Appendix 6

Historic Landscape and Heritage View Impact Analysis

prepared by Biosis Pty Ltd

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Biosis offices

NEW SOUTH WALES

Albury

Phone: (02) 6069 9200 Email: <u>albury@biosis.com.au</u>

Newcastle

Phone: (02) 4911 4040

Email: newcastle@biosis.com.au

Sydney

Phone: (02) 9101 8700 Email: sydney@biosis.com.au

Western Sydney

Phone: (02) 9101 8700 Email: sydney@biosis.com.au

Wollongong

Phone: (02) 4201 1090

Email: wollongong@biosis.com.au

VICTORIA

Ballarat

Phone: (03) 5304 4250 Email: ballarat@biosis.com.au

Melbourne

Phone: (03) 8686 4800 Email: melbourne@biosis.com.au

Wangaratta

Phone: (03) 5718 6900

Email: wangaratta@biosis.com.au

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Prepared by:	Don Wallace		
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Contents

Glos	sary		V
Sum	mary		vi
1	Intro	oduction	8
	1.1	Project background	8
	1.2	Location of the study area	8
	1.3	Purpose	9
	1.4	Scope of assessment	9
	1.5	Limitations	10
	1.6	Notes on Mapping	10
	1.7	Notes on Significant Trees	11
	1.8	Nomination of 'The Hill' Farm Complex to the State Heritage Register	11
2	Hist	oric mapping resources	15
	2.1	Overview	15
3	Heri	tage Items within the Wentworth Hills and Dunmore Valley Dairy Farming Landscape	22
	3.1	Statutory listed heritage items	22
	3.2	Non-statutory Listings—National Trust Register	
	3.3	Review of listings	
		3.3.1 Overview of dairy industry association	25
		3.3.2 Overview of trees at the heritage items	26
		3.3.3 'Belmont'	27
		3.3.4 'The Hill' Farm	28
		3.3.5 'Kurrawong'	
		3.3.6 'St lves'	
		3.3.7 'Rosemont'	
		3.3.8 'Bravella'	
		3.3.9 'Kyawana'	
		3.3.10 Memorial, Norfolk Island pine trees	
4		orical arrangements and access	
	4.1	Historical arrangements and access	
	4.2	Alterations to historical arrangements and access	
5	Sign	ificant views	37
	5.1	Shellharbour Development Control Plan—View catchments	37
	5.2	Significant views	38
6	The	Wentworth Hills and Dunmore Valley Dairy Farming Landscape	47
	6.1	Overview	47
	6.2	Place	47



6.3	Practice	47
6.4	1 Process	48
6.5	Summary of significance and integrity of the cultural landscape	49
6.6	Contributing elements of the cultural landscape	49
7 Th	e proposed development	51
7.′	Overview of proposed development	51
8 He	eritage impacts	52
8.′	Indirect Impacts	52
	8.1.1 Acoustics and Vibration Management	52
8.2	Potential impacts on the Wentworth Hills and Dunmore Valley Dairy Farming Landscape	52
8.3	Potential impacts on fabric and setting of 'Belmont'	54
8.4	1 Cumulative impacts	55
9 Co	nclusions and recommendations	56
9.′	Conclusions	56
9.2	2 Recommendations	56
Annendi	x—Proponent's Proposed Heritage Management Actions	58
Tables Table 1	Heritage items listed on the Shellharbour LEP 2013 in the Amended Project Area	22
Table 1	Heritage items listed on the Shellharbour LEP 2013 in the Study Area	
Table 3	Historical visual connection matrix	
Table 4	Contribution of elements of the cultural landscape	
Table 5	Potential heritage impacts on contributory elements on parts of the cultural landscape	43
rable 3	other than 'Belmont'	52
Table 6	Overview of impacts to contributory elements at Belmont	54
Figure	S	
Figure 1	Location of the study area—regional context	12
Figure 2	Location of the study area—local context	13
Figure 3	Heritage items in the study area and nearby	14
Figure 4	1851 map showing the ridgelines and topography of the region ('Land adjoining Lake Illawarra, showing Shellharbour' SLNSW Maps/0231)	16
Figure 5	1889 map showing the subdivision of the land into farms. (SLNSW Maps collection)	16
Figure 6	1893 map showing the subdivision of the land into farms. (SLNSW Maps collection)	17
Figure 7	Map showing the extent of dairy farms in the broader Albion Park region in the valley of the Macquarie Rivulet between the ocean and Illawarra Range. Before 1898. ('Plan shewing position of the Macquarie coal property, Illawarra' SLNSW Maps/0731)	17
Figure 8	1949 aerial photograph of the study area and the heritage items	
	. 5 . 5 . 5 . 6 . 6 . 6 . 6 . 6 . 6 . 6	



Figure 9	1963 aerial photograph of the study area and the heritage items	19
Figure 10	1970 aerial photograph of the study area and the heritage items	19
Figure 11	1980 aerial photograph of the study area and the heritage items	20
Figure 12	1993 aerial photograph of the study area and the heritage items	20
Figure 13	2006 aerial photograph of the study area and the heritage items	21
Figure 14	Aerial photograph of Kyawana taken on 7 March 2023 showing vegetation cover and remnant structures. The former residence is located in the right half of the figure while the dairy is shown still standing in the left of the figure.	34
Figure 15	Figure 28.1 from the Shellharbour Development Control Plan	37
Figure 16	Figure 28.2 from the Shellharbour Development Control Plan	38
Figure 17	The aspect of 'Belmont'	39
Figure 18	The aspect of 'Bravella'	40
Figure 19	The aspect of 'The Hill' Farm	41
Figure 20	The aspect of 'Kurrawong'	42
Figure 21	The aspect of 'Kyawana'	43
Figure 22	The aspect of 'Rosemont'	44
Figure 23	The aspect of 'St Ives'	45
Figure 24	Composite analysis showing intensity of shared views, visual relationships between the homesteads and the valley way through the Dunmore Bends	46
Figure 25	Proposed Amended Project Area in the Wentworth Hills—'Belmont' homestead inset	51
Photos		
Photo 1	'Belmont'	27
Photo 2	'The Hill' Farm	28
Photo 3	'The Hill' residence	28
Photo 4	'Kurrawong'	29
Photo 5	'Rosemont'	31
Photo 6	Bravella fig trees – Image extracted from Historic and Archaeological Map Shellharbour City 1830–1930, Tamara Hynd 2004	32
Photo 7	'Kyawana' ruins	33
Photo 8	Dunmore Bends and the memorial avenue of pines	35



Glossary

Biosis	Biosis Pty Ltd	
Shellharbour LEP 2013	Shellharbour Local Environmental Plan 2013	
c.	Circa	
CBD	Central Business District	
CHL	Commonwealth Heritage List	
DA	Development Application	
DCCEEW	Australian Government Department of Climate Change, Energy, the Environment and Water	
DP	Deposited Plan	
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)	
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	
Heritage NSW	Heritage NSW, Department of Planning and Environment	
Heritage Act	Heritage Act 1977 (NSW)	
NHL	National Heritage List	
NSW	New South Wales	
REF	Review of Environmental Factors	
SHI	State Heritage Inventory	
SHR	State Heritage Register	
SoHI	Statement of Heritage Impact	
study area	The area of impact for the proposed works	



Summary

Project Background

Cleary Bros (Bombo) Pty Ltd has proposed a State Significant Development Application to extend the extraction of hard rock at its Albion Park Quarry at East West Link, Albion Park NSW. The Amended Project—known as 'Albion Park Quarry – Stage 7 (SSD-10369)'—involves continued operation of the approved Stages 1 to 6 of the existing quarry and a proposed Stage 7 extension area that involves:

- Removing 2.2 Megatonnes (Mt) of overburden;
- Hard rock extraction (drilling and blasting) and processing up to 900,000 tonnes per year from a total resource of approximately 22 Mt; and
- Progressive rehabilitation.

The Amended Project Area includes a local heritage item—a house and farm known as 'Belmont' (Item No. 1209)—and has a broader setting of former and current farmland and homesteads. The Project includes the removal of 'Belmont' and other structures in the Amended Project Area to allow quarrying to continue.

In considering submissions of the Project, the NSW Department of Planning and Environment (DPE) requested further information on the broader cultural landscape and impacts of the proposal thereon. This Historic Landscape and Heritage View Impact Analysis is provided in response to that request and should be read in conjunction with Biosis' 2021 Historic Heritage Assessment (HHA).

Significance of the Wentworth Hills and Dunmore Valley Dairy Farming Landscape

The Wentworth Hills and Dunmore Valley Dairy Farming Landscape is a significant cultural landscape but its intactness and integrity has reduced over time due to a variety of factors, ranging from the cessation of dairy farming practices on many properties to the subdivision and suburbanisation of land, ongoing transport infrastructure projects, as well as quarrying activities. Some elements that were included in the listings of individual heritage items no longer exist. Nevertheless, the place as a whole remains a significant cultural landscape.

Heritage Impacts of the Project

'Belmont' is a listed heritage item within the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape* and a significant contributory element. The heritage impacts to 'Belmont' will be major adverse impacts and will be irreversible. It is understood from the proponent that the Amended Project cannot proceed while still retaining 'Belmont' in its current setting. The impacts cannot be mitigated to any significant degree. Strategies are in place to manage the salvage of some elements of 'Belmont' and these are outlined in the HHA. However, given the current condition of 'Belmont', the relocation of the timber-framed building offsite would be feasible, and would be an improved heritage outcome over demolition.

The impacts to the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape* range from no impact to moderately adverse impacts. Principal impacts are on views associated with The Hill' Farm and the site of 'Kyawana'. The Amended Project Area is in the mid- and foreground of views from The Hill' Farm and the site of 'Kyawana' to the west and south to the Illawarra Escarpment and Saddleback Mountain respectively. The intrusion into those views will be a minor sector that will be softened somewhat when the excavation is ultimately rehabilitated. Rehabilitation is the recommended mitigation measure.



Recommendations

The previous Historic Heritage Assessment (HHA) made four recommendations—in short:

- 'Belmont' be archivally recorded (this was completed in July 2020);
- Archaeological investigation be carried out during removal of 'Belmont';
- Two dry stone walls be dismantled and rebuilt elsewhere on the property; and
- The 2017 Albion Park Quarry Heritage Management Plan (HMP) be updated.

In response to the HHA and the submissions received following exhibition, the proponent has identified four overarching heritage management actions (refer appendix):

- Action Item 1 Capturing the heritage value of 'Belmont' in its current setting
- Action Item 2 Identification of an alternative site for the 'Belmont'
- Action Item 3 Retaining materials from the 'Belmont' and outbuildings
- Action Item 4 Recovering residual heritage value

Recommendations made in light of this cultural landscape assessment or reiterated are that:

- a Heritage Interpretation Plan to assist interested parties in interpreting the former heritage values of the 'Belmont' in the Wentworth Hills and Dunmore Valley Dairy Farming Landscape should be prepared and its recommendations implemented—interpretive devices should include those as described in Action Item 1;
- the proposal to explore the retention and relocation of 'Belmont' homestead in accordance with Action Item 2 should be supported;
- if Action Item 2 does not result in the retention and relocation of the 'Belmont' homestead, then Action Item 3 should be followed; and
- Action Item 4 should be carried out in accordance with the archaeological recommendations of the HHA.



