



New Berrima Brickworks Facility

State Significant Development Assessment SSD-10422

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Glossary

Abbreviation	Definition
Applicant	The Austral Brick Co Pty Ltd
CIV	Capital Investment Value
Council	Wingecarribee Shire Council
DA	Development Application
Department	Department of Planning, Industry and Environment (DPIE)
Demolition	The removal of buildings, sheds and other structures on the site
Development	The development as described in the EIS and RtS for SSD-10422
DPI	Department of Primary Industries, DPIE
EES	Environment, Energy and Science, DPIE
EIS	Environmental Impact Statement titled <i>Environmental Impact Statement SSD-10422 Proposed Brickworks Plant</i> prepared by Willow Tree Planning Pty Ltd dated 20 July 2020
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPI	Environmental Planning Instrument
EPL	Environment Protection Licence
ESD	Ecologically Sustainable Development
Heritage	Heritage NSW, Department of Premier and Cabinet
Minister	Minister for Planning and Public Spaces
Planning Secretary	Secretary of the Department
RtS	Response to Submissions titled <i>State Significant Development Application (SSD 10422) For Proposed Brickworks Plant</i> prepared by Willow Tree Planning Pty Ltd dated 1 March 2021
SEARs	Planning Secretary's Environmental Assessment Requirements

SEPP	State Environmental Planning Policy
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
SSD	State Significant Development
TfNSW	Transport for NSW

Executive Summary

This report details the Department of Planning, Industry and Environment's (the Department) assessment of a State significant development application (SSD-10422) for the New Berrima Brickworks facility. The Austral Brick Co Pty Ltd (the Applicant) proposes the construction and 24/7 operation of a brickworks facility with a production capacity of 50 million bricks per annum at 416 and 524 Berrima Road, Moss Vale in the Wingecarribee local government area (LGA).

The site is located 6.8 kilometres (km) south-west of Bowral and approximately 50.8 km west of Wollongong and covers approximately 51.68 hectares (ha) of IN1 General Industry and E3 Environmental Management zoned land under the Wingecarribee Local Environmental Plan 2010 (WLEP). The site currently consists of paddocks, derived grasslands, scattered mature trees, a storage dam, internal access road and minor agricultural structures supporting the existing agricultural land use.

The development is proposed to replace the Applicant's existing Bowral Brickworks Plant that will be decommissioned upon the completion of construction of the development. The existing Bowral Brickworks Plant has been in operation for 95 years with onsite plant and equipment including kilns, now inefficient and outdated.

Current Proposal

The Applicant proposes the construction and 24/7 operation of a new brickworks facility with a production capacity of 50 million bricks per annum including the installation of a tunnel kiln, dry press brick plant, associated office, bulk earthworks, landscaping, car parking and infrastructure servicing. The development is proposed to source its clay and shale from the approved New Berrima Quarry adjoining directly north of the site.

The proposed development (the development) has a capital investment value (CIV) of \$80 million and is expected to generate 65 construction jobs, 5 full time equivalent operational jobs and the retention of 35 existing full time equivalent operational jobs from the Bowral Brickworks Plant.

Statutory Context

The development is classified as State significant development (SSD) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) because it involves the construction and operation of a brickworks facility that has a CIV of more than \$30 million and meets the criteria in Clause 9 of Schedule 1 in State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP).

Consequently, the Minister for Planning and Public Spaces is the consent authority for the proposed development under section 4.5(1) of the EP&A Act.

Engagement

The Department of Planning, Industry and Environment (the Department) exhibited the DA and accompanying EIS for the development from Friday 31 July 2020 until Friday 28 August 2020. A total of 14 submissions were received including three from special interest groups and 11 from the general public. Of the 14 submissions received, four objections were received from the public on the development. The Department also received advice from eight government authorities during the exhibition period.

Key concerns raised related to greenhouse gas emissions, the provision of renewable energy, cumulative dust and noise impacts and biodiversity impacts. The Applicant submitted a Response to

Submissions (RtS) on 29 October 2020 to address and clarify matters raised in the submissions. Further information relating to air quality, biodiversity and noise was submitted on 8 March 2021 to address outstanding concerns from the Environment Protection Authority (EPA) and the Department's Environment, Energy and Science Group (EES).

Assessment

The Department's assessment of the application has fully considered all relevant matters under section 4.15 of the EP&A Act, the objects of the EP&A Act and the principles of ecologically sustainable development. The Department has identified the key issues for assessment are air quality impacts, greenhouse gas emissions, biodiversity impacts and noise impacts.

Operational Air Quality Impacts

The Applicant provided an assessment of maximum air pollution concentrations from the operation of the development which demonstrated compliance with the corresponding standards for emissions concentrations of ceramic works industries of the Protection of the Environment Operations (Clean Air) Regulation 2010 (Clean Air Regulation). However, the emissions design was not considered to be in line with best practice for industry. The EPA highlighted its expectations for newly designed and constructed industrial plant to use best practice technology to perform well below the emissions standards of Clean Air Regulation.

To address these concerns, the Applicant made further refinements to the kiln design, incorporating state-of-the-art technologies to ensure emissions from the development would be well below the emission standards of the Clean Air Regulation, consistent with best practice for new industrial facilities. The EPA was satisfied with the Applicant's revised assessment and recommended conditions requiring post-commissioning emissions monitoring and reporting.

The Department's assessment concluded the development has been designed in line with best industry practices and discharge concentrations are well below the emission standards required for industry as prescribed in the Clean Air Regulation. The development will therefore have minimal impacts on the existing air amenity of the locality. To further ensure emissions are appropriately managed, the Department has recommended a range of conditions including requirements for the Applicant to undertake post commissioning monitoring and validation of air emissions to ensure the development complies with the limits of the Environment Protection Licence and the preparation and implementation of an air quality management plan (AQMP) detailing measures to manage and mitigate air quality impacts arising from the operation of the development.

Greenhouse gas emissions

The use of natural gas and subsequent greenhouse gas (GHG) emissions was a primary concern raised by the public in the submissions. The purpose of the development is to replace the Applicant's existing Bowral brickworks plant due to its poor environmental performance resulting from outdated equipment, machinery and plant infrastructure. The Applicant provided an assessment of Scope 1 and 2 GHG emissions in the air quality impact assessment (AQIA) which stipulated the development would have a minimal contribution to Australia's GHG emissions. The Applicant has also committed to the ongoing research and consideration of renewable energies technologies not readily available for NSW industries such as industrial microwave technologies and hydrogen gas to be implemented where practical and feasible.

The Department's assessment has concluded the development will have a minimal contribution to State and National GHG emissions as an industry. In addition, the Department considers the development will result in an improvement of energy and fuel efficiencies in comparison to the existing Bowral operation upon the termination of operations. The Department has recommended conditions requiring the implementation of an AQMP for the ongoing management and improvements to air quality of the site and the preparation of a Community Consultation Plan (CCP) to keep the community informed about the development's progress in implementing renewable energies technologies into business operations.

Biodiversity

The site's historic agricultural land use has resulted in the clearing and degradation of native vegetation with only scattered clusters of vegetation found across the site. Vegetation along Stony Creek which is adjacent the western and south-western site boundary is also degraded. To accommodate the development footprint, the Applicant is proposing to remove 2.06 hectares (ha) of vegetation.

To assess the impact of this, the Applicant provided a biodiversity development assessment report (BDAR) with its application which determined that the integrity and clustering of vegetation on the site did not provide habitat connectivity for fauna species and it is unlikely the clearing of land would impact on any endangered fauna species. Notwithstanding, the BDAR calculated that a total of 34 species credits (determined in accordance with the *Biodiversity Conservation Act 2016* (BC Act)) would be required to offset the clearing of vegetation on the land which the Applicant has committed to purchasing and retiring. In addition, the Applicant is proposing the restoration and ongoing management of the riparian corridor through the implementation of a vegetation management plan.

The EES reviewed the BDAR and was satisfied with the assessment subject to the offsetting of species credits, implementation of management measures during vegetation clearing and the implementation of the vegetation management plan. The Department's assessment concluded the Applicant has satisfactorily considered the practical and feasible minimisation of impacts to the site's biodiversity. The Department also considered the current integrity of native vegetation on-site to be low with no likely habitat linkages available for native fauna. The Department has recommended conditions requiring the offsetting of species credits in accordance with the BC Act and supports the improvement of habitat connectivity in the area through the preparation and implementation of a vegetation management plan for the restoration of the riparian corridor and its ongoing management.

Noise Impacts

The Applicant provided a noise impact assessment (NIA) to assess the potential noise impacts generated by the development. The NIA indicated the development would comply with the project noise levels established under the EPA's Noise Policy for Industry (EPA, 2017) at all sensitive receivers with no predicted sleep disturbance at any residential receiver. The EPA reviewed the NIA and was satisfied with the assumptions and predictions presented. The EPA advised the Applicant should undertake post-commissioning noise monitoring to ensure operational noise levels are compliant with the project noise levels.

The Department has considered the issues raised in submissions and the EPA's advice and is satisfied the development is predicted to comply with the relevant noise levels and will have a minimal impact on the noise amenity of the locality subject to the implementation of recommended conditions. These conditions include operational noise limits, the preparation and implementation of construction and operation noise management plans, and the preparation of a post-commissioning noise monitoring and

verification report to ensure the development operates in compliance with the noise limits as predicted in the NIA.

Conclusion

The Department's assessment concluded that the impacts of the development can be mitigated and/or managed to ensure an acceptable level of environmental performance, subject to the recommended conditions of consent. In particular, the development is considered to result in a net environmental improvement of the Applicant's brick manufacturing operations given the proposed closure of the existing and outdated Bowral Brickworks Plant. Furthermore, the development will retain the existing work force within the locality as well as providing new job opportunities and continued investment in the growth of the Southern Highlands region. Consequently, the Department considers the development is in the public interest and is recommended for approval, subject to conditions.

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1 Introduction

1.1 The Department's Assessment

This report details the Department of Planning, Industry and Environment's (the Department) assessment of the State significant development (SSD-10422) for the New Berrima Brickworks facility (the development). The development involves the construction and 24/7 operation of a brickworks facility with a production capacity of 50 million bricks per annum. The Department's assessment considers all documentation submitted by the Applicant, including the Environmental Impact Statement (EIS) and Response to Submissions (RtS), and submissions received from government authorities, stakeholders and the public. The Department's assessment also considers the legislation and planning instruments relevant to the site and the development.

This report describes the proposed development, surrounding environment, relevant strategic and statutory planning provisions and the issues raised in submissions. The report evaluates the key issues associated with the development and provides recommendations for managing any impacts during construction and operation. The Department's assessment of the New Berrima Brickworks facility has concluded the development is in the public interest and should be approved, subject to conditions.

1.2 Development Background

The Austral Brick Co Pty Ltd (the Applicant) is seeking development consent for the construction and 24/7 operation of a brickworks facility with a production capacity of 50 million bricks per annum including the installation of a tunnel kiln, dry press brick plant, associated office, bulk earthworks, landscaping, car parking and infrastructure servicing at 416 and 524 Berrima Road, Moss Vale in the Wingecarribee local government area (LGA) (see **Figure 1**).

The development is proposed to replace the existing Bowral Brickworks Plant operated by the Applicant located in Bowral that is planned to be decommissioned upon the completion of construction works for the development. The Bowral Brickworks Plant has been in operation for 96 years with onsite plant and equipment including kilns, now considered to be inefficient and outdated.

The development has a capital investment value of \$80 million and is expected to generate 65 construction jobs, 5 full time equivalent operational jobs and the retention of 35 existing full time equivalent operational jobs from the existing Bowral Brickworks Plant.

The site was previously part of the Chesley Park Pastoral Land homestead until it was purchased in 2013 by the Applicant to provide relocation opportunities for the existing Bowral Brick Plant operations.



Figure 1 | Regional Context Map

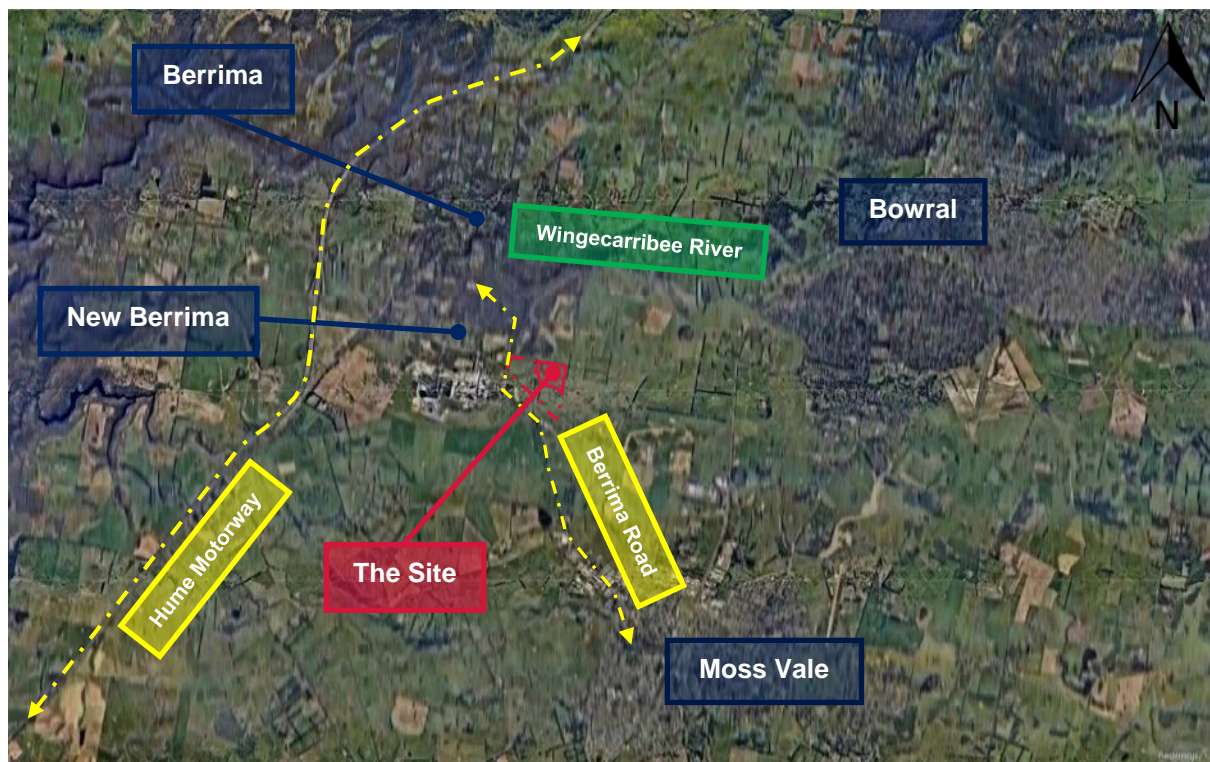


Figure 2 | Local Context Map

1.3 Site Description

The development site comprises of 178,658 square metres (m²) on a 51.68 hectare (ha) parcel of IN1 General Industrial and E3 Environmental Management zoned land located at 416 and 524 Berrima Road, Moss Vale (see **Figure 2**). The site is legally described as Lot 1 DP 785111 and Lot 1 DP 414246. Lot 1 DP 785111 is zoned as IN1 and currently consists of paddocks, derived grasslands, scattered

mature trees, a storage dam, internal access road and minor agricultural structures supporting the existing agricultural land use. Lot 1 DP 414246 is zoned E3 and contains the existing quarry access road. The site is located 6.8 kilometres (km) south-west of Bowral and approximately 50.8 km west of Wollongong.

The site's topography rises to the east of the site and features tributaries of Stony Creek running north to south through the site. Stony Creek connects with the Wingecarribee River to the north of the site. The site also features an above ground water main partially through the north of the site's access handle.

1.4 Surrounding Land Uses

The site is surrounded by a range of industrial, agricultural and rural residential land uses including:

- Boral Cement Works to the west of the site
- New Berrima residential suburb to the north-west
- Inghams poultry facility to the south
- rural residential properties to the east
- Stony Creek adjacent to the west and the Wingecarribee River to the north.

The closest residential receivers to the site are located approximately 800 metres (m) from the south eastern boundary of the site.

The development site is located adjacent to Berrima Road being the main arterial road in the locality. Berrima Road extends northbound to the Old Hume Highway and the Hume Motorway (M31) and extends southbound through Moss Vale connecting to the Illawarra Highway (A48) and Moss Vale Road.

1.5 Other Development Approvals

The Applicant has received development consent/approval for multiple developments surrounding the development site which are described below and shown in **Figure 3**.

Austral Masonry Plant

The Applicant received development consent for Development Application (DA) DA18/0576 from Wingecarribee Shire Council (Council) on 27 September 2019 for earthworks and construction and operation of a masonry plant with a production capacity of 220,000 tonnes per annum (tpa). The development is to be located at the western portion of Lot 1 DP 785111.

New Berrima Clay/Shale Quarry

The Applicant received project approval for the New Berrima Clay/Shale Quarry (08_0212) from the then Minister for Planning under the former Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 9 July 2012. The approved quarry is to be located adjacent the development site to the north. 08_0212 has since been modified on two occasions as follows:

- Modification 1 was approved on 15 December 2015 for the relocation of extraction areas, visual barrier and surface water dams.
- Modification 2 was approved on 6 July 2017 for the construction of a causeway over Stony Creek, realignment of western access road, repositioning of site offices/ amenities and installation of underground power.

