ENVIRONMENTAL IMPACT STATEMENT
PROPOSED RESOURCE RECOVERY FACILITY
16 KERR ROAD, INGLEBURN

Prepared for: Bulk Recovery Solutions Pty Ltd
Campbelltown City Council

Prepared by: F Torres, Senior Acoustical Engineer
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BENBOW ENVIRONMENTAL

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Benbow
ENVIRONMENTAL

Engineering a Sustainable Future for Our Environment

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Submission of
Environmental Impact Statement (EIS)
prepared under the Environmental Planning and Assessment Act 1979 Section 78(A)

EIS prepared by

name	Richard T Benbow
qualifications	Bachelor of Science (Engineering) With Merit
address	Benbow Environmental
	13 Daking Street
	North Parramatta NSW 2151
in respect of	A proposed waste transfer, storage and resource recovery materials processing facility

development application

applicant name	Bulk Recovery Solutions Pty Ltd
applicant address	16 Kerr Road
	Ingleburn NSW 2565
land to be developed: address	16 Kerr Road
	Ingleburn NSW 2565
lot no, DP/MPS, vol/fol etc	Lot 16 DP 717203
proposed development	Waste Transfer, Storage and Resource Recovery Facility

or

☐ map(s) attached

environmental impact statement

☑ an environmental impact statement (EIS) is attached

certificate

I certify that I have prepared the contents of this Statement and to the best of my knowledge

- it is in accordance with Schedule 2 of the Environmental Planning and Assessment Regulation 2000,
- contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and
- the information contained in the statement is neither false nor misleading.

signature	R T Benbow
name	Richard T Benbow
date	27 April 2015

LIMITATIONS

Our services for this project are carried out in accordance with our current professional standards for site assessment investigations. No guarantees are either expressed or implied.

This report has been prepared solely for the use of Bulk Recovery Solutions Pty Ltd, as per our agreement for providing environmental services. Only Bulk Recovery Solutions Pty Ltd is entitled to rely upon the findings in the report within the scope of work described in this report. Otherwise, no responsibility is accepted for the use of any part of the report by another in any other context or for any other purpose.

Although all due care has been taken in the preparation of this study, no warranty is given, nor liability accepted (except that otherwise required by law) in relation to any of the information contained within this document. We accept no responsibility for the accuracy of any data or information provided to us by Bulk Recovery Solutions Pty Ltd for the purposes of preparing this report.

Any opinions and judgements expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal advice.

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ATTACHMENTS

STUDY TEAM

R.T. Benbow	Benbow Environmental	Environmental Impact Statement compilation
L. Zanotto	Benbow Environmental	EIS review
Felipe Torres	Benbow Environmental	Acoustic assessment
Katie Trahair	Benbow Environmental	Air Quality assessment

ABBREVIATIONS

Abbreviation	
ABL	Assessment background level
ABS	Australian Bureau of Statistics
AHD	Australian Height Datum
AMMAAP	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW
BOM	Bureau of Meteorology
DA	Development Application
DCP	Development Control Plan
DECC	Department of Environment and Climate Change (now NSW EPA)
DEWHA	Department of the Environment, Water, Heritage and the Arts
DPI	Department of Primary Industry
DNR	Department of Natural Resources
DoP	Department of Planning
DoPE	Department of Planning and Environment
DWE	Department of Water and Energy
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cmth)
EPL	Environment Protection Licence
ESD	Ecological Sustainable Development
GDE	Groundwater Dependent Ecosystem
Ha	Hectares
INP	Industrial Noise Policy (guidelines developed by the EPA)
KT	Kilo Tonnes
LALC	Local Aboriginal Land Council
LEP	Local Environment Plan
Mbgl	Metres below ground level
Mt	Million tonnes
NES	National Environmental Significance
NSW	New South Wales
NSW EPA	New South Wales Environment Protection Authority
NSW RNP	New South Wales Road Noise Policy
PM_{10}	Particulate matter of size 10 μm
RBL	Rating background level
RNP	NSW EPA Road Noise Policy
ROW	Right of Way
RSD	Roller Shutter Door
RTA	Roads and Traffic Authority
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
T	Tonne (1000kg)
TMP	Traffic Management Plan
Tpa	Tonnes per annum
TSC Act	Threatened Species Conservation Act 1995
TSP	Total suspended particulates
VENM	Virgin Excavated Natural Material

UNITS OF MEASUREMENT

°C	degree centigrade	(unit of temperature)
dB(A)	A-weighted decibels	(unit of noise)
dB(lin)	Linear-weighted decibels	(unit of noise)
D/T	dilutions to threshold	(unit of odour)
g	gram	(unit of mass)
Ha	hectares	(unit of length)
Kg	kilogram	(unit of mass)
KT	kilo tonnes	(unit of mass)
m	metre	(unit of length)
m^3	cubic meter	(unit of volume)
Mbgl	metres below ground level	(unit of length)
MT	million tonnes	(unit of mass)
PM_{10}	particulate matter of size 10 μm	(pollutant)
T	tonnes	(unit of mass)
Tpa	tonnes per annum	(unit of mass)
μg	microgram	(10^{-6} gm – unit of mass)
$\mu g/m^3$	microgram/cubic meter	(concentration)
ODU	odour detection unit	(unit of odour)
~	approximate	

EXECUTIVE SUMMARY

The Environmental Impact Statement (EIS) has been prepared by Benbow Environmental to assess the potential environmental impacts of a Resource Recovery Facility on behalf of the proponents Bulk Recovery Solutions Pty Ltd. Bulk Recovery Solutions Pty Ltd, ABN 51 148 898 784 would operate the waste transfer, storage and resource recovery facility that is proposed. This EIS has been required by the Council due to the proximity of the site to the residential zones, as further explained in Section 1 of this report.

The proposed facility is an extension to an already approved concrete batching plant, construction of which had commenced previously but has not advanced since a previous EIS was submitted. This previous approval also extended to a masonry block plant. An EIS was required for these developments and was prepared by Umwelt Environmental Consultants in February 2006. This EIS has been referred to where applicable, as the proposed resource recovery facility will be situated on the same site but mainly within the rear workshop.

This EIS does not deal with the use of the front half of the site where a previous deferred consent 1113/2013/DA-DE was granted by Campbelltown City Council. This consent expired on 3rd December, 2014. The front half of the site is not related to the proposed development.

The EIS has been compiled by Benbow Environmental on behalf of the Directors of Bulk Recovery Solutions Pty Ltd.

The site located at 16 Kerr Road, Ingleburn (Lot 16 in DP 717203) is currently zoned General Industry Zone 4(a) under the Campbelltown Local Environmental Plan 2002. The western boundary of the site has a frontage to Kerr Road of approximately 25 m. The site is also located within the Georges River Catchment. The nearest waterway to the site is Redfern Creek approximately 230 m west of the site.

The EIS addresses potential environmental impacts associated with the proposed resource recovery facility. The assessment process has given strong consideration to cumulative issues associated with existing activities in the area.

The site is owned by members of the Baillie family.

The proposed development would be an Integrated Development under Schedule 1 of the Protection of the Environmental Operations Act 1997 (POEO Act). The proposed development would process up to 30,000 tonnes p.a (or approximately 125 tonne/day) of materials resourced from concrete plants, and exceeds the threshold (120 tonne/day) of becoming an Integrated Development and requiring an Environment Protection Licence (EPL).

Outline of the Proposal

This site is now occupied by a business of the Baillie Family. Past development approvals were granted by Campbelltown City Council for the operation of the ready mixed concrete batching plant, a masonry block making plant, raw material storage area, workshop, offices and amenities to service the site's operations.

The rear half of the site where the workshop activities were undertaken would house the majority of the proposed development the subject of this current EIS.

Figure 0-1: Aerial View of Site

The proposal outlined in this document is to add to the uses of the site's large existing building by using the majority of this workshop and a partly enclosed area on the western side for furthering the proposed for resource recovery. The capacity of this plant would be in the range of 30,000 tonnes p.a. of recycled products suitable to be used as engineered construction materials. The processes on site associated with the resource recovery would be mechanical. The proposed additional use of the site can be housed within the existing enclosed areas of the building so that there would be no external storage of stockpiles of material either to be processed or sold as finished product.

The waste materials would be transported by trucks using bins with tippers and with trailers. These would unload materials inside an existing built space on the northern side of the building. Concrete agitators may bring material directly to the site and the area selected for this operation is on the northern side, external to the building. Inwards transport would be by specialist waste trucks. Outwards transport would be by tipper trucks (with and without dog trailers) and semi trailers.

Waste and recycling operations have legal obligations under the Protection of the Environment Operations (Waste) Regulation 2014.

Under the Regulation, the threshold quantity of waste a facility can accept for processing without holding an Environment Protection Licence is 6,000 tonnes per annum.

The threshold quantity for storage or processing at any one time is now 1,000 tonne.

In summary, the proposal involves the following:

- Processing of up to 30,000 tonnes p.a. of concrete plant washout materials.
- Extract, crush and screen up to 3,000 tonnes p.a. of the resource suitable for sale to the construction industry; and
- Storage on site due to space limitations would be limited to 1,500 tonne of finished product.

The proposed development would be required to operate to the conditions of consent and an Environmental Management Plan (EMP) prepared to the principles of ISO 14001 is recommended.

The proposed site layout is shown overleaf. The area to be used for this process is shown on Figure 0-1. It is shown to be in the rear of the building. There are no stockpiles external to the building.

This layout has three areas marked – A, B and C. The following provides a summary of the proposed operations:

- 90% of the operations would be conducted in Areas A and B. This is a built space with a doorway opening facing north. The stockpile shown is the material sourced from concrete plants. Within this area, tipper trucks would deliver this material. A front end loader would transfer the material into the machine called a "Wobbler" which initially washes the material, and then a conveyor transfers it into Area B.

- Area B is used to further wash and separate the materials. In this area the concrete reclaimer is located and the sand washer. Material from the concrete reclaimer passes into a log washer which is basically a long tank with an Archimedes' screw to push the material along the length of the log washer.

- A conveyor transfers this material along to a trammel screen where it is then separated into different sizes and held in bunkers. These materials are then transferred onto stockpiles shown. From there it would be loaded by front-end loader into tipper trucks.