1 Introduction

1.1 Project background

Cleary Bros (Bombo) Pty Ltd has commissioned Biosis to undertake this 'Historic Landscape and Heritage View Impact Analysis' for a proposed quarry extension.

Cleary Bros (Bombo) Pty Ltd proposed a State Significant Development Application to extend the extraction of hard rock at its Albion Park Quarry at East West Link, Albion Park NSW. The Amended Project—known as 'Albion Park Quarry – Stage 7 (SSD-10369)'—involves continued operation of the approved Stages 1 to 6 of the existing quarry and a proposed Stage 7 extension area that involves:

- Removing 2.2 Megatonnes (Mt) of overburden;
- Hard rock extraction (drilling and blasting) and processing up to 900,000 tonnes per year from a total resource of approximately 22 Mt; and
- Progressive rehabilitation.

The Amended Project Area includes a local heritage item—a house and farm known as 'Belmont'—and has a broader setting of former and current farmland and homesteads. The Project is also near five local heritage items associated with the 'Kyawana', 'The Hill', 'St Ives', 'Kurrawong', and 'Bravella' properties. The proposed works included the removal of 'Belmont' and other structures in the Amended Project Area to allow quarrying to continue.

The Planning Secretary's Environmental Assessment Requirements (SEARs) of 3 October 2019 required, that the environmental impact statement (EIS) address, among other things, 'historic heritage in the vicinity of the development and an assessment of the likelihood and significance of impacts on heritage items.'

In August 2021, Biosis prepared an Historic Heritage Assessment (HHA). The HHA was included in the application's EIS which the NSW Department of Planning and Environment (DPE) exhibited in May and June 2022. Following exhibition, Heritage NSW, as delegate of the Heritage Council of NSW, declined to comment further on the proposal as 'the subject site is not listed on the State Heritage Register (SHR), nor is it in the immediate vicinity of any SHR items [... and ...] does not contain any known historical archaeological relics.'

Shellharbour City Council's submission of 21 July 2022 expressed its view that this part of the local government authority area is a cultural landscape where individual heritage items are connected by views, topography and historical associations and that further assessment of impacts on the 'Croom and Dunmore cultural landscape' be provided for review. Consequently, DPE requested further information on the cultural landscape and impacts of the proposal. This Historic Landscape and Heritage View Impact Analysis is provided in response to that request and should be read in conjunction with the 2021 HHA.

1.2 Location of the study area

The Study Area includes the Amended Project Area of (Figure 1 and Figure 2) at East West Link, within the suburb of Croom in Shellharbour City Council Local Government Area (LGA).

The Project Area and environs include shared settings of individual places (heritage items). Shellharbour City Council has referred to this landscape as 'Croom and Dunmore cultural landscape'. After consideration of the extent and nature of the cultural landscape and the aspects of cultural landscapes as place, practice and process, Biosis has defined it as the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape*.



1.3 Purpose

The primary purpose of this report is to address the historic heritage issues outlined by Shellharbour City Council and DPE as per the Request for Additional Information (RFI) dated 22 December 2022. This includes an assessment of the heritage impacts of the Amended Project including:

- visual impacts of the Amended Project on views to, from, and between surrounding heritage items
- altered historical arrangements and access
- impacts on landscape and vistas
- impacts on the use of the surrounding land for dairying, including the management of flyrock risk and any mitigation measures that would limit land use during blasting
- blasting/ground vibration impacts on building fabric*
- noise treatments to historic buildings*
- consideration of lists held by the National Trust
- additional assessment of the Belmont Homestead and fig trees to consider the impacts on heritage significance in connection with other homesteads in the landscape, visual impacts, landscape and vistas, and altered historical arrangements and access
- the cumulative impact of the Amended Project on historic heritage values.

This assessment includes the heritage items listed in the following section.

* SLR Consulting Australia Pty Ltd has provided a Noise and Blasting Assessment which summarises the results of ambient noise measurements and assesses the potential operational noise and blasting impacts associated with the Project.

1.4 Scope of assessment

The Wentworth Hills and Dunmore Valley Dairy Farming Landscape includes the following local heritage items listed as environmental heritage on Schedule 5 of the Shellharbour Local Environmental Plan 2013 (LEP):

- 'Belmont', stone walls, figs and coral tree avenue 207 Dunsters Lane, Croom (LEP Item I209)
- 'The Hill' Farm Complex 195 Dunsters Lane, Croom (including World War II observation post boxes)
 (LEP Item I022)
- 'Kurrawong' Trees, Dry Stone Walls, and Silo 126 James Road, Croom (LEP Item 1024)
- 'St Ives' and fig trees 2 James Road, Croom (LEP Item I025)
- 'Rosemont' Complex Trees and Setting 35 James Road, Croom (LEP Item I026)
- 'Bravella' Site Fig Trees 144 James Road, Croom (LEP Item I177)
- 'Kyawana' 265 Dunsters Lane, Croom (LEP Item I281)
- Memorial, Norfolk Island pine trees James Road, Croom (LEP Item I179)



This report was prepared in accordance with the guidelines of the NSW Heritage Manual and the *Burra Charter* and its practice note on cultural landscapes.¹²

The primary objectives of this report are to:

- Understand the heritage values of the Wentworth Hills and Dunmore Valley Dairy Farming Landscape;
- Confirm the authenticity, intactness and integrity of that landscape considering the cultural landscape as place, practice and process and the contribution of individual places within the landscape; and
- Assess potential impacts on the heritage values of the cultural landscape and recommend mitigation measures to minimise any adverse impacts from the Amended Project.

The methodology to achieve the report objectives has included:

- Identifying historical land development and uses from historical mapping resources.
- Investigating landforms, vegetation and use over time.
- Mapping heritage items.
- Identifying regional significant views referenced in the Shellharbour Development Control Plan (DCP)
- Ground-truthing and reviewing listing documentation of heritage items.
- Mapping historic views to, from and between significant elements.
- Assessing potential impacts on significant views and settings arising from proposed changes to landform and use.

1.5 Limitations

No access to private property on 'St Ives' or 'Rosemont' was available at the time of the site inspection. Inspection of these sites was conducted from the public domain on James Road and other adjoining private properties where access was available.

1.6 Notes on Mapping

Historical maps included in this report have been oriented so that north is at the top of the page. As their scales and extents vary, they have been georeferenced with the study area indicated by an orange rectangular outline. That outline is the extent of the study area as delineated in Figure 1 and Figure 2 on pages 12 and 13.

The historic landscape of the shallower slopes during their most significant period were open pasture with scattered trees with rocky, steeper slopes and peaks more heavily wooded. The landscape is undulating and views change and reveal themselves across it and as one moves through it. Analysis and mapping of key aspects has been carried out by taking a significant viewpoint—namely the sites of homesteads—and projecting a horizontal plane radially from the level of that site until it intersects with higher land. Ignoring vegetation and taller structures, that view plane shows what can potentially be seen without accounting for areas that may be hidden by lower hills. Altitudinal viewsheds—such as distant land above the intersection of the horizontal—has not been mapped. As such, these aspect figures provide a general indication of the views from a particular homestead. Relationships between significant viewpoints has been mapped by overlaying

² (Australia ICOMOS 2013)

¹ (Heritage Office 2001)



shared view planes. This mapping methodology gives an indication of what could have been seen with only low vegetation. Obstructive vegetation and access limitations has meant that the exact visual connections between significant viewpoints has not been possible in all instances. 10 metre contours have been used and this tolerance should be allowed when considering viewshed mapping.

Comprehensive illustration of all views has not been possible principally due to limited access to private property and obstructive vegetation. It should also be noted that few of the views of the cultural landscape are static point-to-point views rather the experience of the landscape is dynamic and experienced when moving through it. The landscape character assessment by Moir provides comprehensive drone photography that best illustrates the landscape in overview.

1.7 Notes on Significant Trees

Several of the listings refer to significant trees but do not define their locations. Several of the mentioned trees are figs. There are five species of fig trees endemic to the area, with many fig trees over the landscape but with very little documentary evidence that could confirm how long most of them have been growing or whether they were pre-existing and preferentially retained, planted or self-seeded. Several of the trees have been damaged by natural forces or may be senescent, however their age, condition and prospects have not been assessed arboriculturally as part of this study.

Some assumptions about which trees are referred to in the listings have been made. That said, the only vegetation proposed to be removed is on the site of 'Belmont' as part of the Amended Project.

Some of the listings include commentary on the ecological values of the heritage items—that is natural rather than cultural heritage values. Ecological values of trees and other habitat have not been considered in this report on the cultural landscape.

1.8 Nomination of 'The Hill' Farm Complex to the State Heritage Register

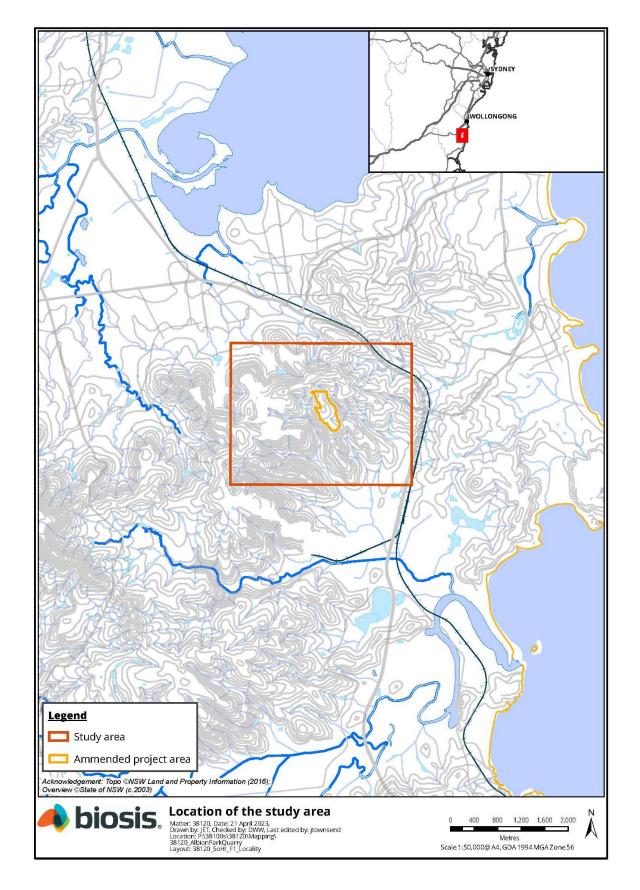
DPE's RFI noted 'that the Shellharbour Heritage Inventory for 'The Hill' Farm Complex includes a recommendation to nominate the listing for the State Heritage Register.'

That recommendation is not included in the recommended management of the place in the State Heritage Inventory (SHI) which is the heritage inventory referred to on Shellharbour Council's website. Despite enquiries—including with Shellharbour Council—a recommendation to nominate the place for the State Heritage Register has not been found elsewhere.

