage Concepts 2006:16; HLA 2003:4).

4.3.5 Subdivisions and Roads

Subdivision of large estates and subsequent establishment of market gardens, orchards, vineyards and poultry farms had occurred by the late nineteenth century; however, many of the large estates created by the first subdivision remained relatively intact until World War II (Heritage Concepts 2006:16; HLA 2003:7). In 1958, Throsby's grant, owned by Harold Alfred Swane at the time, was subdivided and Jardine Drive and Buchan, Croatia and Dalmatia Avenues were laid. Subsequently, most old paddocks and infrastructure were removed, and the trend of building small houses with adjacent market gardens resulted in more horticultural land use. However, these have now been replaced by larger houses and small gardens, for a more rural residential use (HLA 2003:9).

4.4 The Twentieth Century

By the late nineteenth century, the Glenfield-Rossmore area was dominated by market gardens, orchards, vineyards and poultry farms. In the early twentieth century, following the 1902 drought, firewood was a major Cumberland industry (Heritage Concepts 2006:16).

4.4.1 Hurlstone Agricultural High School

The first Hurlstone School was established by John Kinloch, a maths tutor who opened his private school on land purchased at Ashfield, where Trinity Grammar School and Yeo Park now stand. Kinloch named the school after his mother, Helen Hurlstone, who died of influenza when he was 16. However, Kinloch had to sell the school because of a lack of students to pay the bills. It was purchased by the government and used as a residential women's teachers college. In 1907, the women moved to a new Teacher Training College at the University of Sydney, and the property became Hurlstone Agricultural Continuation School, a school for boys which was modeled on the Vilvorde agricultural school in Brussels (Pollock 2007).



Figure 4.4 The Hurlstone Agricultural High School in 1934 (slsw d1_20266).

In 1926, Hurlstone Agricultural High School (HAHS; see Figure 4.4) was relocated to Glenfield after outgrowing the old school grounds at Summer Hill. One hundred acres (approximately 40.47 ha) to

the south of the Veterinary Research Station had been purchased from Mr Robert Ross in 1916 for the sum of £10,000 (Pollock 2007:12). The NSW Department of Education funded the construction of farm facilities, classrooms and dormitories, including a central administration block that contained the Principal's residence, a dining room, and assembly hall. The Principal's residence was renamed Clarke House in 1980 after Reginald Clarke, the last school principal to live there (Pollock 2007:12; HAHSSHG 2008). The Prefect's Cottage (now the English staffroom) is located next to Clarke House and was built around the same time.

Glenfield Park School is located to the west of HAHS and was opened in 1927 as a boarding school for disabled children (Figure 4.5). Ajuga School and Campbell House School are currently located on the Glenfield Park School grounds. The Ajuga School and Campbell House buildings were probably built in 1926. They were used as dormitories for students (Ajuga) and teachers (Campbell House) at Glenfield Park School until the 1980s, when three staff members were murdered. The Glenfield Park School Principal's residence, a small weatherboard cottage, was occupied until late 2006. Although it is still standing, it is in poor condition.



Figure 4.5 Glenfield Special School in 1946 (slnsw d1_41973).

The brother of Percival Hindmarsh, the second school principal in its new location, was a director of the Glenfield Veterinary Research Station, to the north of HAHS, and the two institutions co-operated to produce the first calf in Australia born through artificial insemination of a Hurlstone Ayrshire cow (Pollock 2007).

Between 1989 and 1990, Glenfield Veterinary Research Station, was relocated to the Elizabeth Macarthur Agricultural Institute at Camden. The agricultural land and farm buildings were acquired by HAHS, and the land to the north was acquired by the Department of Education and Training (DET).

Roy Watts was a student at Hurlstone Agricultural High School from 1929-32, winning the McKern prize (a memorial prize named after a former student who died at Gallipoli) in 1930 and becoming the NSW Director General of Agriculture in 1965-80. The road between HAHS and the Veterinary Research Station is named after him, and he had also been Head of this Station at one point. His

ashes have been buried in the rose garden in front of Clarke House. The Director of Education renamed the school Macarthur Memorial Agricultural High School in 1939, in honour of woolgrower John Macarthur; however this government edict was soon forgotten and the school returned to its original name (Pollock 2007).

4.4.2 Ingleburn Army Camp

Ingleburn Army Camp was the first purpose-built Australian army training camp established for WWII. The land at Ingleburn was compulsory acquired by the Commonwealth in 1940 but construction and occupation began in 1939, with 2nd AIF troops accommodated in tents while buildings were being erected. Conditions were rudimentary and other difficulties included the expense and poor quality of goods at privately-owned canteens, prior to the Army providing and servicing canteens (HLA 2003:9). The Army's First Field Hospital (Second Military Hospital) was constructed in 1939-1940, on Areas M and N to the northeast of Ingleburn Village and Bardia Barracks, to process recruits and to train medical staff (GML 2001:10).

Accommodation consisted of an initial 253 buildings, and a further 80 built soon after, for infantry, engineers, transport, signals and anti-aircraft units (for an example of the types of buildings constructed (Figure 4.6). Army brigades used the camp as an assembly point, including the 16th Battalion of the 6th Division, which was the first Australian overseas contingent. With the outbreak of war in the Pacific, troops were refitted and retrained in Queensland and Ingleburn was used for training specialist troops such as vehicle fitters (HLA 2003:10).