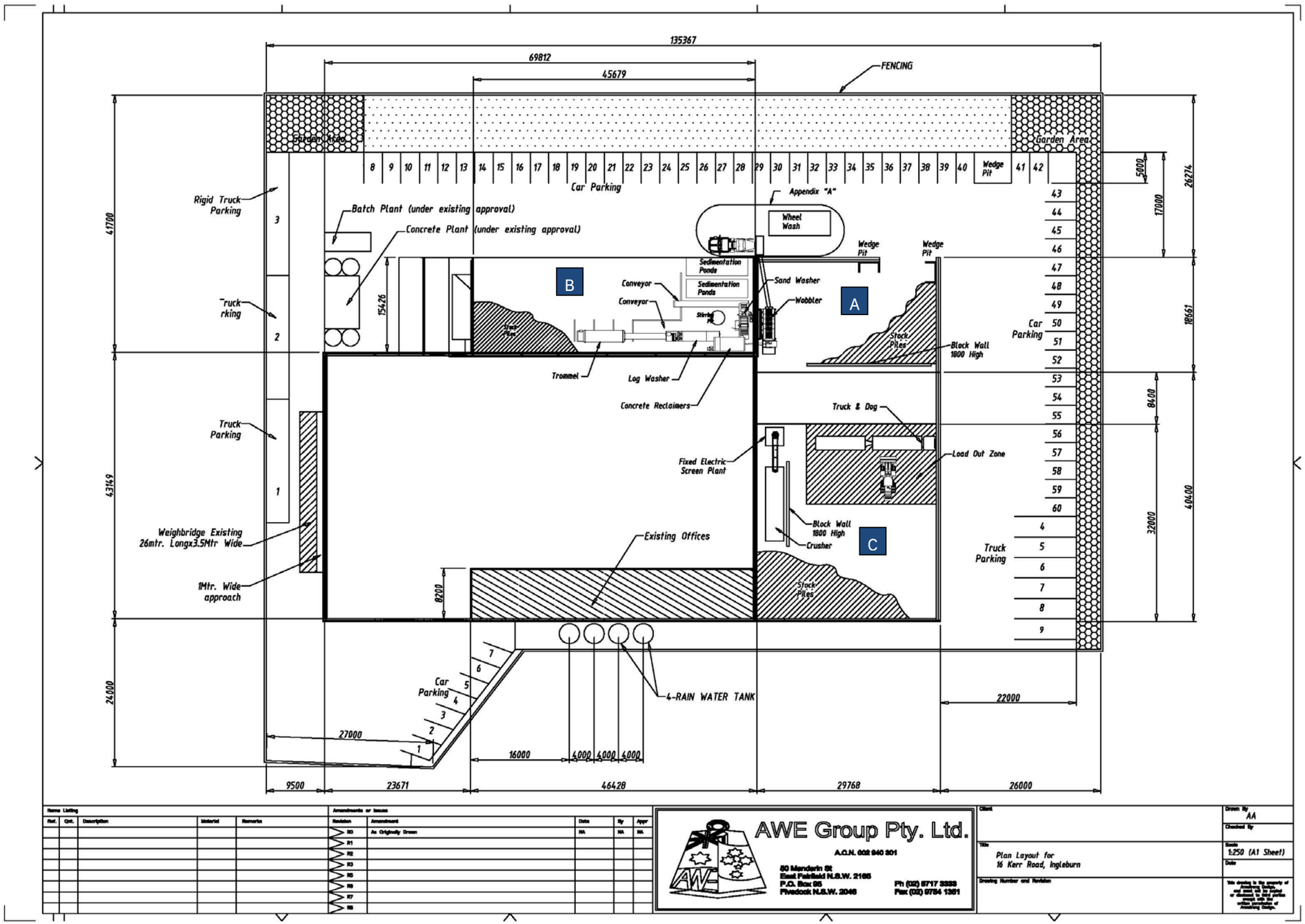
  Within Area B are the "sedimentation ponds" that would hold collected rainwater from the dirty area of the yard. Water drained from these "ponds" would be used in the cleaning process. Rainwater would also be collected for this purpose. The sedimentation ponds would drain water generated in the slurry. Dewatered slurry would require removal off-site as a waste material.

The concrete would be crushed with a small jaw crusher.

The concrete relcaimer would use approximately 10,000 Litres of recycled water per day. Similarly the sand washer and log washer.

The wash water would undergo sediment removal and sludge would be dewatered using a vacuum filter. This would reduce the volume of mains water required to ~5,000 L per day. No waste water would be discharged to sewer.

Figure 0-2: Site Layout



There are no chemicals used in the washing processes.

Power consumption is expected to be ~200 amps per hour.

The consent conditions granted on approval, as well as the EMP, and the statement of compliance presented in the EIS would establish an ongoing compliance monitoring program. This program involves ongoing liaison with the residential community and industries within the vicinity of the site.

The Study Area

The EIS addresses a study area that encompasses the immediate neighbouring properties, in particular the adjoining industrial premises and the residential areas on the other side of the Main Southern Railway. The total site area is 12,950 m^2.

Consultation

Extensive consultations have been previously conducted in preparing the EIS for the concrete batching and masonry plant and for the subsequent EIS prepared for Direct Holdings (NSW) Pty Ltd. These were conducted with the following persons and authorities: The previous EIS had been compiled after consultation with the following persons and Government bodies:

- Campbelltown City Council;
- NSW EPA;
- Sydney Catchment Authority; and
- Potentially affected residents.

Given these extensive previous consultations and the scale of the proposed development, further consultations were considered warranted. Consultations with the Council have been conducted during the preparation of the EIS.

The SEARS document has also recommended consultation with the following bodies:

- Roads and Maritime Services;
- Department of Primary Industries;
- Department of Resources and Energy.

The proponent is undertaking this consultation.

Council have requested that residents who attended the Land and Environment Court hearing in relation to the previous approved development be consulted and this consultation has been conducted by the proponent.

Justification

Bulk Recovery Solutions Pty Ltd is a new business established to recover and convert concrete plant washout materials into reusable construction materials to supply engineered construction materials for new developments.

The design of the proposed development has been undertaken to ensure that:

- The additional development does not alter the size of the site or its complexity;
- Existing facilities are readily able to house the development; and
- There are no cumulative increases in any of the environmental factors used to manage the environmental impacts i.e. noise, air quality, waste generated, stormwater, traffic or visual amenity of the industrial area or residential premises.

The principles of Ecological Sustainable Development (ESD) have been considered throughout the planning phases and the design of the proposed development. The development, as proposed, enables resources to be recovered, recycled and converted for reuse. The proposal enables a higher level of recovery of resources from the ready mixed concrete plants.

Community Benefits

There are limited community benefits to the residential community residing in the vicinity of the development. The proposed development would create 5–7 new employment positions at full production. This number includes process operators, transport crew and office staff. The original DA for the concrete batching plant included waste recovery from this plant.

The wider community would have greater benefits. The proposal meets the precautionary principle of Ecological Sustainable Development.

Alternatives

The proponents occupy the site and their business plan requires them to operate all facets of their business on a site controlled by themselves. This limits the alternate sites available.

There are other businesses operating resource recovery operations, several studies have been conducted by Benbow Environmental for these types of businesses for environmental compliance. However, the infrastructure of the selected site location is readily available without requiring further construction works and the site location is well placed for the type of operation that is proposed.

The site has a high acoustic wall along its boundary with the rail line and the nearest residents. The acoustic wall is of a major benefit for noise control and therefore supports the selection of this site.

The other alternatives exist but are not as cost effective to the proponents. Expanding the uses of their existing site reduces the overhead expenses associated with operating on a separate site.

The existing site is well located for transport of the concrete washout materials from the CBD of Sydney and the South West sub region of Sydney.

The opportunity to locate the proposed operation on another site therefore does not currently exist. This site can readily satisfy environmental criteria by using a building that is already constructed and available for use.

Objectives of the Proposal

Bulk Recovery Solutions Pty Ltd propose to use the rear and side area of the existing building at No. 16 Kerr Road, Ingleburn for the operation of a resource recovery facility to be incorporated into the already approved concrete batching plant. The masonry products plant has not been developed and may proceed in the future. The front half of the building was to be used for this purpose in the original EIS. The subsequent EIS for a demolition materials and scrap metals transfer, storage and Resource Recovery Facility, although approved by Council and subsequently expired is no longer of relevance. The excavation that exists on site and was originally to be used as part of the construction of a concrete batching plant is to be filled under a separate communication between Council and the site's owner. This aspect is not relevant to this EIS. The building to house this plant has been erected and provides a satisfactory space to undertake the proposed operation. The storage bins for recycling of concrete wastes would be inside the building spaces and locations that would not impede the use of the majority of the building for storage of wastes and resource recovery.

The objectives of the proposal are several and include:

- Enabling growth in Bulk Recovery Solutions Pty Ltd at a site located within reasonable proximity to Sydney's concrete batching plants;
- Expanding the use of an existing site and more fully utilising the infrastructure that exists;
- Readily satisfying environmental criteria without having to erect a new building;
- Installing extensive sediment and waste water controls by having the operations wholly within a building.
- Utilising wastewater such that it is reused in the washing processes;
- Utilising rainwater harvesting;
- Isolating the yard area where sediment may be released, direct this water into pits and transfer it by pump to the sedimentation ponds. These ponds, wholly within a built space and therefore protected from weather, were also part of the original EIS.

The approved use of the concrete plant would not be impeded or altered by the proposed development. The previously approved workshop would be used to house the proposed development as would a partly enclosed area on the northern side of the building.

Land Use Zoning

The land is currently zoned General Industry Zone 4(a) under the Campbelltown Local Environmental Plan 2002. The development as designed is consistent with the objectives of this zoning.

Identification and Prioritisation of Environmental Issues

The identification and prioritisation of the potential environmental impacts of the proposed development was a fundamental step in preparing the EIS. The Secretary's Environmental Assessment Requirements (SEARs) (SEAR No. 894) is presented in Attachment 1.

This process involved the following stages:

- Planning requirements;
- Assessment of local Council requirements and community expectations;
- Assessment of potential environmental impacts; and
- Report compilation summarising the Statements of Compliance.

Assessment of the Impacts

The preparation of the EIS has enabled the potential concerns expected from the residential community to be considered and deliberate steps have been taken in the design of the proposal and through the use of the land form to mitigate any concerns that may be raised.

Engineered controls to minimise potential impacts have been considered as inherent design features to be incorporated into the proposed development.

A brief summary of the main environmental impacts is presented below.

Noise

Construction noise would not be a significant issue as the building is already constructed for the previous purpose of housing the workshop.

The site has been designed with substantial noise controls in place to mitigate environmental noise associated with the operation of the masonry products plant and will provide extensive noise control for this additional process.

A high concrete acoustic wall has been erected on the site boundary nearest the residential area.

The use of reinforced concrete in the original construction of the building provides substantial noise reduction however much of the proposed operations would occur on the northern side of the site within existing built spaces.

The noise levels from the proposed extension of the uses of the site will not significantly contribute to the existing residential noise levels. The project specific noise levels approved for the previous development would need to be altered by 1 dB which is not significant.

There will also not be any substantial increase in traffic noise levels due to the relatively small numbers of truck movements needed for this size of development. Approximately 8 loads of concrete washout material would be received in a day. Two loads of finished product from Area C would be transported out of the site.

Air Quality

The air emissions from the process of storing, recovering, recycling and finally loading out construction materials engineered from this process are predominantly coarse dust particles.

This dust is readily controlled using water sprays and by placing the process within a building. This removes the potential for fugitive emissions of dust and particulates. External stockpiles are damp when brought to the site and would be kept damp by fixed water sprays.

A detailed air emissions assessment (which includes an air dispersion modelling component) has been conducted in accordance with the NSW EPA guidelines and provides findings that no further contribution to the existing air emissions from the site operations would be generated. An Environmental Management Plan (EMP) would need to be developed for the operation of the waste transfer station. Regular audits would be needed to ensure the EMP is being followed. Further requirements for the EMP are listed below and are standard requirements expected of an EPA licensed site.