The entry in the SHI assesses the heritage values of the place against the NSW Criteria for State heritage significance and mentions local and regional significance. The recommended management in the SHI is to 'retain current listings'. Subsequent to the assessments which began with the National Trust's listing in 1977 and were carried out through the 1980s–2000s, the place was listed as a heritage item on the *Shellharbour Local Environmental Plan 2013* where it was scheduled as being of 'local' significance. The place had been listed on Schedule 1 of the now repealed (4 August 2016) *Illawarra Regional Environmental Plan No 1 (1986 EPI 11)* where its level of significance local/regional/State was not indicated.



Figure 1 Location of the study area—regional context





Study area detail

Outs

Study area detail

Figure 2 Location of the study area—local context



Heritage items in the vicinity of the study area - 2006 imagery

Figure 3 Heritage items in the study area and nearby



2 Historic mapping resources

2.1 Overview

The maps and aerial photographs in this section show the landscape as recorded over time.

They are of various scales and extent but are reoriented north at the top of the page with the Study Area identified by the orange rectangle.

The maps show that dairy farming covered much of the Illawarra coastal plain in the nineteenth century. The aerial photographs from 1949 show the landscape of dairying was sparse pasture with some trees and remnant forest or similar on steeper slopes. Later aerial photographs show that the sites within the study area have more vegetation now than when dairy farming was more widespread.



Figure 4 1851 map showing the ridgelines and topography of the region ('Land adjoining Lake Illawarra, showing Shellharbour' SLNSW Maps/0231)



Figure 5 1889 map showing the subdivision of the land into farms. (SLNSW Maps collection)

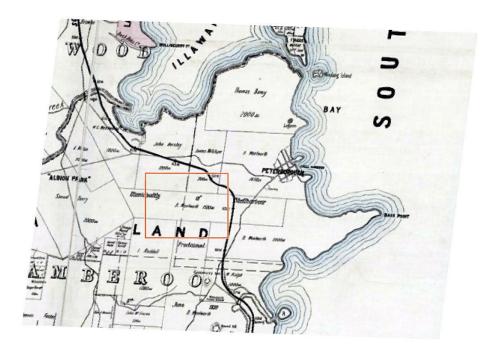




Figure 6 1893 map showing the subdivision of the land into farms. (SLNSW Maps collection)



Figure 7 Map showing the extent of dairy farms in the broader Albion Park region in the valley of the Macquarie Rivulet between the ocean and Illawarra Range. Before 1898. ('Plan shewing position of the Macquarie coal property, Illawarra' SLNSW Maps/0731)





Figure 8 1949 aerial photograph of the study area and the heritage items.

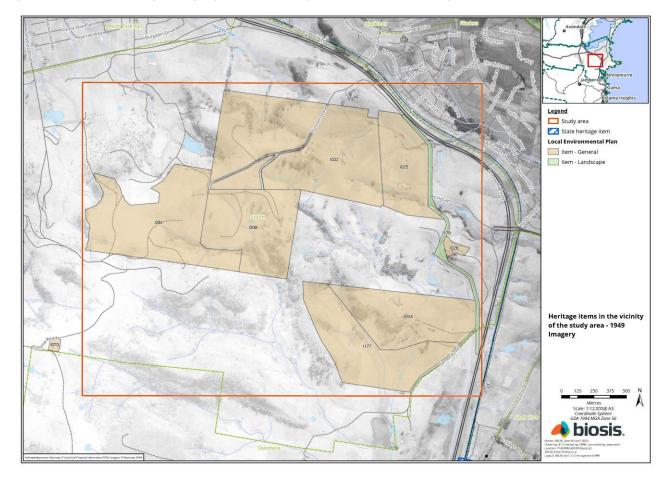




Figure 9 1963 aerial photograph of the study area and the heritage items.

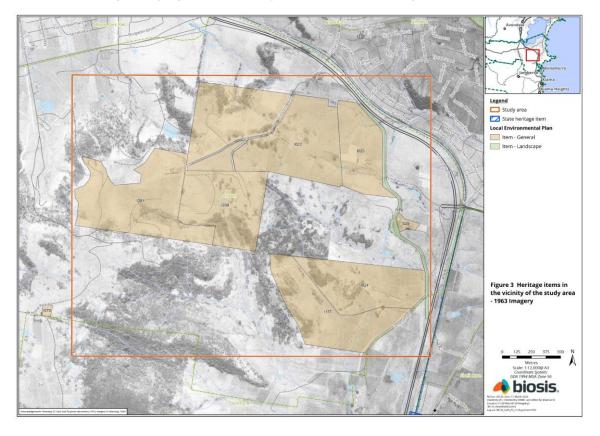


Figure 10 1970 aerial photograph of the study area and the heritage items.

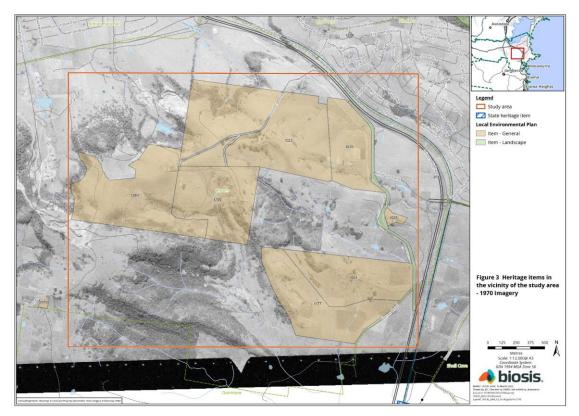




Figure 11 1980 aerial photograph of the study area and the heritage items.

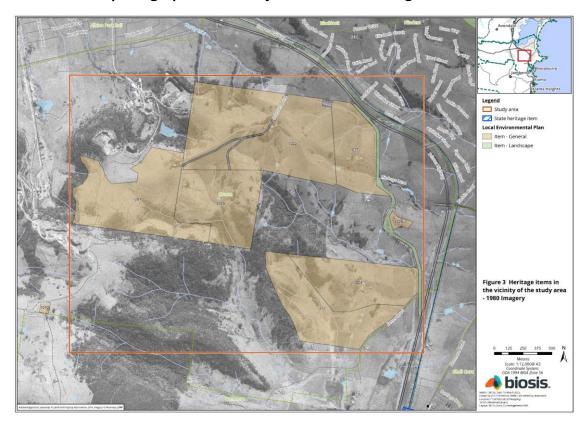


Figure 12 1993 aerial photograph of the study area and the heritage items.

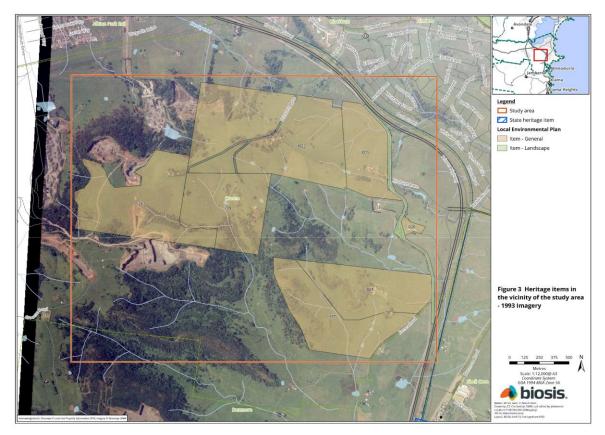
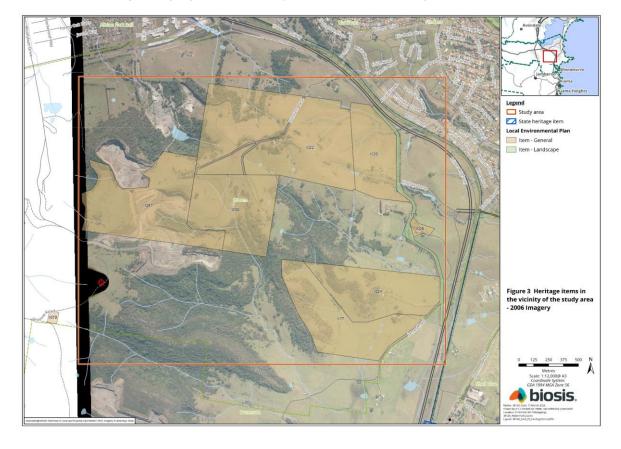




Figure 13 2006 aerial photograph of the study area and the heritage items.





3 Heritage Items within the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape*

3.1 Statutory listed heritage items

The heritage items below lie within the Wentworth Hills and Dunmore Valley Dairy Farming Landscape:

- 'Belmont', stone walls, figs and coral tree avenue 207 Dunsters Lane, Croom (on site)
- 'The Hill' Farm Complex 195 Dunsters Lane, Croom (including World War II observation post boxes)
- 'Kurrawong' Trees, Dry Stone Walls, and Silo 126 James Road, Croom
- 'St Ives' and fig trees 2 James Road, Croom
- 'Rosemont' Complex Trees and Setting 35 James Road, Croom
- 'Bravella' Site Fig Trees 144 James Road, Croom
- 'Kyawana' 265 Dunsters Lane, Croom
- Memorial, Norfolk Island pine trees James Road, Croom

The statements of heritage significance listed in Table 1 and Table 2 summarise the cultural significance or heritage values for which the item was listed, and have been sourced from Heritage NSW's State Heritage Inventory database. The accuracy and currency of these statements are considered in section 3.3.

Table 1 Heritage items listed on the Shellharbour LEP 2013 in the Amended Project Area

Item	Location	Significance	Statement of heritage significance
Belmont, stone walls, figs and coral tree avenue - (Item No. I209)	207 Dunsters Lane, Croom	Local	Victorian Edwardian cusp era weatherboard farmhouse, and adjoining yard complex, demonstrate how farm homesteads were deliberately sited to have sight lines to Shellharbour port, Kiama, other hilltop homesteads, and within the wider cultural landscape. The house, its entry avenue of Coral trees (in 2019 no longer standing), dry stone walls, and isolated fig have local historic, aesthetic, technical and social values.