Ingleburn Village was a Married Quarters Precinct for Ingleburn Army Camp. The Village is defined by the layout of Lawson, Wentworth, Eyre, Sturt, Blaxland, Cunningham, Burke, Bass, Oxley and Stevens Roads and Flinders Crescent. Defence housing generally comprises standard military-pattern 60ftx18ft prefabricated structures developed in the 1930s for the Australian Army (also referred to as P1 huts or Sydney Williams Type Barracks). These structures were designed as modules that could be modified to suit a variety of uses, including accommodation and administration. At Ingleburn the houses are clad in various materials, including weatherboarding, fibro sheet (asbestos cement), brick and timber. Most of the houses have brick chimneys and concrete driveways. Many have already been removed from the area adjacent to the Project and there is a representative sample of this type of building within the Ingleburn Army Camp Heritage Precinct, Bardia Barracks (Figure 4.6 and Figure 4.7).



Figure 4.6 Characteristic military prefabricated housing and streetscape at Ingleburn Village.



Figure 4.7 Bardia Barracks Heritage Precinct entry.

Following WWII some areas of Ingleburn were leased to graziers, until 1951 when the camp was used to station and train troops bound for the Korean War. Ingleburn was a major National Service centre by 1954, and also trained Reserve troops, and by 1959 Ingleburn Village had been established with more permanent accommodation structures (HLA 2003:10). The increased housing requirements for the National Service scheme saw prefabricated houses for married instructional staff being provided to Puckapunyal (Vic), Woodside (SA), Wacol (Qld), Swanbourne (WA) and Ingleburn, sourced from Britain and Sweden (Robertson & Hindmarsh 2004:np). At Ingleburn, the new accommodation included three Riley-Newsum cottages prefabricated in Britain and five and Amals Sagverks Aktiebolag prefabricated in Sweden (Figure 4.8 and Figure 4.9). Ingleburn Village was consciously developed to reflect suburban housing, rather than the standard layout grid of military barracks with a mix of housing stock and variations in the siting on each block.



Figure 4.8 Typical examples of Riley-Newsum pre-fabricated type government housing, under construction at Duntroon, 1951 (AHC 001314).



Figure 4.9 Amals Sagverks Aktiebolag prefabricated cottage, 7 Commonwealth Ave, Georges Heights (Robertson & Hindmarsh 2004).

In the 1960s the Army's School of Infantry Training was established at Ingleburn, and the camp was used to train troops for the Vietnam War. Further, with the extension of compulsory military training after 1964, the camp held a number of objectors to conscription in its Guard House and Cell Blocks.

In 1972, the Whitlam Government suspended the National Service, and thereafter Ingleburn was mainly used to train the Army Reserves. Units began to be transferred from Ingleburn to other areas from the mid-1990s, and a process of demolishing vacant buildings began, with many also destroyed by fire later that decade. In 1997 the hospital was relocated to Holsworthy and the buildings, which included quantities of asbestos, were demolished in 1997, the site is now marked by remanet brick gate posts (GML 2001:10).

4.5 Sydney's Water Supply and the Upper Canal

The Upper Canal was constructed as part of the Upper Nepean Scheme to provide Sydney with a reliable and safe water supply, and was operational by 1888. The Upper Nepean Scheme was a major feat of engineering, and planning by Edward Moriarty, Engineer-in-Chief of the Harbours and Rivers Branch in the Public Works Department. The Upper Canal supplies water from the Upper Nepean dams via Broughtons Pass Weir to the Macarthur Water Filtration Plant and Prospect Reservoir, from whence it is transported to Guildford Pipehead via the Lower Canal (now decommissioned) and on to the Potts Hill, Crown Street and Paddington Reservoirs. With the growth of Sydney, the Scheme eventually became inadequate to meet the city's needs. Therefore, a number of other dams were built, including Warragamba Dam in 1946; however, the Upper Canal still provides water to Prospect Reservoir.

Cottages for maintenance workers were built at intervals of approximately 8km along the Canal, and were still standing until the 1970s. A telephone line ran the length of the Upper Canal from 1898, and exotic plantings including Bunya and Stone Pines, Willows, Indian Hawthorne and Japonica hedges formed part of the landscaping of the Canal (Higginbotham 2002).

5 Physical Assessment and Impact Identification

5.1 Preamble

The new rail link passes through a sparsely populated agricultural and pastoral landscape which has remained relatively unchanged since European settlement. The pattern of early land grants is still evident, as is the pattern of late nineteenth century land subdivisions and the establishment of market gardens and associated infrastructure. The area is now under increasing pressure from urban development such as the Macquarie Links residential area.

In 2008 the Project corridor was surveyed to verify and evaluate impacts on the heritage items identified in 2006 by Heritage Concepts during the Concept Plan phase of the Project, and to identify any additional or potential heritage items, places or archaeological sites.

This assessment updates the original evaluation in consideration of the modifications to the proposed scope of the Project works that have occurred since that assessment was undertaken.