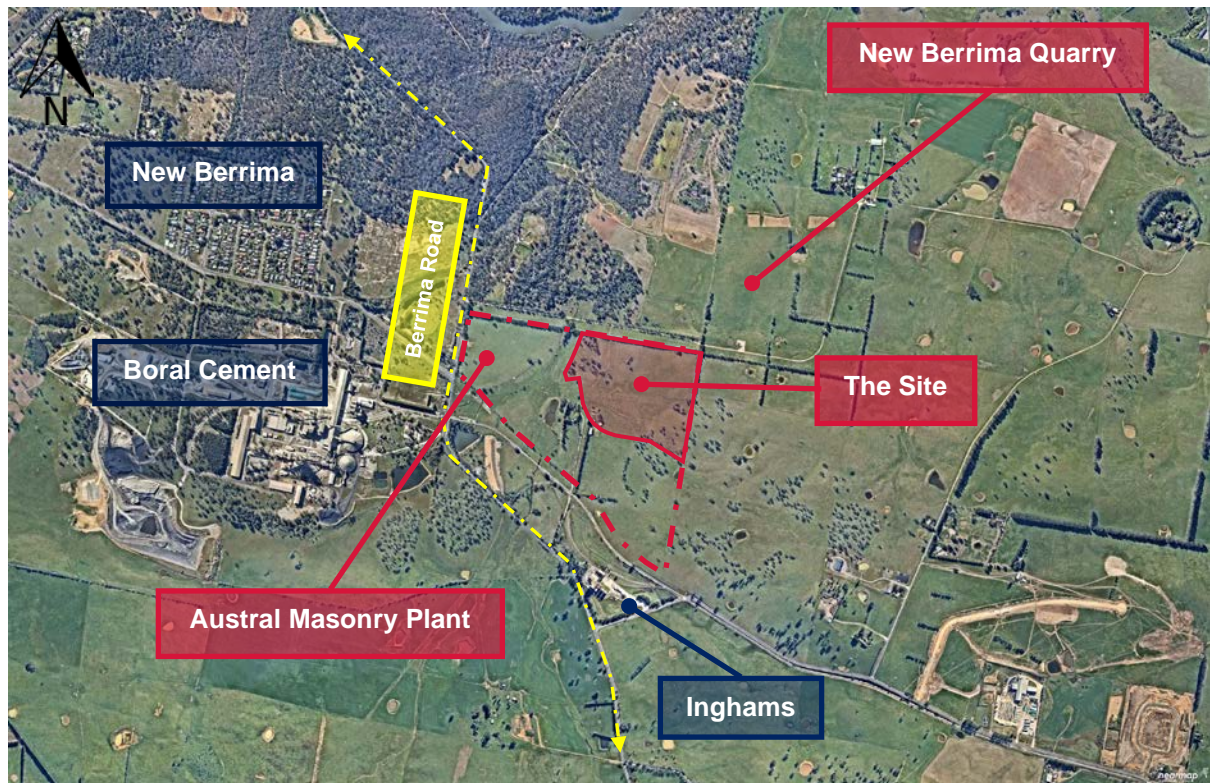


Figure 3 | Surrounding Developments

1.6 Current Operations

The Applicant currently operates the Bowral Brickworks Plant co-located with a quarry at 1 Kiama Street, Bowral. The Bowral Brickworks plant has been operational for 96 years. The associated Bowral quarry is close to exhaustion with approximately three years of shale reserves remaining with an annual extraction limit of 150,000 tonnes permitted.

The Bowral Brickworks Plant currently operates under an Environment Protection Licence (EPL) with a maximum capacity of 200,000 tonnes (t) of ceramic production per annum. However, the Bowral Brickworks Plant currently produces 35 Million standard brick equivalents (SBE) per annum being approximately 155,000 t of ceramics per annum. The Bowral Brickworks Plant currently employs 35 full time equivalent staff to operate the facility.

2 Development

2.1 Description of the Development

The main components of the development are summarised in **Table 1** and shown in **Figure 4**, **Figure 5** and **Figure 6** and described in full in the EIS and RtS report included in **Appendix B**.

Table 1 | Main Components of the Development

Aspect	Description
Development Summary	<ul style="list-style-type: none"> • Construction and 24/7 operation of a brickworks facility
Operation	<ul style="list-style-type: none"> • Production of 50 million SBE per annum
Site area and development footprint	<ul style="list-style-type: none"> • The site is approximately 178,658 m² • Development footprint of 33,545 m²
Building height	<ul style="list-style-type: none"> • 20 m high production building • 35 m high kiln stacks
Earthworks, civil works and services extension	<ul style="list-style-type: none"> • 2.06 ha vegetation clearing • Bulk earthworks to establishing building pad
Construction	<ul style="list-style-type: none"> • Production building • Tunnel kiln • Crusher • Surge bins • Scrubber and stack • Reactor • Raw material storage • Water tanks • Export container area • Office and amenities • Workshop
Traffic	<ul style="list-style-type: none"> • 115 vehicles per day comprising 24 light vehicles and 85 heavy vehicles • Heavy vehicles are predicted as follows: <ul style="list-style-type: none"> ○ 60 product trucks ○ 15 trucks for pickup ○ 10 courier/ delivery trucks
Road and access works	<ul style="list-style-type: none"> • Existing access via Lot 1 DP 414246 • Internal hardstand for vehicle access and movement • Fire service road around the perimeter of the site
Car parking	<ul style="list-style-type: none"> • 59 car parking spaces

Aspect	Description
Landscaping	<ul style="list-style-type: none"> • 84,214 m² of landscaping works • 40 m wide riparian drainage corridor along southern and south-western site boundary.
Construction timeframe	<ul style="list-style-type: none"> • Earthworks – 5 months • Construction – 15 months
Hours of operation	24 hours, 7 days
Capital investment value	\$80 Million
Employment	65 full-time equivalent construction jobs, the retention of 35 full-time equivalent operational jobs and 5 new full-time equivalent operational jobs.

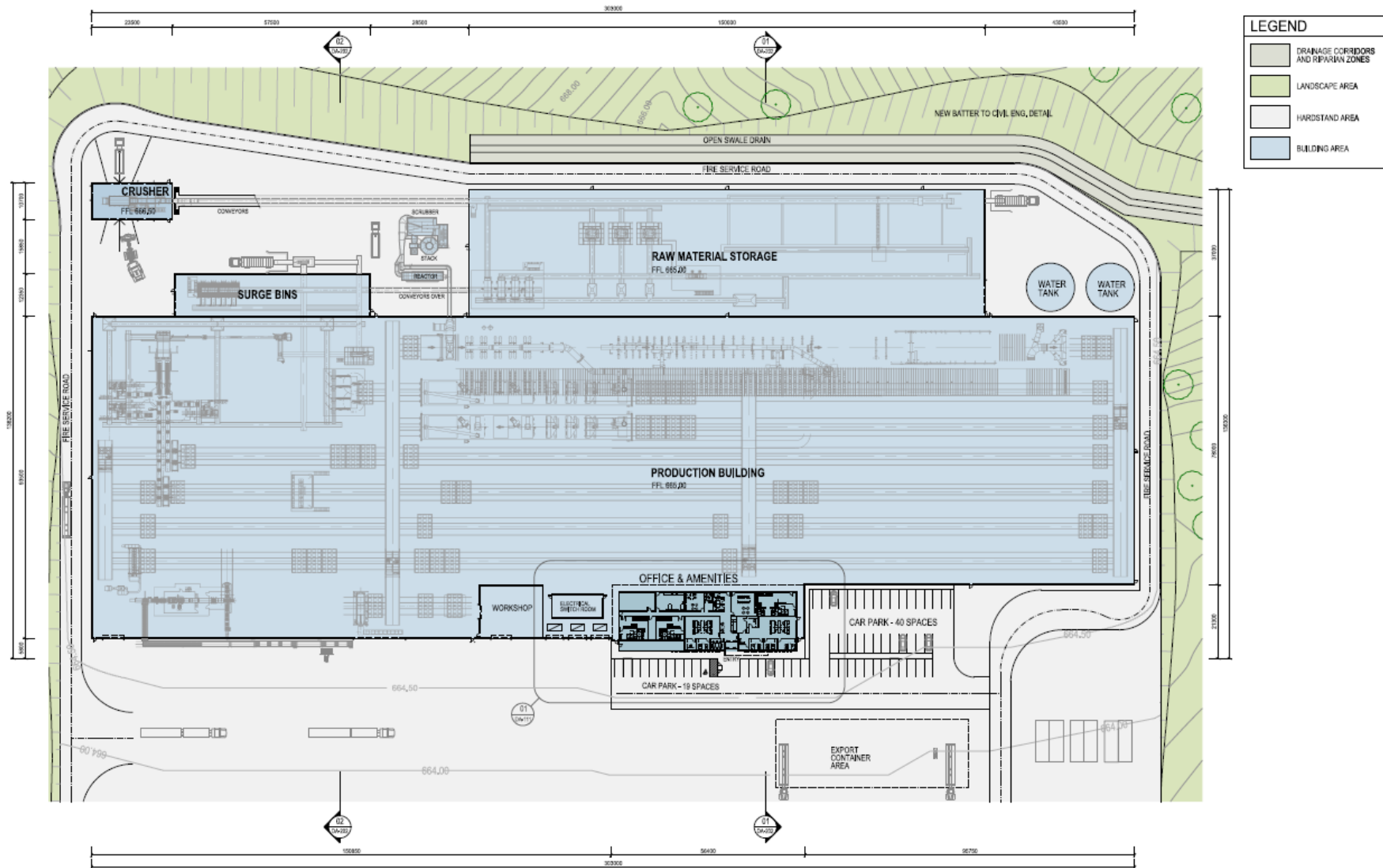


Figure 5 | Plant floor plan

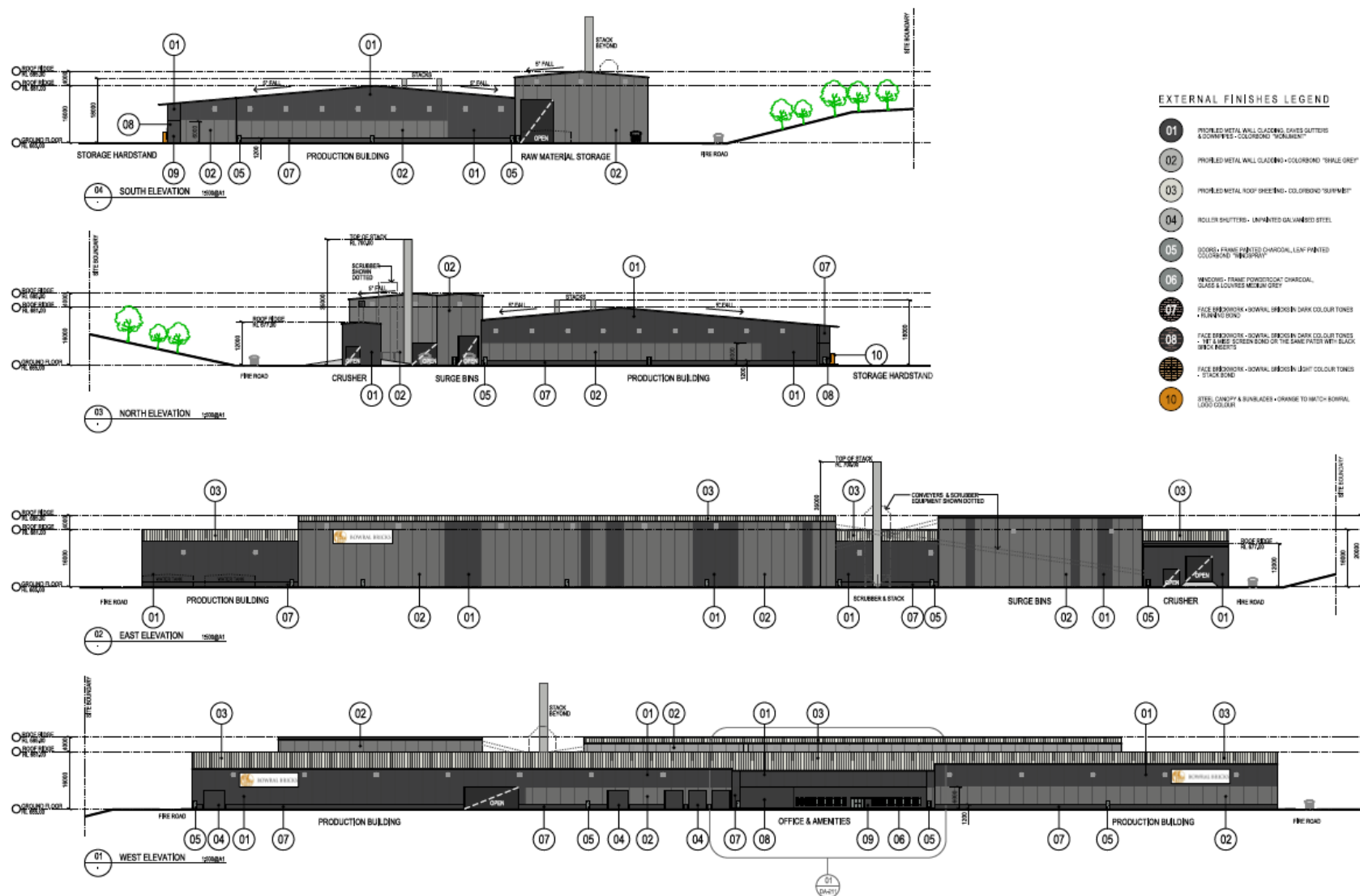


Figure 6 | Plant elevations

2.2 Infrastructure and Staging

The construction works are proposed to be undertaken over the course of four stages as follows:

- Stage One: Demolition and site establishment works – five months
- Stage Two: Kiln and infrastructure installation– 15 months
- Stage Three: Construction of production building – eight months

2.3 Process Description

The operational processes of the facility involve the manufacturing, storage and distribution of brick product. The plant is proposed to produce a combination of standard common and face brick types, pavers and large format pavers. In addition, the plant will be producing a variation of brick shapes including bullnose bricks, cant bricks, squint bricks and sculptured plinth bricks. The manufacturing of bricks at the facility is identified in **Figure 7** and undertaken over the following operational stages:

Raw Material Preparation

The preparation of raw materials includes the extraction of clay and shales from the adjoining quarry via the use of heavy plant. The raw materials are fed into crusher machinery and crushed to a particle size of 10 cm and mixed with various clays. The crushed material is transferred by conveyor to a pan mill for further crushing of the material.

Shaping

Crushed materials are then shaped as either semi-dry pressed bricks or extruded bricks. Semi-dry pressed bricks consist of 10 – 12% water content and are compressed into a steel mould under the material's weight. Extruded bricks consist of 18 – 25% water which are pressed through column shaped tubes and cut into bricks by wire cutter.

Drying

Pressed bricks are subsequently loaded onto kiln cars and dried by small fire and hot exhaust gases from the kiln. Extruded bricks have a low moisture content and therefore do not require drying. They are set on kiln cars and proceed onto firing.

Firing

Bricks are moved on kiln cars through the kiln and fired at temperatures between 1,000 degrees Celsius (°C) and 1,200 °C.

Packing

Processed bricks are stacked vertically between 50 to 60 bricks high and strapped into a 'leaf'. Approximately four leaves are strapped together to form a pack for transportation.

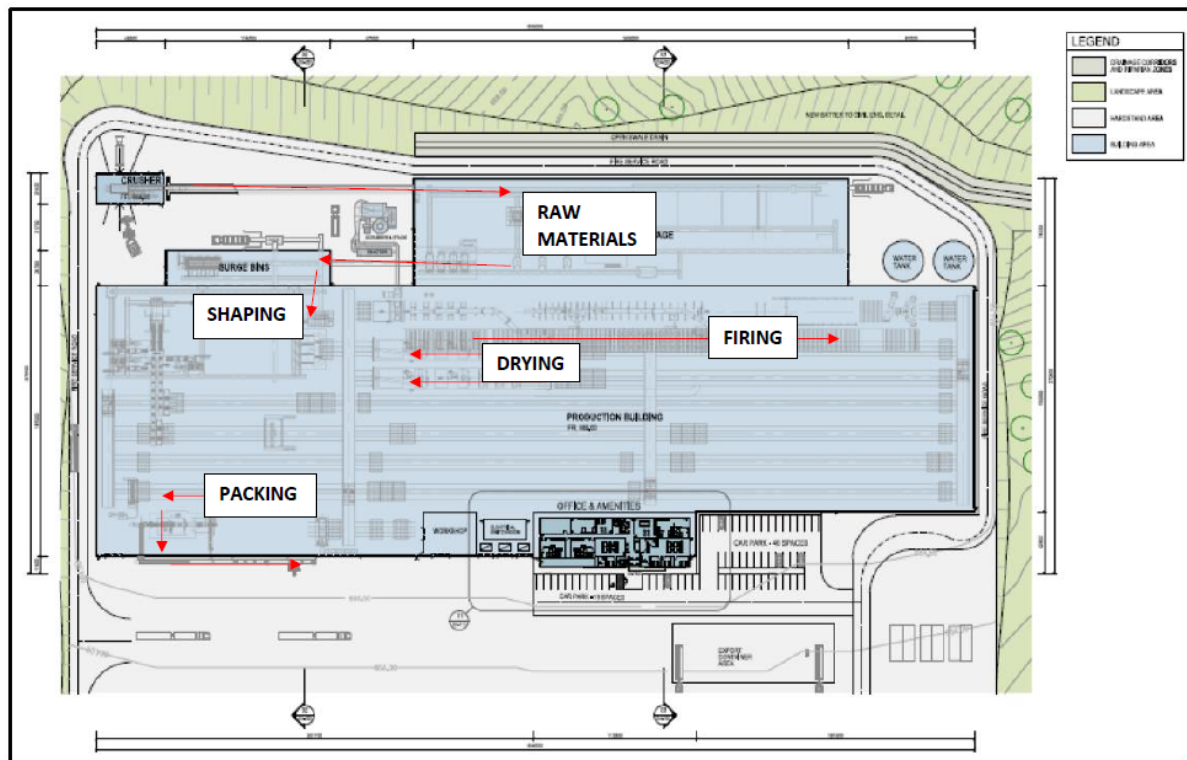


Figure 7 | Operational process

2.4 Applicant's Need and Justification for the Development

The Applicant has stated the project is required to replace the existing Bowral Brickworks Plant owned and operated by the Applicant in Bowral. The existing plant has been operational for 96 years and is due to be decommissioned when the construction of this development is completed as it has become inefficient given the advancement in technology since it commenced operation. In addition, the existing quarry at the Bowral Brickworks Plant is due to be exhausted in 2022.

The development is considered necessary by the Applicant to enable the continued production of brick manufacturing with improved technologies and environmental efficiencies. Furthermore, the development will allow for the retention of 35 existing full-time equivalent operational jobs and a further 5 new full-time equivalent operational jobs.

The Applicant additionally notes the development will result in a reduction of heavy vehicle movements through residential areas, particularly the transportation of clay material from the approved Berrima Quarry site to the Bowral Brickworks Plant.

2.5 Related development

The development is linked to the approved New Berrima Clay Quarry adjacent the development site to the north. The development will source clay and shale materials directly from the quarry for brick manufacturing. Materials from the quarry will be transported directly to the development via truck using existing shared access.