Table 2 Heritage items listed on the Shellharbour LEP 2013 in the Study Area

Item	Location	Significance	Statement of heritage significance
The Hill Farm Complex (Item I022)	195 Dunsters Lane, Croom	Local	'The Hill' complex, Dunsters Lane, Croom is of exceptional local significance. Amongst the complex buildings, structures, major trees and landscape elements, is the homestead dating pre 1865. The complex and homestead (built internally and



Item	Location	Significance	Statement of heritage significance
			externally of local cedar) date from the original D'Arcy Wentworth land grant; the Peterborough Estate. The original home includes rare period additions c1865 and 1900. The complex is a major regional landmark with expansive views in and out, and dominant within the cultural landscape. Several significant and landmark trees exist, some providing increasingly scarce fauna habitat. The Hill farm complex includes remains of World War Two observation posts. The property has been in the same family ownership since 1865 and is a key site in the evolution of the Illawarra Shorthorn Cattle breed.
"Kurrawong", trees, stone walls and silo (Item No. 1024)	126 James Road, Croom	Local	'Kurrawong' is a Federation farmhouse built high on a hill ridge overlooking the old Princes Highway at Dunmore. In addition to its setting, the property includes significant trees and dry stone walls. 'Kurrawong' belongs to the James Road farm group and has historic associations with nearby James family properties ('Rosemont', 'Bravella' site, 'St Ives', 'Aronda' in Shellharbour Village and 'Clover Hill' near Macquarie Pass). 'Kurrawong' was built for John James, The founder of the Australian Milking (Illawarra) Shorthorn Society. The property was deliberately sited having a clear view line to 'The Hill' (Dunster family) and nearby James family properties. Stone walls are representative of the north Kiama/Dunmore construction type. Figs are representative of Illawarra farm plantings and provide an increasingly scarce habitat for regional fauna.
"St Ives" and fig trees (Item No. I025)	2 James Road, Croom	Local	'St Ives is a good example of a rural, weatherboard, Federation era farmhouse. It is located on a hilltop, within the wider Dunmore valley cultural landscape. There are major views in and out. Its high-pitched roof and verandah are surrounded by mature trees. The home has a tree lined entry and major specimens of Moreton Bay figs. The trees retain classic form, habitat



Item	Location	Significance	Statement of heritage significance
			and contribute to the cultural landscape. They remain as physical evidence of the dairy industry. One spectacular isolated mature tree with natural habitat, is located on the ridge nearby, commanding views in from the surrounding landscape. It is a major feature within the cultural landscape, spectacularly located on the ridge crest, and is seen by surrounding development and transport routes. It readily relays its historical associations with the dairy landscape. The open setting and context of the tree add to its significance. This tree is associated with Benjamin Lindsay, Chairman of the NSW Lands Board. Local historic associations with local pioneer families and with the development of the local dairy industry. 'St Ives' belongs to the James Road farm group associated with the nearby and linked James family properties ('Rosemont', 'Bravella' site, 'Kurrawong', 'Aronda' at Shellharbour Village and 'Clover Hill' near Macquarie Pass). Near the northern boundary lining the creek are scattered Cabbage Tree palms that have both historic and landscape aesthetic values.
Rosemont complex, trees and setting (Item No. 1026)	35 James Road, Croom	Local	'Rosemont' located on a hilltop has local landmark qualities. It remains within deliberate views of nearby family connected homesteads, each being of note. "Rosemont' retains a rural setting within the highly significant Dunmore valley cultural landscape. The modest home is an increasingly scarce example of an early 20th century rural homestead, as are the trees on the property, being highly indicative of the Illawarra dairying. This property is one of the James Road farm group having exceptional local significance ('Rosemont', 'Bravella', 'Kurrawong', 'St Ives') Historic associations with the James family of Dunmore. These farms are part of the former Bassett-Darley estate.
Bravella Site Fig Trees (Item No. I177)	144 James Road, Croom	Local	'Bravella' fig trees demonstrate cultural planting fashion of the 19th century associated with pastoral landscape and dairying homestead sites. They have the ability to educate about such practices. The trees are evidence of early settlement in the area, are especially associated with the James family, and linked to other members of the James Road farm group ('Kurrawong', 'Rosemont', 'St Ives', 'Aronda' in Shellharbour and 'Clover Hill',



Item	Location	Significance	Statement of heritage significance
			Macquarie Pass). The trees continue to be a major hilltop landmark in the Dunmore valley cultural landscape. The trees remain a major fauna habitat and food supply.
"Kyawana" (Item No. I281)	Dunsters Lane and James Road, Croom	Local	'Kyawana' has strong links with the dairy industry and education. It is linked with the nearby Croom School site (after the school's closure c.1920, its building materials were used for the home's construction). 'Kyawana' sits high on a hill and has sweeping views of, and is contributory to, the surrounding cultural landscape.
Memorial, Norfolk Island pine trees (Item No. I179)	Memorial, Norfolk Island pine trees – James Road, Croom	Local	The Norfolk Island pines on both sides of the 'Dunmore Bends' (old Princes Highway) were planted as an 'Avenue of Honour' memorial for each person from the Shellharbour, Dunmore and Croom communities, who were casualties of World War One. The species choice reflects an association with 'The Lone Pine' returned from Gallipoli and one suitable for a maritime environment. The trees remain prominent in the cultural landscape both locally, and to all those who travel along this route.

3.2 Non-statutory Listings—National Trust Register

The National Trust Register is a non-statutory heritage list of places the organisation considers important. Only one of the above items is registered by the National Trust of Australia (NSW)—and that is 'The Hill' Homestead within 'The Hill' Farm Complex. It was listed on the Register on 19 September 1977.

3.3 Review of listings

3.3.1 Overview of dairy industry association

The whole of the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape* has an association with dairy farming in the Illawarra although parts of it demonstrate this association to greater or lesser degrees. Retained open pasture in continuing use for dairy farming—such as at 'The Hill' Farm, 'St Ives' and parts of 'Kyawana'—has the strongest association as do the retained homesteads and associated dairying structures. The homesteads at 'Bravella', 'Rosemont' and 'Kyawana' have been lost and no longer retain their former association with dairy farming, however other relics or features on these properties still retain some connection with the former land use. 'Kyawana', for instance, has been lost but its ruinous dairy remains.



3.3.2 Overview of trees at the heritage items

The statements of significance for all heritage items other than 'Kyawana' mention significant trees. The listings for 'Bravella' and the memorial avenue of pines primarily relate solely to trees/tree groups. The memorial avenue is a designed landscape within the greater cultural landscape that is known to have been intentionally planted as a memorial in the Inter-War period.

It is not clear from the listings for 'Belmont', 'Bravella', 'The Hill' Farm, 'Kurrawong', 'St Ives' and 'Rosemont' which trees are being referred to, however some assumptions can be made due to certain dominant and isolated trees present in close association with historical residences. There are many native fig trees across the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape*—a landscape which is now more intensively wooded than during the Victorian, Federation and Inter-War periods. When these fig trees date from and whether these fig trees were planted, self-seeded or preferentially retained is not known. Some of the listing information refers to trees being associated with early settlement. If early settlement is taken to be the period of about 1820 to 1870, the trees would now be at least 150 to 200 years old.

Reference is also made in the listings to the specific association of fig trees and dairy farming in the Illawarra. The landscape during the Victorian, Federation and Inter-War periods had an open pastoral character with sparse trees. Fig trees are useful as shade trees for cattle as they have wide, low and dense canopies with an unobstructive central trunk. The leaves, young twigs and fruit of *Ficus macrophylla* (Moreton Bay Fig) and *Ficus rubiginosa* (Port Jackson Fig) can also be fodder for horse and cattle with such use being recorded during the Federation period. The trees also provide shelter from wind and were planted—or retained/left to grow—in the close, intensively cultivated settings of the homesteads in this cultural landscape. That said, the specificity of the association of fig trees and dairy farming in the Illawarra has not been established and may be a broader association with beef cattle, dairy cattle and livestock husbandry throughout the range from northern Queensland to southern New South Wales.

The listings also refer to the ecological values of the fig trees. Those values have not been considered in this report on the cultural landscape, but are further examined for the Amended Project Area in the Biodiversity Development Assessment Report (Niche 2023).



3.3.3 'Belmont'



Photo 1 'Belmont'

Victorian Edwardian cusp era weatherboard farmhouse, and adjoining yard complex, demonstrate how farm homesteads were deliberately sited to have sight lines to Shellharbour port, Kiama, other hilltop homesteads, and within the wider cultural landscape.

The house, its entry avenue of Coral trees (in 2019 no longer standing), dry stone walls, and isolated fig have local historic, aesthetic, technical and social values.

The HHA has provided a full assessment of 'Belmont' and its assessment of significance stands. Further inspections into the intactness and integrity of the house as part of this assessment has revealed that the building is largely intact and authentic and could be occupied with some cleaning and repairs. The condition of the framing and footings is not known. If the framing is sound, the building could be transported and reerected elsewhere but would require the demolition of the chimneys and new footings and potentially structural reinforcement.

The isolated fig to the north has been significantly damaged—reportedly from lightning strikes—with some new growth but a lot of dead wood. Its condition arboriculturally has not been assessed.



3.3.4 'The Hill' Farm



Photo 2 'The Hill' Farm



Photo 3 'The Hill' residence

'The Hill' complex, Dunster's Lane, Croom is of exceptional local significance. Amongst the complex buildings, structures, major trees and landscape elements, is the homestead dating pre 1865.

The complex and homestead (built internally and externally of local cedar) date from the original D'Arcy Wentworth land grant; the Peterborough Estate. The original home includes rare period additions c1865 and 1900

The complex is a major regional landmark with expansive views in and out, and dominant within the cultural landscape. Several significant and landmark trees exist, some providing increasingly scarce fauna habitat.

The Hill farm complex includes remains of World War Two observation posts.

The property has been in the same family ownership since 1865 and is a key site in the evolution of the Illawarra Shorthorn Cattle breed.

The assessment in the State Heritage Inventory appears, generally, to be correct and current. '



3.3.5 'Kurrawong'



Photo 4 'Kurrawong'

'Kurrawong' is a Federation farmhouse built high on a hill ridge overlooking the old Princes Highway at Dunmore. In addition to its setting, the property includes significant trees and dry stone walls.

'Kurrawong' belongs to the James Road farm group and has historic associations with nearby James family properties ('Rosemont', 'Bravella' site, 'St Ives', 'Aronda' in Shellharbour Village and 'Clover Hill' near Macquarie Pass).

'Kurrawong' was built for John James, The founder of the Australian Milking (Illawarra) Shorthorn Society. The property was deliberately sited having a clear view line to 'The Hill' (Dunster family) and nearby James family properties.

Stone walls are representative of the north Kiama/Dunmore construction type. Figs are representative of Illawarra farm plantings and provide an increasingly scarce habitat for regional fauna.

The assessment above generally holds true. There are a number of fig trees across the property and it is not clear whether they were planted, self-seeded or preferentially retained. A particularly large fig tree near the homestead was reportedly struck by lightning. Its massive trunk is broken and seemingly dead. The concrete silo referred to in the assessment was not seen. A section of dry stone wall remains at the northern boundary of the site.

The visual connection between 'The Hill' Farm and 'Kurrawong' remains, while there is no direct view of the 'Belmont' or Amended Project Area from the residence.



3.3.6 'St Ives'

Access to the private property of 'St Ives' was not available on the day of inspection so inspection was carried out from the public domain on James Road as well as through viewing on adjacent private properties.

'St Ives is a good example of a rural, weatherboard, Federation era farmhouse. It is located on a hilltop, within the wider Dunmore valley cultural landscape.

There are major views in and out. Its high-pitched roof and verandah are surrounded by mature trees. The home has a tree lined entry and major specimens of Moreton Bay figs. The trees retain classic form, habitat and contribute to the cultural landscape. They remain as physical evidence of the dairy industry.

One spectacular isolated mature tree with natural habitat, is located on the ridge nearby, commanding views in from the surrounding landscape. It is a major feature within the cultural landscape, spectacularly located on the ridge crest, and is seen by surrounding development and transport routes. It readily relays its historical associations with the dairy landscape. The open setting and context of the tree add to its significance. This tree is associated with Benjamin Lindsay, Chairman of the NSW Lands Board. Local historic associations with local pioneer families and with the development of the local dairy industry.