5.2 Hurlstone Agricultural High School and Macquarie Field House on Quarter Sessions Road

5.2.1 Physical Assessment

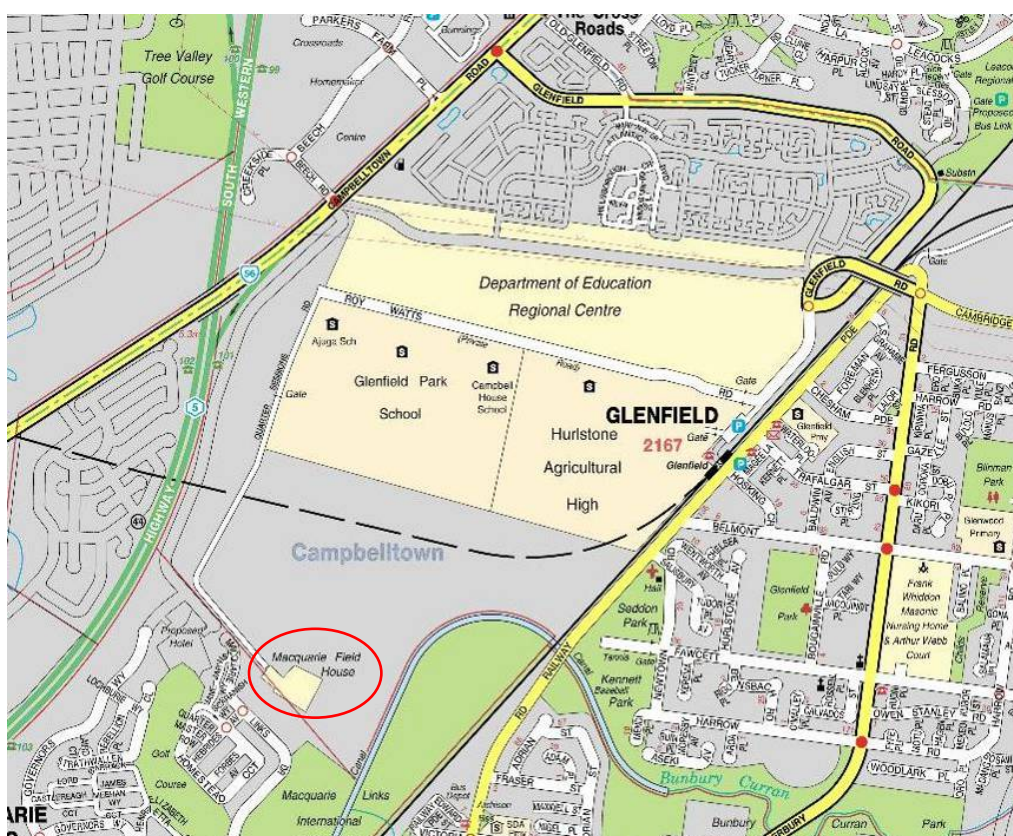


Figure 5.1 Location map for the Hurlstone Agricultural High School, with Macquarie Field House (circled) to its south (UBD).

The Hurlstone Agricultural High School commands expansive views across the landscape, particularly those from the southern property boundary. The school is elevated above a small valley which falls away to the south, rising again to the local prominence on which Macquarie Field House stands (Figure 5.1 and Figure 5.2).



Figure 5.2 Views from Hurlstone Agricultural High School to the Main South Line to the southeast (left) and to Macquarie Field House and Quarter Sessions Road to the southwest (right).

The Department of Education constructed the central administration block (now Clarke House) in 1926, to house the former Principal's residence, a dining room, a kitchen and servants' quarters, as well as dormitories, classrooms and farm facilities (Figure 5.3 and Figure 5.4). Clarke House is the only previously identified heritage item within the boundary of the school. The Prefect's Cottage, adjacent to Clarke House, may have been built earlier, and as the requirements of the school have grown, new facilities have been constructed such that a variety of architectural styles are represented within the grounds (Figure 5.5).



Figure 5.3 Clarke House (left) and contemporary dormitory building (right).



Figure 5.4 The dairy (left) and associated farm buildings (right).



Figure 5.5 The prefects' cottage (left) and the juxtaposition of 1920s and 1960s buildings (right).

The buildings which currently house Ajuga School and Campbell House School (Figure 5.6) were built as dormitories for bedridden students of the Glenfield Park School and staff during the early 1920s and also have expansive views across the valley to the south.



Figure 5.6 North elevations of Ajuga school buildings.

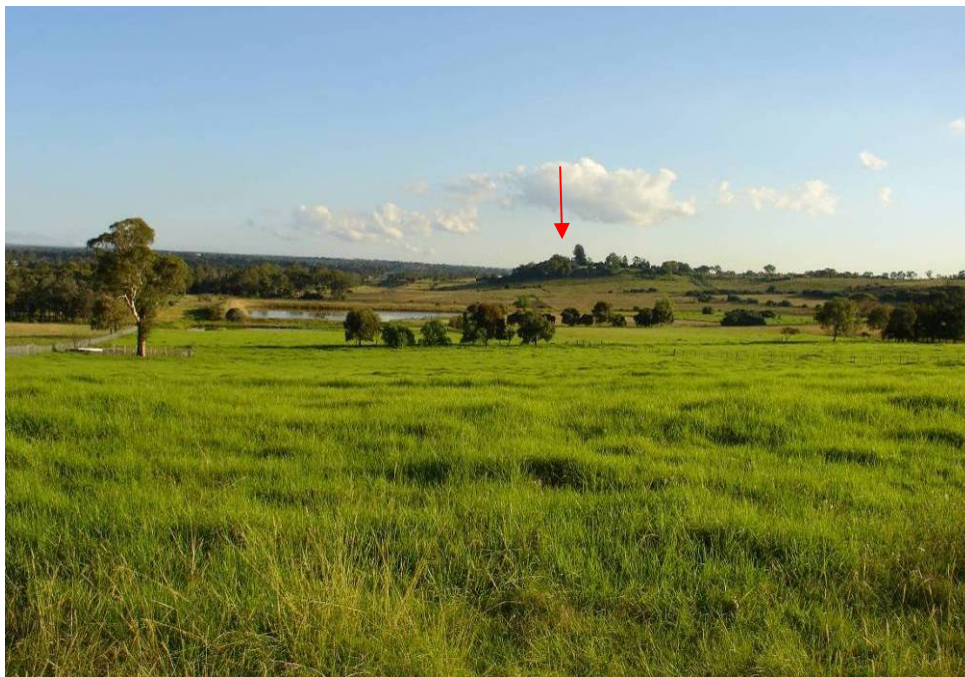


Figure 5.7 View from the rear of Ajuga School to Macquarie Field House (arrowed) to the south marked by two large hoop pines.