3 Strategic context

3.1 Sydney-Canberra Corridor Regional Strategy 2006-2031

The Sydney-Canberra Corridor Regional Strategy 2006-2031 (SCCRS) is a regional strategy that applies to the local government areas of Wingecarribee, Goulburn Mulwaree, Upper Lachlan, Yass Valley, Palerang and Queanbeyan. The corridor is identified as a key region of state and national significance for transport, communications, goods and services. The SCCRS aims to provide housing, manage environmental impacts on existing urban areas, ensure adequate land supply for economic growth and employment in manufacturing, transport and logistics, and to limit development in areas constrained by primary industry resources, scenic and cultural significance.

The SCCRS has identified the northern subregion of the corridor in the Wingecarribee LGA as an area of opportunity for employment lands as the area is within proximity to major metropolitan markets and regionally based business, road infrastructure accessibility, land affordability and high rates of commuting.

The development is located within the northern subregion of the corridor and is considered to be consistent with the aims of the SCCRS as it provides employment generating development within land identified for employment generating activity. Furthermore, the development will enable staff from the existing Bowral Brickworks Plant to be retained in line with the SCCRS aims to reduce the areas workforce commuting outside of the region.

3.2 South East and Tablelands Regional Plan 2036

The *South East and Tablelands Regional Plan 2036* (SETRP) is a regional plan that aims to guide NSW Government's land use planning priorities over the next 20 years. The vision of the SETRP is for a borderless region in a geographically diverse natural environment.

The SETRP sets out priorities and directions for each LGA within south-eastern NSW and tablelands region. Directions for Wingecarribee include capitalising on economic opportunities arising from the area's proximity to Sydney and to capitalise on land availability in the Moss Vale Enterprise Corridor to attract industry and investment.

The development is considered to be directly in line with the SETRP's directions for the Wingecarribee LGA as it provides industrial investment and capitalises on economic opportunities with Sydney.

4 Statutory Context

4.1 State significance

The proposal is State significant development pursuant to section 4.36 of *Environmental Planning and Assessment Act 1979* (EP&A Act) because it has a capital investment value (CIV) of more than \$30 million for development of the purposes of brickworks which meets the criteria in Clause 9 of Schedule 1 in State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP).

4.2 Permissibility

The IN1 General Industrial and E3 Environmental Management land use zones apply to the site under the Wingecarribee Local Environment Plan 2010 (WLEP). Development for the purposes of General Industry is permitted with consent in the IN1 zone and development for the purposes of roads are permitted with consent in the E3 zone. Therefore, the Minister or a delegate may determine the carrying out of the development.

4.3 Consent Authority

The Minister is the consent authority for the development under section 4.5 of the EP&A Act. On 26 April 2021, the Minister delegated the functions to determine SSD applications to the Director, Industry Assessments where:

- the relevant local council has not made an objection;
- there are less than 15 unique public submissions in the nature of objections; and
- a political disclosure statement has not been made by the Applicant.

Of the 14 submissions received, four objected to the proposed development. Council did not provide a submission on the application. No reportable political donations were made by the Applicant in the last two years and no reportable political donations were made by any persons who lodged a submission.

Accordingly, the application can be determined by the Director, Industry Assessments under delegation.

4.4 Other approvals

Section 4.42 of the EP&A Act requires further approvals to be obtained, considered or determined in a manner that is consistent with any Part 4 approval for SSD projects under the EP&A Act. In the case of the development, an EPL will need to be applied for and issued by the EPA under the *Protection of the Environment Operations Act 1997*.

4.5 Mandatory Matters for Consideration

Section 4.15 of the EP&A Act sets out matters to be considered by a consent authority when determining a development application. The Department's consideration of these matters is set out in **Section 5** and **Appendix G**. In summary, the Department is satisfied the proposed development is consistent with the requirements of section 4.15 of the EP&A Act.

Under section 4.15 of the EP&A Act, the consent authority, when determining a development application, must take into consideration the provisions of any environmental planning instrument (EPI) and draft EPI (that has been subject to public consultation and notified under the EP&A Act) that apply to the proposed development.

The Department has considered the development against the relevant provisions of several key EPIs including:

- State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)

- State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)
- State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (Drinking Catchment SEPP)
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33)
- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)
- State Environmental Planning Policy No. 64 – Advertising Structures and Signage (SEPP 65)
- Wingecarribee Local Environmental Plan 2010 (WLEP).

Development Control Plans (DCPs) do not apply to SSD under Clause 11 of the SRD SEPP. However, the Department has considered the relevant provisions of the Moss Vale Enterprise Corridor DCP 2008 in its assessment of the development in **Section 5** of this report.

Detailed consideration of the provisions of all EPIs that apply to the development is provided in **Appendix D**. The Department is satisfied the proposed development generally complies with the relevant provisions of these EPIs.

4.6 Public Exhibition and Notification

In accordance with section 2.22 and Schedule 1 to the EP&A Act, the development application and any accompanying information of an SSD application are required to be publicly exhibited for at least 28 days. The application was on public exhibition from 31 July 2020 until 28 August 2020. Details of the exhibition process and notifications are provided in **Section 5.1**.

4.7 Objects of the EP&A Act

In determining the application, the consent authority is to consider whether the development is consistent with the relevant objects of the EP&A Act. These objects are detailed in section 1.3 of the EP&A Act. The objects of relevance to the merit assessment of this application include:

- to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,*
- to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*
- to promote the orderly and economic use and development of land,*
- to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*
- to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),*
- to promote good design and amenity of the built environment,*
- to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,*
- to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,*
- to provide increased opportunity for community participation in environmental planning and assessment.*

The Department has fully considered the objects of the EP&A Act, including the encouragement of Ecologically Sustainable Development (ESD), in its assessment of the application (see **Table 2**).

Table 2 | Considerations Against the Objects of the EP&A Act

Object	Consideration
<i>(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources</i>	The development would replace existing outdated brickworks plant within the region and retain local employment.
<i>(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment</i>	The new technology included in the development will reduce the amount of natural gas consumption and subsequent pollution emissions to operate the facility. The Department considers this is consistent with the principles of ESD.
<i>(c) to promote the orderly and economic use and development of land</i>	The development is a permissible use which would promote the orderly and economic development of land.
<i>(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats</i>	The Department's assessment in Section 6 of this report demonstrates that, with the implementation of recommended conditions of consent, the impacts of the development can be mitigated and/ or managed to ensure an acceptable level of environmental performance.
<i>(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)</i>	The Department's assessment in Section 6.4 of this report demonstrate that, with the implementation of recommended conditions of consent, the development can be managed to ensure minimal impacts to heritage and cultural values.
<i>(g) to promote good design and amenity of the built environment</i>	The Department's assessment in Section 6 of this report demonstrates, with the implementation of recommended conditions of consent and the Applicant's committed mitigation measures, the visual impacts of the development would be of an acceptable level and promote good industrial design and amenity.
<i>(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants</i>	The brick works facility is to be constructed in accordance with the relevant occupational work health and safety standards and best construction practices.
<i>(i) to promote the sharing of the responsibility for environmental planning and assessment between the</i>	The Department has assessed the development in consultation other Government authorities. This is consistent with the object of sharing the responsibility for environmental

Object	Consideration
<i>different levels of government in the State</i>	planning between the different levels of government in the State.
(j) <i>to provide increased opportunity for community participation in environmental planning and assessment</i>	The application was exhibited in accordance with Schedule 1 Clause 9 of the EP&A Act to provide public involvement and participation in the environmental planning and assessment of this application.

4.8 Ecologically Sustainable Development

The EP&A Act adopts the definition of ESD found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- (a) *the precautionary principle*
- (b) *inter-generational equity*
- (c) *conservation of biological diversity and ecological integrity*
- (d) *improved valuation, pricing and incentive mechanisms.*

The potential environmental impacts of the development have been assessed and, where potential impacts have been identified, mitigation measures and environmental safeguards have been recommended.

As demonstrated by the Department's assessment in **Section 6** of this report, the development is not anticipated to have any adverse impacts on native flora or fauna, including threatened species, populations and ecological communities, and their habitats. The development requires removal of 2.06 ha of vegetation which would be offset by the purchase and retiring of ecosystem credits in accordance with the NSW Biodiversity Offsets Policy for Major Projects. As such, the Department considers that the development would not adversely impact on the environment and is consistent with the objectives of the EP&A Act and the principles of ESD.

4.9 Biodiversity Development Assessment Report

Under section 7.9(2) of the *Biodiversity Conservation Act 2016* (the BC Act), SSD applications are to be accompanied by a Biodiversity Development Assessment Report (BDAR) unless the Planning Agency Head and the Environment Agency Head determine that the development is not likely to have any significant impact on biodiversity values. The Applicant has submitted a BDAR as part of the SSD application.

The Department's consideration of the BDAR, including the potential impact of the development upon biodiversity values at the site, is provided in **Section 6** of this report.

4.10 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Under the EPBC Act, assessment and approval is required from the Commonwealth Government if a development is likely to impact on a matter of national environmental significance (MNES), as it is considered to be a 'controlled action'. The EIS for the development included a preliminary assessment of the MNES in relation to the development and concluded a species under the EPBC Act list occurs within the subject site. As such, the Applicant has formally referred the Application to the Commonwealth to investigate any further requirements under the EPBC Act.

5 Engagement

5.1 Consultation

The Applicant, as required by the Planning Secretary's Environmental Assessment Requirements (SEARs), undertook consultation with relevant local and State authorities as well as the community and affected landowners. The Department undertook further consultation with these stakeholders during the exhibition of the DA and EIS and throughout the assessment of the application. These consultation activities are described in detail in the following sections.

Consultation by the Applicant

The Applicant undertook a range of consultation activities throughout preparation of the EIS including:

- One-on-one conversations with local stakeholders and residents
- Community drop-in sessions held during the morning and evening of 5 March 2020
- Survey distributed at the end of community drop-in sessions
- Distribution of newsletter flyer to neighbouring businesses, residents of New Berrima and local community leaders

Consultation by the Department

The Department undertook a range of consultation activities throughout preparation of the Planning Secretary's environmental assessment requirements (SEARs) including consultation with relevant public authorities and a planning focus meeting (PFM). The PFM was held on 7 November 2019 at the existing Bowral Brickworks Plant and included a tour of the Bowral Brickworks Plant and an inspection of the development site.

In addition to the Department, the NSW Environment Protection Authority (EPA), Environment, Energy and Science Group (EES), Council, Water NSW, the Applicant and the Applicant's consultant, Willow Tree Planning Pty Ltd were in attendance at the PFM.

Key issues discussed during the PFM included air quality and noise impacts; visual impacts on the public realm; relationship between the development and approved quarry; and vegetation clearing and bulk earthworks.

After accepting the DA and EIS, the Department:

- made them publicly available from **Friday 31 July 2020** until **Friday 28 August 2020** on the Department's website
- notified landowners in the vicinity of the site about the exhibition period by letter
- notified and invited comment from relevant State government authorities and Council by letter
- advertised the exhibition in the Bowral Southern Highlands News.

5.2 Summary of submissions

During the exhibition period, the Department received a total of 14 submissions on the proposal and advice from eight NSW Government authorities. Of the submissions received, three were from special interest groups and 11 were from the members of the community. Of the 22 submissions and agency advice received, four objected to the development and 18 provided comment. All of the community members who made a submission live within 10 km from the development site. A summary of the

submissions is provided in below, and a link to the full copy of the submissions is provided in **Appendix A**. The Department did not receive a submission from Council on the development during the exhibition period.

Public Authorities

EPA did not object to the development, however advised the information provided in the EIS was insufficient in determining the environmental impact of the development and the effectiveness of the mitigation and management measures proposed. The EPA provided comments on the EIS requesting clarification on several issues including the identification of all scheduled activities to be captured under an EPL, location and operation of crusher related noise sources, details on processes of water distribution for kiln cooling and plant washing.

In addition, the EPA requested the Air Quality Impact Assessment (AQIA) provided with the EIS be revised to adequately assess hydrogen fluoride (HF) impacts on sensitive land, an assessment of hydrogen chloride (HCl), provide further mitigation measures to minimise incremental pollutant impacts identified, refine the assessment of nitrogen dioxide, adequately assess fugitive dust and solid particle emissions.

The EPA has also requested the Noise Impact Assessment (NIA) be revised to clarify seasonal variations in background noise levels and to confirm the noise sources from proposed manufacturing processes are accurately assessed.

Transport for NSW (TfNSW) did not object to the development, however, advised the application does not provide sufficient information to assess the impacts of the development. TfNSW requested more information regarding the material exportations and traffic generation between the adjoining New Berrima Quarry. In addition, TfNSW requested the Traffic Impact Assessment (TIA) be amended to identify heavy vehicle types to be used during construction.

Biodiversity and Conservation Division (BCD) did not object to the development, however provided comments on biodiversity. BCD requested the submitted BDAR be revised to further address indirect biodiversity impacts on Stony Creek, provide further justification or survey data on fauna species excluded in the assessment, clarification on the extent of vegetation clearing and an assessment of Matter of National Environmental Significance (MNES).

Heritage NSW advised it has no comments on the development, noting the site is not listed on the State Heritage Register (SHR) and does not contain any known historical archaeological deposits.

Water NSW did not object to the development and advised it is considered the development can achieve a neutral or beneficial effect (NorBE) on water quality subject to erosion and sediment control measures being implemented during construction and stormwater quality treatment measures being implemented and maintained throughout the operational life of the development. Water NSW additionally recommended the requirement of an Operational Environmental Management Plan (OEMP) be conditioned which provided details on stormwater management, treatment measures and stormwater monitoring programs.

NSW Rural Fire Service (RFS) raised no objections to the development subject to recommended conditions of approval. RFS provided recommended conditions regarding asset protection zones (APZ), property access, emergency management planning and water and utilities.

DPIE Water raised no objections to the development but requested more detail on the predicted water demand for construction including the proposed water sources and any water licencing requirements.

Special Interest Groups/Private Businesses

Berrima Residents Association Inc did not object to the development but raised concerns with the vegetation planting required to offset the annual greenhouses gasses (GHG) produced by the development and highlighted the requirements of screening to mitigate noise and dust impacts. The submission also noted the development should be required to convert its primary energy source to renewable energies within 5 years of operations.

WinZero Inc objected to the development based on concerns for the use of fossil fuels for brick manufacturing operations and the lack of provisions for the production and use of renewable energy. The objection also raised concern with the cumulative dust impacts of the development and surrounding industrial developments on the locality. Furthermore, the objection highlighted the development site has ample capacity to facilitate a solar array for the plant's operations. In addition, the objection stipulated the need for revegetation of the Stony Creek riverbank to offset some of the carbon emissions generated by the development.

Boral Limited objected to the development subject to the issues identified in its submission being further investigated and actioned by the Applicant. The objection noted the traffic assessment undertaken by the Applicant had not taken into consideration the maximum traffic generation of the nearby Boral Cement Works plant. Furthermore, the objection stipulated flooding assessment had not accurately assessed impacts to road works and the existing Boral Rail line and identified discrepancies in the visual impact assessment undertaken for the development. In addition, the objection refuted that the Applicant had consulted with Boral Limited during the preparation of the EIS.

Public Submissions

Of the 11 public submissions received on the development, two objected and nine provided comment. Key issues raised within the submissions from the general public that objected to the development included no provision of renewable energies proposed, GHG emissions, cumulative dust, noise and traffic impacts on local residences and biodiversity impacts. Issues raised in the balance of submissions reiterated concerns regarding GHG emissions, a lack of renewable energies sourced, cumulative dust impacts and biodiversity impacts on Stony Creek and the Wingecarribee River. The proportion of submissions that raised key issues is provided within **Table 3**.

Table 3 | Key Issues Raised in Public Submissions

Issue	Number of Submissions
Air Quality	8
Noise	7
Renewable Energies	7
Biodiversity	6
Revegetation	6

GHG Emissions	5
Construction Materials	2
Traffic	1
Water Quality	1

5.3 Response to submissions

On 29 October 2020, the Applicant provided a Response to Submissions (RtS) on the issues raised during the exhibition of the development (see **Appendix B**). The RtS included an amended AQIA, Waste Management Plan (WMP), SWEPT Path Analysis, amended Biodiversity Development Assessment Report (BDAR) and an amended Flood Impact Assessment (FIA).

The RtS was made publicly available on the Department's website and was provided to key government agencies to consider whether it adequately addressed the issues raised during the exhibition period. A summary of the government authority responses is provided below:

- EPA advised the amended AQIA had not adequately addressed the EPA's original comments. Particularly, the EPA mentioned the discharge concentrations of the development were not representative of best practice for new industrial facilities. Furthermore, background level noise sources were not considered to have been adequately addressed
- TfNSW advised the development was not considered to impact upon the State road network and had no further comments
- EES advised the RtS had addressed issues relating to flood impact and had no further comments on the issue. However, EES noted the BDAR did not provide BAM and credit calculations which are required to be provided. Furthermore, EES noted the BDAR did not address potential indirect impacts to the biodiversity values of Stony Creek and downstream areas.

The Applicant provided a further response to the outstanding issues raised by EPA and EES on 10 March 2021 including a revised BDAR and an addendum to the AQIA which provided re-modelling of air emissions based on reduced discharge concentrations of the development. EPA advised the re-modelling represents a significant reduction in emissions concentrations and that the proposed emissions performance is consistent with best industry practice. The EPA provided recommended conditions for emissions monitoring and verification reporting. Furthermore, the EPA provided recommended conditions for noise monitoring and noise verification reporting. EES reviewed the revised BDAR and advised all issues had been satisfied.

The Department additionally forwarded Council the RtS for its consideration however no response from Council was received on the RtS documentation.

6 Assessment

The Department has considered the EIS, the issues raised in the submissions, the Applicant's RtS and supplementary information in its assessment of the development. The Department considers the key assessment issues are:

- Air Quality
- Biodiversity
- Noise.

A number of other issues have also been considered. These issues are considered to be minor and are addressed in **Table 6** under **Section 6.4**.

6.1 Air Quality

The development is intended to improve the environmental efficiency of brick manufacturing operations compared to the existing Bowral Brickworks facility by reducing concentrations of pollutants such as Hydrogen Fluoride (HF), a key pollutant in the manufacturing of bricks. An assessment of construction air quality impacts has been undertaken in **Section 6.4**. The development may have an impact on local air quality and have the potential to affect human health and the environment, including on nearby water resources, such as the adjacent Stony Creek, if not appropriately mitigated.

The EIS included an Air Quality Impact Assessment (AQIA) prepared by Airlabs Environmental Pty Ltd to inform the likely air quality impacts of the development. The AQIA has been undertaken in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*, EPA, January 2017 (Approved Methods).