'St Ives' belongs to the James Road farm group associated with the nearby and linked James family properties ('Rosemont', 'Bravella' site, 'Kurrawong', 'Aronda' at Shellharbour Village and 'Clover Hill' near Macquarie Pass). Near the northern boundary lining the creek are scattered Cabbage Tree palms that have both historic and landscape aesthetic values.

Without access to the site, it has not been possible to confirm fully the statement of significance. The 'major views in and out' are not defined in the inventory listing. 'St Ives' does not have views of 'Belmont' or the Amended Project Area.



3.3.7 'Rosemont'

Access to the private property of 'Rosemont' was not available on the day of inspection so inspection was carried out from the public domain on James Road.



Photo 5 'Rosemont'

'Rosemont' located on a hilltop has local landmark qualities. It remains within deliberate views of nearby family connected homesteads, each being of note. "Rosemont' retains a rural setting within the highly significant Dunmore valley cultural landscape. The modest home is an increasingly scarce example of an early 20th century rural homestead, as are the trees on the property, being highly indicative of the Illawarra dairying.

This property is one of the James Road farm group having exceptional local significance ('Rosemont', 'Bravella', 'Kurrawong', 'St Ives') Historic associations with the James family of Dunmore. These farms are part of the former Bassett-Darley estate.

Biosis understands that, with development consent, the homestead was demolished in 2015 and a new house built in its place. A large steel shed has also been erected on the site. The integrity has been reduced by this loss but the landform itself remains contributory to the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape*.



3.3.8 'Bravella'



Photo 6 Bravella fig trees - Image extracted from Historic and Archaeologic al Map Shellharbour City 1830-1930, Tamara

Hynd 2004

'Bravella' fig trees demonstrate cultural planting fashion of the 19th century associated with pastoral landscape and dairying homestead sites. They have the ability to educate about such practices. The trees are evidence of early settlement in the area, are especially associated with the James family, and linked to other members of the James Road farm group ('Kurrawong', 'Rosemont', 'St Ives', 'Aronda' in Shellharbour and 'Clover Hill', Macquarie Pass).

The trees continue to be a major hilltop landmark in the Dunmore valley cultural landscape. The trees remain a major fauna habitat and food supply.

The 'Bravella' fig trees have been indicated as those two that are near the northern boundary of the property with 'Kurrawong', and immediately southwest of the current residence. They make similar contributions as many of the other figs do. The integrity of 'Bravella' had been reduced earlier by the loss of the homestead in the 1970s but the site itself and the trees remain contributory to the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape*. 'Bravella' does not have views of the 'Belmont' or Amended Project Area.



3.3.9 'Kyawana'



Photo 7 'Kyawana' ruins

'Kyawana' has strong links with the dairy industry and education. It is linked with the nearby Croom School site (after the school's closure c.1920, its building materials were used for the home's construction).

'Kyawana' sits high on a hill and has sweeping views of, and is contributory to, the surrounding cultural landscape.

A thicket of Cape Honeysuckle has overtaken 'Kyawana' which prevents full access to the site. The extent of cover is shown in Figure 14. Inspection revealed that the main building has collapsed and can only be described as a ruinous collection of deteriorated building materials. However, there also remains intact remnants of the former dairy to the west of the former residence, which is also being overtaken by vegetation on the site. What association the place might have had with education is not able to be demonstrated. Vegetation aside, the site itself has panoramic views, including of 'Belmont' and the Amended Project Area. The landform, views and setting of its southwestern quadrant have been significantly altered by quarrying operations. Nevertheless, the site itself remains contributory to the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape*.



Figure 14 Aerial photograph of Kyawana taken on 7 March 2023 showing vegetation cover and remnant structures. The former residence is located in the right half of the figure while the dairy is shown still standing in the left of the figure.





3.3.10 Memorial, Norfolk Island pine trees



Photo 8 Dunmore Bends and the memorial avenue of pines

The Norfolk Island pines on both sides of the 'Dunmore Bends' (old Princes Highway) were planted as an 'Avenue of Honour' memorial for each person from the Shellharbour, Dunmore and Croom communities, who were casualties of World War One.

The species choice reflects an association with 'The Lone Pine' returned from Gallipoli and one suitable for a maritime environment.

The trees remain prominent in the cultural landscape both locally, and to all those who travel along this route.

Dunmore Bends and the memorial avenue of pines demonstrates historical and aesthetic heritage values and together remain a major contributory element in the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape*.



4 Historical arrangements and access

4.1 Historical arrangements and access

The historical arrangements and access in the cultural landscape would have included formal and informal paths and drives. The principal arterial road is now known as James Road—formerly Princes Highway—this snakes through the eastern part of the landscape from the higher land into the Dunmore Valley in a section known as the Dunmore Bends. From this serpentine spine, access to individual homesteads was directly onto their properties or, for 'Kyawana', 'The Hill' Farm and 'Belmont', via the minor local road, Dunsters Lane. Within and between homesteads there would have been informal paths made over time as well as fencing some with cattle grids and gates. There are remnants of dry stone walls between properties but these seem to have been high enough to contain livestock but not so high as to prevent access by people between properties.

4.2 Alterations to historical arrangements and access

The orientation of the original homesteads and their aspects over land and to sea is unaltered.

Although the realignment and widening of the Princes Highway in the eastern part of the landscape had significant impacts on the wider cultural landscape, it has had the benefit of preserving the Dunmore Bends and direct access from James Road and via Dunsters Lane. It is not known what specific changes to lesser paths have happened but changing ownership of the properties and farming and other practices would have influenced them. Generally, rural paths in similar farming landscapes are made by wear and traffic rather than made and maintained through significant civil works.

Alterations to access arrangements have included:

- Access to 'Kyawana' has been severed due to a cutting constructed around 2008 (although access is still available via minor diversions).
- Historical aerial photos show a defined access between Bravella and Kurrawong which looks to be abandoned now.
- Minor deviation to 'Belmont' from 'The Hill', where the access was diverted around the new amenity bund built in around 2008.
- Dunsters Lane access changed from connecting directly to the Princes Highway north of the property, and now has a slip road alongside the new motorway before rejoining the old Princes Highway further east.
- The connection between 'Kyawana' to the west (southwest) to the former Croom school site, (and
 connection to the original road between Albion Park and Kiama) has been severed by quarrying in the
 later part of the 20th century.



5 Significant views

5.1 Shellharbour Development Control Plan—View catchments

Although the Shellharbour Development Control Plan does not apply to this State Significant Development, the DCP is a useful reference document to understand how heritage view catchments are defined and managed for proposed development within the area generally.

Shellharbour Development Control Plan's chapter on European heritage provides development control context advice in relation to rural landscapes including Dunmore and Croom as follows:

No new structures or buildings are to be erected in the primary view catchment of the item. The primary view catchment is the principal view of the heritage item from the public domain unless it has been defined by a visual assessment and curtilage study that has been approved by Council. [28.2.2]

The DCP also provides guidance on the siting of new development. However, the development is presumed to be additive development—such as dwellings—which might introduce new obstructions to views to significant elements rather than excavation such as a quarry. However, guidance is given in advice item 28.2.7 as follows:

Earthworks including cut and/or fill must be minimised in order to retain the natural contours of the lot. [28.2.7]

The DCP does not map specific views of importance in the area it covers. Notably, the DCP provides the concept of relative significance of views—that there are primary views and views of lesser importance and that the primary views are the ones to be managed to avoid intrusive development.

Figure 15 Figure 28.1 from the Shellharbour Development Control Plan

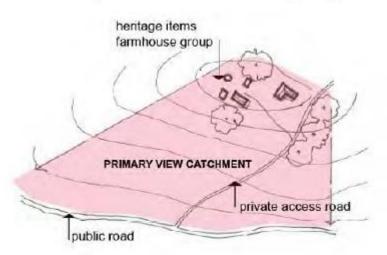
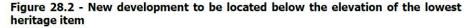


Figure 28.1 - New development to be located outside the primary view catchment



Figure 16 Figure 28.2 from the Shellharbour Development Control Plan





5.2 Significant views

This section analyses the historical and current views of the cultural landscape and individual places in that landscape so as to inform the significance of them and the contributions they make.

Vegetation and structures can obscure views over land and change over time. The historical visual connection matrix in Table 3 shows whether a line of sight over land between the homesteads could exist at a broad level bearing in mind the 10-metre contour tolerance. The matrix is based on the view mapping methodology and has not been fully ground-truthed which would require site access and potentially invasive clearance of vegetation which could have adverse heritage impacts. While it is true that the landscape during the primary dairying use period was less vegetated with shrubs and trees than today, the key aspects presented below are maximum possible views based only on the broader terrain/landform and do not take into account current or past obstructive vegetation.

The Amended Project would destroy the DCP-defined 'primary view catchment' of 'Belmont' from Dunsters Lane. However, that section of Dunsters Lane from which 'Belmont' is visible is beyond 'The Hill' and reads as a private road.

'Kyawana's context has been significantly altered and there is no apparent primary view catchment. The primary view catchments of the other heritage items between their respective homesteads and public roads would not be altered by the proposed works as no development is proposed within those catchments.

Refer section 1.6 for further discussion of view mapping.



Table 3 Historical visual connection matrix



Figure 17 The aspect of 'Belmont'

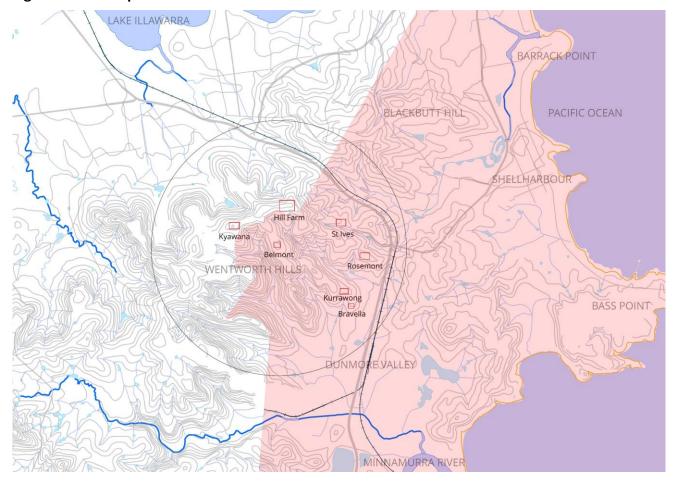




Figure 18 The aspect of 'Bravella'