Soil and Sediment

The proposed activity, if located outside the building, would require extensive management of stormwater as a result of soil and sediment being expected to be released during the emptying of bins and the process itself. From studies Benbow Environmental has conducted on several similar sites that are fully housing the emptying of bins, the storage stockpiles in the ground bins and the processing equipment within a building removes the soil and sediment from potentially contaminating external areas and leading to stormwater contamination issues.

A stormwater management plan for the site would need to be developed prior to a construction certificate being released. This EIS examines stormwater issues in detail in Section 5.

The external area of the site would be made suitable for storage of waste materials and recovered resources. The EMP proposed for the site would delineate the areas that can be used for this purpose.

Fire Safety

The processes involve the use of non-combustible materials and hence fire safety issues are limited to ensuring that the existing facility is compliant to the Building Code of Australia (BCA). This involved inspecting the site and auditing the existing fire services and exit pathways in accordance to BCA requirements. The fire services would be compliant with BCA.

Fauna and Flora

The site is within an area of land permanently altered to house industry. Therefore, as the site is being fully developed, there are no fauna and flora impacts associated with the proposed additional use.

Environmental Management Plan

An environmental management plan would be developed to the principles of ISO 14001 and this would provide the methods of operation to satisfy the following:

- Statement of Commitments;
- Conditions of Consent;
- Other legal environmental requirements; and
- A routine environmental auditing programme.

Ecological Sustainable Development

Ecological Sustainable Development (ESD) is growing in its acceptance amongst the community.

The Department of Environment and Heritage website defines ESD as "*development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs*".

The proposed development is an excellent demonstration of how to apply ESD to a new development in terms of the following aspects:

- Recover resources that would have been wasted and minimise disposal to landfill facilities;
- Encourage effective recycling and minimise waste disposal costs in the construction industry;
- Recovered materials can be used to produce engineered construction materials, winning valuable materials that replace new resources;
- Construction of new developments using recycled construction materials would be less carbon intensive compared to using new materials;
- Maximising the use of space available rather than developing a new site or reconstructing a new building means less construction materials and resources to be used; and
- The subject site is situated in a well-established industrial estate, therefore is not changing the existing land use. The land has already been cleared and designated for industrial purposes for many years.

The value of the proposed development needs to be recognised and be given reasonableness in its assessment. The control of the environmental management of the site activities will need emphasis in the approving process.

The main environmental safeguards to be implemented so that the environmental impacts are regulated include:

- Noise controls;
- Dust and particulates controls; and
- Environmental Management System.

Greenhouse Gas Emissions

The increasing development of our communities will need to address the consequences of a development on greenhouse gas emissions.

The proposal will generate minimal greenhouse gas emissions from the use of diesel fuels and electricity. The material that is recovered as a resource will require energy to manufacture recycled construction materials. These are the negatives.

The positives are that building materials will be recovered and reused in construction, minimising the need to win new sources of these materials.

Concluding Remarks

The EIS has undertaken detailed consideration of the major issues and designed methods of solving these. The potential environmental impacts associated with the proposed development are considered minimal, given the nature of the activities conducted and the implementation of proposed environmental safeguards.

Approval of the development is requested.

1. INTRODUCTION

The site currently has approval to operate a masonry plant consisting of a masonry block making plant and a ready mixed concrete plant at the site at 16 Kerr Road, Ingleburn. Development consent was granted following a Land and Environment Court Appeal to resolve specific issues. Bulk Recovery Solutions Pty Ltd propose to add an additional operation to the activities on site. This activity is associated with the recycling of building waste materials and converting these materials into reusable products. Collecting, storing and transferring scrap metal would also be a part of the site's activities. This activity is proposed to be undertaken within the building that would be housing the masonry block making plant.

The masonry block making plant is not proceeding in the immediate future. The concrete batching plant is proceeding to be erected.

Clause 35 of Part 2 of Schedule 3 allows for consideration that the additional development is not designated if the additions do not significantly increase the environmental impacts of the total development.

The design of the additional development has been undertaken to ensure that this is the outcome – no increase to the current level of environmental impact which readily satisfies all regulatory requirements. This enables Campbelltown City Council (the Council) to consider the additional development as requiring a statement of environmental effects and not an EIS. However, the Council has considered the proposal to be a designated development based on Schedule 3 of the Environmental Planning and Assessment Regulation, 2000 (EP&A) under the following definitions. The relevant extract is italicised and the relevant clauses are bolded.

"16 Crushing, grinding or separating works

(1) Crushing, grinding or separating works, being works that process materials (such as sand, gravel, rock or minerals) or materials for recycling or reuse (such as slag, road base, concrete, bricks, tiles, bituminous material, metal or timber) by crushing, grinding or separating into different sizes:

(a) that have an intended processing capacity of more than 150 tonnes per day or 30,000 tonnes per year, or

(b) that are located:

(i) within 40 metres of a natural waterbody or wetland, or

(ii) within 250 metres of a residential zone or dwelling not associated with the development.

(2) This clause does not apply to development specifically referred to elsewhere in this Schedule."

"32 Waste management facilities or works

(1) Waste management facilities or works that store, treat, purify or dispose of waste or sort, process, recycle, recover, use or reuse material from waste and:

(a) that dispose (by landfilling, incinerating, storing, placing or other means) of solid or liquid waste:

(i) that includes any substance classified in the Australian Dangerous Goods Code or medical, cytotoxic or quarantine waste, or

(ii) that comprises more than 100,000 tonnes of "clean fill" (such as soil, sand, gravel, bricks or other excavated or hard material) in a manner that, in the opinion of the consent authority, is likely to cause significant impacts on drainage or flooding, or
(iii) that comprises more than 1,000 tonnes per year of sludge or effluent, or
(iv) that comprises more than 200 tonnes per year of other waste material, or

(b) that sort, consolidate or temporarily store waste at transfer stations or materials recycling facilities for transfer to another site for final disposal, permanent storage, reprocessing, recycling, use or reuse and:
(i) that handle substances classified in the Australian Dangerous Goods Code or medical, cytotoxic or quarantine waste, or
(ii) that have an intended handling capacity of more than 10,000 tonnes per year of waste containing food or livestock, agricultural or food processing industries waste or similar substances, or
(iii) that have an intended handling capacity of more than 30,000 tonnes per year of waste such as glass, plastic, paper, wood, metal, rubber or building demolition material, or

(c) that purify, recover, reprocess or process more than 5,000 tonnes per year of solid or liquid organic materials, or

(d) that are located:
(i) in or within 100 metres of a natural waterbody, wetland, coastal dune field or environmentally sensitive area, or
(ii) in an area of high watertable, highly permeable soils, acid sulphate, sodic or saline soils, or
(iii) within a drinking water catchment, or
(iv) within a catchment of an estuary where the entrance to the sea is intermittently open, or
(v) on a floodplain, or
(vi) within 500 metres of a residential zone or 250 metres of a dwelling not associated with the development and, in the opinion of the consent authority, having regard to topography and local meteorological conditions, are likely to significantly affect the amenity of the neighbourhood by reason of noise, visual impacts, air pollution (including odour, smoke, fumes or dust), vermin or traffic…"

The proposed development is considered designated development under Item 32 (Waste management facilities or works) as a consequence of the following:

- The development is within 250 metres of dwellings not associated with the development.

Waste and recycling operations have legal obligations under the Protection of the Environment Operations (Waste) Regulation 2014.

Under the Regulation, the threshold quantity of waste a facility can accept for processing without holding an Environment Protection Licence is 6,000 tonnes per annum.

The threshold quantity for storage or processing at any one time is now 1,000 tonne.

Benbow Environmental was commissioned by Bulk Recovery Solutions Pty Ltd to prepare the EIS to support the development application. This EIS addresses the requirements of the Campbelltown City Council and other relevant government authorities.

The EIS facilitates a thorough assessment of the environmental impact considered necessary to be assessed for the proposed developed and includes the following major aspects:

- Planning, legislative and regulatory considerations;
- Noise emissions and assessment;
- Air emissions and assessment;
- Economic and social aspects; and
- Waste generation and management.

The EIS has resulted in a compilation of environmental safeguards recommended for the proposed development.

A Statement of Commitments is provided as Section 8. The Statement of Commitments summarises the commitment made by the proponents to the environmental controls incorporated into the development. This statement bears the signatures of the proponents.

1.1 INTRODUCTION TO THE PROPONENT

The proponents for the proposed development are the directors of Bulk Recovery Solutions Pty Ltd.

The purpose of this report is to outline the proposed operation of a waste transfer recovery and recycling facility that would enable greater use of this site. The development as proposed in this EIS, would utilise the northern side of the site and the building in the eastern half. These areas of the site were previously developed under earlier consents.

The site already has development approval for a concrete batching, a masonry products plant, raw material storage area, workshop, offices and amenities to service the site's operations. No equipment associated with the masonry production plant has been installed. It is proposed to use the northern side and rear of the building that has been erected as the operational use for the waste transfer and resource recovery activities. The development as outlined by the proponent would not use the external rear yard area for operations. This is a matter of critical importance as this ensures that residential noise levels would not be exceeded.

1.2 PROJECT OUTLINE

This section of the EIS outlines the project. This includes the objectives of the project, the need for the project, purposes of the EIS, structure of the document, and statutory requirements.

1.2.1 Objectives of the Proposal

The purpose of the development is to:

- Utilise the already built building to enhance the operations of the site. The proposal will enable waste materials generated by the concrete batching plants in Sydney to be processed and valuable materials recovered to be re-used. This will provide advantages to the construction industry;
- Use the site for resource recovery, conversion into construction materials and delivery from the site to end users;
- Operate a site with effective environmental controls built as an integral part of the site; and
- Operate a site with ample room for truck manoeuvring and a weighbridge.

The value of this development to the proponent is not in the sales value but in lowering site operating costs by recycling waste materials and achieving greater use of the site.

1.2.2 Need for the Project

The proposal is needed by the proponents to enable a business opportunity to be developed in an area unused on an existing site.

The site is well suited to this use as the operations are able to be conducted wholly within existing built areas.

The site has a high acoustic wall constructed of concrete along the boundary that faces the nearest residential area. This attenuates the noise emissions from the proposed operations.

1.2.3 Purposes of the EIS

The purpose of this EIS is to document the existing environment and assess the potential environmental impacts from the proposal.

The purpose of the EIS is also to provide the consent authority, the community, government authorities, and the applicant with sufficient information to make informed decisions in relation to the proposed development.

The consent authority is the Campbelltown City Council, who has granted approvals for the concrete batching and masonry plant.

1.2.4 Structure of the EIS

The EIS is organised into the following three main sections:

- Executive Summary
  This summarises the proposed development, justification and the environmental assessment of the proposal.

- Main Contents of the EIS
  The main contents of the EIS describe the development in detail, the environmental assessment of the issues, the impacts, and safeguard measures.

- Attachments
  The attachments contain the requirements of the Secretary of the Department of Planning and Environment, expert reports and technical support documents. The Secretary's Environmental Assessment Requirements (SEARs) replaced the Director General's Requirements (DGRs).

1.2.5 Statutory Requirements

The statutory requirements to be satisfied are those contained within the Environmental Planning and Assessment Act 1979 and the associated Environmental Planning Instruments and Regulations.