Macquarie Field House stands on a prominent hilltop overlooking the valley to its north and the surrounding rural landscape through which the Project passes (Figure 5.7). This vista provides an understanding of the early pattern of land grants and later land subdivisions in the region. The early pattern of the home paddocks continues to be recognisable in the hedges and fencing. The hill falls away to a small valley to the north, rising up again to Hurlstone Agricultural High School. The main access to the estate has always been via Quarter Sessions Road, which is little more than a rough, heavily rutted track with remnant asphalt surfacing nearer to the house (Figure 5.8). Views to the south have been significantly compromised by the Macquarie Links development and as such views to the north are more highly valued for their contribution to the heritage values of the house.



Figure 5.8 Quarter Sessions Road nearing the main entry (left) and inside the gardens (right).

The house displays the attributes of Regency style, adapted to the requirements of environment with broad verandahs (Figure 5.9). The entry to the property is through stone gate posts with a white picket gate and fence. Another set of gate posts nearer to the house, and offset from the front gates, marks a brick-paved tree-lined driveway which continues as Quarter Sessions Road to the west and north as the only access to the house.



Figure 5.9 North-east elevation which overlooks the valley to Glenfield and Sydney.

Beyond a row of screening trees is the adjacent Macquarie Links housing estate, which has severely disrupted the original vistas across the rural landscape to the south (Figure 5.10). An elliptical apsidal garden seat alcove built in c.1870s on the site of an even earlier structure is now in ruins, and protected by a corrugated iron sheet. The house is surrounded by exotic plantings, including African olives, oleanders and pepper trees. Two large hoop pines (*Araucaria cunninghamiana*) are visible from a great distance and mark the property. A number of other structures and archaeological features are also identified on the land, including Meehan's 1806–1810 Farm House, a barn, and early wells, which are located within the SHR heritage curtilage (see Appendix A).



Figure 5.10 View to the north and Hurlstone Agricultural High School (left) and the recent Macquarie Links development is visible from Macquarie Field House to the south.

The valley was part of the original Macquarie Field House estate and retains a strong visual relationship with the house (Figure 5.10). Views from the house extend across the valley to the Sydney city skyline (Figure 5.11).



Figure 5.11 View to the northeast and the Sydney CBD (arrowed).

5.2.2 Identification of Impacts: Hurlstone Agricultural High School and Macquarie Field House on Quarter Sessions Road

Clarke House is the only part of the Hurlstone Agricultural High School that has been identified as a heritage item. Macquarie Field House, on Quarter Sessions Road, is listed on the SHR; however, a section only of Quarter Sessions Road is within the SHR curtilage. The Project corridor runs across the valley between the DET lands and the Macquarie Field House SHR curtilage and will be visible from the house and the school lands, as well as having an impact on the historic alignment of Quarter Sessions Road (Figure 5.12).