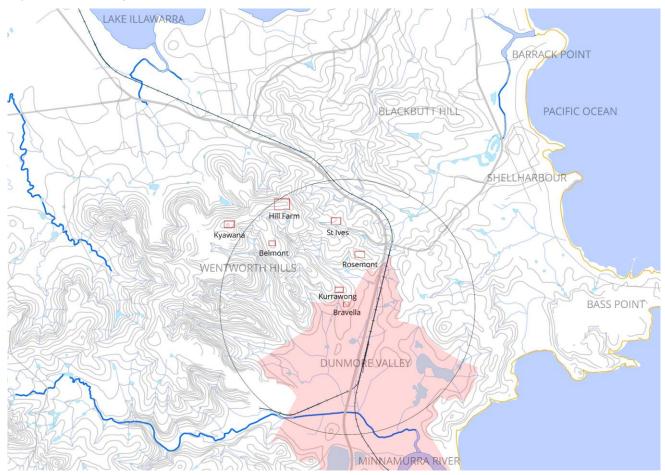




Figure 19 The aspect of 'The Hill' Farm

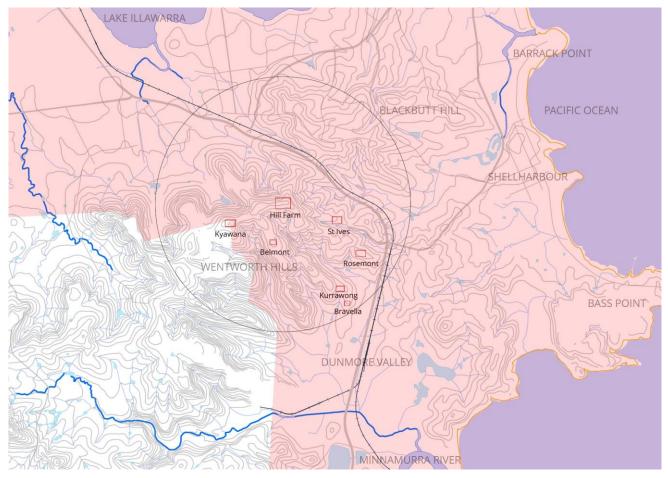




Figure 20 The aspect of 'Kurrawong'

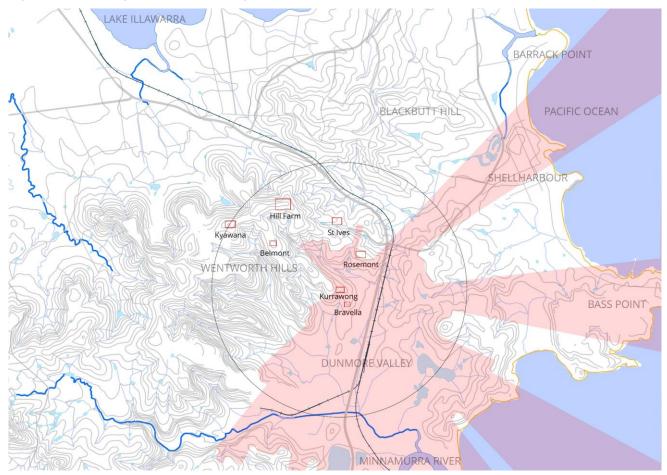




Figure 21 The aspect of 'Kyawana'

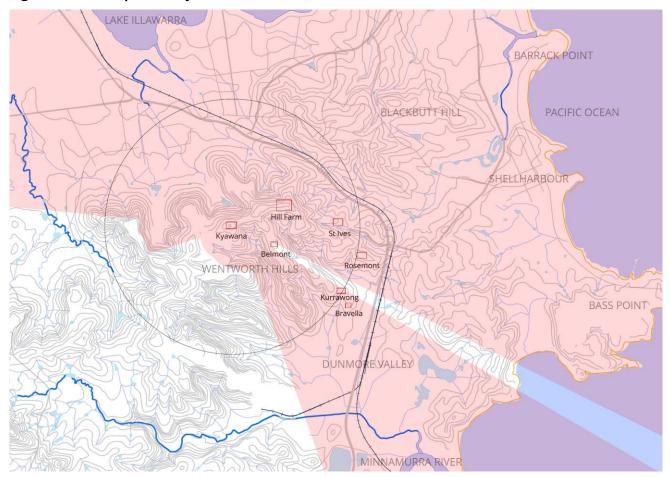




Figure 22 The aspect of 'Rosemont'

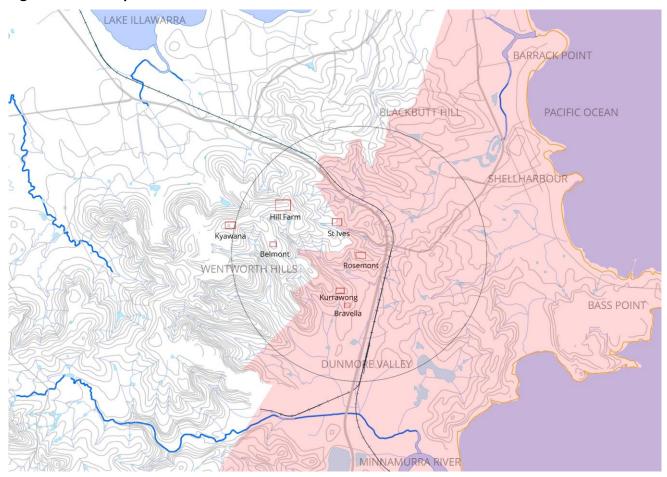




Figure 23 The aspect of 'St Ives'

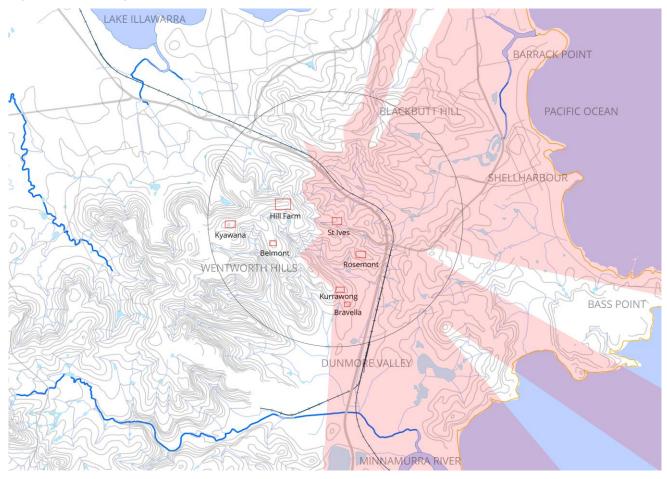
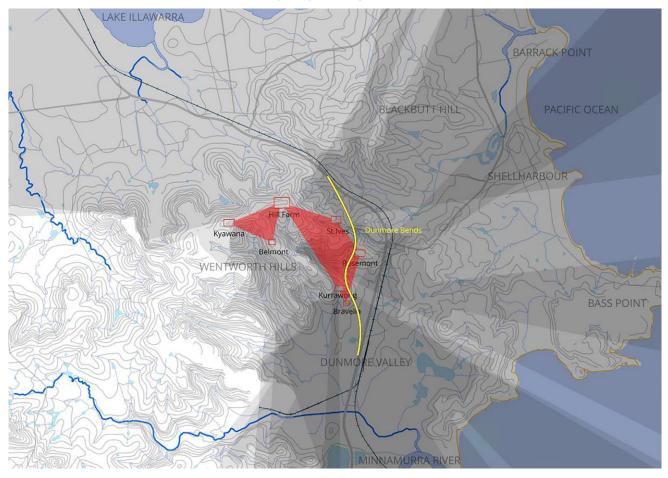




Figure 24 Composite analysis showing intensity of shared views, visual relationships between the homesteads and the valley way through the Dunmore Bends





6 The Wentworth Hills and Dunmore Valley Dairy Farming Landscape

6.1 Overview

This section deals specifically with the concepts of place, practice and process in establishing and maintaining cultural landscapes. Historical context can be found in the HHA and is not repeated here.

The Australia ICOMOS Practice Note on Cultural Landscapes describes Place, Practice and Process in relation to cultural landscapes. That practice note also deals with management: however, this assessment does not provide for management of the cultural landscape rather it seeks to understand it and to assess impacts upon it.

- **Place**—Cultural landscapes are geographically defined places, and encompass flora, fauna, geology, hydrology, cultural features, and their wider geographic, social, economic, and political dimensions.
- Practice—Cultural landscapes are the result of the combination of cultural practices, on-going biological and land use processes, and history.
- Process—Cultural landscapes are socially constructed living entities, and are the product of change, dynamic processes, and diverse interactions between people and nature through time.

6.2 Place

Situated on the coastal plain between the Illawarra Escarpment and the ocean, the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape* occupies an area of approximately 20 km². The Wentworth Hills are rolling to steep low hills (less than approximately 150 metres above sea level) located about four kilometres from the coast. The ridges of hard volcanic rock—latite—run in various directions from the central hillcrests with undulating slopes of sandstone forming the Dunmore Valley to the west of Shellharbour and south of Blackbutt Hill and its southern slopes. Creeks in the south-eastern valleys of the Wentworth Hills flow south through the Dunmore Valley and to Rocklow Creek which in turn flows into the Minnamurra River near the entrance to the South Pacific Ocean.

6.3 Practice

Before European farming practices were introduced and the land was alienated, Aboriginal people would have managed the land as rainforest and more open woodland plains.

In the early nineteenth century, the land was exploited using European practices for forestry and for cattle. The cattle were first run in open country and this was coupled with the clearing of land and harvesting of timber to turn it to pasture or for grain cropping except where unsuited such as steep rocky ground.

By the late nineteenth century, the area from the coast and west of lake Illawarra to the Illawarra Escarpment and Macquarie Pass was dominated by dairy farms with homesteads—five or six times the area of the Wentworth Hills and Dunmore Valley. Typical dairy farms had a homestead with an outlook over the associated farmland with cultivated areas and dairying facilities close by.

The practice of subdividing farms and building new homesteads to accommodate growing families and generations continued from the mid-nineteenth century to the early twentieth century.



Although by their design and setting homesteads are buildings 'in-the-round', they do have a front with a front door where the primary shared living spaces of the houses are usually placed. In the Wentworth Hills and Dunmore Valley, the remaining homesteads are on ridgelines or the western slope of the valley and generally face the east or northeast towards the ocean. It is not clear whether homesteads on the eastern side of the valley faced west but generally homesteads are positioned to look over lower land as opposed to up a close slope.

A panoramic photograph from The Hill' Farm extending from the north through the east to the south-east dating from the late-nineteenth century to the Inter-War period (prior to the planting of the memorial avenue along the old Princes Highway) is kept at The Hill' Farm. (Legible reprography of the photograph was not possible in situ at the time of inspection.) The image shows the undulating pasture of the Dunmore Valley with a sparse scattering of trees and bush. It is unknown whether trees and shrubs were planted, self-seeded or preferentially retained. This very open landscape character of the slopes of the Valley appears to be the likely character from the mid-nineteenth century to the mid-twentieth century. It is harder to discern the character of the Wentworth Hills but post-World War Two photographs of the Wentworth Hills show they too were more sparsely vegetated.

While the dairy farming practice can be considered a 'continuing or living landscape', the planting of the memorial avenue of trees on that part of the old Princes Highway known as the Dunmore Bends is both a 'designed landscape' and—as a memorial to the fallen of war—an 'associative landscape'.

In tandem with dairy farming, substantial quarries for blue metal and other uses were developed near Kiama from the 1870s, with quarries in Bombo and Dunmore opening in the following several decades. George Lawrence Fuller (1832–1917) was a farmer and shopkeeper and owner of 'Kyawana'. He originally allowed quarrying of his farmland for a royalty but later opened up his own quarry at Dunmore.