In accordance with requirements under the EP&A Regulation, 2000, the Secretary's Requirements for the preparation of an EIS for the proposed development were obtained. The SEAR, Number 894, for a proposed Waste Transfer and Resource Recovery Facility was issued by the Department of Planning and Environment.

The key environmental planning issues that were raised in these requirements included the following:

- Assessment of the development against relevant legislation and environmental planning instruments;
- Noise impacts including noise during construction, operation and traffic noise contributions;
- Air quality impacts particularly relating to dust and odour;
- Water management including water quality, groundwater and surface discharge;
- Potential impacts to soil and groundwater;
- Waste generation and management;
- Demolition material receipt, processing and management;
- Hazards and risk including fire safety and dangerous goods management;
- Road and traffic contributions, particularly the capacity of Kerr Road to support increased heavy vehicle movements; and
- Potential impacts on closest residential areas.

A copy of the requirements has been included as Attachment 1 to the EIS. All of the requirements of the Secretary have been considered in the preparation of this EIS.

The Statement of Compliance is listed in Table 2-2 of Section 2.3 and titled "Compliance with Environmental Assessment Requirements". This table lists the section and page where requested information has been provided.

1.3 DEVELOPMENT ALTERNATIVES

This section of the EIS discusses alternatives to the development in regard to both the site and proposed methods of operation. The criteria for selection of the site are firstly discussed.

1.3.1 Criteria for Selection

- Existing site has ample room available to house the proposed operation within existing built areas.
- The site is not in a sensitive land use area due to the presence of a high acoustic wall.
- The development is a permitted use with consent.
- The development is a beneficial use which fulfils the principles of ecologically sustainable development and is to be encouraged.
- The site is well positioned for transport with arterial roadways to the CBD of Sydney, to the west and south-west regions of the Greater Sydney Metropolitan Area.

The land meets the selection criteria.

1.3.2 Alternative Sites

There are always alternative sites that can be considered. However, for this development, the infrastructure and facilities of the existing site precludes other sites fulfilling the solution criteria.

1.3.3 Alternative Design and Methods

There are alternative design and methods of operation available. The locations on site to house the operations are limited to the northern side and rear of a large concrete building. This therefore limits the methods of operation that are available. The size of the development is relatively small and this therefore favours the process that is typically used for separating and then crushing/screening of washout bulk materials from concrete batching plants.

1.4 LICENCES AND APPROVALS

The proposed development would be an Integrated Development under Schedule 1 of the Protection of the Environment Operations Act 1997 (POEO Act). The proposed development would process up to 30,000 tonne p.a (or approximately 120 tonne/day) of materials, which is within the size range of being an Integrated Development and requiring an Environment Protection Licence (EPL).

1.5 IDENTIFICATION AND PRIORITISATION OF ISSUES

As noted in the Executive Summary, the identification and prioritisation of the potential environmental impacts of the proposed development was a fundamental step in preparing this EIS.

This process involved the following stages:

- Planning, legislative and regulatory considerations;
- Noise emissions and assessment;
- Air emissions and assessment;
- Economic and social aspects; and
- Waste generation and management.

The statutory requirements and government guidelines in conjunction with the government consultation process confirmed the presence of issues including:

- Noise;
- Air quality;
- Water quality; and
- Waste generation and management.

The following environmental aspects have also been assessed and the levels of potential impacts associated with the proposal were considered:

- Soil and groundwater;
- Stormwater and leachate management;
- Flora and Fauna;
- Traffic impact;
- Fire safety; and
- Chemical management.

The following section of the EIS examines the development issues relating to planning.

2. DEVELOPMENT ISSUES

2.1 INTRODUCTION

This Section of the EIS provides an assessment of the proposed development in accordance with all relevant statutory planning controls.

2.1.1 Site Details

The subject land is described as Lot 16 DP 717203. The site itself is a relatively rectangular parcel, which can only be accessed via Kerr Road from the south side of the site.

The site is also located within the Georges River Catchment. The nearest waterway to the site is Redfern Creek located approximately 230 m west of the site.

The total site area is 12,950 m^2.

A site plan showing the basic details of the proposed development is shown on Figure 3–2 with the approved concrete products factory also in operation.

The site is currently owned by members of the Baillie family .

The Land Title is shown in Attachment 2.

The areas of the site to be occupied by the proposed development have been in use for a workshop and also for the preparation of the area for a concrete batching plant.

The approved concrete plant has not been erected. The excavation for the concrete plant previously designed would be filled. Documentation is provided in this regard in Attachment 3. The masonry block making plant would not be proceeding for the immediate future. An acoustic wall was required for the concrete batching plant. The proposed operations would occupy the northern side of the existing building, at the rear of the building and site, as well as use the weighbridge adjacent to the front entrance. The rear of the building is referred to as the Workshop in the EIS as this had been its previous use. The EIS does not make comment on uses of other areas of the site.

2.1.1.1 Surrounding Development

The site is currently zoned 4(a) under the Campbelltown LEP 2002 within the north-eastern boundary of the Ingleburn Industrial Area. Existing Factory units are adjoined to the north-west and south-west. The Main Southern Railway is separated from the south-eastern boundary of the site by a strip of land approximately 8 m wide. The Main Southern Railway separates the site from the Ingleburn residential area.

The nearest resident to the site is approximately 43 m to the south-east, on the other side of the Main Southern Railway. The nearest major arterial road is Henderson Road, which runs adjacent to the north-eastern boundary of the site. Being an industrial estate, the streetscape surrounding the site is industrial.

2.1.1.2 Existing Development

The majority of the land on site has been developed to the proponent's specifications and in accordance with Council's conditions of consent. This includes a defined factory area comprising of a concrete batching and masonry products manufacturing facility, a workshop, raw material storage bins, offices and amenities. Parking spaces have been allocated along the north-western boundary of the site. Site plans are presented in Section 3 of the EIS. The masonry products manufacturing facility is not proceeding in the immediate future.

The internal floor areas of the building spaces are concreted. The external areas used for internal roads and car parking are concreted. There is an overland water flow path that is an easement and cannot be used for storage.

2.1.1.3 Topography and drainage

The site has a relatively flat topography. The majority of the site is paved with minimal landscaping that is restricted to the rear car park. All drainage has been being designed to connect into the existing on site drainage system.

2.1.1.4 Zoning

The subject site is zoned 4(a) (General Industry) pursuant to the provisions of Campbelltown Council Local Environmental Plan 2002. A detailed assessment of the zoning objectives and development standards is provided in Section 2.2.3.

2.2 PLANNING AND LEGISLATIVE REQUIREMENTS

2.2.1 Development Control Plans

The provisions of Development Control Plan Part 6 (2009) – Industrial Development applies to this proposal. Details have been included below.

2.2.1.1 Campbelltown Development Control Plan (2009)

The subject site is affected by the provisions of Campbelltown (Sustainable City) Development Control Plan (Sustainable City DCP), however, it is noted that this document has limited application to industrial activities.

The provisions of Campbelltown Industrial Development Policy apply to the site and the proposed additional development. Whilst the policy has not been prepared as a Development Control Plan, its applications to industrial development within the City of Campbelltown essentially play this role and for the purposes of this assessment, it is considered.

The subject site is also affected by Council's Off-street Parking Policy and has been addressed within the EIS.

2.2.1.2 Draft Campbelltown Local Environmental Plan 2014

Zone IN1 General Industrial identifies land suitable for a range of industrial and warehouse uses and other compatible activities, including general industries, light industries, high technology industries, industrial training facilities, depots and other limited support services and facilities including neighbourhood shops and infrastructure. It should be noted that all forms of housing, heavy industry, bulky goods premises and similar uses are prohibited in this zone.

The IN1 General Industrial Zone generally applies to land currently zoned 4(a) and to some land currently zoned 4(b) Industry under Campbelltown (Urban Area) LEP 2002, except for land which has been zoned IN2 Light Industrial (as discussed below).

Zone IN2 Light Industrial identifies land which permits (with consent) a variety of land uses consistent with the objectives and the nature of a light industrial area generally, including light industries, depots, industrial retail outlets, bulky goods premises and warehouse and distribution centres. Limited daily support services and facilities and infrastructure are also permissible in this zone. All types of housing are prohibited.

2.2.2 State and Regional Environmental Planning Policies

The following Regional (REP) and State Environmental Planning Policies (SEPP) have been examined. Those that are applicable are examined in Section 2.2.3.

- SEPP (Infrastructure) 2007 – The application does not require referral under the provisions of SEPP (Infrastructure) 2007.

- SEPP No. 33 – Hazardous and Offensive Development – The application does not trigger SEPP 33 and is considered not relevant. It is examined in detail below.

- REP No. 2 – Greater Metropolitan Regional Environmental Plan No. 2 Georges River Catchment. The requirements of this Plan apply to the site. This REP is discussed in Section 2.2.2.2 of the Report. There are no draft REPs which apply to the subject site.

- State Environmental Planning Policy (Infrastructure) 2007.

- South West Subregion Draft Subregional Strategy.

2.2.2.1 State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

Pursuant to Clause 3 of State Environmental Planning Policy No. 33 (SEPP 33) 'potentially hazardous industry' is defined as follows:

> *"potentially hazardous industry" means a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:*
>
> *(a) to human health, life or property; or*
> *(b) to the biophysical environment,*
>
> *and includes a hazardous industry and a hazardous storage establishment;*

Hazardous storage establishment is defined at Clause 4 of SEPP 33 as follows:

> *"hazardous storage establishment" means any establishment where goods, materials or products are stored which, when in operation and when all measures proposed to reduce or minimise its impact on the locality have been employed (including, for example, measures to isolate the establishment from existing or likely future development on the other land in the locality), would pose a significant risk in relation to the locality:*
>
> *(a) to human health, life or property; or*
> *(b) to the biophysical environment,*

The materials stored within the northern side of the building on site (none external) will consist of washout materials from concrete batching plants. These are materials that are remnant in the truck mounted concrete mixers operated by the ready mixed concrete batching plants. As the mixers (also referred to as concrete agitators) return to the concrete batching plant, the barrel of the mixer needs to be washed out so that it is free of any residual concrete. The residual concrete may contain all of the raw materials used in the batching of concrete i.e. aggregates; sand, fly ash and cement bound onto the aggregate; sand, fly ash, cement and water as a slurry. The concrete batching plants are provided with a washout area. This area drains excess water into collection pits or in-ground concrete tanks to enable the water to be recycled at the concrete plant.

The bulk of the washout material is first drained and while damp, is loaded into truck and trailer bodies for removal from the concrete batching plant. The washout materials are removed for disposal or for reprocessing off-site. The washout materials contain resources that can be recovered and reused in construction materials, including new concrete being batched by the concrete plants.

None of these materials are considered hazardous. The subject site does not propose to receive hazardous materials or substances and accordingly, it is considered that the proposal does not involve potentially hazardous or potentially offensive development. The processes require no hazardous substances or

chemicals belonging to dangerous goods Classes. Accordingly, a preliminary hazard analysis is not required.