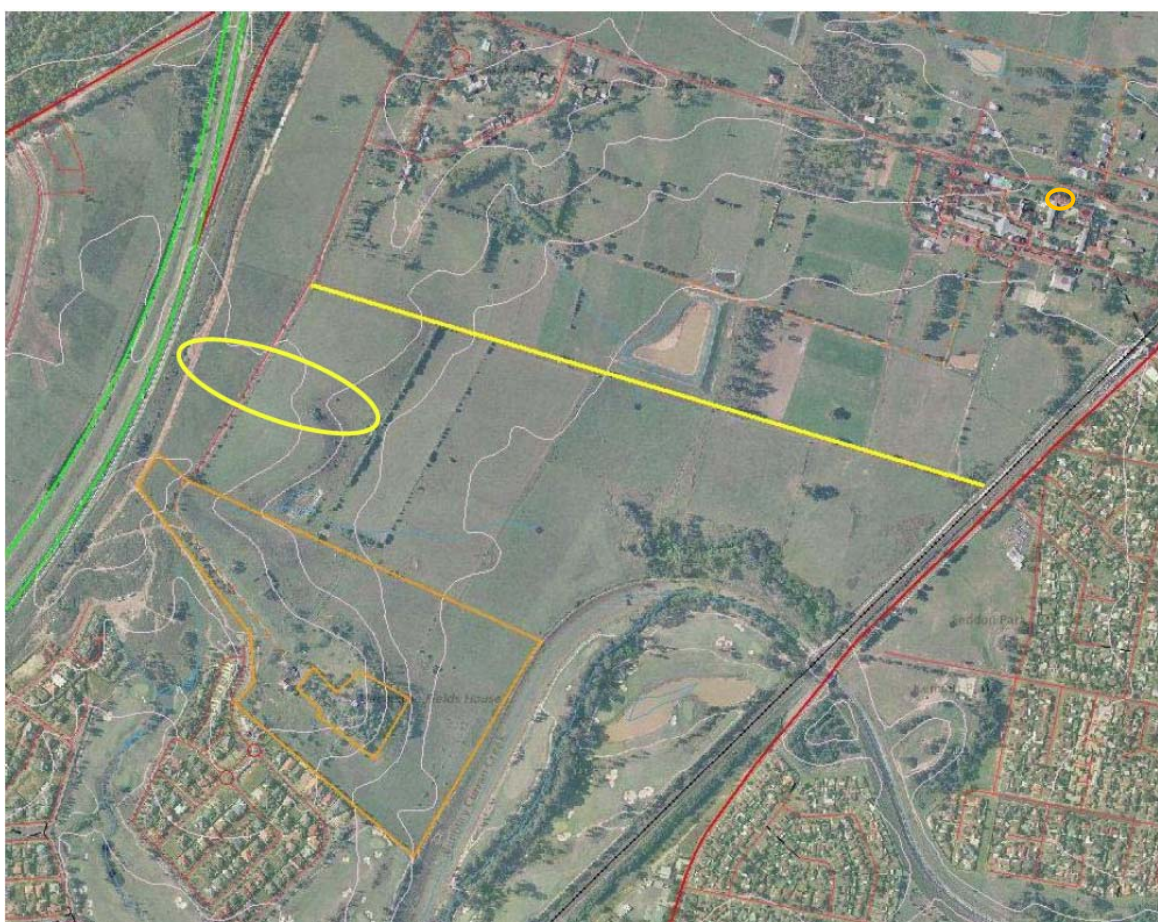


Figure 5.12 Aerial photograph with Lot 1 DP 612265, Macquarie Field House, within Lot 1 DP828871, the curtilage outlined in orange, and Clarke House circled upper right. The yellow circle indicates the intersection of the rail line with Quarter Sessions Road. The southern boundary of the Department of Education and Training land is indicated by the yellow horizontal line (AUSIMAGE © Sinclair Knight Merz Pty Ltd).

The Project joins the Glenfield Transport Interchange immediately to the west of the proposed southern flyover, which is likely to be constructed on a combination of bridge, viaduct and embankment structures to carry the new line over the existing Main South Line. The flyover will have a maximum height of 5.9m and maximum width of 35m (Figure 5.13 and Figure 5.14).



Figure 5.13 Artist's impression of the southern flyover viewed from the southwest (Source: Tim Throsby, Hassell)

To the west of the southern flyover, the Project will be elevated above the valley floor on a constructed embankment until it nears Quarter Sessions Road, which will be diverted to Macquarie Links Drive. There will be diversions to road the north and south of the railway. The railway will continue through Quarter Sessions Road and then go beneath Macquarie Links Drive and the Hume Highway. Figure 5.14 also identifies the locations for site compounds and stockpiles adjacent to the rail corridor across the valley. Stockpiling during construction will have a short term adverse affect on the aesthetic values of the rural environment, which will be mitigated by landscaping following construction of the railway. However, there may be an adverse impact on the historic pattern of fields and paddocks in the valley, and there may be disturbance of potential relics associated with early land use practices.

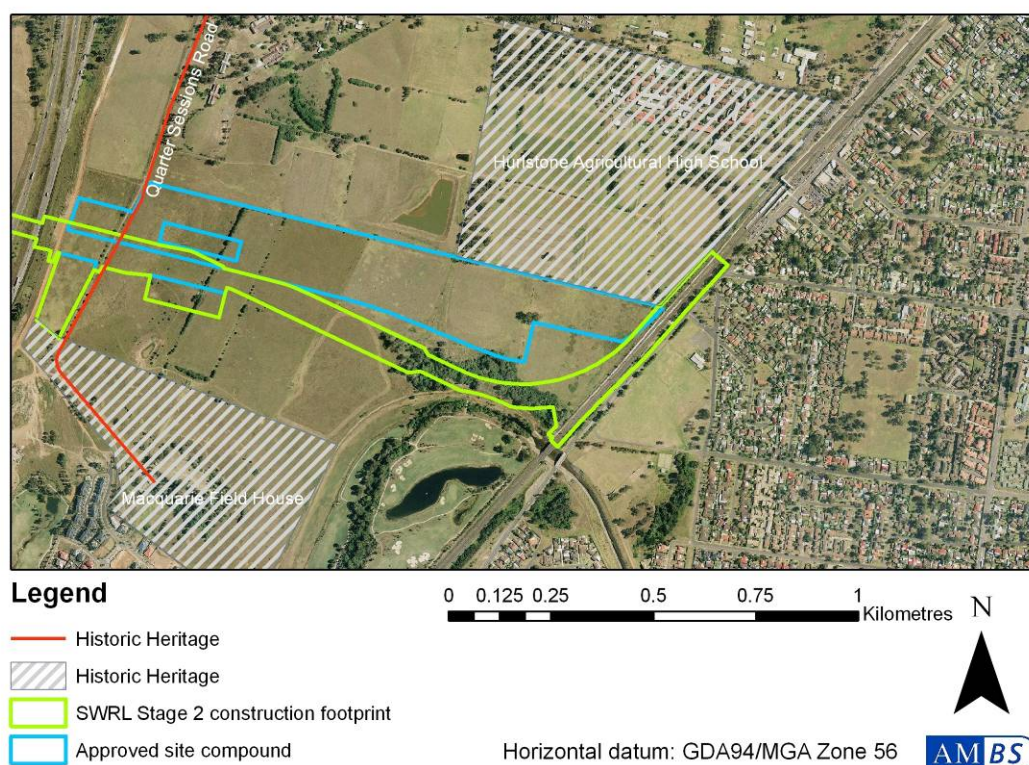


Figure 5.14 The Project with Hurlstone Agricultural High School (north) and Macquarie Field House (south).