The assessment has considered sensitive receivers (R1 to R91) within a three km radius of the site in its assessment of air quality impacts (see **Figure 8**). The closest residential receivers are R56 located approximately 1 km west of the site and R58, R59 and R60, which are located approximately 800 m to the south-east of the site.

The AQIA identified the primary source of air quality emissions from the site during operation would be from the kiln stack. As it is proposed to use 100% natural gas as a fuel source, key pollutants would include HF, Sulfur Oxides (SO₂), oxides of Nitrogen (NO_x) and Nitrogen Dioxide (NO₂) and sulfuric acid mist (SO₃). To manage these pollutants, the Applicant is proposing to install a 35 m kiln stack to aid in the dispersion of pollutants as well as a fluorine cascade scrubber system to reduce high fluorine concentrations by 45 – 65 %.

The AQIA provided a cumulative assessment of air pollutant emissions generated from the development, considering the existing environment and adjoining approved developments such as the Berrima Masonry Plant and New Berrima Quarry.

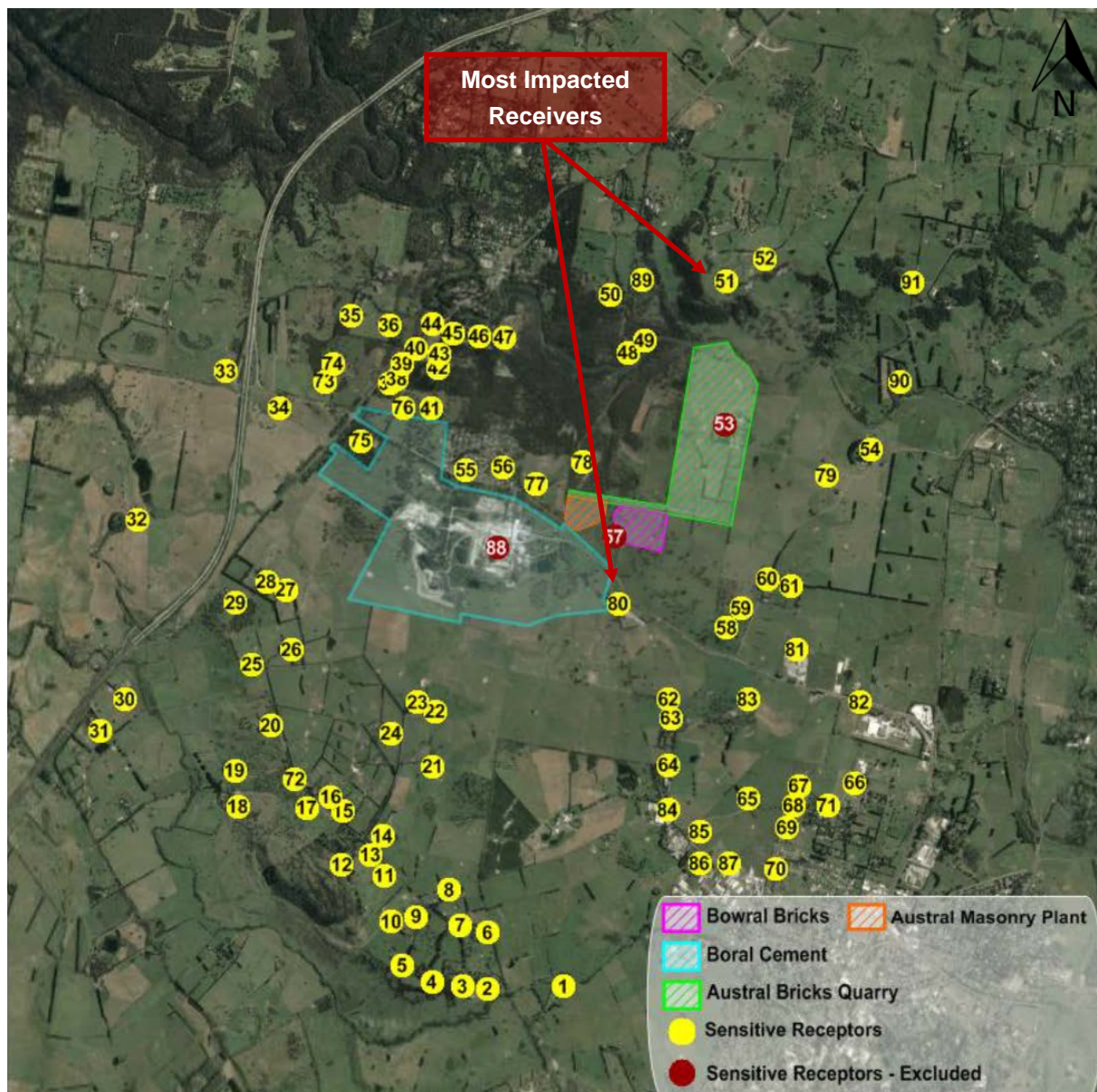


Figure 8 | Air Emissions Receivers

Operational Impacts

The AQIA identified the maximum air pollution concentrations from the operation of the development would be below the corresponding standards for emissions concentrations of ceramic works industries (Group 6) as defined in Schedule 3 of the Protection of the Environment Operations (Clean Air) Regulation 2010 (Clean Air Regulation). Particularly, HF emissions concentrations have been designed with a maximum discharge concentration from the kiln stack of 20 milligrams per cubic metre (mg/m^3), being lower than the standard of $50 \text{ mg}/\text{m}^3$.

In considering the AQIA submitted with the EIS, the EPA noted that although the predicted emissions concentrations were compliant with the Clean Air Regulation, the emissions design was not considered to be in line with best practice for industry. The EPA highlighted its expectations for newly designed and constructed industrial plant to use best practice technology to perform well below the emissions

standards of the Clean Air Regulation. The EPA also sought further information in relation to impacts of HF on sensitive nearby land/ vegetation as well as further analysis of hydrogen chloride (HCl), fugitive dust emissions and cumulative impacts.

To address concerns raised by the EPA, the Applicant provided a revised AQIA. This assessment used revised pollutant emission rates that were determined by improvements to the kiln design by the manufacturer to reflect the application of best reasonable and feasible emission control measures. Following further clarification from the Applicant, the EPA indicated it was satisfied these improvements were in line with industry best practice.

As a result of these proposed improvements, the Applicant's assessment indicated it could achieve reductions in discharge concentrations of 70% for SO₂, 65% for SO₃ and 44% for NO₂ over those originally predicted. These emissions would ensure predicted incremental impacts of air concentrations are below the relevant assessment criteria for each pollutant type. For example, concentrations of HF over a 24-hour period were predicted to be 1.5 mg/m³, achieving 52% of the assessment criteria (2.9 mg/m³) at the worst impacted receiver (No. 80).

Notwithstanding the above, the model predicted there would be a minor exceedance of the EPA's sensitive land use impact assessment criteria for HF on nearby land zoned E3 Environmental Management. However, the Applicant considered it unlikely sensitive vegetation would be grown in this area given it is located adjacent to industrial land and proposed no further mitigation.

The EPA noted the Applicant's commitment to installing a cascade scrubber to minimise HF emissions, suggesting it should be capable of performing better than the modelled 20 mg/m³. As such, the EPA considers the model to be conservative and likely to have overpredicted impacts. Nevertheless, the EPA highlighted that best practice control and management of HF emissions are required to ensure impacts on nearby potential future land uses are minimised.

In relation to cumulative impacts, the Applicant's assessment predicted there would be a minor exceedance of the 1-hour average cumulative NO₂ impact assessment criterion of 246 µg/m³ by 6 µg/m³ at residential receptor 20. In its consideration of the revised AQIA, the EPA identified the primary source of NO_x emissions in the area was from the nearby Boral Cement Facility. It acknowledged that while exceedances were predicted, the assumptions made in the Applicant's model were conservative (for example, it is unlikely the facility will continuously emit NO_x emissions at a maximum of 250 µg/m³ throughout the year) and therefore likely to overpredict the results.

The Department notes that of the eight public submissions received, four objections raised concern for the cumulative impacts of the development and surrounding industrial development on air quality amenity within the locality, particularly impacts on the New Berrima residential area north-west of the site. Submissions noted ongoing concern from the local community for the existing air quality of the area and the potential additional impacts of the development.

As described above, the EPA has considered the Applicant's assessment of air quality and noted that while there are some minor exceedances predicted, these are likely a result of the conservative assumptions made with the model. The EPA has confirmed the Applicant's approach to air quality management and mitigation measures is in line with best industry practice.

To ensure the development can achieve the concentrations predicted in its assessment, the EPA has recommended strict emission limits be imposed which are significantly lower than the concentrations

set out in the Clean Air Regulation. The EPA has also recommended a condition for post commissioning emissions monitoring and verification subsequent to the commencement of operation.

The EPA confirmed all other issues previously raised such as fugitive dust emissions have been satisfied, and that particulate matter monitoring will be required to be undertaken by the Applicant as part of emissions monitoring under the EPL.

The Department has reviewed the EIS, RtS including the AQIA, advice provided by the EPA and public submissions. The Department concurs with the EPA's position that the model is conservative and likely to overestimate the predicted concentrations. As such, the Department is satisfied HF impacts on sensitive agricultural land uses on adjoining land will be unlikely and can be managed acceptably through conditions of consent and the EPL. Furthermore, the Department notes although the development's contributions to cumulative particulate levels are minimal, ongoing management and monitoring to mitigate any fugitive dust emissions to ensure the development does not have adverse air quality impacts is necessary. Overall, the Department is satisfied the Applicant has adequately demonstrated that all air emissions generated by the development will be below the relevant assessment criteria of the Clean Air Regulation at all sensitive receivers.

The Department has recommended conditions requiring the Applicant to undertake post commissioning monitoring of the air emissions and air emissions validation reporting to ensure site emissions are compliant with the emissions limits of the EPL. In addition, conditions are recommended requiring the Applicant to prepare and implement an air quality management plan (AQMP) detailing measures to manage and mitigate air quality impacts arising from the operation of the development.

The Department's assessment concludes the development will have acceptable impacts on the existing air amenity of the locality as all air emissions are estimated to be below the relevant assessment criteria and can be appropriately managed through the Applicant's commitments and recommended conditions of consent.

Greenhouse Gas Emissions

The intent of the development is to replace the existing Boral Brickworks facility with a new plant with improved environmental efficiencies including fuel source consumption and greenhouse gas (GHG) emissions. The EIS and AQIA has provided an assessment of the development's contribution of Scope 1 and Scope 2 GHG emissions.

The EIS notes the estimated fuel and electricity consumption of the Bowral Brickworks facility is approximately 376,200 gigajoules (GJ) per annum of natural gas, 4176.3 megawatts (MW) per annum of electricity and 145.9 kilolitres (kL) per annum of diesel fuel.

The AQIA identifies the development will produce approximately 19,730.2 tonnes of carbon dioxide equivalent (CO₂-e) Scope 1 emissions (diesel fuel and natural gas consumption) and 3,508.1 tonnes of CO₂-e Scope 2 emissions (electricity consumption). The development would subsequently generate a total of 23,238.3 tonnes of CO₂-e GHG emissions.

The AQIA compared the predicted GHG emissions of the development with the *State and Territory Greenhouse Gas Inventories 2017 – Australia's National Greenhouse Accounts*. The AQIA stipulated the development would contribute to approximately 0.02% of NSW's GHG emissions and 0.004% of Australia's GHG emissions. The AQIA noted the development would have a minimal contribution comparatively to state and national GHG emissions. However, the AQIA provided mitigation measures

to further minimise the development's GHG contributions including orderly maintenance and management of equipment plant and equipment.

Concern was raised in seven of the public submissions received during the exhibition period for the generation of GHG emissions and that the Applicant had not given any consideration to using sustainable energy sources such as hydrogen to fuel the brickworks plant kiln.

In response to these concerns, the Applicant provided further detail around its consideration of alternative energy sources as well as energy reduction initiatives with a commitment to reducing carbon emissions and energy consumption.

The AQIA noted the Applicant has lodged an application with the Climate Active for the use of carbon neutral bricks with a target to double the volume of sustainable product by 2025. The AQIA also noted the Applicant plans to invest in transitioning brick manufacturing operations to hydrogen fuel. The Applicant notes extensive trials and studies are required to be undertaken first to understand the quality, feasibility and environmental impacts of using hydrogen for brick manufacturing operations.

The Applicant has additionally considered alternative renewable energy options such as microwave technology and bio-energy based heating. The AQIA noted microwave technology has been trialled in the United Kingdom for ceramic production however further testing and studies need to be undertaken to determine the viability of the technology for brick manufacturing.

The Department notes no concerns regarding GHG emissions were raised in the advice provided by the EPA. The Department acknowledges the development will result in an improvement of GHG emissions as the existing and outdated Bowral Bricks facility will terminate operations upon the construction of this subject development. Furthermore, the Department is satisfied the Applicant has provided adequate consideration of alternative sustainable fuel sources and notes the Applicant's commitment to transition from natural gas to a more sustainable fuel source once more research and testing has been done in the brick manufacturing industry.

The Department recommends conditions of consent requiring the Applicant to prepare and implement an AQMP for the operation of the development. The AQMP must include measures and controls utilised by the Applicant to reduce the development's contribution to GHG emissions. In addition, the AQMP will require the Applicant to continually identify and consider all feasible and reasonable sustainable energy sources to be incorporated into the operations of the development to further reduce the development's contributions to GHG emissions.

Overall, the Department's assessment concludes the development to have a minimal contribution to state and national GHG emissions. In addition, the development will result in an improvement of energy and fuel efficiencies in comparison to the existing Bowral operation upon the termination of operations.

6.2 Biodiversity

To accommodate the development footprint, the Applicant proposes to remove 2.06 hectares (ha) of vegetation comprised of two plant community types including 2 ha of Mountain Grey Gum (PCT 944) and 0.6 ha of Broad-leaf Peppermint (PCT 731). The vegetation clearing has the potential to impact on endangered flora and habitats of threatened fauna species. Vegetation to be cleared is located in two main clusters located in the north-west and south-east corners of the site as shown in **Figure 9**.

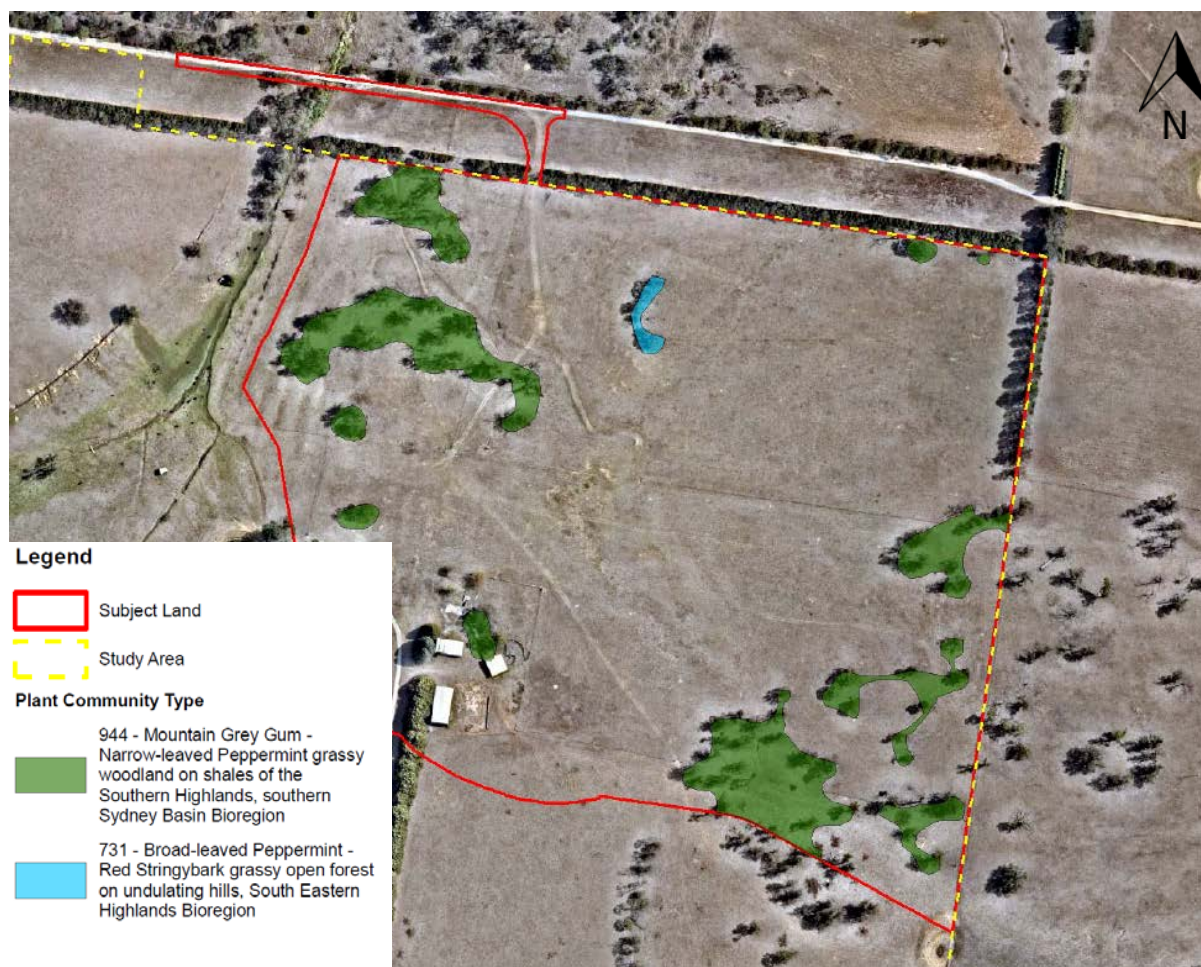


Figure 9 | Vegetation to be cleared

The site is located to the south of the Wingecarribee River and the Stony Creek riparian corridor lies adjacent to the western and south-western site boundary. The riparian corridor may provide habitat linkages onto the site. As such, the development has the potential to impact on habitat connectivity and the inhabitation of listed endangered species under the BC Act.

Applicant's Assessment

The Applicant provided a BDAR in accordance with the Biodiversity Assessment Methods (BAM) 2017 and the BC Act as part of the EIS. In response to issues raised by EES regarding the level of assessment for the Koala and Pygmy Possum, details of vegetation clearing and the assessment for Matters of National Environmental Significance (MNES), the Applicant submitted an amended BDAR with the RtS.