Potential emissions from the proposed operations include dust and noise. However, due to the previous installation of an acoustic wall and a dust spray system to control the effects of noise and dust generating areas respectively within the site, it is considered that operations can take place within the requirements of the NSW EPA and therefore are not considered 'offensive'.

2.2.2.2 Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment

REP 2 applies to the subject land. The following provides an assessment of the proposed development in accordance with REP 2.

REP 2 has the following aims:
(2) The specific aims and objectives of this plan are as follows:

Environmental Protection and Water Quality and River Flows

> *(a) to preserve and protect and to encourage the restoration or rehabilitation of regionally significant sensitive natural environments such as wetlands (including mangroves, saltmarsh and seagrass areas), bushland and open space corridors within the Catchment, by identifying environmentally sensitive areas and providing for appropriate land use planning and development controls,*
>
> *(b) to preserve, enhance and protect the freshwater and estuarine ecosystems within the Catchment by providing appropriate development,*
>
> *(c) to ensure that development achieves the environmental objectives for the Catchment.*

Regional Role and Land Use

(a) to identify land uses in the Catchment which have the potential to impact adversely on the water quality and river flows in the Georges River and its tributaries and to provide appropriate planning controls aimed at reducing adverse impacts on the water quality and river flows,

(b) to conserve, manage and improve the aquatic environment within the Catchment which is a significant resource base for the aquaculture industry, by providing controls aimed at reducing pollution entering the Catchment's watercourses,

(c) to protect the safety and well-being of the local and regional community in accordance with standards and processes aimed at improving the water quality and river flows in the Catchment to enable recreation,

(d) to aid in the improvement of the environmental quality of Botany Bay in conjunction with other regional planning instruments.

Part 2 of REP 2 sets out a range of planning principles, which must be considered when a consent authority determines a development application. The following provides a comment in relation to each principle for consideration.

General Principles

The proposed development involves a wide gambit of environmental protection measures, including physical devices and barriers as well as management and quality assurance systems. These are discussed in detail within the main body of the EIS.

Having regard to these environmental protection measures, the proposed development is unlikely to result in any adverse impact to the Georges River or its tributaries. The main safeguard is placing the activities of the proposed development within a building. The materials being processed are inert and there are no chemicals associated with the operation of the proposed development.

There would be a minor quantity of diesel fuel stored in drums on a bunded pallet within the workshop area of the building.

Specific Planning Principles

Acid Sulphate Soils

The subject site does not contain acid sulphate soils.

Bank Disturbance

The proposed development will not result in any disturbance to the bank of the natural watercourse that flows to nearby Redfern Creek or Bunbury Curran Creek.

Flooding

Based on today's interpretation of the existing developed site, this has been taken into consideration with the future development of the site.

Industrial Discharges

The proposed development is unlikely to result in any industrial discharges to land.

Land Degradation

The proposed development will not result in any exposed soils at final development stage as the waste transfer and recycling facility will occur within the existing enclosed, hardstand industrial building floor.

On-Site Sewage Management

The subject site has access to Sydney Water's reticulated sewerage system. No on-site sewage disposal is proposed.

River-Related Uses

The site does not extend to the foreshore of the Redfern Creek or Bunbury Curran Creek and accordingly, this issue is not relevant to the subject site.

Sewer Overflows

The proposed development is unlikely to result in significant sewerage discharge.

Urban/Stormwater runoff

The application is considered satisfactory with regard to this issue as the addition to the site's operation would be carried out inside a building.

Urban Development Areas

Not relevant to the proposal.

Vegetated Buffer Areas

The proposed development provides for the maintenance of an 8m buffer to the natural vegetation separating the site from Henderson Rd as well as the Main Southern Railway. This riparian treatment is consistent with other similar localities/developments and is considered to be satisfactory.

Water Quality and River Flows

Having regard to the stormwater protection measures detailed within the body of the EIS, the proposed development is unlikely to result in any adverse water quality or river flow impacts.

Wetlands

Not relevant to the proposal.

Planning Requirements and Consultation

Item 22 to Clause 11 of REP 2 provides specific planning controls for waste management facilities as follows:

> *A system is to be required to manage leachate surface controls on the land on which the waste management facility or works is or are proposed.*
>
> *A site management plan is to be required for the land on which the waste management facility or works is or are proposed.*
>
> *The likelihood of groundwater contamination. The adequacy of the proposed leachate management system and surface water controls. The long-term stability of the final landform and the adequacy of the site management plan.*
>
> *Where the proposed development involves extraction of material, whether an adverse impact on the Georges River or its tributaries will result.*

In relation to the above matters it is noted that:

- All storage of materials will take place within the built areas of the site and recycling activities are to occur on hardstand areas also all within the existing built areas. Accordingly, there is considered to be minimal to negligible risk of leaching of materials into the subsoil.
- The proposed development is unlikely to result in any ground and water contamination.
- Upon completion of the development, there are no operational characteristics which would give rise to land instability.
- The proposed development does not involve extraction of material; hence, there are no likely adverse impacts on the Georges River or its tributaries.
- Soil and sediment controls already approved would be adequate for this proposed additional development. No additional controls would be considered necessary.

2.2.2.3 State Environmental Planning Policy No. 55 – Remediation of Land

Pursuant to Clause 7 of State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55), the consent authority shall not provide consent to the carrying out of development unless it has considered contamination and remediation.

Potential for previous activities to have caused pollution has been assessed, and Council granted a previous consent on the basis there has been no contamination of the internal areas of the building.

Clause 7 states the following:

> 7 Contamination and remediation to be considered in determining development application

(1) A consent authority must not consent to the carrying out of any development on land unless:

(a) it has considered whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

(2) Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subclause (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.

(3) The applicant for development consent must carry out the investigation required by subclause (2) and must provide a report on it to the consent authority. The consent authority may require the applicant to carry out, and provide a report on, a detailed investigation (as referred to in the contaminated land planning guidelines) if it considers that the findings of the preliminary investigation warrant such an investigation.

(4) The land concerned is:

(a) land that is within an investigation area,

(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,

(c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital land:

(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and
(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).

Table 1 of the Managing Land Contamination Guidelines provides the following potentially contaminating land uses:

- Acid / alkali plant and formulation
- Agricultural / horticultural activities
- Airports

- Asbestos production and disposal
- Chemical manufacture and formulation
- Defence works
- Drum re-conditioning works
- Dry cleaning establishments
- Electrical manufacturing (transformers)
- Electroplating and heat treatment premises
- Engine works
- Explosives industry
- Gas works
- Iron and steel works
- Land fill sites
- Metal treatment
- Mining and extractive industries
- Oil production and storage
- Plant formulation and manufacture
- Pesticide manufacture and formulation
- Power stations
- Railway yards
- Scrap yards
- Service stations
- Sheep and cattle dips
- Smelting and refining
- Tanning and associated trades
- Waste storage and treatment
- Wood preservation

The site of the proposed development as it exists today, has not been the subject of contamination and the proponent advises the areas of the site to be occupied by the development are free of wastes and any visual degradation.

2.2.2.4 State Environmental Planning Policy No. 11 – Traffic Generating Land Uses

The proposed development involves occupation of an industrial building having a gross floor area of approximately 12,950 m^2. Item (f) of Schedule 2 of SEPP 11 includes:

> *(f) the erection of a building for the purposes of industry where the gross floor area of the building is or exceeds 5,000 square metres, or the enlargement or extension of a building used for the purposes of industry where the gross floor area of that enlargement or extension is or exceeds 5,000 square metres;*

The proposed development involves neither the erection of a new building or enlargement of an existing building and accordingly the proposed development is not considered to fall within Schedule 2 of SEPP 11. Referral to the Local Traffic Committee is not required under the instrument.

2.2.2.5 Industrial Development Policy

The following provides an assessment of the proposed development in accordance with the requirements of Council's Industrial Development Policy. Whilst this document is not a formal Development Control Plan, it has been consistently applied to industrial development within Campbelltown and its relevance is considered for the purposes of this assessment.

2.2.2.6 Car Parking

All traffic will enter and exit via the driveway on Kerr Rd. All vehicles will enter and exit the property in a forward direction.

Off street car parking for sixty-five (65) vehicles is provided on site. This is substantially in excess of the number needed for a business employing five (5) to seven (7) staff. The car and truck parking areas are shown on the site plan.

2.2.2.7 South West Subregional Draft Subregional Strategy

The land is a part of a long established industrial estate providing jobs growth and opportunities for new businesses to start their development cycle.

The development of the site has occurred from "greenfield" by the original proponents and will achieve many of the objectives of the Draft Subregional Strategy such as supporting emerging industries.

The development as proposed is an innovative step as the activities of the business are to focus on extracting valuable resource materials from materials that had limited use for road construction.

This fulfils another one of the objectives of this strategy of promoting innovation. Although waste recycling operations may have the potential to generate environmental issues, adoption of the controls outlined for this development will ensure the search for innovation is not compromised by poor environmental practices.

Adherence to an Environmental Management Plan by the business owners is considered to be a critical issue. The Statement of Commitments presented in Section 8.4 of the EIS has been signed by the Directors of Bulk Recovery Solutions Pty Ltd.

The use of the building enclosure and the use of wet processes are the main controls to prevent release of dust and particulates.

The development therefore does not detract from the environmental objectives in the Strategy Action for Air. The air impact assessment provided in this EIS assesses the cumulative impact of the previously approved concrete plant and masonry block plant even though these activities have not progressed further since the building was constructed.

Noise emissions would also be adequately controlled so that residents are not subjected to unacceptable noise levels based on the NSW Industrial Noise Policy.

The purpose of the development meets the objects of the Strategy in improving our community's use of natural resources in Sydney.

The quantities of natural resources to be conserved is not significant in contrast to the millions of tonnes of construction materials consumed, but as a small project, it will demonstrate what is achievable and give encouragement for more similar projects.

The location of this facility is within relative close proximity for transporting resource materials from the CBD of Sydney and being in the South West Subregion accord with the Strategy.

To benefit the consent authority, it is essential that the advantages of locating a facility of this type in Ingleburn are not unbalanced by visual impacts or nuisance to other businesses by excessive noise or release of particulates.

Hence, being able to locate the facility within a large concrete building is ideal as it protects the Campbelltown City Council's desire for building industrial estates with high visual appearance and few conflicts in land use.

2.2.3 Statutory Controls

2.2.3.1 Campbelltown (Urban Area) Local Environmental Plan 2002

The subject site is zoned 4(a) General Industrial Zone, pursuant to the provisions of Campbelltown (Urban Area) Local Environmental Plan 2002 (CLEP 2002). The objectives of the 4(a) zone are listed at Clause 12 as follows:

The objectives of this zone are:

(a) to encourage activities that will contribute to the economic and employment growth of the City of Campbelltown, and
(b) to allow a range of industrial, storage and allied activities, together with ancillary uses, the opportunity to locate within the City of Campbelltown, and
(c) to encourage a high quality standard of development which is aesthetically pleasing, functional and relates sympathetically to nearby and adjoining development, and
(d) to protect the viability of the commercial centres in the City of Campbelltown by limiting commercial activities to those associated with permitted industrial, storage and allied development, and
(e) to ensure development will not be carried out unless the consent authority is satisfied that the processes to be carried on, the transportation to be involved, or the plant, machinery or materials to be used, do not interfere unreasonably with the amenity of the area.