6.4 Process

Although the practice of dairy farming continues in the Illawarra more broadly and in the Wentworth Hills and Dunmore Valley Dairy Farming Landscape in particular, it is a practice that is now less prevalent. Within the Wentworth Hills and Dunmore Valley Dairy Farming Landscape, new practices have been introduced some of which are broader rural uses such as sheep and beef cattle and agistment but also entirely new practices such as transport, quarrying and suburbanisation. These new practices have been significantly transformative and are entirely new practices rather than evolutions of past practices of land clearing, forestry and dairy farming.

Dairy farming continues in the higher parts of the eastern side of Dunmore Valley including 'The Hill' Farm, 'St lves', and parts of 'Kyawana'."

The cessation of the practice of dairy farming for much of the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape* has reduced the integrity of the cultural landscape not only in the loss of the use itself but by the revegetation of the land. The introduction of new unrelated practices has significantly transformed the cultural landscape in the following ways:

- Transport—the realignment and widening of the Princes Highway has had the benefit of allowing the
 retention of the Dunmore Bends and the memorial avenue of pines but it has also bisected the
 Wentworth Hills and Dunmore Valley Dairy Farming Landscape in a way that is considerably more
 intrusive than the railway had been. This intrusive element lies in the key views from the principal
 homesteads to the east.
- **Quarrying**—the quarrying of land has completely transformed the landscape of the Wentworth Hills in the eastern part of the cultural landscape principally by the removal of hills and ridges since



- quarrying commenced in the Wentworth Hills in the 1920s. This transformation is less apparent when viewed from the Dunmore Valley and its slopes and from the lower heritage items.
- **Suburbanisation**—the residential subdivisions to the north and east of the highway-bisected Dunmore Valley have had major adverse impacts on the integrity of the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape* by: permanently changing the former farming land use; reducing the perceived overall extent of the Farming Landscape; and by developing relatively dense structures over the once pastured slopes that were midground in the principal views from the homesteads.

6.5 Summary of significance and integrity of the cultural landscape

The Wentworth Hills and Dunmore Valley Dairy Farming Landscape is a cultural landscape that arose from the clearing of land and the establishment and continued practice of dairy farming from the early nineteenth century to the post World War Two period. This cultural landscape had been part of a much larger dairy farming cultural landscape across the Illawarra coastal plain.

The cessation of the practice of dairy farming (in the most part) and the transformation of much of the Wentworth Hills and Dunmore Valley Dairy Farming Landscape for unrelated and non-evolutionary practices has had major adverse impacts on the significance, extent and setting of the landscape. In particular, transport and suburbanisation practices have adversely impacted significant views from the principal original homesteads. The loss of key homesteads—such as 'Bravella', 'Rosemont' and 'Kyawana'—and associated structures has further reduced the integrity of the Wentworth Hills and Dunmore Valley Dairy Farming Landscape.

Due to the low integrity of the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape*, it is not possible to restore the dairy farming practice of the cultural landscape to any significant extent.

6.6 Contributing elements of the cultural landscape

Table 4 below lists the key elements of the cultural landscape and their contribution to the landscape as a whole. Significant views are associated within individual places and the landscape more broadly—see Figure 24 on page 46.

Table 4 Contribution of elements of the cultural landscape

Element	Contribution/Significance
Topography of <i>Wentworth Hills and the Dunmore Valley</i> where it is generally unaltered including valley and lowlands, undulating slopes and low hills, and peaks	Major
Continuing dairy farming use	Major
'Belmont'	Major
Vegetation of dairying landscape—quality of open pasture and scattered trees on undulating land	Major
Remnant dry stone walls and structures specially related to dairy farming	Major
Fig trees generally—varying major to detracting where obscuring historically open views	Major to intrusive/detracting
Dunmore Bends (Old Princes Highway) and the Memorial Avenue of Norfolk Island Pines	Major
'Kurrawong'	Major



Element	Contribution/Significance
The Hill' Farm Complex	Major
World War Two bunkers at Hill Farm Complex—including open views to sea	Major
'St Ives' and fig trees (not inspected—provisional)	Major
Historic paths and roads including Dunsters Lane	Major
Fig trees of 'Bravella' specifically	Moderate
'Kyawana'— landform and views only	Moderate
'Rosemont'—landform and views only (not inspected—provisional)	Moderate
'Kyawana'—fabric and vegetation	Minor to detracting
New processes and uses that do not alter the landform or result in substantial new structures	Neutral
New processes and uses that alter the landform including transport, quarrying and suburbanisation	Intrusive/Detracting
New residential development in the eastern part of the Dunmore Valley	Intrusive/Detracting
Motorway through eastern part of the Dunmore Valley—Princes Highway widening and realignment	Intrusive/Detracting



7 The proposed development

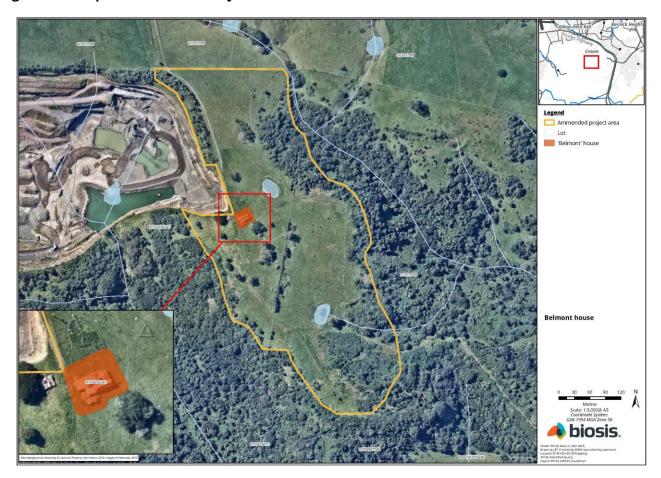
7.1 Overview of proposed development

The Amended Project—known as 'Albion Park Quarry – Stage 7 (SSD-10369)'—involves continued operation of the approved Stages 1 to 6 of the existing quarry and a proposed Stage 7 extension area that involves:

- Removing 2.2 million tonnes (Mt) of overburden;
- Hard rock extraction (drilling and blasting) and processing up to 900,000 tonnes per year from a total resource of approximately 22 Mt; and
- Progressive rehabilitation.

The extent of the Amended Project and future operations are described in the Amended Project Description. It is also mapped in the HHA.

Figure 25 Proposed Amended Project Area in the Wentworth Hills—'Belmont' homestead inset





8 Heritage impacts

8.1 Indirect Impacts

8.1.1 Acoustics and Vibration Management

The quarrying of hard rock requires periodic blasting of the resource with explosives and haulage using offroad heavy vehicles. DPE has requested further information on acoustics and vibration management. How that relates to what is significant in this cultural landscape can be summarised in the following questions:

- Will blasting and quarrying activities inhibit the important process of continuing dairy farming use within the cultural landscape? For example—will cows be alarmed and stop producing milk, have a reduced grazing range or need to be herded more?
- Will blasting and quarrying activities damage nearby buildings?
- Will significant historic buildings need to be altered to mitigate noise impacts on occupants? If so, what are the direct impacts on significant building fabric?

SLR Consulting Australia Pty Ltd has provided a Noise and Blasting Assessment which summarises the results of ambient noise measurements and assesses the potential operational noise and blasting impacts associated with the Project.

8.2 Potential impacts on the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape*

Table 5 below assesses potential heritage impacts on the cultural landscape outside of 'Belmont' and the Amended Project Area.

The Amended Project Area is principally visible from 'The Hill' Farm and the site of 'Kyawana'. The Amended Project is away from the principal views of most of the cultural landscape which are predominantly within the Dunmore Valley and broadly in the east and south.

The Amended Project is in the mid- and foreground of views from The Hill' Farm and the site of 'Kyawana' to the west and south to the Illawarra Escarpment and Saddleback Mountain respectively. Absent and non-contiguous contour data over the changing quarry landscape in the southwestern quadrants of the 'Kyawana' and The Hill' Farm viewsheds prevent accurate mapping but the contour data that exists indicate that, over the quarries, there are views to several slightly higher hills within the Wentworth Hills as well as longer views to Locking Hill and Stockyard Mountain approximately 2km and 4km away respectively.

The Hill' Farm has views that span more than 270 degrees part of which has already been altered by existing quarrying at various quarry sites. The further intrusion into those views will be a minor sector that will be softened somewhat when the excavation is ultimately rehabilitated. The existing quarries near 'Kyawana' has significantly changed views except in the northeast quadrant. The integrity of most of its setting is low.

Table 5 Potential heritage impacts on contributory elements on parts of the cultural landscape other than 'Belmont'

Element	Heritage Impact
Topography of Wentworth Hills and the Dunmore Valley where it is generally unaltered including valley and lowlands, undulating slopes and low hills, and peaks	Moderate in the context of the landscape broadly. The



Element	Heritage Impact
	landscape to be quarried is visible from few locations including the 'West of Princes Highway', 'West of Dunmore Road', and 'Shell Cove West' visual catchments (see Visual Impact Assessment).
Continuing dairy farming use	Biosis understands that there will be no impact on current dairy farming use. Refer Noise and Blasting Assessment.
Vegetation of dairying landscape—quality of open pasture and scattered trees on undulating land	No impact.
Remnant dry stone walls and structures specially related to dairy farming	No impact.
Fig trees generally—varying major to detracting where obscuring historically open views	No impact.
Dunmore Bends (Old Princes Highway) and the Memorial Avenue of Norfolk Island Pines	Minor impact—the Project is a distant and peripheral landform from this element.
'Kurrawong'	No impact.
The Hill' Farm Complex	Minor impact—the Amended Project is visible from this element but is not located in the primary significant views.
World War Two bunkers at Hill Farm Complex—including open views to sea	No impact.
'St Ives' and fig trees (not inspected—provisional)	No impact.
Fig trees of 'Bravella' specifically	No impact.
'Kyawana'— landform and views only	Moderate impact—the Amended Project is close and visible from this element. There will be no obstruction of views. Kyawana already has a significantly degraded setting—its current landscape character will not significantly change.
'Rosemont'—landform and views only	Minor impact—the Amended Project is visible



Element	Heritage Impact
	from this element but is not located in the primary significant views.
'Kyawana'—fabric and vegetation	No impact.
Historic paths and roads including Dunsters Lane—outside 'Belmont'	Minor impact to historical paths/roads outside of the 'Belmont' property - the last section of access to 'Belmont' will be removed, however this section was part of a diversion made in around 2008 when the amenity bund was constructed over the original access.

8.3 Potential impacts on fabric and setting of 'Belmont'

Table 6 below assesses potential heritage impacts on that part of the cultural landscape at 'Belmont'. The impacts will be major adverse impacts and will be irreversible.