The amended BDAR stipulated the Koala was not retained for BAM assessment as no records associated with scattered tree paddocks were available within 10 km of the study area and eucalyptus feed trees were not identified with the study area during site surveys. The Pygmy Possum was also excluded as there was no identified habitat potential on the site. In addition, the RtS and BDAR stated a referral to the Commonwealth Government in relation to MNES will be made separately by the Applicant. EES raised no further comments on the matter and the Department accepts MNES will be addressed by the Applicant directly with the Commonwealth Government and separate to this DA.

The amended BDAR describes how the development has sought to minimise impacts on habitats where practical and feasible, including:

- locating the development footprint primarily on cleared land and exotic vegetation
- locating the proposed stormwater basin and drainage corridor within exotic vegetation areas to the south of the site to maintain existing hydrological flows across the site
- minimising the extent of PCT 944 vegetation to be removed.

The BDAR noted the site's historic agricultural land use has resulted in the clearing and degradation of vegetation on the site with the exception of scattered clusters of remnant tree canopies. The BDAR provided an assessment of residual impacts on flora and fauna identified in the development area.

Flora Impacts

The BDAR included an assessment of the integrity of the existing vegetation on the site by scoring the integrity of vegetation out of 100 in accordance with the BAM. Surveying established PCT 944 as a potentially Threatened Ecological Community (TEC) in accordance with the BC Act as it comprised of a *Eucalyptus macarthurri* (Camden Woollybutt) canopy being Southern Highlands Shale Woodlands (SHSW).

Surveying carried out by the Applicant found the existing ground coverage of the two PCTs consisted entirely of exotic and introduced flora species within the plotted areas. On this basis, the BDAR noted that natural regeneration or assisted regeneration of the PCTs would be ineffective and extensive physical works would be required to be undertaken on the site to facilitate regeneration of the PCTs. Subsequently, the BDAR's assessment of vegetation integrity concluded the state of vegetation was poor and listed vegetation integrity scores of 4.7 for PCT 944 and 10.4 for PCT 731 out of a total score of 100.

The BDAR provided an assessment of Serious and Irreversible Impact (SAII) for the removal of SHSW. The BDAR stated the building footprint had been located to minimise direct impacts to the TEC and additional sediment and tree protection measures would be implemented during construction to minimise indirect impacts to the TEC. The BDAR further mentioned the TEC is fragmented across this site with poor ground coverage vegetation integrity due to historic clearing and agricultural uses of the site.

The BDAR concluded no ecosystem credits were required to be offset for vegetation clearing of PCT 944 and PCT 731 given the low vegetation integrity scores. However, as surveying identified the PCT 944 canopy to be cleared consisted of 16 TEC individuals, 32 biodiversity species credits are required to offset the development.

In addition to the required offsets, 0.18 ha of the TEC will be retained and further rehabilitated with SHSW species within the riparian corridor along the southern boundary of the site, through the implementation of a Vegetation Management Plan (See **Figure 10**).

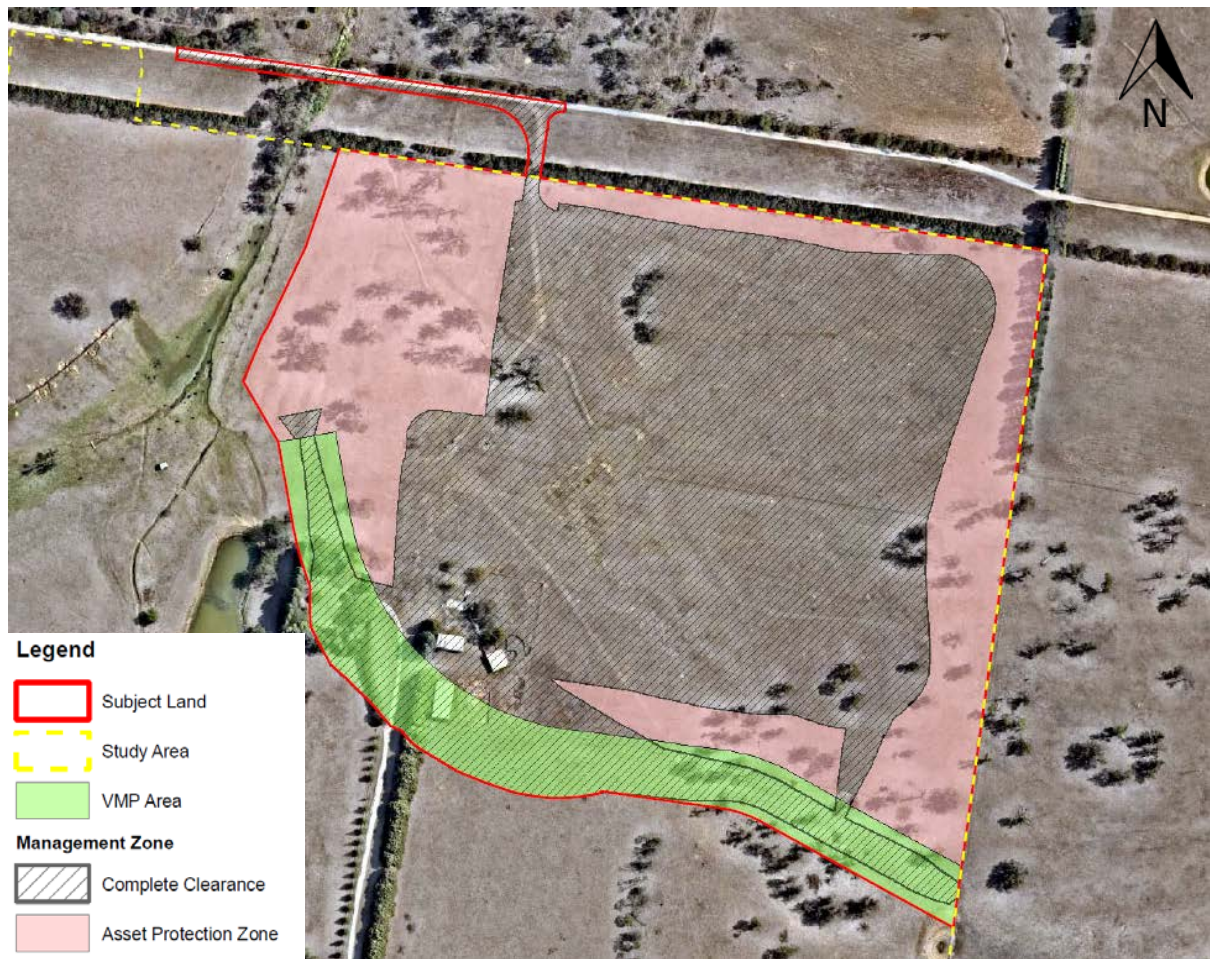


Figure 10 | Vegetation Management Plan area

Fauna Impacts

The BDAR stipulates the clearance of vegetation may impact on the habitat connectivity for local fauna and threatened species. Desktop assessments and field surveying identified 15 fauna species that may inhabit the site.

Field surveying identified 18 hollow trees within PCT 944 clusters on site with hollows up to 15 centimetres (cm) in diameter suitable for nesting. The hollow trees were considered as potential habitats for two threatened bird species being *Callocephalon fimbriatum* (Gang-gang Cockatoo) and *Calyptorhynchus lathami* (Glossy Black Cockatoo) and also suitable for roosting for threatened bat species *Myotis macropus* (Southern Myotis) (see **Figure 11**). Therefore, the BDAR identified the Gang-gang Cockatoo, Glossy Cockatoo and Southern Myotis as candidate species for further assessment.

The BDAR reported that due to the historic agricultural use of the site, the existing integrity of vegetation and the scattered location of remnant trees, the site does not possess habitat linkages. The Applicant proposes mitigation measures to mitigate impacts of the development including:

- salvaging tree hollows to be cleared for reuse
- providing nesting boxes in the event structural integrity of tree hollows cannot be retained
- pre-clearance surveys and habitat feature marking to be undertaken one week prior to the clearance of vegetation.

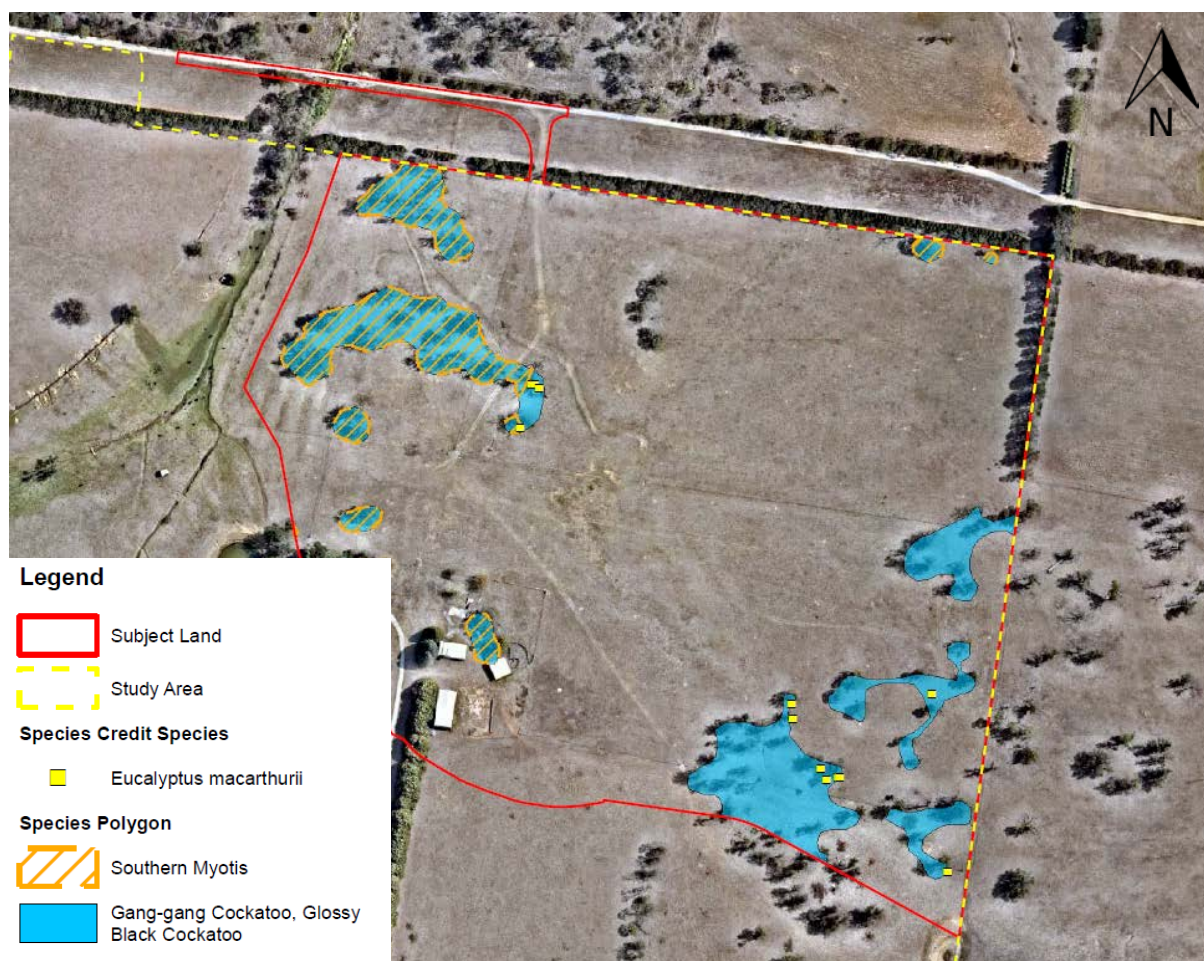


Figure 11 | Potential habitats to be cleared

The BDAR concluded the potential habitat area of the Southern Myotis to be small and therefore did not require species credit offsetting in accordance with the BAM. However, one species credit is required for the Gang-gang Cockatoo and one species credit for the Glossy Black-Cockatoo to account for the removal of an area of tree hollows with habitat potential. Furthermore, due to the highly degraded nature of on-site vegetation communities within the site, no ecosystem credits are required.

Therefore, the BDAR concluded the development would require a total of 34 species credits to be retired consisting of 32 credits for the clearance of TEC and 2 credits for impacts on threatened species habitat.

Submissions

The EIS and BDAR were referred to EES and Council for comment. EES recommended the mitigation measures in the BDAR and the requirement to offset a total of 34 species credits be included in conditions of consent.

Six public submissions received on the application during the exhibition period, raised concern for the need for native vegetation planting and protection of riparian corridors. Concern was also raised for the potential impacts of the development on endangered aquatic species.

Department's Assessment

The Department acknowledges the current integrity of native vegetation on-site is low with no likely habitat linkages available for native fauna due to the previous agricultural land uses and the presence of exotic and introduced plant species. The Department is satisfied the development has incorporated principles to minimise impacts on habitats as the development footprint has been located away from remnant tree clusters on cleared land and existing exotic vegetation. Furthermore, the development is unlikely to impact on aquatic species as the Applicant's BDAR confirmed no potential habitats or occurrences were identified within the study area.

The Department notes the Applicant has proposed to prepare and implement a VMP for the restoration and rehabilitation of a 40 m wide riparian corridor along the southern and south-western boundary of the development connecting to Stony Creek, incorporating SHSW tree planting which is considered to address the concerns raised in public submissions. In addition, the Department notes EES comments had been addressed and EES was satisfied with the measures proposed by the Applicant.

The Department recommends conditions of consent requiring the Applicant to offset a total of 34 species credits in accordance with the BAM and to prepare and implement the proposed VMP for the restoration and rehabilitation of the existing riparian corridor. The Department's assessment concludes the Applicant has provided a robust assessment of the development's impacts on biodiversity and is satisfied the development will have a minor impact on biodiversity values subject to the Applicant's proposed mitigation measures and conditions of consent.

6.3 Noise Impacts

The construction and operation of the development has the potential to generate obtrusive noise and impact on local residents and landowners. The Applicant carried out a Noise Impact Assessment (NIA) to assess the predicted noise impacts of the development during construction and operation on nearby sensitive receivers.

Construction Noise

The NIA included a quantitative assessment of three construction scenarios in accordance with the Interim Construction Noise Guideline (ICNG), including excavation and site establishment works, concreting and foundational works for the manufacturing plant, and structural works and erection of the manufacturing plant. Construction is proposed to be carried out during standard construction hours, being 7 am to 6 pm Monday to Friday, 8 am to 1 pm on Saturdays and at no time on Sundays or public holidays.

Each construction scenario was modelled under standard construction hours. The construction noise sources identified included a 20 tonne excavator, backhoe, concrete mixer truck, concrete pump, crane, welder and hand tools. The construction noise modelling assessed all noise sources being operational during a 15-minute period, representing a worst-case scenario. The Applicant's assessment identified full compliance with the residential construction noise management levels of the ICNG during standard hours at all 20 receivers.

The EPA reviewed the EIS and did not provide any comments regarding construction noise impacts. The Department has reviewed the EIS and RtS and considers the noise impacts associated with the construction of the development is compliant with the ICNG and is substantially below the construction noise management goals at all nearby sensitive receivers. The Department has recommended a condition be imposed requiring the Applicant to prepare and implement a Construction Noise Management Plan (CNMP) to detail measures to manage and mitigate potential noise impacts.

The Department's assessment concludes construction of the development will have a minor impact on the local amenity over a temporary time period within standard construction hours and can be appropriately managed through the Applicant's commitments and recommended conditions of consent.

Operation Noise – Applicant's Assessment

The NIA identified the principal noise sources associated with the operation of the development include the use of plant equipment, excavation, civil and construction works, vehicle and truck movements, loading and unloading of delivery materials and external crushing operations.

The NIA considered the predicted noise impacts on 20 receivers (R1 to R20) (see **Figure 12**) located within a one km radius of the development site. Receivers R1 to R9 have been identified as residential receivers, R10 to R15 and R17 to R20 have been identified as commercial and industrial receivers, and R16 has been identified as an Active Recreation receiver. The closest residential receivers are R1, R2, R3 located approximately one km west of the site and R5, R6 and R7 which are located approximately 800 m to the south-east of the site.

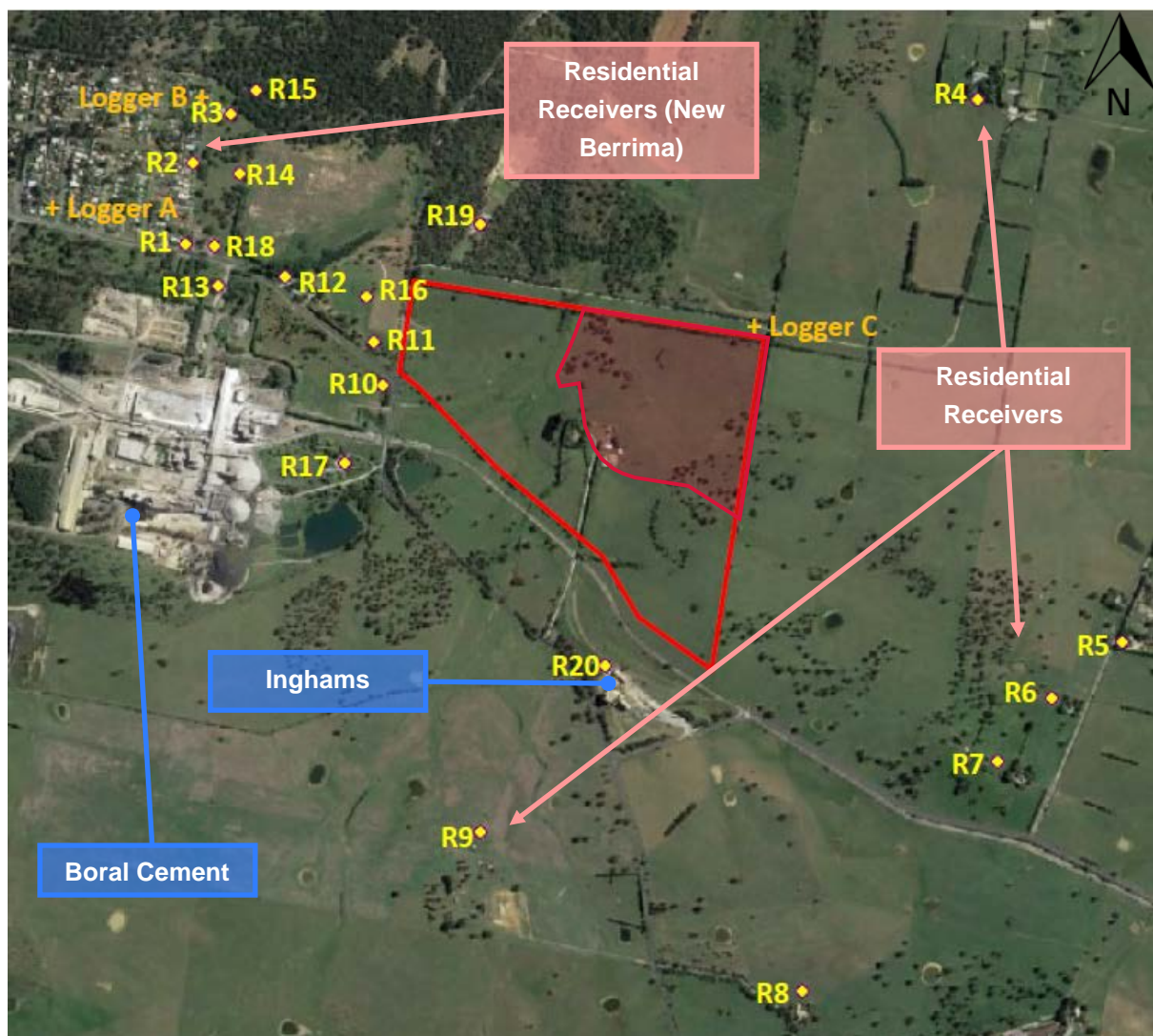


Figure 12 | Location of Sensitive Receivers

The NIA included an assessment of the existing acoustic environment by undertaking background noise level measurements for daytime, evening and night-time periods in accordance with the NSW EPA

Noise Policy for Industry (NPfI) (EPA, 2017). Existing noise sources were identified to consist of traffic, wildlife and operational noise from the Boral Cement Works site, located approximately 750 m to the west of the site.