The proposed development is considered to be consistent with the above objectives. In this regard, we note the following:

- The proposed development puts to further productive use a large industrial building that is underutilised.
- The proposed development will occupy the existing building structure and, in that regard, is considered to be appropriate to the context of the locality and functional to the intended use.
- The proposed development does not involve any commercial component and will therefore have no impact on the viability of commercial centres.

The proposed use will be compatible with the existing industrial and commercial development in the area.

2.2.3.2 Definitions in Campbelltown Local Environment Plan

Design Guidelines

The general criteria for the design of the approved factory development have addressed the following guidelines:

- Compliance with the objectives of the plan;
- Submission of a detailed landscape plan;
- The building design provides for an attractive building incorporating façade treatment selected building materials and a detailed colour schedule;
- The design is functional and will compliment other adjoining industrial developments in Kerr Rd;
- Loading areas have been designed to enable vehicles to enter and leave the site in a forward direction with adequate on site manoeuvring area; and
- The proposed use of the factory building is an appropriate use for the industrial estate and will not be in conflict with adjoining premises.

Development Standards

The existing factory building has been approved by Council and satisfies the general requirements for industrial buildings in regard to front façade, side, rear walls and roof cladding. The following table details the relevant development standards that apply to the proposed use.

Table 2-1: Development Standards

Standard	Requirement	Compliance
Fire Safety – Clause 5.4	Compliance with fire safety provisions for industrial buildings in BCA	The additional development does not alter the fire safety requirements
WorkCover	Proposal to comply with requirements of the WorkCover Authority	Proposed use will comply
Access for Disabled Persons	Parking to comply with DCP Part 6.4. Access in accordance with Part D3 of BCA	Access to car parking and building will be provided to satisfy disabled person access requirements
Pollution Control	Industrial activity not to interfere with existing and future amenity of adjoining industrial occupations and neighbourhood	Issues relating to the proposed use in regard to pollution control have been addressed in this Environmental Impact Statement
Parking (DCP Part 6.4)	1 space/250m² gross floor area + 1 space/35m² office	Proposed use does not generate the requirement for additional off street car parking. The total staff (5) will be adequately accommodated by the provision of 65 on-site car parking spaces that Council indicate are required.
Vehicular Access	9 metre wide access	Existing driveways – 9 metres wide
Amenities	Male and female amenities	Complies
Advertising	One sign and street number	Complies
Trade Waste	Stored within factory building	Complies

2.2.4 Environmental Planning and Assessment Regulations 2000

Schedule 3 Part 1 of the EP&A Regulations 2000 provides specific definitions for land uses. Under Clause 16 - Crushing, grinding or separating works means:

> *(1) Crushing, grinding or separating works, being works that process materials (such as sand, gravel, rock or minerals) or materials for recycling or reuse (such as slag, road base, concrete, bricks, tiles, bituminous material, metal or timber) by crushing, grinding or separating into different sizes:*
>
> *(a) that have an intended processing capacity of more than 150 tonnes per day or 30,000 tonnes per year, or*
>
> *(b) that are located:*
>
> *(i) within 40 metres of a natural waterbody or wetland, or*
>
> *(ii) within 250 metres of a residential zone or dwelling not associated with the development.*
>
> *(2) This clause does not apply to development specifically referred to elsewhere in this Schedule.*

Clause 32 is also relevant.

"32 Waste management facilities or works

(1) Waste management facilities or works that store, treat, purify or dispose of waste or sort, process, recycle, recover, use or reuse material from waste and:

(a) that dispose (by landfilling, incinerating, storing, placing or other means) of solid or liquid waste:

(i) that includes any substance classified in the Australian Dangerous Goods Code or medical, cytotoxic or quarantine waste, or

(ii) that comprises more than 100,000 tonnes of "clean fill" (such as soil, sand, gravel, bricks or other excavated or hard material) in a manner that, in the opinion of the consent authority, is likely to cause significant impacts on drainage or flooding, or

(iii) that comprises more than 1,000 tonnes per year of sludge or effluent, or

(iv) that comprises more than 200 tonnes per year of other waste material, or

(b) that sort, consolidate or temporarily store waste at transfer stations or materials recycling facilities for transfer to another site for final disposal, permanent storage, reprocessing, recycling, use or reuse and:

(i) that handle substances classified in the Australian Dangerous Goods Code or medical, cytotoxic or quarantine waste, or

(ii) that have an intended handling capacity of more than 10,000 tonnes per year of waste containing food or livestock, agricultural or food processing industries waste or similar substances, or

(iii) that have an intended handling capacity of more than 30,000 tonnes per year of waste such as glass, plastic, paper, wood, metal, rubber or building demolition material, or

(c) that purify, recover, reprocess or process more than 5,000 tonnes per year of solid or liquid organic materials, or

(d) that are located:

(i) in or within 100 metres of a natural waterbody, wetland, coastal dune field or environmentally sensitive area, or

(ii) in an area of high watertable, highly permeable soils, acid sulphate, sodic or saline soils, or

(iii) within a drinking water catchment, or

(iv) within a catchment of an estuary where the entrance to the sea is intermittently open, or

(v) on a floodplain, or

(vi) within 500 metres of a residential zone or 250 metres of a dwelling not associated with the development and, in the opinion of the consent authority, having regard to topography and local meteorological conditions, are likely to significantly affect the amenity of the neighbourhood by reason of noise, visual impacts, air pollution (including odour, smoke, fumes or dust), vermin or traffic..."

In response to the regulative requirements that trigger designated development, the following comments are made in relation to the proposed use.

The proposed use will process and sort waste material sourced from concrete batching plants. The unwanted waste by-products are dispatched off site to a licensed landfill, however the proponent advises these are very minimal. The separation distance triggers the relevance of Clause 16.

The processing capacity of the land use may exceed 120 tonnes per day and 30,000 tonnes per year.

The subject site is not located within 40 m of a natural water body or wetland. The nearest resident exists approximately 43 m away and is separated from the site by the Main Southern Railway and a high acoustic wall.

In consideration of the volume of raw product processed and the location of the subject site, the proposed use would be integrated development. Hence, the site will require an Environment Protection Licence.

The trigger of Clause 32 waste management facilities or works was discussed in Section 1 Introduction and similar to Clause 16 is only triggered for designated development because of its proximity to a residential zone and a dwelling not associated with the development.

The existing environmental safeguards and the basis of the proposal being to house the additional development wholly within a building ensure that significant environmental impact is unlikely.

2.2.5 Environmental Assessment

2.2.5.1 Section 79 C (1) – Matters for Consideration

The following section provides an assessment of the proposed development in accordance with the provisions of Section 79C of the Environmental Planning and Assessment (Amendment) Act, 1979.

In determining a development application a consent authority is to take into consideration such of the following matters as are relevant to the development, the subject of the development application.

(a) The provisions of:

(i) Any environmental planning instrument

The Campbelltown Local Environmental Plan (LEP) 2002 applies to the subject land. The subject land is zoned 4(a) (General Industry Zone). Under the provisions of this zone the proposed use is permissible with the consent of Council.

(ii) Any draft environmental planning instruments that have been placed on public exhibition

None relevant at this stage.

(iii) Any Development Control Plans

The proposed use has been assessed in accordance with DCP No. 6 – Industrial Development. The development complies with the relevant requirements (or can be conditioned to comply). The objectives of the respective Development Control Plan have been addressed in Section 1.6 of the Report.

(iv) Any matters prescribed by the regulations.

None at this stage.

(b) The likely impact of the development including environmental impacts in both the natural and built environment and social and economic impacts in the locality.

- Context and Setting

The subject site No. 16 Kerr Road, Ingleburn is located on the northern side of the street.

The proposed use will complement the development and strengthen the overall economic development of the area.

- Potential Impact on Adjoining Properties

There will be no negative impact on the adjoining or surrounding industrial developments with the environmental controls designed into the development.

- Access, Transport and Traffic

The applicant will utilise the existing exit/entry driveways on to Kerr Road. Traffic movements will be in a forward direction on and off the site, with no conflict with traffic movements in Kerr Road.

- Public Domain

The proposed use will have a positive contribution to the public domain.

- Utilities

The existing utilities have been provided to service the complex.

- Heritage

There are no heritage issues.

- Other Land Resources

The proposed development will utilise an existing valuable industrial development.

- Critical Habitat

The land does not include or comprise critical habitat.

- Air and Microclimate

There are no air or microclimate issues.

- Waste

All trade waste materials generated by the recycling process that cannot be recycled or reused will be disposed of through a licensed waste-handling contractor to a licensed landfill.

- Energy

There are no energy issues.

- Noise

The processes in the proposed use will not emit noise to a level that exceeds 70dB(A) at the property boundary and the processes would be wholly within built areas. There will be no cumulative increases in the residential noise provided the noise control safeguards detailed in the Noise Section of this EIS are implemented.

- Natural Hazards

There are no acknowledged natural hazards.

- Social Impact in the Locality

There are no negative social impacts.

- Economic Impact in the Locality

The proposed use will contribute to the economic development of Ingleburn.

- Site Design and Building Form

The existing building design and form will not be altered.

- Construction

The building has been built and no further construction is required for this proposed additional development.

- Cumulative Impacts

There are no cumulative impact issues that exceed recognised environmental criteria, namely noise and air criteria.

(c) The suitability of the site for the development.
The proposed development is appropriate for this site. The objectives of the General Industry 4(a) zone and DCP Part 6 - Industrial Development have been satisfied.

(d) Any submissions made in accordance with the Act.
No submissions at this stage.

(e) The public interest
There are no aspects of the proposed use that would be contrary to the public interest.

2.2.6 Concluding Summary

The planning sections above support the proposed use of No. 16 Kerr Road, Ingleburn as a waste transfer and resource recycling facility to be incorporated to the already existing and approved developments and provides evidence of the permissible use subject to Council's approval.

In summary:

- The proposed development has been assessed in accordance with the matters for consideration within Section 79C of the Environmental Planning and Assessment Act 1979.
- The proposed use is integrated development as defined in the EP&A Act 1979.
- The proposed use is permissible with consent pursuant to the provisions of 4(a) (General Industry Zone) and is consistent with the zone objectives in the Campbelltown Local Environmental Plan 2002.
- The proposal has been assessed against the requirements of DCP Part 6 –Industrial Development. The proposal complies with all relevant aspects of the Development Control Plan.
- The detailed architectural plans of the factory layout and supporting documents and reports justify Council's approval of the proposed development.

Having regard to the contents of the report and the conclusions reached, the proposed use is recommended for approval subject to conditions by Council.

2.3 CONSULTATION

Consultation with government departments and the local community plays an important role in ensuring all potential environmental impacts are evaluated. The consultation process provides the opportunity to identify and prioritise issues.

Extensive consultations have been previously conducted in preparation of similar DAs for this site. These were conducted with the following stakeholders:

- Campbelltown City Council;
- NSW EPA;
- Sydney Catchment Authority;
- Roads and Maritime Services; and
- Potentially affected residents.

Consultations with the Council have been conducted by the proponents in the preparation of the EIS.

The proponents have conducted a new round of consultation with nearest residents.