The placement of site compounds and stockpile areas to the south of the railway corridor about the SHR curtilage of Macquarie Field House. These stockpiles and site compounds would be temporary facilities and would be removed on completion of works. All impacted areas would be rehabilitated to pre-construction conditions.

As the Project passes across the valley it cuts through the rural landscape that had formed the original land grant associated with Macquarie Field House, and as such there will be a detrimental effect on the physical evidence of early historic land use patterns in the local area. The historic views from the house to the north over the home paddocks will be lost, as will a clear understanding of the historic association of the house with the original James Meehan land grant.

Quarter Sessions Road, which is one of the few intact rural road alignments within the local area, is to be diverted at the intersection with the railway to Macquarie Links Road. The section of the road to south of the railway will however, continue in its original function as the primary access to Macquarie Field House from Macquarie Links Road. The section of the road within the Macquarie Field House SHR curtilage will not be impacted by the Project development. The loss of a portion of Quarter Sessions Road (approximately 40 metres in length), which is the primary access to Macquarie Field House, will have a detrimental impact on an understanding of the historic association of the house with the road. Although the section of the road affected by the Project is outside the Macquarie Field House SHR curtilage, the loss of the road alignment will have an adverse impact on an understanding of its historic association with the house and therefore on the historic and aesthetic significance of the house. There is also some potential that relics associated with the construction and traditional use of the road will be exposed by the road diversion works.

The railway will disrupt the clarity of views between Macquarie Field House and Hurlstone Agricultural High School across the valley. There will be a minor adverse impact on the visual

amenity of Clarke House, the only identified heritage item associated with the school. There will be an adverse impact on an understanding of the original James Meehan Macquarie Fields grant. There will be a detrimental effect on the SHR significance of Macquarie Field House arising from the construction of the new rail link and flyover. The heritage values of the SHR listed Macquarie Field House, on Quarter Sessions Road, will be compromised by the Project, particularly during the construction period, due to the significant impacts of the new rail line on the visual amenity of the rural landscape including the significant views to the north.

5.3 Campbelltown Road and Ingleburn Village

5.3.1 Physical Assessment

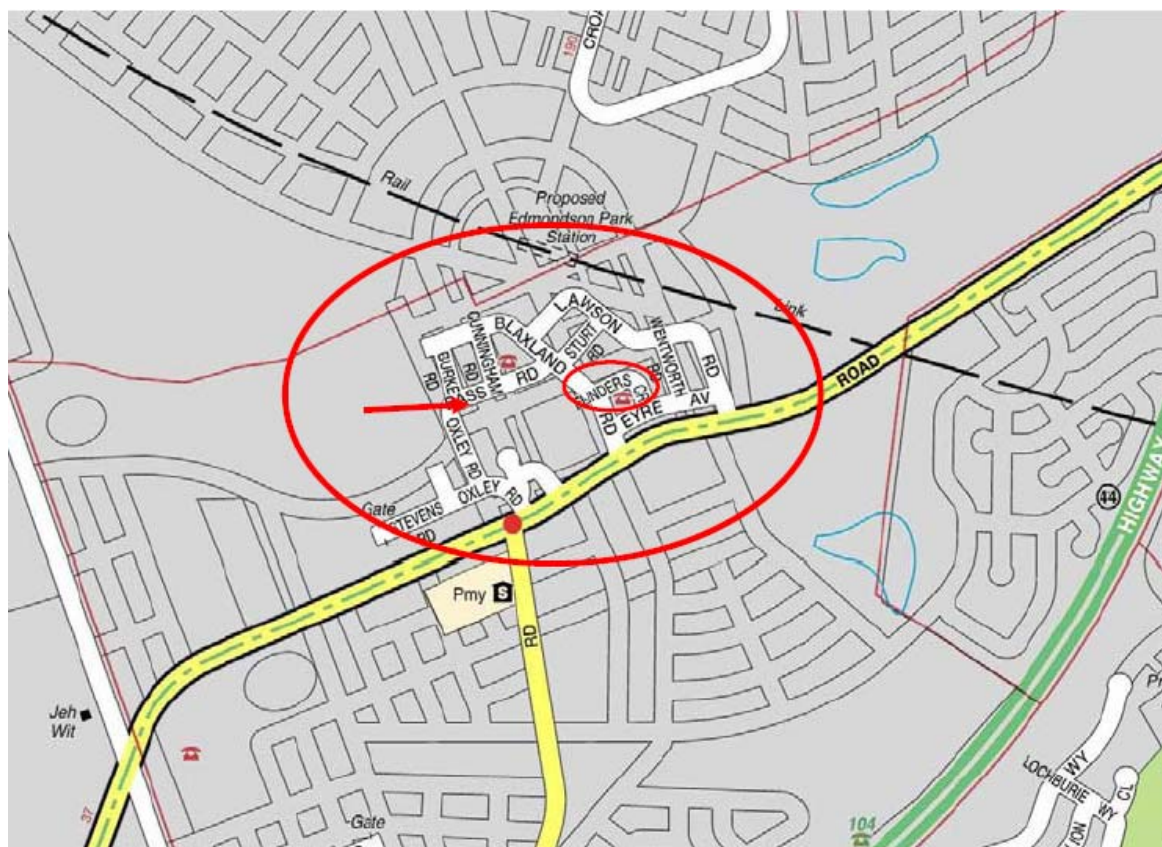


Figure 5.15 Ingleburn Village (circled) to the northwest of Campbelltown Road. The Riley-Newsums to the south of Bass Road are arrowed and, the Amals Sagverks Aktiebolag prefabricated cottages at Blaxland Rd and Flinders Crescent are circled (UBD).