The NIA assessed inverse weather conditions using the Noise Enhancing Wind Analysis (NEWA) in accordance with NPfI. Due to the low occurrence of adverse wind effects and temperature inversions at the site, the Applicant's assessment only considered neutral weather conditions in the assessment of noise impacts in accordance with the NPfI.

The NIA modelled a worst-case operational scenario which considered the noise generation of proposed activities associated with the development, including plant equipment, brick manufacturing machinery (such as crusher, brick press and extruder), conveyors and kiln. The noise modelling assessed day, evening and night operations, including heavy vehicle movements, plant operations of the approved but not yet constructed adjoining masonry plant and the subject development.

The NIA predicted the development would comply with the project noise levels during all periods at all sensitive receivers as presented in **Figure 13**. The NIA did not predict sleep disturbance at any residential receiver.

The Applicant has proposed a number of mitigation measures to ensure operational noise levels are further reduced at sensitive receivers. Measures include the prohibition of idle vehicles, minimisation of truck exhaust brakes on-site, enforcement of low speed limits on-site and the use of white noise alarms for reversing forklifts.

Receptor	Project Criteria $L_{eq}(15 \text{ minute})$			Project Criteria L_{Amax}	Scenario 1	
	Day	Evening	Night		Predicted $L_{eq}(15 \text{ minute})$	Predicted L_{Amax}
R1	40	40	38	52	35✓	40✓
R2	40	40	38	52	37✓	44✓
R3	40	40	38	52	37✓	44✓
R4	40	40	38	52	38✓	45✓
R5	40	40	38	52	36✓	42✓
R6	40	40	38	52	37✓	43✓
R7	40	40	38	52	37✓	42✓
R8	40	40	38	52	36✓	41✓
R9	40	40	38	52	37✓	43✓
R10	63			NA	47✓	N/A
R11	63			NA	46✓	N/A
R12	63			NA	37✓	N/A
R13	63			NA	35✓	N/A
R14	63			NA	38✓	N/A
R15	63			NA	37✓	N/A
R16	53			NA	39✓	N/A
R17	68			NA	43✓	N/A
R18	63			NA	35✓	N/A
R19	63			NA	48✓	N/A
R20	68			NA	41✓	N/A

Figure 13 | Predicted Operational Noise Levels

Submissions

Seven public submissions expressed concern for the cumulative noise impacts of the development and surrounding industrial operations on the amenity of local residents, particularly the residential suburb of New Berrima to the north-west of the development site.

The EPA reviewed the EIS and NIA and requested the Applicant clarify seasonal noise variations, such as cicada noise, which had been considered in determining the project noise trigger levels. The EPA additionally noted discrepancies between the EIS and the NIA regarding the description of the brickmaking processes. EPA requested the NIA be amended to specify the correct processes involved with the development to accurately identify noise sources and predicted noise levels. The Applicant subsequently provided a response to the EPA in the RtS which provided justification for the background noise levels modelled and clarified the operational noise sources modelled in the assessment.

Following its review of the RtS, the EPA advised it had no further comments on the NIA. However, the EPA noted that although the development complies with the project specific noise criteria, one receiver was in-line with the 38 decibels (dB) night time noise criteria and a further five receivers were below the night time noise criteria by 1 dB. The EPA recommended conditions requiring the Applicant to undertake post-commissioning attended noise monitoring and verification reporting, and to prepare and implement an operational noise management plan (ONMP).

Department's Assessment

The Department has reviewed the NIA, the advice provided by the EPA and the public submissions. The Department is satisfied the Applicant has provided a robust assessment that considers the worst case construction and operational noise scenarios of the development. The NIA identifies the development will comply with the project specific noise criteria at all sensitive receivers with no instances of sleep disturbance predicted for residential receivers. Considering the predicted noise levels are close to the noise criteria at some receivers, the Department concurs with the EPA's recommendations requiring the Applicant to undertake post-commissioning noise monitoring and provide noise validation reporting to the satisfaction of the Planning Secretary.

The Department is satisfied the Applicant has adequately assessed the cumulative noise impacts of the development on the locality and concludes the development will have minor impacts on local amenity subject to the imposition of the recommended conditions of consent and the mitigation measures proposed by the Applicant. The Department additionally notes the Applicant will be required to comply with noise limits under the EPL including undertaking attended noise monitoring to ensure compliance.

6.4 Other issues

The Department's assessment of other issues is provided in **Table 6**.

Table 4 | Assessment of Other Issues

Findings	Recommendations
Traffic and Access	
<ul style="list-style-type: none"> The Applicant has submitted a Traffic Impact Assessment (TIA) prepared by Ason Group Pty Ltd to assess the traffic impacts associated with the development including operational and construction impacts on the local road amenity, vehicle access and parking provisions. The TIA used traffic survey data to identify existing traffic flow data of the local road network being Berrima Road and Taylor Avenue during the peak hour periods of 8am – 9am (AM) and 5pm – 6pm (PM). The TIA identified peak traffic flows of 151 vehicles during the AM and 124 vehicles during the PM peak along Berrima Road and 343 vehicles during the AM and 263 during the PM along Taylor Avenue. Furthermore, the TIA identified that heavy vehicle volumes represent 6% and 2% of traffic during the AM and PM peaks, respectively along Berrima Road and heavy vehicle volumes of 14% and 11% of traffic during the AM and PM peaks, respectively along Taylor Avenue. 	<p>Require the Applicant to:</p> <ul style="list-style-type: none"> Prepare and implement an OTMP to the satisfaction of the Planning Secretary. Prepare and implement a CTMP to the satisfaction of the Planning Secretary. Upgrade Berrima Road/ Taylor Avenue intersection in accordance with the TIA.
Operational Impacts	
<ul style="list-style-type: none"> The operation of the development is proposed to generate 115 trucks accessing the site per day, representing a total of 230 truck movements to the site per day. In addition, there is anticipated to be a maximum of 36 light vehicles accessing the site. The TIA outlined the development would generate 14 heavy vehicle movements (7 inbound and 7 outbound) during both the AM and PM peak periods. In addition, the development would generate 12 inbound light vehicle movements during the AM and 12 outbound light vehicle movements during the PM. The TIA provided a SIDRA analysis of the cumulative traffic impacts of the development, accounting for traffic generated by the Masonry Plant and the Berrima Quarry. The SIDRA analysis assessed the development's impacts on delay of service (DOS) or intersection delay and level of service (LoS) of key intersections within the local road network during peak periods. The TIA identified the existing baseline LoS for intersections within the local road network to predominately be A, with the exception of the Old Hume Highway/Taylor Avenue intersection operating a B LoS. In particular, the primary intersection of Berrima Road/Taylor Avenue operates at an A LoS. The SIDRA analysis stipulated the development would not impact on the LoS of any of the key intersections within the local road network during both the AM and PM peaks. However, the TIA did note there 	

would be a minor increase to DOS of 1 second at two intersections during the AM peak.

- Although the development would not impact on the LoS of key intersections, the TIA identified the Berrima Road/Taylor Avenue intersection is required to be upgraded to facilitate the development's use of B-Double vehicles as the appropriate intersection infrastructure is not present to enable safe movement of heavy vehicles during peak periods.
- The intersection would require Auxiliary left-turn (AUL) treatment and a Channelised right-turn (CHR) treatment due to approximately 131 vehicle left turn movements turning during the PM peak period and moderate right turn crossings during the PM peak period from Berrima Road onto Taylor Avenue. The turning treatment will enable B-Double vehicles to turn safely onto Taylor Avenue without impeding traffic flows and retaining the predicted LoS during peak periods.
- TfNSW reviewed the EIS and TIA and recommended the Applicant consider utilising alternative modes of transport such as rail. TfNSW additionally requested clarity on the extent of traffic generated by deliveries from the New Berrima Quarry to the site.
- The Applicant provided an RtS which included a response to TfNSW comments. The Applicant clarified New Berrima Quarry deliveries and advised the use of alternative transport modes such as rail was not viable for the operation of the development as product delivery is often requested for Metro Sydney with only 1 to 2 days' notice. The loading/unloading of train freight and logistics associated with rail transport would not allow for the operation to supply construction sites within deadlines.
- TfNSW reviewed the RtS and advised the Department the development is not expected to negatively impact on the local road network and particularly state classified roads.
- The Department notes Council did not provide a submission on the EIS or provide any comments on the RtS. However, one public submission received raised concern for the impact of the development on the local road network.
- The Department considers the cumulative assessment undertaken by the Applicant in the TIA as sufficient in demonstrating the development will not have an adverse impact on the efficiency of the local road network. The Department additionally considers the proposed intersection upgrade works are acceptable in facilitating the safe turning of B Double vehicles from Berrima Road on to Taylor Avenue while maintaining the existing intersection LoS. A condition has been recommended requiring these intersection works.
- The Department has also recommended the preparation and implementation of an Operational Traffic Management Plan (OTMP) to outline the management and mitigation of traffic impacts to ensure the development does not have any impacts further to the predictions made in the TIA. In addition, the OTMP should include a Driver Code of Conduct which outlines the obligations and standards for drivers

associated with the operation of the development to ensure accountability for road safety.

- The Department's assessment concludes the operation of the development will have a minimal impact on the local road network as there are no predicted changes to the existing performance grades of key intersections subject to the completion of intersection upgrade works and conditions of consent.

Construction Impacts

- The Applicant provided a draft Construction Traffic Management Plan (CTMP) with the TIA to demonstrate the measures proposed to minimise impacts of construction on the local road network.
- The TIA provides a conservative prediction of traffic impacts associated with the construction of the development. The TIA assumes a maximum of 60 contractors would be on-site during the most intensive phase of the construction program equating to a maximum of 60 vehicle movements during the AM and PM peak periods.
- The TIA considers the traffic generated from construction to be a moderate increase on traffic on the local road network. The TIA proposes to prioritise intensive vehicle deliveries and movements outside of peak hour periods.
- The Department is satisfied the traffic generated from the construction of the development is acceptable subject to the implementation of management and mitigation measures recommended in the TIA.
- The Department recommends a condition of consent requiring the Applicant to prepare and implement a finalised CTMP to the satisfaction of the Planning Secretary prior to construction.
- The Department's assessment concludes traffic generated during the construction phase of the development can be managed effectively through conditions of consent.

Access

- The site is currently serviced by a private access road along the northern boundary of the site. The access road then connects to Berrima Road in a western direction from the site.
- The development will comprise of internal access roads connecting to parking facilities, materials loading and unloading and fire road access surrounding the perimeter of the site. The EIS and TIA stipulate all access roads are proposed to be constructed in accordance with the relevant Australian Standards.
- The development includes a proposed Basic Right Turn (BAR) treatment to Berrima Road to accommodate B-Double heavy vehicle access during the AM peak hour as it is anticipated 40 right turn movements will occur during the AM peak period.
- The Applicant has also provided SWEPT path analysis drawings demonstrating all vehicles including B-Doubles can enter and exit the site in a forward direction and manoeuvre safely within the site.

Findings

Recommendations

- The Department has reviewed the SWEPT path analysis and TIA provided by the Applicant and considers the development to provide sufficient access and on-site manoeuvrability for the largest anticipated vehicle to access the site.
- Furthermore, the Department considers the proposed BAR treatment to the Berrima Road site access is sufficient in providing safe right-turn access into the site during peak periods without impeding traffic flows and notes no submission was received from Council.
- The Department recommends conditions requiring the Applicant to implement the proposed BAR treatment in accordance with the TIA and confirm suitable access is provided to B-Double vehicles to the satisfaction of the relevant road authority.
- The Department's assessment concludes sufficient provisions for safe vehicle access and manoeuvrability on-site have been proposed to accommodate the development's operations.

Construction Air Quality Impacts

- The construction of the development is likely to generate dust emissions having the potential to impact on air quality. The Applicant provided an AQIA which included an assessment of fugitive dust emissions generated from the construction of the development.
- Key sources of dust emissions include excavation, topsoil stripping, handling of spoil and structural fill material, wind erosion from exposed temporary stockpiles and wheel dust generated from on-site haulage.
- The AQIA proposed a number of mitigation measures to be implemented to manage dust including water suppression, minimising stockpiling of materials and halting dust generating activities during adverse weather conditions.
- The EPA reviewed the AQIA and provided no comments specific to construction air quality impacts. Furthermore, concerns raised in public submissions made during the exhibition period related to the operation of the development.
- The Department acknowledges dust impacts generated from the construction of the development are temporary and will have minimal impacts on the local amenity subject to the implementation of the proposed mitigation measures.
- However, the Department understands the general community concern for air quality within the locality. Therefore, the Department has recommended a condition requiring the Applicant to prepare and implement a Construction Environmental Management Plan which details the mitigation measures to be utilised to manage and minimise dust generation during construction. This includes an Erosion and Sediment Control Plan which would also detail measures to manage fugitive dust emissions.
- The Department's assessment concludes suitable measures have been proposed by the Applicant to manage and minimise air quality impacts during the temporary construction phase of the development

Require the Applicant to:

- prepare and implement a Construction Air Quality Management Plan (CAQMP) to the satisfaction of the Planning Secretary;
- prepare and implement an erosion and sediment control plan during construction to the satisfaction of the Planning Secretary.

and can be further managed through the recommended conditions of consent to prevent any adverse impacts on local air amenity.

Visual Impacts

- The development includes the construction and operation of a brick manufacturing facility featuring a stack with a maximum height of 35 m, located within an area of predominantly rural residential land uses. The proposed industrial development has the potential to impact on the visual amenity and characteristics of the locality.
- The site currently consists of both natural and exotic vegetation along with existing rural agricultural buildings. Adjoining development to the west has been approved but not yet constructed for a masonry facility and directly north of the site is the New Berrima Shale Quarry. In addition, the Boral Cement Works facility is located to the west across Taylor Avenue and the Ingham Industrial facility directly to the south.
- The EIS included a Landscape and Visual Impact Assessment (LVIA) prepared by Geoscapes Landscape Architecture Pty Ltd which assessed the visual sensitivity and visual magnitude of the development from nine key viewpoints within the locality. In particular, the LVIA assessed a viewpoint from Carribee Road located approximately 800 m south-east of the site boundary being the nearest residential receiver of the development.
- The LVIA found that none of the key viewpoints were identified as having potentially high visual impacts resulting from the development with the New Berrima Sports ground (Viewpoint 4) being the most impacted with a moderate/minor rating.
- The LVIA stipulated the topography of the site which rises from the west to the east, effectively contains the development within the site and screens views from properties to the east of the site with the assistance of existing vegetation. Furthermore, the LVIA acknowledged the industrial landuses approved immediately west and north of the site attribute to a changing industrial and business enterprise character of the locality.
- The LVIA additionally noted the development includes the planting of scattered trees and a 40 m Riparian Corridor which will facilitate further vegetation screening of the development from the south and south-west.
- During the exhibition period, one submission from a commercial stakeholder noted the visual montages provided in the LVIA omitted the proposed 35 m stack from digital imagery of the development.
- The Applicant submitted a RtS which included a revised LVIA to correct this. The Applicant noted there was no change to the outcomes and findings of the LVIA.
- The Department considers the development will have minimal visual impacts on receivers within the locality given the undulating topography of the site and proximity to sensitive receivers. Furthermore, the Department notes the development is consistent with the industrial zoning and approved land uses within the locality.
- The Department recommends the incorporation of scattered tree planting and the 40 m Riparian Corridor are satisfactory in screening the development and mitigating visual impacts.
- The Department recommends conditions of consent requiring the Applicant to prepare and implement a Landscape Management Plan

Require the Applicant to:

- Prepare and implement an LMP to the satisfaction of the Planning Secretary.

Findings

Recommendations

(LMP) to the satisfaction of the Planning Secretary, for the management and maintenance of vegetation planting for the purpose of screening for the life of the development.

- Therefore, the Department supports the findings of the LVIA and concludes the development would have acceptable impacts on the visual amenity of the locality.