The Sydney Catchment Authority previously advised a similar project was not of relevance to them.

Discussions with nearest residents in Gordon Avenue and Redfern Street have agreed to be undertaken by the proponent.

Their previous concerns were:

- Hours of operation;
- Future operation of the concrete plant;
- Types of wastes to be brought on-site and where these would be stored; and
- Control of dust emissions.

The site had not previously caused disturbance or annoyance.

The site as designed is not suited to operation outside of daytime hours. The rear open area of the site is only suitable for parking and no stockpiles are to be stored. These restrictions assist in ensuring residents' concerns are not to be realised.

2.3.1 Public Participation on Submission of Development Application

In accordance with Part 3a of the Environment Planning and Assessment Amendment (infrastructure and Other Planning Reform) Act 1979, this EIS must be advertised through a process of public notification and the EIS put on public display.

During the 30 day public exhibition period, the public is invited to make comments and forward submissions to the consent authority, Campbelltown City Council.

2.4 ENVIRONMENTAL ASSESSMENT REQUIREMENTS

In accordance with Clause 73 of the Environmental Planning and Assessment (EP&A) Regulation 2000, Environmental Assessment Requirements were obtained for the proposed development.

A copy of the Environmental Assessment Requirements is presented in Attachment 1.

Key environmental planning issues raised by the requirements and subsequently addressed in this EIS are identified in Table 2-2. This Table also includes the issues raised by the NSW EPA, Department of Primary Industries, Office of Water and Trade & Investment Resources & Energy.

Table 2-2: Compliance with Environmental Assessment Requirements

Environmental Assessment Requirement	EIS Reference	
	Section	Page No.
Department of Planning		
• Statutory Issues – Key issues to be included in the EIS under Schedule 2 and Clause 72 of the EP&A Act 1979 include:		Cover page 2
1. An Executive Summary	Executive Summary	i
2. A full/detailed description of the proposal, including:		
a) The need for (objectives of) the development	1.2	1-3
b) Alternatives considered, including the consequences of not carrying out the development	1.3	1-6
c) The development to be carried out	3	3-1
d) Likely staging of the proposal	3.5	3-14
3. A risk assessment of the potential environmental impacts of the proposal, identifying the key issues for further assessment	5	5-1
4. A detailed assessment of the key issues specified below, and any other significant issues identified in the risk assessment, which includes:		
a) A description of the existing environment, using sufficient baseline data	4	4-1
b) Any likely interactions between the proposed operations and existing/approved development and land use in the area	4.1	4-1
c) An assessment of the potential impacts of all stages of the proposal, including any cumulative impacts, taking into consideration any relevant policies, guidelines, plans and statutory provisions	2.2, 5, 6 and 7	2-2, 5-1, 6-1 and 7-1
d) A description of the measures that would be implemented to avoid, minimise, mitigate and (if necessary) offset the potential impacts of the proposal, including detailed contingency plans for managing any significant risks to the environment	8	8-1
e) A List of any approvals that must be obtained under any Act or law before the development may lawfully be carried out	2.2	2-2
5. A compilation (in a single section of the EIS) of all the proposed environmental management and monitoring measures	8	8-1
6. A detailed description of how the environmental performance of the proposal would be monitored and managed over time	8.2	8-3
7. A conclusion justifying the development on economic, social and environmental grounds, taking into consideration whether the proposal is consistent with the objects of the Environmental Planning & Assessment Act 1979	9	9-1
8. A signed declaration from the author of the EIS, certifying that the information contained within the document is neither false nor misleading	Inside cover	i

Table 2-2: Compliance with Environmental Assessment Requirements

Environmental Assessment Requirement	EIS Reference	
	Section	Page No.
• Key environmental issues to be addressed in the EIS		
1. Waste management, including:		
a) Identification of the quantity and type of waste that would be handled, stored, processed or disposed of at the facility	5.6	5-27
b) A description of how this waste would be stored and handled on site, and transported to and from the site	5.6	5-27
2. Air quality, including odour, dust and greenhouse gas emissions in accordance with relevant DECCW guidelines. This assessment must consider any potential impacts on nearby private receptors	5.2	5-10
3. Soils and water, including:		
a) Impacts on surface water, stormwater, management, wastewater management, flooding and flood liable land	5.3	5-22
b) Details of water requirements including water supply	5.3	5-22
c) The potential for soil and groundwater contamination	5.3 and 5.4	5-22 and 5-26
d) Details of leachate collection and management	5.3	5-22
4. Traffic and transport	6.7	6-15
5. Noise and vibration, including noise during construction, operation and traffic	5.1	5-1
6. Hazards and risk, including an assessment of dangerous goods storage and handling, and fire management	6.2	6-5
• Assessment of the proposal against relevant environmental planning instruments, including:		
1. State Environmental Planning Policy (Infrastructure) 2007	2.2.2	2-3
2. State Environmental Planning Policy No. 33 – Hazardous and Offensive Development	2.2.2.1	2-4
3. Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment	2.2.2.2	2-5
4. Draft South West Sub-regional Strategy	2.2.2.7	2-11
5. Campbelltown Local Environmental Plan 2002	2.2.3.1	2-12
6. Draft Campbelltown Local Environmental Plan 2014	2.2.1.2	2-3
7. Relevant development control plans and section 94 plans	2.2	2-2
• Preparation of the EIS to follow DoP guidance as specified in Attachment 2 of the Director's General Requirement document	Throughout the report	
• Relevant local, state and Commonwealth government authorities, service providers, community groups, surrounding land owners and occupiers that are likely to be impacted by the proposal should/must be consulted. The EIS should include details of the consultations carried out and issues raised	2.3	2-20

3. DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1 SITE DESCRIPTION

3.1.1 Location

The operations of Bulk Recovery Solutions Pty Ltd would be located at 16 Kerr Road, Ingleburn within the north-eastern portion of the existing Ingleburn industrial precinct Industrial Area in Western Sydney.

The site is zoned 4(a) General Industry Zone.

3.1.2 Site Features

The site is a relatively rectangular parcel which can only be accessed via Kerr Road from the south site of the site. The frontage to Kerr Road is approximately 25 m in length. The total site area is 12,950 m^2.

The site shares its north western and south western boundaries with adjoining industrial premises and are approximately 95 m and 97 m in length respectively. The north-eastern and south eastern boundaries are approximately 139 m and 90 m in length respectively. These boundaries are separated from major infrastructure i.e. major arterial road and railway line by a vacant strip of land.

The site is also located within the Georges River Catchment. The nearest waterway to the site is Redfern Creek, which is approximately 230 m west of the site.

Existing Factory units are adjoined to the north-west and south-west of the site. The Main Southern Railway is separated from the south-eastern boundary of the site by a strip of land approximately 8 m wide. The Main Southern Railway separates the site from the Ingleburn residential area. The nearest resident to the site is approximately 43 m to the south-east, on the other side of the Main Southern Railway. The nearest major arterial road is Henderson Road, which runs adjacent to the north-eastern boundary of the site. Being an industrial estate, the streetscape surrounding the site is industrial. The site plan is shown on Figure 3-1.

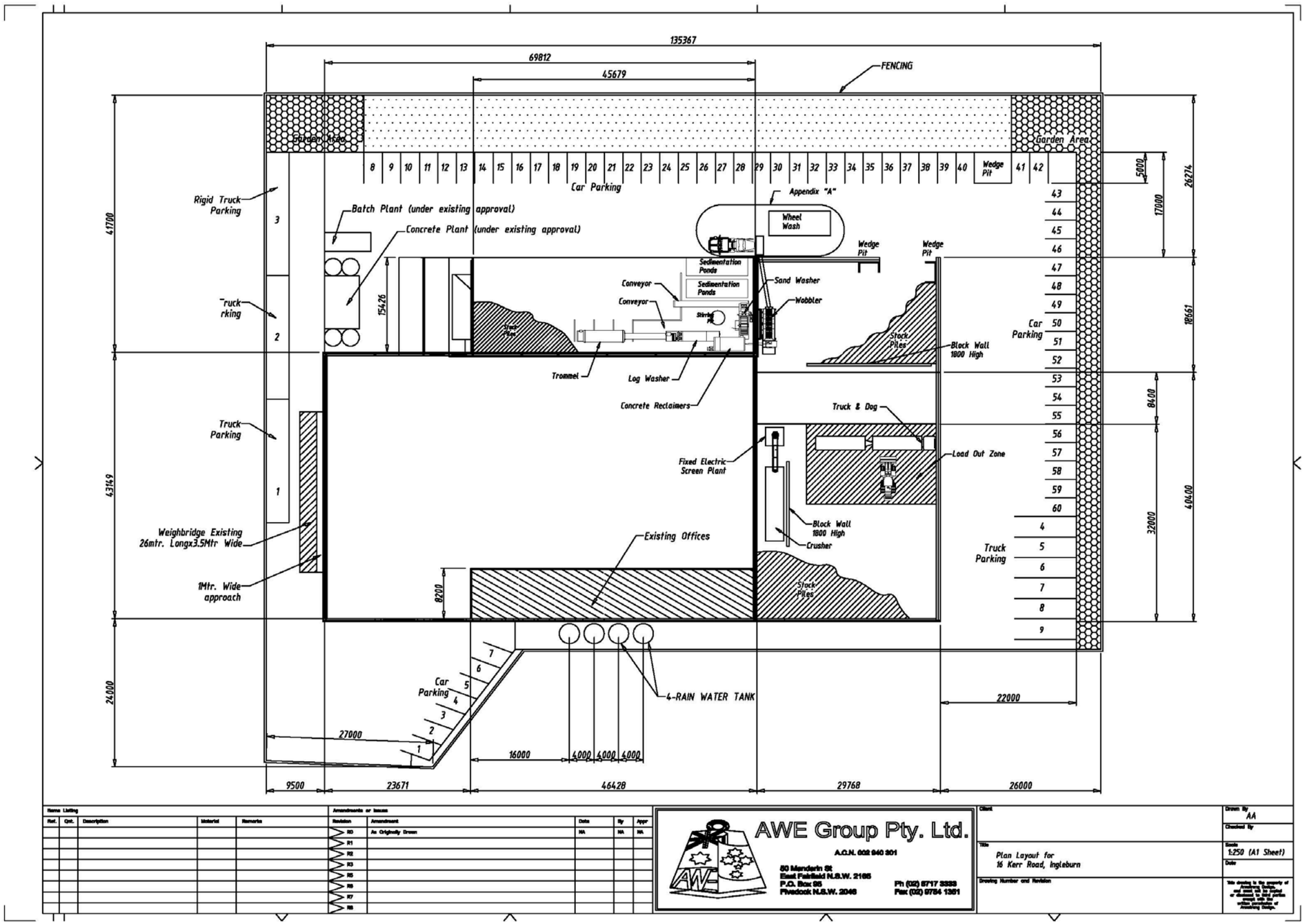
3.1.3 Land Ownership

Land is currently owned by the Baillie family who have given their permission to lodge the development application with Council.

3.1.4 Site History

The site was likely used for agricultural purposes prior to conversion to an industrial area in 1970s. The site has undergone several development applications and the area of the site proposed to be used for this development (i.e. the subject of this EIS) is fully developed.