The east–west alignment of Campbelltown Road passes to the south of Ingleburn Army Camp (Figure 5.15). The historic road passes through a landscape which is largely rural with vegetation extending to the verges. Although the surface has been asphalted, there are some indications that remnant Telford-type road base may be present beneath this surface (Figure 5.16).



Figure 5.16 View to the east and the location for the bridge, and west along Campbelltown Road.

The Ingleburn Village Married Quarters, defined by Lawson, Wentworth, Eyre, Sturt, Blaxland, Cunningham, Burke, Bass, Oxley and Stevens Roads and Flinders Crescent, is today sparsely populated. The evidence of the density of housing in the village during the period of the National Service scheme is indicated by the expanse of vacant space and extant remains. Lawson Street is now devoid of housing and across the village concrete paths lead from the road to grassed areas, and concrete pads are all that is left of the houses supported on concrete and brick piers (Figure 5.17).



Figure 5.17 View north west along Lawson Road to houses on Wentworth Road. Note concrete path in foreground.

Among the few extant cottages are the three Riley-Newsums, on the south side of Bass Road adjacent to the corner of Burke Road, and the Amals Sagverks Aktiebolag prefabricated cottages at Blaxland Road and Flinders Crescent (Figure 5.18).



Figure 5.18 Ingleburn Village with the Riley Newsums and Amals Sagverks Aktiebolag prefabricated cottages identified (AUSIMAGE © Sinclair Knight Merz Pty Ltd)

The three Riley-Newsum cottages form a small, but coherent group standing on a rise up from Campbelltown Road. The cottages are L-shaped, weatherboard clad with pitched hip roofs and large picture windows wrapped around the corner of the long wing (Figure 5.19). Of the three, only one is occupied, the other two are secured behind a chain-wire fence. There are few dwellings within the vicinity of the Riley-Newsum cottages.



Figure 5.19 View along Bass Rd to the west of the Riley-Newsum cottages; the westernmost is occupied.

The Amals Sagverks Aktiebolag cottages are identified in the CHL Inventory as standing at 7 Blaxland Rd, and 8, 10, 13 and 15 Flinders Crescent. Although the majority of the cottages within this part of the village appear to have been removed, there is a mix of cottage types, some of which are no longer occupied and have been secured behind chain-wire fencing. In addition, not all cottages are numbered, making absolute identification of the cottages uncertain. The architectural features of the Amals Sagverks Aktiebolag cottages are similar to those of the Riley-Newsums, in particular the timber weatherboards and large picture windows wrapped around a corner of the cottage. In addition, the Amals Sagverks Aktiebolag cottages are rectangular with a low pitched roof, a glassed entry porch and have a broad brick chimney standing against one end wall (Figure 5.20 and Figure 5.21). The placement of the chimney against an external wall, rather than within the house, is a distinctly Australian feature (Robertson & Hindmarsh 2004:np).



Figure 5.20 Two Amals Sagverks Aktiebolag cottages at 15 (left) and 13 (right) Flinders Crescent.



Figure 5.21 The Amals Sagverks Aktiebolag cottage at 8/10 Flinders Crescent (left), and the cottage at 7 Blaxland Rd.

The cottages at 8 / 10 (it is not numbered) and at 15 Flinders Crescent are unoccupied and secured behind chain-wire fencing, with either 8 or 10 apparently having been removed. The cottages at 13 Flinders Crescent and at 7 Blaxland continue to be occupied. Those houses that continue to be occupied are generally set in well tended gardens; a variety of native and exotic trees are extant which give some sense of what the village atmosphere when fully occupied.

These two cottage types are rare, with only a few surviving examples from the hundreds originally constructed. There is only one remaining at Holsworthy Army Base, one at Georges Heights (now managed by the Sydney Harbour Federation Trust) and it is believed, few survive at military bases outside NSW (Robertson & Hindmarsh 2004:np).

5.3.2 Identification of Impacts: Campbelltown Road and Ingleburn Village

Campbelltown Road will be bridged and the railway will cross Ingleburn Army Camp to the north of the Ingleburn Village and to the south of the Sewage Treatment Plant (STP) (Figure 5.22). An underbridge carrying two tracks with a safe walkway/refuge area on each side will take the railway over Campbelltown Road. The bridge is to have two spans to allow for future widening of Campbelltown Road. The bridge will be 56m long with a total width of 9.8 metres. Construction will entail building embankments and excavating for the bridge abutments on each side of Campbelltown Road. Excavations have the potential to expose archaeological relics associated with the early construction of the road in the vicinity of bridge.