Heritage

- The development is located on a vacant site within close proximity to Stony Creek and the Wingecarribee River presenting the potential for the development to have impacts on Aboriginal cultural heritage and heritage values.
- The EIS was accompanied by an Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared by Biosis to assess the development's impacts on Aboriginal cultural heritage and heritage values.
- An ACHAR was originally undertaken in 2018 for the entire site to support the development application for the adjoining Masonry Plant referred to as Stage 1 in the ACHAR.
- The ACHAR undertook extensive consultation with Council, the Illawarra Local Aboriginal Land Council and Aboriginal stakeholders within the region. Government bodies were notified of the development and advertised in the local paper. The consultation process resulted in 11 Aboriginal stakeholders registering interest in the project for further consultation becoming registered Aboriginal parties (RAP).
- The ACHAR additionally included a search of the Aboriginal Heritage Information Management System (AHIMS) database which identified 90 Aboriginal archaeological sites within a five km area of the site and background research on the Aboriginal history of the site to inform potential heritage and cultural values.
- Biosis undertook an archaeological field survey within the study area which included a meandering foot transect of the site and subsurface testing. The field survey and subsurface testing identified 14 Aboriginal heritage sites within the study area, 12 of which were considered to have low Aboriginal cultural heritage significance, while one was considered to be moderate and another to be high.
- The Aboriginal heritage site located directly north-west of the development site at Stony Creek (AHIMS Stony Creek) was considered to have high Aboriginal cultural and heritage significance as 15 subsurface artefacts were located in addition to three axe grinding grooves and three grinding holes observed at the site.
- The Aboriginal heritage site (AHIMS A04) considered to have moderate Aboriginal cultural heritage value is located south of the AHIMS Stony Creek site and are likely to be associated sites. Subsurface testing observed 34 subsurface artefacts consisting of fragments and flakes of quartz, crystal quartz, quartzite and silcrete.
- Subsequent to field surveying, testing and background research, Biosis consulted further with the RAP to produce recommendations for managing the development's impacts on Aboriginal cultural heritage values within the site.
- Require the Applicant to prepare and implement an ACHMP in consultation with the RAP to the satisfaction of the Planning Secretary.

Findings

Recommendations

- The ACHAR concluded impacts to AHIMS A04 and AHIMS Stony Creek could be avoided for parts of the site if appropriately mitigated. The ACHAR recommended the conservation of part of AHIMS Stony Creek during construction through the implementation of a 35 m buffer to prevent disturbance to identified grinding grooves, the preparation and implementation of an Aboriginal Cultural Heritage Management Plan (ACHMP) and to continue consultation with the RAP for the life of the development.
- The Biodiversity and Conservation Division (BCD) and the Heritage Council NSW reviewed the EIS and provided no comments regarding Aboriginal Cultural Heritage. Furthermore, no comments were received from Council during the exhibition period and no concerns were raised regarding Aboriginal cultural heritage in the public submissions during the exhibition period.
- The Department notes the disturbance to the development site from historic agricultural land use. Furthermore, the Department notes Aboriginal cultural heritage values for the broader site have been assessed previously for the approved adjoining Masonry Plant.
- The Department has reviewed the EIS and ACHAR and considers the development would have a low impact on Aboriginal cultural heritage values if conservation of identified artefacts is managed effectively.
- The Department endorses the recommendations provided in the ACHAR by Biosis and the RAP for the conservation of Stony Creek artefacts during construction and the preparation of an ACHMP.
- The Department recommends the implementation of conditions requiring the Applicant to prepare and implement an ACHMP in consultation with the RAP to the satisfaction of the Planning Secretary to manage the protection of observed artefacts at AHIMS Stony Creek and AHIMS A04 during construction and for the life of the development.
- Therefore, the Department's assessment concludes the development's impacts on aboriginal heritage and cultural values can be minimised to an acceptable level through appropriate management and conservation of identified sites during construction enforced by the conditions of consent.

Soils and Water

- The development has the potential to impact upon the water quality of the site including surface waters, stormwater and erosion and sediment control due to the development's location in proximity to water bodies.
- The Applicant provided a Soil and Water Management Plan (SWMP) and Civil Servicing Report prepared by AT&L

Stormwater

- Overland flows from the site currently drain to the Stony Creek riparian corridor located directly to the west of the development site.
- The Applicant proposes two catchment areas within the development site. Catchment 1 is proposed to discharge to On-site Detention (OSD) and catchment 2 is proposed to discharge to Stony Creek.
- The development will incorporate a combination of kerb inlet gully pits and field inlet gully pits located around the development site to intercept stormwater runoff and discharge flows to the OSD.

Require the Applicant to:

- Prepare and implement a final SWMP including an ESCMP in consultation with WaterNSW to the satisfaction of Planning Secretary.
- Prepare and implement an OEMP which includes stormwater management, treatment measures and monitoring programs.

- The OSD system is proposed to implement rock lined discharge swale, designed in accordance with the NSW Office of Water Guidelines.

Water Quality Treatment

- The development site is identified as being within the Sydney Drinking water catchment.
- The Applicant is proposing to implement a treatment train approach to manage pollutants including a primary/secondary treatment device, to be installed on the pipe network for impervious area drainage. The treatment device is predominately aimed at capturing gross pollutants with capacity to capture sediments, hydrocarbons, oil, fuel, grease and total suspended solids (TSS).
- In addition, the Applicant would install a filter cartridge system on the proposed stormwater pipe network to remove and dissolve nitrogen, phosphorus and TSS.
- The Applicant provided Urban Stormwater Improvement Conceptualisation (MUSIC) modelling to assess pollutant loads for pre and post-development water quality conditions. MUSIC modelling results indicated the development would achieve a 100% pollutant load reduction for gross pollutants with the implementation of treatment measures. The modelling also indicated the development would achieve a reduction of TSS of 90% and a reduction of phosphorus of 73.7%.
- WaterNSW reviewed the EIS and advised the Department the development can achieve a neutral or beneficial effect (NorBE) on water quality subject to adequate erosion and sediment control measures being implemented during construction and that proposed water treatment measures are implemented and maintained for the life of the development.
- In addition, WaterNSW recommended the Applicant provide stormwater management and treatment measure, monitoring programs and emergency measures within an Operational Environmental Management Plan (OEMP).

Erosion and Sediment Control

- The SWMP provided by the Applicant included a preliminary Erosion and Sediment Control Plan (ESCP) as a planned approach for the management of erosion and sediments during the construction phase of the development.
- The ESCP includes control measures such as the installation of a temporary sediment basin and the diversion of sediment contaminated water into the basin, sediment fences, dust suppression and water quality monitoring.
- WaterNSW reviewed the EIS and advised a comprehensive and staged SWMP providing detailed and finalised ESCP must be prepared in consultation with WaterNSW given the extent of cut and fill proposed with the development, to manage erosion and sediment control during the construction phase of the project.
- The Department agrees with WaterNSW's recommendations for the preparation of detailed and finalised erosion and sediment control measures prior to construction to manage and mitigate the cut and fill required to accommodate the development footprint.
- The Department recommends conditions of consent requiring the Applicant to prepare and implement a final ESCP.

Findings

Recommendations

- The Department's assessment concludes the development will have a neutral impact on water quality subject to the finalisation of stormwater and sediment control measures which can be suitably managed through conditions of consent.

Flood Impacts

- The Applicant engaged with SMEC to prepare a Flood Impact Assessment (FIA) for the development to assess the 1% AEP (1 in 100 year ARI), 0.2% (1 in 500 year ARI) and the Probable Maximum Flood (PMF).
 - The FIA provided flood modelling using existing flood survey data prepared by SMEC for Council's flood planning in 2014 to prepare pre-development flood modelling scenario. Further, finished surface levels of the development footprint were incorporated into the post-development flood modelling scenario.
 - Flood modelling results demonstrated there would be no significant flood level impacts on upstream or downstream land due to the development. Flood level impacts on the boundary of the site was modelled to be 10 mm for the 1% AEP storm event and 15 mm for the 0.2% AEP storm event.
 - The FIA noted the building pad for the development has been designed to provide excess of 2 m freeboard to accommodate 1% AEP flood levels at Stony Creek and PMF levels.
 - Additionally, the FIA noted the flood hazard for stony creek has not changed with there being no increase of any flood hazard to any major infrastructure surrounding the site.
 - EES reviewed the EIS and the FIA and provided advice. EES advised the site occupies flood prone land and therefore the development should be considered in accordance with the NSW Government's Flood Prone Land Policy set out in the Floodplain Development Manual to reduce the impact of flooding and flood liability on individuals.
 - Furthermore, EES requested the FIA to provided consideration of potential local and mainstream flooding impacts considering the close proximity of watercourses.
 - In addition, a submission was received from a community stakeholder which noted the FIA did not adequately account for the Berrima Road Deviation project to the south of the site and only accounted for works undertaken to date.
 - The Applicant provided further flood modelling analysis in a revised FIA as part of the RtS submission. The revised FIA noted the development would have minimal to negligible flood impacts within the Stony Creek and tributaries of Wingecarribee River. The revised FIA additionally considered the pre and post-development scenarios of the development including cumulative impacts on surrounding sites such as the Berrima Road Deviation project.
 - Furthermore, the Applicant advised the flood modelling was undertaken in accordance with the NSW Floodplain Management Manual.
 - EES reviewed the RtS including the revised FIA and advised flooding issues had been adequately addressed and that there were no further comments in relation to flood impacts.
- N/A

Findings

Recommendations

- The Department has reviewed the EIS, RtS and FIA. The Department notes the building pad and impervious area of the development have been designed with sufficient freeboard space to withstand 1% AEP, 0.2% AEP and PMF flood events.
- The Department acknowledges the flood impact modelling has considered both pre and post-development scenarios and accounted for cumulative flood impacts of the development on upstream and downstream receivers, the Stony Creek and the Wingecarribee River. The Department notes that modelling indicated the development would have minimal flood impacts on the locality.
- The Department therefore considers the flood impacts of the development to be acceptably minor on upstream and downstream receivers.

Bushfire

- The northern boundary of the broader site is identified as being bushfire prone land. The Applicant provided a Bushfire Risk Assessment (BRA) to assess the potential bushfire impacts of the development. The BRA assessed the development against the aims and objectives of the RFS's Planning for Bushfire Protection 2019 (PBP).
- The aim of the PBP is to provide protection of human life and minimise impacts on property from bushfires through appropriate planning and management.
- The BRA included a desktop assessment of the site using RFS 2019 bushfire protection mapping, aerial mapping and GIS data. The BRA analysed vegetation and slope of topography in accordance with the PBP to determine bushfire hazards, risks and fire mitigation and protection measures.
- Land adjoining the site to the north is classified as bushfire prone land and consists primarily of woodland vegetation communities, grassland and managed land. Within the development site, it consists of small patches of fragmented remnant trees and highly modified vegetation. The BRA notes vegetation is mainly located upslope from the proposed building footprint.
- The BRA provided a recommended Asset Protection Zone (APZ) for the perimeter of the development site to minimise material ignition at the site. The BRA notes the development includes 6 m wide designated fire roads around the perimeter of the site to facilitate defence of the site against fire.
- The BRA stipulates the development will include suitable water supply arrangements in accordance with NSW RFS requirements, fire hydrants in accordance with relevant building codes and fire/smoke detection devices within production buildings in accordance with the relevant Australian standards.
- The BRA concluded the development would not pose bushfire hazards to adjoining properties and that the development satisfies the requirements of the PBP as the development provides sufficient defendable perimeter, sufficient emergency access, water supply and utility services. The BRA recommended an APZ be established upon commencement of works and the commissioning of fire hydrants and water supply in accordance with relevant Australian standards.

Require the Applicant to:

- Establish an APZ prior to the commencement of construction.
- Prepare and implement a Bushfire Emergency Management Plan in consultation with RFS.

- The EIS and BRA was referred to the NSW RFS for comment during the exhibition period. RFS provided no objections to the development proposal. RFS reaffirmed the APZ provided in the BRA must be established upon commencement of works and in perpetuity of the development. Further, RFS reaffirmed property access and water utility are to be implemented in accordance with the PBP and the Australian Standards. RFS advised that a Bush Fire Emergency Management and Evacuation Plan must be prepared in consultation with RFS.
- The Department is satisfied appropriate measures including the establishment of an APZ, fire access roads and water supply are to be incorporated with the development in accordance with RFS requirements and the relevant building standards.
- The Department considers the development will not have additional fire hazard impacts on surrounding properties and the appropriate measures are in place for bushfire defence.
- The Department accepts the recommendations of the BRA and the RFS to establish an APZ, water supply and the preparation of a Bush Fire Emergency Management and Evacuation Plan.
- The Department recommends conditions of consent for the preparation and implementation of a Bush Fire Emergency Management and Evacuation Plan in consultation with RFS and for the APZ to be established in accordance with the BRA and development plans.
- The Department's assessment concludes sufficient consideration has been given to potential bushfire threats on the development site and is satisfied the bushfire risk would be low and can be appropriately managed through conditions of consent.

Ecologically Sustainable Development

- The Applicant has provided an Ecological Sustainable Development report (ESDR) to detail the design and sustainability initiatives incorporated into the development. N/A
- Energy efficient design elements include building materials, machinery and utilities to mitigate the environmental impact of the development.
- Design initiatives include shading over glazing and reduction of glazing thickness to improve lighting efficiency to the office, zoned mechanical systems and replacement of boiler and air conditioning with a reverse cycle cooling method.
- The design of the production building includes natural ventilation, roof ventilators to improve air circulation and humidity control, translucent roof materials across 10% of the roof surface area for improved natural lighting and rainwater harvesting/reuse.
- The proposed sustainability features incorporated into the design of the development are predicted to reduce energy consumption of the office space by 44% and a reduction of 32% of the production building.
- Notwithstanding the above initiatives, concern was raised in public submissions regarding sustainable design including a perceived lack of sustainable energy features being incorporated into the development such as solar energy for office and facility lighting.

Findings

Recommendations

- The Applicant reviewed the public submissions and subsequently updated the design of the development to include solar panel coverings to the roof with an area of approximately 1,968 m².
- The Department acknowledges the Applicant has incorporated sustainability and energy efficiency features and measures into the design of both the office space and the production building of the development. Moreover, the design is expected to result in a substantial reduction of energy consumption used by improving lighting and air flow efficiencies.
- Overall, the Department considers the Applicant has given satisfactory consideration to public submissions by subsequently incorporating solar panel technology into the building design to further improve energy efficiency.
- The Department's assessment concludes the development has been designed with satisfactory sustainability initiatives in place and appropriately addresses concerns raised in public submissions.

7 Evaluation

The Department's assessment of the application has fully considered all relevant matters under section 4.15 of the EP&A Act, the objects of the EP&A Act and the principles of ecologically sustainable development. The Department has considered the development on its merits, taking into consideration the strategic plans that guide development in the area, the EPIs that apply to the development and the submissions and advice received from Government agencies and the public.

The development involves the establishment of a modern and efficient brickworks manufacturing facility in the Southern Highlands. It will replace the Applicant's ageing operations in Bowral which is approaching its end of life. Importantly, the development will ensure the retention of its existing workforce along with providing 5 new operation jobs and 65 construction jobs. The development will provide significant investment in the Southern Highlands and will continue to support the development and construction industries in the region by keeping manufacturing of building materials in the area.

The Department's assessment identified there would be some minor air quality and noise amenity impacts during operation as well as the loss of vegetation across the site that would require offsetting. The Department worked with the EPA and Applicant to improve the air quality outcomes of the site with the Applicant committing to implementing efficient emissions control technologies resulting in best industry practice for NSW.

In addition, the Applicant has committed to the incorporation of solar panels and an ongoing commitment to improve the facility with green technologies, when feasible, practicable and available in response to community feedback. The Applicant is also required to report and consult with the community on continual improvements to the facility through the implementation of a community consultation plan. Furthermore, the Applicant has shown consideration for the biodiversity values of the site and proposed the rehabilitation of a riparian corridor and the purchase and retirement of biodiversity credits to offset impacts on residual biodiversity loss and restore native vegetation on-site.

The Department concludes the development would be managed to ensure an acceptable level of environmental performance and recommended a range of conditions to verify the operational impacts of the development. These include noise and air quality verification reports once the development is operational as well as management plans to set out measures to monitor and manage ongoing operations. The Department has also recommended conditions for the payment of development contributions and the Applicant's contribution to infrastructure upgrades to service the development, including road and intersection works and drainage.

Overall, the Department's assessment has concluded the development would:

- provide a range of employment and investment benefits for the region and the State, including a capital investment of 80 million in the Wingecarribee LGA and 65 construction, 5 new operation jobs and the retention of 35 operational jobs
- support the development and construction industry through the development of a state-of-the-art brickworks manufacturing facility
- not have a significant impact on the locality during construction and operation.

Consequently, the Department considers the development is in the public interest and should be approved, subject to conditions.

8 Recommendation

For the purpose of section 4.38 of the *Environmental Planning and Assessment Act 1979*, it is recommended that the Executive Director, Energy, Industry and Compliance as delegate of the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report
- **accepts and adopts** all of the findings and recommendations in this report as the reasons for making the decision to grant consent to the application
- **agrees** with the key reasons for approval listed in the notice of decision
- **grants consent** for the application in respect of the New Berrima Brickworks Facility SSD-10422
- **signs** the attached development consent and recommended conditions of consent.

Report prepared by:
Shaun Williams
Senior Environmental Assessment
Officer

Recommended by:



21 May 2021

Joanna Bakopanos
Team Leader
Industry Assessments

9 Determination

The recommendation is **Adopted** by:

A handwritten signature in black ink, appearing to read 'C. Ritchie', written in a cursive style.

28 May 2021

Chris Ritchie
Director
Industry Assessments

Appendices

Appendix A – List of Documents

The Department has relied upon the following key documents during its assessment of the proposed development:

Environmental Impact Statement

- 'Environmental Impact Statement, SSD-10422 Proposed Brickworks Plant' prepared by Willow Tree Planning Pty Ltd dated 20 July 2020.

Submissions

- All submissions received from relevant public authorities and the general public

Response to Submissions

- 'Response to Submissions, State Significant Development Application (SSD 10422) For Proposed Brickworks Plant' prepared by Willow Tree Planning Pty Ltd dated 23 October 2020.
- 'Response to Submissions, State Significant Development Application (SSD 10422) For Proposed Brickworks Plant' prepared by Willow Tree Planning Pty Ltd dated 1 March 2021.