 Table 6
 Overview of impacts to contributory elements at Belmont

Element	Impact
Topography of Wentworth Hills and the Dunmore Valley where it is generally unaltered including valley and lowlands, undulating slopes and low hills, and peaks	Major adverse
Continuing dairy farming use	Major adverse—although it is noted that the land is not currently used for dairy farming
'Belmont'	Major adverse
Vegetation of dairying landscape—quality of open pasture and scattered trees on undulating land	Major adverse
Remnant dry stone walls and structures specially related to dairy farming	Major adverse
Fig trees at 'Belmont'	Major adverse
Historic paths and roads including Dunsters Lane—within 'Belmont'	Minor adverse—the road to 'Belmont' will be shortened but will not be cut off from access from the Old Princes Highway. However, this section of road is a relatively recent diversion.



While irreversible, major adverse impacts cannot be fully mitigated, strategies for salvage were outlined in the HHA. At the time the HHA was written, no methodology for the potential relocation of the 'Belmont' had been developed. A proposed methodology has now been prepared and is included as the Appendix to this report.

The relocation of significant structures out of their settings almost always has major adverse impacts on their heritage value except where there may be a history of relocation. Timber framed structures such as 'Belmont' are quite commonly moved but there is no evidence of the building being moved before. Biosis has reviewed the current condition of 'Belmont' and consider that it may be feasible to relocate it. This was an option explored by the proponent who has provided further discussion on the feasibility of relocation below. It seems that relocating the structure would be feasible but would involve several factors beyond the proponent's control.

As part of the Albion Park Quarry Stage 7 application, Cleary Bros have examined opportunities to relocate "Belmont" locally to preserve the heritage values associated with the structure. Cleary Bros have contacted several potential landowners with regard to relocating the residence, with little interest shown to date. Cleary Bros have also examined opportunities to relocate the structure within the Cleary Bros landholding surrounding the Albion Park Quarry, including the prominent spur to the east of Stage 7b which exhibits a similar landform to the "Belmont's current location, however this site is vegetated with the Melaleuca armilaris critically endangered ecological community, and as such is not suitable. The remainder of the property consists of moderately sloping to steeply sloping areas that would require significant earthworks to support the structure.

Despite the challenges to date, Cleary Bros are open to expressions of interest from the local community in relocating the Belmont to a suitable site in the local area. Such sites may include Council-owned properties (such as the Albion Park Showgrounds), or private property within the Shellharbour LGA. Cleary Bros would be willing to pay the transport costs of relocating the residence to a new site.

In the event that a suitable site for relocating the Belmont residence cannot be found or approved in a suitable timeframe, Cleary Bros would invite expressions of interest for Council and other local stakeholders, including individuals, to salvage important materials from the house during its demolition, where this could be undertaken in a way that would allow elements of the property to continue to live on in the Shellharbour LGA.

8.4 Cumulative impacts

New processes and uses that alter the landform including transport, quarrying, suburbanisation and others are likely to have an adverse cumulative impact on the cultural landscape. The degree of impact will depend on the way in which each proposal minimises impacts on the contributing elements including topography and views.

The proposed Amended Project increases the impact of the existing quarries. However, it is a moderate addition of impact in the full context of the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape* as it is largely hidden from significant views in the higher, steeper slopes and is a reduction in land levels (elevation) rather than an added intrusion in those views such as power transmission lines might be. The Amended Project would have a lesser impact than the residential and transport development in the eastern part of the cultural landscape has had.



9 Conclusions and recommendations

9.1 Conclusions

Belmont' is a heritage item listed on Schedule 5 of the *Shellharbour LEP 2013* within *Wentworth Hills and Dunmore Valley Dairy Farming Landscape* and a significant contributory element. The heritage impacts to 'Belmont' will be major adverse impacts and will be irreversible. It is understood from the proponent that the Amended Project cannot proceed while still retaining 'Belmont' in its current setting. The impacts cannot be mitigated to any significant degree. Strategies are in place to manage the salvage of some elements of 'Belmont' and these are outlined in the HHA. However, given the current condition of 'Belmont', the relocation of the timber-framed building offsite would be feasible, and would be an improved heritage outcome over demolition.

The impacts to the *Wentworth Hills and Dunmore Valley Dairy Farming Landscape* range from no impact to moderately adverse impacts. Principal impacts are on views associated with 'The Hill' Farm and the site of 'Kyawana'. The Amended Project Area is in the mid- and foreground of views from The Hill' Farm and the site of 'Kyawana' to the west and south to the Illawarra Escarpment and Saddleback Mountain respectively. The intrusion into those views will be a minor sector that will be softened somewhat when the excavation is ultimately rehabilitated. Rehabilitation is the recommended mitigation measure.

9.2 Recommendations

The previous Historic Heritage Assessment (HHA) made four recommendations—in short:

- 'Belmont' be archivally recorded (this was completed in July 2020);
- Archaeological investigation be carried out during removal of 'Belmont';
- Two dry stone walls be dismantled and rebuilt elsewhere on the property; and
- The 2017 Albion Park Quarry Heritage Management Plan (HMP) be updated.

In response to the HHA and the submissions received following exhibition, the proponent has identified four overarching heritage management actions (refer appendix):

- Action Item 1 Capturing the heritage value of 'Belmont' in its current setting
- Action Item 2 Identification of an alternative site for the 'Belmont'
- Action Item 3 Retaining materials from the 'Belmont' and outbuildings
- Action Item 4 Recovering residual heritage value

Recommendations made in light of this cultural landscape assessment or reiterated are that:

- a Heritage Interpretation Plan to assist interested parties in interpreting the former heritage values of the 'Belmont' in the Wentworth Hills and Dunmore Valley Dairy Farming Landscape should be prepared and its recommendations implemented—interpretive devices should include those as described in Action Item 1;
- the proposal to explore the retention and relocation of 'Belmont' homestead in accordance with Action Item 2 should be supported;



- if Action Item 2 does not result in the retention and relocation of the 'Belmont' homestead, then Action Item 3 should be followed; and
- Action Item 4 should be carried out in accordance with the archaeological recommendations of the HHA.



Appendix—Proponent's Proposed Heritage Management Actions

Action Item 1 - Capturing the heritage value of 'Belmont' in its current setting

- As described in the Response to Submissions (RWC, November 2022), Cleary Bros will develop an
 interactive three-dimensional virtual model of the 'Belmont' and surrounds, to capture and share the
 site with the community into perpetuity. The model would form two parts, which would be made
 freely available for members of the community to access.
 - The first part would involve an interactive walkthrough of the internal and external features of 'Belmont' Main House, rebuilt using internal scans taken prior to its removal. This would allow users to navigate virtually through a 3D rendered recreation of the 'Belmont' Main House, with users able to click on and learn about the key facets of the structure through information (text or multimedia) provided by an Archaeologist.
 - o The second part of the model would involve an animated re-creation of the locality, assisted by drone photogrammetry, as it would have appeared in the first half of the 20th century prior to any quarrying activity on the adjoining lots. This would allow users to understand at their own pace the locations and boundaries of the early properties, how they were connected to the local community (tracks, etc), local streams, fences, buildings, dry stone walls etc.
- This model is being proposed as a constructive means principally to address the impacts of the amended Project upon the local cultural landscape, and to support the communication of these heritage values to the wider community. It is intended that this digital experience would be shared on the Cleary Bros website for any member of the public to experience. Cleary Bros has discussed this concept with Council, who have suggested that it could also be shared through their Museum, ensuring access for local community members with limited computer access.
- Finally, input would be sought from interested local residents to guide the development and delivery
 of the model to ensure that the legitimate concerns of the local community are reflected in the final
 product. Cleary Bros believes this technology provides a much greater opportunity for the wider
 community to experience and explore the 'Belmont' than is currently possible.

Action Item 2 - Identification of an alternative site for the 'Belmont'

- Cleary Bros will engage an appropriate structural engineer to confirm the feasibility of relocating the structure. Where the engineer deems that relocation is not possible with significant damage to the structure, Cleary Bros will not proceed further with relocation of the 'Belmont'. Where the structural engineer confirms relocation is feasible, Cleary Bros will invite expressions of interest as follows:
 - Cleary Bros will contact all landowners of heritage listed properties in the neighbouring area (between the Princes Highway and existing quarries) and invite them to submit an expression of interest for taking possession of 'Belmont'. Expressions of interest would need to be submitted within one month of formal invitation, unless otherwise agreed between Cleary Bros and the landowner.
 - Cleary Bros will contact Shellharbour City Council and invite them to submit an expression of interest for taking possession of 'Belmont', either on Council owned land or another suitable site nominated by the Council. Expressions of interest would need to be submitted within one month of formal invitation, unless otherwise agreed between Cleary Bros and Council.



- In the event multiple expressions of interest are received, Cleary Bros will consult with Council before Cleary Bros selects the preferred destination, guided by the intent of the relocation which is to preserve as best as possible the values of the Dunmore Hills heritage landscape.
- Cleary Bros would pay costs to uplift and transport the 'Belmont' to the preferred destination within
 the Shellharbour LGA excluding any upgrades or improvements required to public assets and
 infrastructure that may restrict transportation. Any costs associated with development approvals, civil
 works on the destination property, and works required to repair or upgrade the 'Belmont' would not
 be covered by Cleary Bros.
- Cleary Bros may elect to relocate the 'Belmont' to a temporary site within the CB landholding during the expressions of interest period, or while development approval is secured for the final destination.

Action Item 3 - Retaining materials from the 'Belmont' and outbuildings

- In the event the relocation of 'Belmont' does not proceed, either due to an absence of suitable expressions of interest for its relocation, or advice from the structural engineer that relocation is not reasonably feasible, Cleary Bros will invite the community to participate in the recovery of items of interest from the 'Belmont' as follows:
 - Cleary Bros will contact all neighbouring landowners (between the Princes Highway and existing quarries) to invite them to submit an expression of interest to attend and recover materials or items from the 'Belmont'. Cleary Bros will also contact Shellharbour City Council and the Shellharbour Museum, and request they provide details of the invitation to submit an expression of interest to relevant organisations and individuals who may have an interest in the 'Belmont'. Stakeholders will be requested to submit an expression of interest within 2 weeks of the invitation.
 - Where one or more expressions of interest are received, Cleary Bros will consult with Council before Cleary Bros selects the interested party/parties and then will invite the stakeholder(s) to attend the property at a designated date/time, and identify materials or items that they would like to recover. Cleary Bros will arrange for these items/materials to be removed from the 'Belmont' under the supervision of an Archaeologist and placed on a suitable vehicle supplied by the stakeholder.

Action Item 4 - Recovering residual heritage value

- Following the completion of Action Items 1, 2 and 3 (as applicable), the remaining structure(s) (if applicable), will be deconstructed and removed under the supervision of an Archaeologist. This process outlined in the Historic Heritage Report (Biosis 2022) will be followed and is summarised below:
 - Archaeological works will consist of monitoring during demolition works (i.e. removal of floor surfaces, foundations etc.) and any additional ground disturbance works within the study area until archaeological remains or a sterile layer is encountered. Deeper archaeological excavation may be required depending on the nature of remains encountered. The archaeological investigations must:
 - i. Follow the intent of the Heritage Act.
 - ii. Be conducted by a suitably qualified heritage consultant who meets the NSW Heritage Council's Excavation Director criteria.
 - iii. Be supported by an archaeological assessment (this assessment) and an Archaeological Research Design).