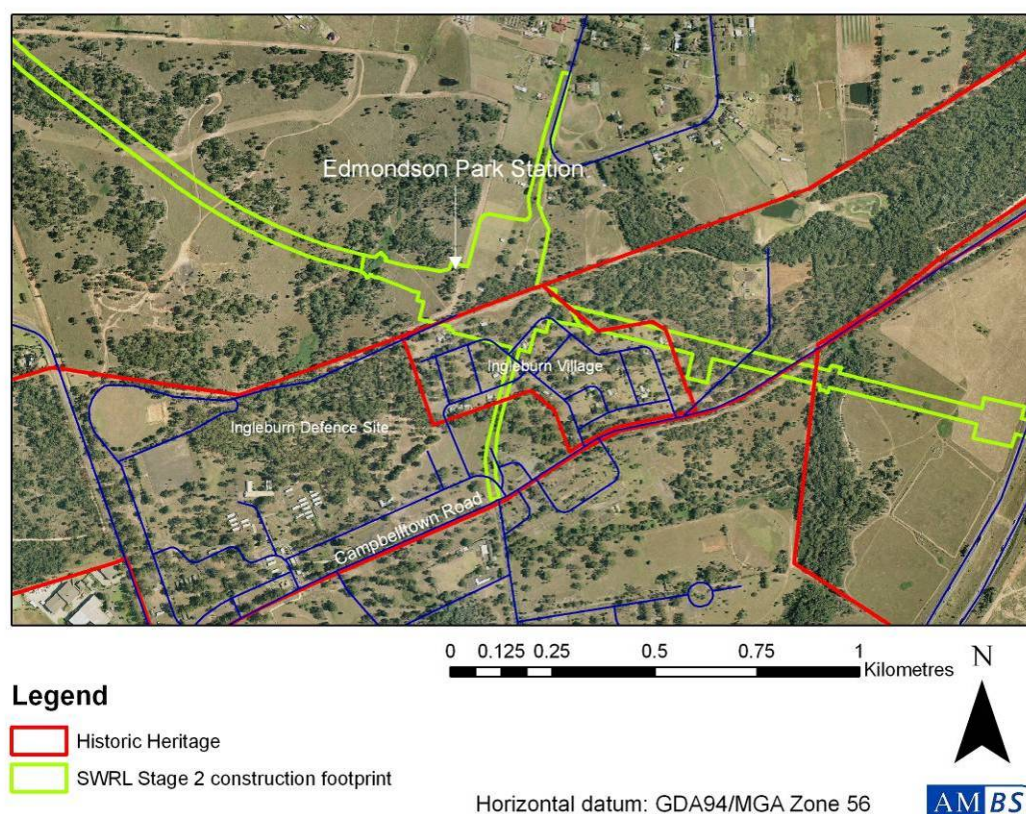


Figure 5.22 The Project with Ingleburn Village, Ingleburn Army Camp and Campbelltown Road.

Any relics associated with Campbelltown Road that are exposed are unlikely to make a significant contribution to current research questions, or provide an insight into current knowledge, that is not available from other sources (see below Section 6.2.5). Construction of the underbridge for the railway will have an adverse affect on the aesthetic values of the local landscape, in the long and short term. The short term impact of construction would be mitigated by rehabilitation of the landscape following works. It is unlikely that the scope of the Project will encroach onto the land occupied by the Ingleburn Sewage Treatment Plant, which has been assessed as having no significance (GML 2001:97).

Construction of the railway alignment, Edmondson Park Railway Station and associated bus interchange, and the link road from the station to Macdonald Road will remove part of Ingleburn Village and as such will have a detrimental impact on the form and layout of the village. An important aspect of the identified significant heritage value of the village and the cottages is the rarity of *the street layout, which reflected as closely as possible suburban sub-divisions, avoiding military stereotypes to create a normal community and suburban environment for army families. The Riley-Newsum and Amals Sagverks Aktiebolag cottages in Ingleburn Village are rare survivors of their type* (Criterion B, see Inventory, Appendix A).

Construction activities in the north of the village will entail cutting into the landscape and constructing embankments. In addition, construction of the railway, the link road and Edmondson Park Railway Station will include extensive land clearance and excavation within Ingleburn Village. The proximity of the station development to the village is such that there is also potential for adverse impacts to the cottages arising from vibration during construction and operational phases, which should be monitored as described in Section 6.2.2.

The Project footprint impinges on the coherent pattern of roads which reflect an urban layout rather than the usual rigid linearity of military residential barracks. Although the surviving Riley-Newsum and Amals Sagverks Aktiebolag prefabricated cottages are not directly impacted, their association with the distinctive and rare pattern of suburban sub-divisions will be lost. In addition any understanding of the village as a coherent environment will also be lost.

Excavations have the potential to expose archaeological relics associated with the construction and occupation of Ingleburn Village, which should be managed in accordance with the guidelines identified in Section 6.2.5 below. The village is now sparsely occupied, following removal of a number of houses adjacent to the proposed corridor. The significance of the Married Quarters is not included in the GML 2001 report; however, it is noted that the *extent of demolition of individual buildings has compromised the overall quality*, with the result that the integrity and character of the Married Quarters Precinct has been largely lost (GML 2001:118). In relation to the village, the GML report concludes that, while retention of the village may be desirable on heritage grounds alone, it is not essential (2001:119). In addition, the GML report was commissioned by the Major Property Disposal Unit of Defence's Corporate Services because the site is surplus to Defence requirements. Among the recommendations, GML propose that the most economically feasible option would be for the demolition of the buildings within Ingleburn Village and for Defence to sell the land (2001:111). Approval for the sale of the Ingleburn Army Camp Commonwealth lands, which includes Ingleburn Village, has been approved under the EPBC Act.

Stockpiling during construction will have a short term adverse effect on the historic values of Ingleburn Village, including the Riley-Newsum and Amals Sagverks Aktiebolag prefabricated cottages. This will be mitigated by landscaping following construction of the railway. However, care will be required to ensure that any potential relics associated with the village are not disturbed during the landscaping process.

There will be a significant impact on the form and layout of Ingleburn Village as a whole, and an adverse impact on the historic, aesthetic and rarity values of the Riley-Newsum and Amals Sagverks Aktiebolag prefabricated cottages as integral elements of the village arising from the Project footprint.