Statutory Documents

- Relevant considerations under section 4.15 of the EP&A Act (see **Appendix B**)
- Relevant environmental planning instruments, policies and guidelines (see **Appendix C**)

All documents relied upon by the Department during its assessment of the application may be viewed at: <https://www.planningportal.nsw.gov.au/major-projects/project/26746>

Appendix B – Considerations under Section 4.15 of the EP&A Act

Matters for Consideration under Section 4.15 of the EP&A Act

Section 4.15 of the EP&A Act requires that the consent authority, when determining a development application, must take into consideration the following matters:

Table 5 | Matters for Consideration under Section 4.15 of the EP&A Act

Provision	Comment
a) the provisions of: i.) any environmental planning instrument, and	Detailed consideration of the provisions of all environmental planning instruments (including draft instruments subject to public consultation under the EP&A Act) that apply to the development is provided in Appendix C of this report.
ii.) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and	There are no relevant draft EPIs.
iii.) any development control plan, and	Under clause 11 of the SRD SEPP, development control plans do not apply to State significant development.
iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and	Not applicable.
iv.) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), that apply to the land to which the development application relates,	The Department has assessed the development in accordance with all relevant matters prescribed by the regulations, the findings of which are contained in this report.
b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	The Department has considered the likely impacts of the development in detail in Section 6 of this report. The Department concludes that all environmental impacts can be appropriately managed and mitigated through the recommended conditions of consent.
c) the suitability of the site for the development,	The development relates to a brick manufacturing facility located on IN1 General Industrial land pursuant to the Wingecarribee Local Environmental Plan 2010. In addition, the proposed access road to support the development is located within E3 Environmental Management zoned land in which roads are permitted with consent. Therefore, the

Provision	Comment
	subject site is considered suitable for the development.
d) any submissions made in accordance with this Act or the regulations,	All matters raised in submissions have been summarised in Section 5 of this report and given due consideration as part of the assessment of the development in Section 6 of this report.
e) the public interest.	<p>The development would generate up to 65 jobs during construction, 5 new jobs and the retention of 35 existing jobs during operation and \$80 million in capital investment in the Wingecarribee local government area.</p> <p>The environmental impacts of the development would be appropriately managed via the recommended conditions. On balance, the Department considers to the development is in the public interest.</p>

Appendix C – Consideration of Environmental Planning Instruments

State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)

The SRD SEPP identifies certain classes of development as SSD. The proposal is State significant development pursuant to section 4.36 of *Environmental Planning and Assessment Act 1979* (EP&A Act) because it involves development for the construction and operation of a brickworks facility which meets the criteria in Clause 9 of Schedule 1 in the SRD SEPP.

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)

The ISEPP aims to facilitate the effective delivery of infrastructure across the State by improving regulatory certainty and efficiency, identifying matters to be considered in the assessment of development adjacent to certain types of infrastructure development, and providing for consultation with relevant public authorities about certain types of development during the assessment process.

TfNSW's comments are detailed in **Section 5** of the report.

The Department has consulted and considered the comments from relevant public authorities and where applicable, has included suitable conditions in the recommended conditions of consent.

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33)

SEPP 33 aims to identify developments with the potential for significant off-site impacts, in terms of risk and/or offence. A development is defined as potentially hazardous and/or potentially offensive if, without mitigating measures in place, the development would have significant risk and/or adverse impact on off-site receptors.

The Applicant advised that the development would not store dangerous goods above the threshold limits specified in SEPP 33, therefore it would not be considered potentially hazardous or offensive development.

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)

SEPP 55 aims to provide a State-wide approach to the remediation of contaminated land. In particular, SEPP 55 aims to promote the remediation of contaminated land to reduce the risk of harm to human health and the environment by specifying:

- under what circumstances consent is required
- the relevant considerations for consent to carry out remediation work
- the remediation works undertaken meet certain standards and notification requirements.

The Applicant provided a Preliminary Site Investigation which concluded general waste with the potential of Asbestos Containing Materials (ACM) were observed at the existing farmhouse to the south-west portion of the site. The Department has included conditions requiring the appropriate handling and disposal of any unexpected waste materials during the demolition and site establishment phases of the development.

State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (Drinking Catchment SEPP)

The Drinking Catchment SEPP aims to ensure that development identified within the Sydney drinking water catchment will have a neutral or beneficial effect on water quality. Clause 10 of the Drinking Catchment SEPP states that a consent authority must not grant development consent on land identified within the Sydney drinking water catchment unless it is satisfied the proposed development would have a neutral or beneficial effect on water quality.

The Department has undertaken an assessment of the developments impacts on water quality in consultation with WaterNSW in Section 6 of this report. The assessment concluded the development would have a neutral effect on water quality.

State Environmental Planning Policy No. 64 – Advertising Structures and Signage (SEPP 64)

SEPP 64 aims to ensure that outdoor signage is compatible with the desired amenity and visual character of an area, and provides effective communication in suitable locations, that is of a high-quality design and finish.

The development includes business identification signage on the southern, northern and western facades of the building. The Applicant has provided an assessment of the signage against the provisions of SEPP 64 in **Table 6**. The assessment stipulated the proposed signage would be compatible with the existing and future use of the locality as industrial development, would not obscure and views or vistas, the development is suitably setback from any street frontage and therefore signage would not impact upon the streetscape and the signage is not proposed to be illuminated. Therefore, the Department is satisfied the proposed signage is compatible with the existing amenity and visual character of the area.

Table 6 | SEPP 64 Schedule 1 Assessment Criteria

Provision	Comment
<p>1. Character of the area</p> <ul style="list-style-type: none">Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?Is the proposed consistent with a particular theme for outdoor advertising in the area or locality?	<p>The proposed signage is considered to be compatible with the existing and future use of the locality as part of an Enterprise Precinct under the Moss Vale Enterprise Corridor.</p>
<p>2. Special areas</p> <ul style="list-style-type: none">Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	<p>The proposed signage consists of building identification signage fixed to the facades of the facility building. The signage is not considered to be visually dominate that it would detract from visual amenity of the locality.</p>
<p>3. Views and vistas</p> <ul style="list-style-type: none">Does the proposal obscure or compromise important views?Does the proposal dominate the skyline and reduce the quality of vistas?	<p>The proposed signage consists of building identification signage fixed to the facades of the facility building. The signage does not obscure important views, dominate the skyline or impact on other advertisers.</p>

Provision	Comment
<ul style="list-style-type: none"> Does the proposal respect the viewing rights of other advertisers? 	
<p>4. Streetscape, setting or landscape</p> <ul style="list-style-type: none"> Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape? Does the proposal contribute to the visual interest of the streetscape, setting or landscape? Does the proposal reduce clutter by rationalising and simplifying existing advertising? Does the proposal screen unsightliness? Does the proposal protrude above buildings, structures or tree canopies in the area of the locality? Does the proposal require ongoing vegetation management? 	<p>The development is located in the north-eastern corner of the site away with significant separation distance to the nearest road and streetscape. Subsequently, the proposed signage is not considered to be impactful on the streetscape, setting or landscape. Furthermore, the signage does not protrude above the proposed building line.</p>
<p>5. Site and building</p> <ul style="list-style-type: none"> Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located? Does the proposal respect important features of the site or building, or both? Does the proposal show innovation and imagination in its relationship to the site or building, or both? 	<p>The proposed signage is categorised as building identification signage fixed to the facades of the facility building and is considered to be compatible with the scale and portion of the proposed development.</p>
<p>6. Associated devices and logos with advertisements and advertising structures</p> <ul style="list-style-type: none"> Have any safety devices, platforms, lighting device or logos been designed as an integral part of the signage structure on which it is displayed? 	<p>N/A, no safety devices, platforms or lighting are required with the building identification signage.</p>
<p>7. Illumination</p> <ul style="list-style-type: none"> Would illumination result in unacceptable glare? Would illumination affect safety for pedestrians, vehicles or aircraft? Would illumination detract from the amenity of any residences or other form of accommodation? Can the intensity of the illumination be adjusted, if necessary? Is the illumination subject to a curfew? 	<p>N/A, building identification signage is not proposed to be illuminated.</p>
<p>8. Safety</p> <ul style="list-style-type: none"> Would the proposal reduce the safety for any public road? Would the proposal reduce the safety for pedestrians or bicyclists? 	<p>The development is located in the north-eastern corner of the site away with significant separation distance to the nearest road and streetscape. Subsequently, the proposed signage is not considered to impact on public road safety and pedestrian safety.</p>

Provision	Comment
	<ul style="list-style-type: none"> Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?

Wingecarribee Local Environmental Plan 2010 (WLEP)

The WLEP aims to encourage the orderly development of housing, employment, infrastructure and community services to meet the needs of the existing and future residents of the Wingecarribee LGA. The WLEP also aims to conserve and protect natural resources and foster economic, environmental and social well-being.

The Department has reviewed the relevant provisions of the WLEP and notes the site is not identified in maps of the WLEP relating to principal development standards. The Department also notes the provisions relating Clause 5.3 Heritage Conservation, Clause 7.3 Earthworks and Clause 7.4 Natural Resources Sensitivity have been addressed in the Department's assessment of the development in **Section 6** of this report.

Appendix D – Community Views for Draft Notice of Decision

Issue	Consideration
Air Quality Concern was raised in the public submissions regarding the cumulative dust emissions of the development and surrounding industrial uses within the locality.	<p>The Applicant provided an Air Quality Impact Assessment (AQIA) to assess the impacts of the development on air quality. In particular the AQIA provided an assessment of the developments contribution to particulate matter (PM) levels in the locality.</p> <p>The Department reviewed the AQIA in consultation with the EPA and found the development would have a minimal contribution to existing PM and would not result in any additional exceedances of the cumulative assessment criteria for PM2.5 and PM10 under the Protection of the Environment Operations (Clean Air) Regulation 2010 (Clean Air Reg).</p> <p>Conditions include:</p> <p>The Department has recommended conditions of consent requiring the Applicant to undertake post commissioning monitoring of the air emissions and air emissions validation reporting to ensure site emissions are compliant with the emissions limits of the EPL. In addition, conditions of consent are recommended requiring the Applicant to prepare and implement an air quality management plan (AQMP) to the satisfaction of the Planning Secretary to manage and mitigate pollutant emitting operations of the development.</p>
Noise Concern was raised in the public submissions that the development may result in unacceptable noise which will negatively impact on the noise amenity of local residents.	<p>The Applicant provided a Noise Impact Assessment (NIA) to assess the impacts of the development on the acoustic amenity of the locality. The NIA provided a cumulative assessment of the noise impacts associated with the development and surrounding industrial development on the locality including local residents and sleep disturbance. The NIA additionally provided an assessment of construction noise impacts generated during the construction of the development.</p> <p>The Department reviewed the NIA in consultation with the EPA and its assessment found the development would comply with the project noise criteria at all receivers during day, evening and night with no predictions of sleep disturbance. The Department also considered the construction phase of the development will not have an adverse impact on the acoustic amenity.</p> <p>Conditions include:</p> <p>The Department has recommended conditions of consent imposing noise limits for the operation of the development and requiring the Applicant to undertaken post-commissioning noise monitoring and reporting to ensure compliance with the noise limits. The Department has also recommended a condition requiring the Applicant to prepare and implement a Construction Noise Management Plan to manage noise generated during the construction of the development.</p>

Issue	Consideration
<p>Renewable Energy</p> <p>Concern was raised in the public submissions that the Applicant had not adequately considered the implementation of renewable energy sources such as hydrogen and solar power for the operations of the development.</p>	<p>The Applicant provided consideration of the public's concern for renewable energies in its Response to Submissions (RtS) document. The Applicant updated the design of the development to include solar panels on the roof of the facility with an area of approximately 1,968 m². The Applicant also noted its consideration of alternative energy sources for kiln firing including microwave technology and hydrogen but stated alternative renewable energies technologies are not yet practical and feasible in NSW. The Applicant has further committed to ongoing research and consideration of the implementation of renewable energies technologies for its operations nationwide.</p> <p>The Department has undertaken an assessment of greenhouse gas emissions and concluded the development's contributions to state and national greenhouse gas emissions would be minimal. In addition, the Department notes alternative renewable energies technologies such as microwave and hydrogen have not been adequately tested at an industry scale yet for implementation in NSW.</p> <p>Conditions include:</p> <p>The Department has recommended conditions of consent requiring the Applicant to prepare and implement a Community Consultation Plan (CCP) which is to include procedures for updating the local community on the Applicant's research and consideration of practical and feasible renewable energies.</p>
<p>Biodiversity</p> <p>Concern was raised in the public submissions for the developments impact on biodiversity and local wildlife.</p>	<p>The development will require the removal of 2.06 hectares (ha) of vegetation to accommodate the development footprint. The Applicant provided a Biodiversity Development Assessment Report (BDAR) in accordance with the Energy, Environment and Science Group of DPIE's Biodiversity Assessment Methods (BAM). The BDAR identified the vegetation of the site had been impacted by historic agricultural land use and the invasion of exotic ground coverage vegetation species had resulted in the clearing and degradation of native vegetation with the exception of scattered clusters of native vegetation. The BDAR concluded a total of 34 species credits are required to offset the clearing of vegetation on the land. The Applicant has additionally proposed the restoration and management of an identified riparian corridor located to the south of the site.</p> <p>The EES recommended the offsetting of 34 species credits, implementation of management measures during vegetation clearing and the implementation of a vegetation management plan which includes the restoration and management of the riparian corridor. The Department's assessment concluded the Applicant had satisfactorily considered the practical and feasible minimisation of impacts to the site's biodiversity.</p> <p>Conditions include:</p> <p>The Department has recommended conditions requiring the offsetting of 34 species credits in accordance with the <i>Biodiversity Conservation Act 2016</i> (BC Act) and the preparation and implementation of a vegetation management plan for the restoration of the riparian corridor and its ongoing management.</p>

Issue	Consideration
<p>Revegetation</p> <p>Submissions made by the general public highlighted the importance of revegetating the riparian corridor of the site.</p>	<p>The Applicant submitted a Vegetation Management Plan which included a proposed 40 m wide restoration of the riparian corridor along the southern boundary of the site. The riparian corridor is to be revegetated with Southern Highlands Shale Woodlands (SHSW) species. EES reviewed the Vegetation Management Plan and BDAR and endorsed the revegetation of the identified riparian corridor.</p> <p>The Department's assessment considered the revegetation of the riparian corridor would enable the improvement of biodiversity values on the site along with providing visual vegetation screening to the south of the site.</p> <p>Conditions include:</p> <p>The Department has recommended conditions requiring the Applicant to submit a Vegetation Management Plan prior to operation which confirms the planting of SHSW species as proposed and contains measures for the maintenance and continued rehabilitation of vegetation.</p>
<p>Greenhouse Gas Emissions</p> <p>Concern was raised in the submission the development would not contribute to Wingecarribee Shire local government area aims of zero carbon emissions</p>	<p>The development is proposed to improve the environmental performance of the Applicant's brick manufacturing operations by replacing the existing and outdated Bowral Brickworks plant which is not in line with best practice for industry. The Applicant provided an assessment of greenhouse gas (GHG) emissions in the submitted air quality impact assessment (AQIA). The assessment demonstrated the development would have a minimal contribution to both NSW state and National GHG emissions. The Applicant has further committed to ongoing research and consideration of the implementation of renewable energies technologies with lower GHG emissions for its operations nationwide.</p> <p>The Department's assessment considered the development to have a minor contribution to State and National GHG emissions and would result in a reduction of overall GHG emissions contributed by the Applicant with the decommissioning of the existing Bowral Brickworks plant.</p> <p>Conditions include:</p> <p>The Department has recommended conditions of consent requiring the Applicant to prepare and implement a Community Consultation Plan (CCP) which is to include procedures for updating the local community on the Applicant's research and consideration of practical and feasible renewable energies. In addition, conditions of consent have been recommended for the Applicant to prepare and implement an air quality management plan (AQMP) to the satisfaction of the Planning Secretary to manage and mitigate pollutant emitting operations of the development.</p>

Issue	Consideration
<p>Construction Materials</p> <p>Comments were raised in submissions from the general public that the development should be constructed of sustainable materials.</p>	<p>The Applicant provided an Ecological Sustainable Development report (ESDR) to detail the design and sustainability initiatives incorporated into the development. The ESDR outlined the energy efficient design elements incorporated into the development including building materials such as translucent roof materials for improved natural lighting, window shading, reverse cycle cooling, machinery and utilities to mitigate the environmental impact of the development. The ESDR predicted the design and materials of the development would reduce energy consumption of the office space by 44% and a reduction of 32% of the production building.</p> <p>The Department's assessment was satisfied the Applicant had suitably addressed the principles of ecological sustainable development and had incorporated materials and design features to improve the sustainability of the development.</p> <p>Conditions include:</p> <p>N/A, development to be constructed in accordance with the provided plans and schedule of materials.</p>
<p>Traffic</p> <p>Concern was raised in the submissions that the increase of heavy vehicles relating to the development could impact on the local road amenity and safety.</p>	<p>The Applicant provided a traffic impact assessment (TIA) to assess the impacts of the development on the local and regional road network which demonstrated the development would not impact on the existing level of performance of the key intersections being Berrima Road/Taylor Avenue and Old Hume Highway/Taylor Avenue. However, the TIA noted the intersection of Berrima Road/Taylor Avenue should be upgraded to ensure safe right-turn and left-turn movements for heavy vehicles from Berrima Road onto Taylor Avenue due to higher volume turning movements during AM peak hour periods.</p> <p>Council did not provide a submission during the exhibition period to comment on the proposed intersection works. TfNSW noted the development did not impact upon the State road network. The Department's assessment concluded the development would not have an adverse impact on the existing performance of the local and State road networks and that appropriate upgrade measures have been proposed to ensure the safe turning of heavy vehicles to mitigate impacts on traffic flows during peak periods.</p> <p>Conditions include:</p> <p>The Department recommends conditions of consent requiring the Applicant to prepare and implement an operational traffic management plan (OTMP) to manage operational traffic flows of the development and require intersection upgrade works to the satisfaction of the relevant road's authority.</p>

Issue	Consideration
<p>Water Quality</p> <p>Concern was raised in a submission made by the general public for potential impacts of the development on Stony Creek and the Wingecarribee River.</p>	<p>The Applicant prepared a soil and water management plan (SWMP) and flood impact assessment (FIA) to assess the impacts of the development on water quality and flooding. The site is located within the Sydney Drinking Water Catchment and therefore the development must have either a neutral or beneficial effect (NorBE) on water quality. The assessment found the development would have a neutral impact on water quality which was further confirmed by WaterNSW. The flood modelling results provided in the FIA demonstrated there would be no significant flood level impacts on upstream or downstream land and that the development would have a negligible impact on Stony Creek and the tributaries of the Wingecarribee River.</p> <p>The Department's assessment concluded the Applicant had adequately demonstrated the development would have a neutral impact on water quality and a negligible impact on local water bodies.</p> <p>Conditions include:</p> <p>The Department recommends conditions of consent requiring the Applicant to prepare and implement a water management plan (WMP) in consultation with WaterNSW for the management and monitoring of site water quality.</p>

Appendix E – Recommended Instrument of Consent

<https://www.planningportal.nsw.gov.au/major-projects/project/26746>