Figure 3-1: Site Layout



3.2 PROPOSED DEVELOPMENT ACTIVITIES

The site has an existing approval for a concrete batching process and manufacturing plant for concrete blocks (also referred to as a masonry products plant).

Civil works for the excavation of the concrete plant's raw material storage along the northern side of the building had proceeded and this is being filled with Council being aware of this activity (correspondence provided in Attachment 3).

The detailed operations of the concrete plant and the concrete block manufacturing were advised in the Umwelt EIS and the Land Environment Court established the conditions of consent in 336/2006 DA-1.

An earlier consent, F491/2002 provided the site with approval for a two storey workshop for truck and equipment maintenance and offices. This development has been constructed and has previously been in use. It is currently in use.

The assessment provided in the EIS is on the basis of cumulative effects.

The EIS therefore considers the cumulative effect of the potential environmental impacts of noise and air.

A traffic management plan shows the following:

The proposed development would be operating without the concrete plant or the concrete block plant for the immediate future. The number of vehicle movements associated with the proposal would be:

- 8 receipts and 8 outwards truck movements per day.
- Up to 7 inwards and 7 outwards employee vehicle movements per day.

These are very minor numbers for an industrial premises. Traffic flow would be as shown on the site plan with only forward facing truck movements occurring.

The site would have the following signage erected:

- At the entrance, the speed limit 10 km/hour for traffic on-site;
- At the car parking area, signage for visitor parking;
- Car and truck parking would be separated and separately signposted;
- The set down area for bins would be signposted;
- Along areas where there is to be no parking or storage of bins or materials such as the internal roadways, warning signs to keep these areas clear would be erected;
- The need for safety mirrors at the corners of the building would be determined by the proponents having a traffic safety audit undertaken;
- The need to cover loads sign would be erected along the outwards delivery roadway; and
- A further similar warning sign would be erected before the driveway.

The site is able to accommodate the combined activities however, the area shown available for the waste transfer activities is restrictive and will require minimal storage of materials.

The waste transfer and resource recovery facility will comprise of the machinery shown on Figure 3-2 and discussed below.

Figure 3-2 shows three areas – A, B and C. The description follows these three areas for ease of discussion.

- Area A

This is a partly open built space which would be the first stage of the process. Stockpiles are shown inside this space. Tipper trucks would drop off the material and a front end loader would push it up into a stock pile. Outside the building and adjacent to this area, a concrete agitator and truck are shown.

This area enables local concrete trucks to deliver material directly to the proposed facility. The concrete from the agitator is transferred from an aboveground hopper onto a conveyor that transfers the material into a "Wobbler".

The front end loader would feed the material from the stockpile into the "Wobbler".

The "Wobbler" commences the process of breaking down the concrete. Material processed through the "Wobbler" is passed through the wall separating Areas A and B.

- Area B

Within Area B are the majority of the processing operations:

(a) A concrete reclaimer
This is a wet operation and furthers the process of breaking down the bonds that were formed by the initial manufacture of the concrete and provided by the cement, fly ash and sand adhering to the aggregate.

(b) Sand washer
A sand slurry is removed from the concrete reclaimer and is transferred directly into the sand washer. Washing of the sand removes more of the cement and fly ash.

The level of cleanliness of the sand is high such that it can be sold as sand. The washing process will use water that will be sourced from a first flush system, rainwater harvesting, from the two sedimentation ponds shown in Area B, and from mains supply.

The water used in processes would be reused until it needs to be cleaned using a filter press to remove sediment. The filter press would be located within Area B.

The proponent advises that around the area identified as the wheel wash and wedge pit, rainwater would be collected in in-ground pits and transferred by submersible pump to the sedimentation ponds. These pits are likely to be of 5000 L capacity and likely to be located as shown as the

"wedge pit" in the car parking area with the second pit opposite the wheel wash. This will provide a first flush system. The purpose of this is to provide a "first flush system" of this area of the yard as it may be exposed to release of sediment from movements of trucks/trailers and the front end loader. The captured water would be held in the sedimentation ponds for use in the washing processes.

(c) A log washer – to remove sand or slurry from the aggregates.

(d) A trammel screen – to size separate the aggregates.

90% of the operations would occur in Areas A and B.

- Area C

This area would provide crushing using a small jaw crusher and screening.

The screened material would be stockpiled in the area shown.

The area has roller shutter doors facing the railway line. Noise modelling has shown that operating the crusher and screen would need the roller shutter doors closed or noise exceedances would occur. Similarly noise modelling found that the trucks and trailers would need to be loaded from within the building and with roller shutter doors closed.

The processes would operate within the built areas on the northern side and in the rear building previously used as a warehouse. The only operations external to the building would be the storage of a small number of empty bins overnight – typically 5 and up to a maximum of 10.

The recovered materials are then transferred into ground bins/stockpiles mainly using the frontend loader. No stockpiles are to be placed external to the building.

The waste transfer facility will service the concrete batching plants of Sydney. The site would be able to recycle the majority of washout material generated by concrete batching plants.

3.2.1 Proposed Operations

The waste transfer and resource recovery facility will occupy approximately 980 m^2 of the north western portion of the building and will comprise of fixed machinery. The tonnage for the new waste activity is calculated as follows:

- Assume a 5 day working week x 50 weeks per year.
  30 tonnes of waste material per year would be generated that could not be recycled.

Total of 30,000 tonnes of waste material per year. Approximately 27,000 just washed, remaining 3,000 washed then crushed and screened.

3.2.1.1 Waste Sorting

There will be no chemical wastes brought to site.

3.3 DESIGN OF THE DEVELOPMENT

Throughout the design phase of the project, key consideration was given to ensure suitable environmental controls are implemented in the design of the proposed resource materials recovery facility.

3.3.1 Flora and Fauna

There are no threatened or endangered flora or fauna populations or sightings listed or recorded on the NPWS Atlas for threatened or endangered species at the site.

Given the site is located within an existing industrial estate and the proposed development would not significantly alter features of this built environment, the development is not expected to impact threatened flora and fauna in the local area.

3.3.2 Water Quality

The stormwater runoff from the site flows into Redfern Creek. This creek joins Bunbury Curran Creek, which flows into the St George's River. Redfern Creek is approximately 230 m from the site. The concrete batching process uses water and hence the site has been designed to capture and store rainwater for reuse in the production of concrete.

As this operation is not proceeding in the immediate future, the surface water runoff would not have a capture system built into the stormwater drainage. This would occur when the concrete batching plant is installed.

Surface water has the potential to become contaminated by construction waste material and general litter.

As this site's surface water runoff discharges into the Sydney Catchment, the stormwater pits on site need to be fitted with sediment filters. This will provide a useful safeguard to protect downstream water quality and is a protection measure being encouraged by Councils. Maintenance and cleaning of the filter would be detailed in the EMP for the proposed operations of the site.

It is to be noted that the process for recovering and recycling is essentially a dry process. There is water used for misting and spraying of materials to control dust. The rate of application of this water is insufficient to cause runoff onto the floor of the factory.

The processes inside the concrete factory have the potential to spread sediment that, in turn, could be tracked outside by the tyres of vehicles. The trafficked areas inside the concrete factory are to be kept clean by routine sweeping.

There would be no storage of materials external to the building of loose material. Regular auditing of the site with communication and reporting to Council is required given the past nature of the history of use of the site.

3.3.3 Noise

The noise generating processes are housed inside the building constructed of high concrete walls. Doorways at the rear wall will be kept closed except when a truck and trailer enters to be loaded. During loading the crusher does not need to operate. The truck and trailer would reverse into the rear built space (previously the workshop). The roller shutter door then closed and the front end loader fill the truck and trailer bodies.

These processes have been studied several times previously for waste transfer and recycling facilities and are not inherently noisy for several reasons:

- The washout material is a mixture with a lot of fines that cushion the impact of the larger pieces.
- The processes do not involve dropping of the waste from height so impact noise is reduced.

3.3.4 Air Quality

Dust emissions resulting from washout materials sorting and crushing activities can be expected although these materials are damp when brought to site and minimal emissions can be expected. Water effectively controls the release of particulates by forming a crust on the surface of stored materials and for materials being processed. The water agglomerates the dust particles so these are too heavy to become airborne.

The air quality assessment considers the cumulative impact of the operations of the approved developments i.e. the concrete batching and concrete block making activities and the proposed processing of concrete washout material. The cumulative impact uses the emission data provided in the Umwelt EIS and the emission data of the waste operations as provided in this EIS.

Washout materials are relatively free of odour and therefore odour control is not required.

No chemicals are proposed to be used in the processes.

The materials brought to site are inert and do not rot or putrefy. The materials are stored within the building.

No putrescible materials are to be received with the washout materials. As these are collected from concrete batching plants, opportunity for other waste materials to be present is vary unlikely.

3.3.5 Waste

The process generates minimal waste as the majority of the washout materials are able to be washed, separated, sorted and for the aggregates, screened at separated sizes. The waste brought to site is fully recyclable and could be classified as general solid recyclable waste. Further information on waste with a process flow chart is provided in Section 5.

3.3.6 Visual Impact

The proposed development will not involve alteration of the existing building design and form. The site is located within an existing industrial estate and the proposed development would not significantly alter features of this built environment or visual amenity.

3.3.7 Traffic Impact

The proposed development would introduce 5 new employees and therefore a parking facility needs to be considered. Current Conditions of Consent provide 65 car parking spaces, which will be adequate as it readily exceeds the number of employees at the site and provides provision for visitors and contractors (e.g. couriers).

Requirement for truck parking spaces has also been assessed and considered sufficient. Truck parking on site can accommodate 9 trucks.

Tipper trucks and trailers would be used to transport the washout material to the site. Dog trailers will be attached to the trucks to transport finished products off-site.

The proposed development is considered to have a minimal traffic impact as the number of truck movements is expected to be 16 per day and 14 employee car movements per day. A traffic management plan was outlined in Section 3.2.

3.4 SITE LAYOUT PLANS

The site is comprised of a large concrete building with adjoining raw material storage, excavation workshop and an office administration area. The main factory area has been segregated to incorporate the three areas to be used for the proposed activity – the concrete batching and masonry products area established in the Umwelt EIS would remain available for these uses in the future. At present the concrete batching and masonry products activities are not proceeding.

The site is mainly hardstand. Car parking is designated at the rear northern side and rear of the site. An overland water flow path is shown on the site layout. This area is to remain unsealed and cannot be used for any site activities.

The northern boundary of the site adjacent to the roadway is landscaped, improving visual amenity of the site from the roadway.

A weighbridge exists along the western side of the building.

Four site plans are provided with reduced scaled drawings and are not to be scaled. The scaled drawings are provided with the development application.

Figure 3-2 is a plant layout. It shows the foot print of the building and the main activities on the site in Areas A, B and C.

Figure 3-3 describes the elevations of the site. The waste transfer and resource recovery activities are wholly within the building and would not be visible from the residential area and not clearly visible in the industrial estate. Recovered materials to be sold for re-use as construction materials e.g. aggregate and sand would be stored as shown on the site plan within Area B.

The area previously used as the Workshop, Area C, would store crushed and screened concrete.

Figure 3-2: Proposed Site Layout

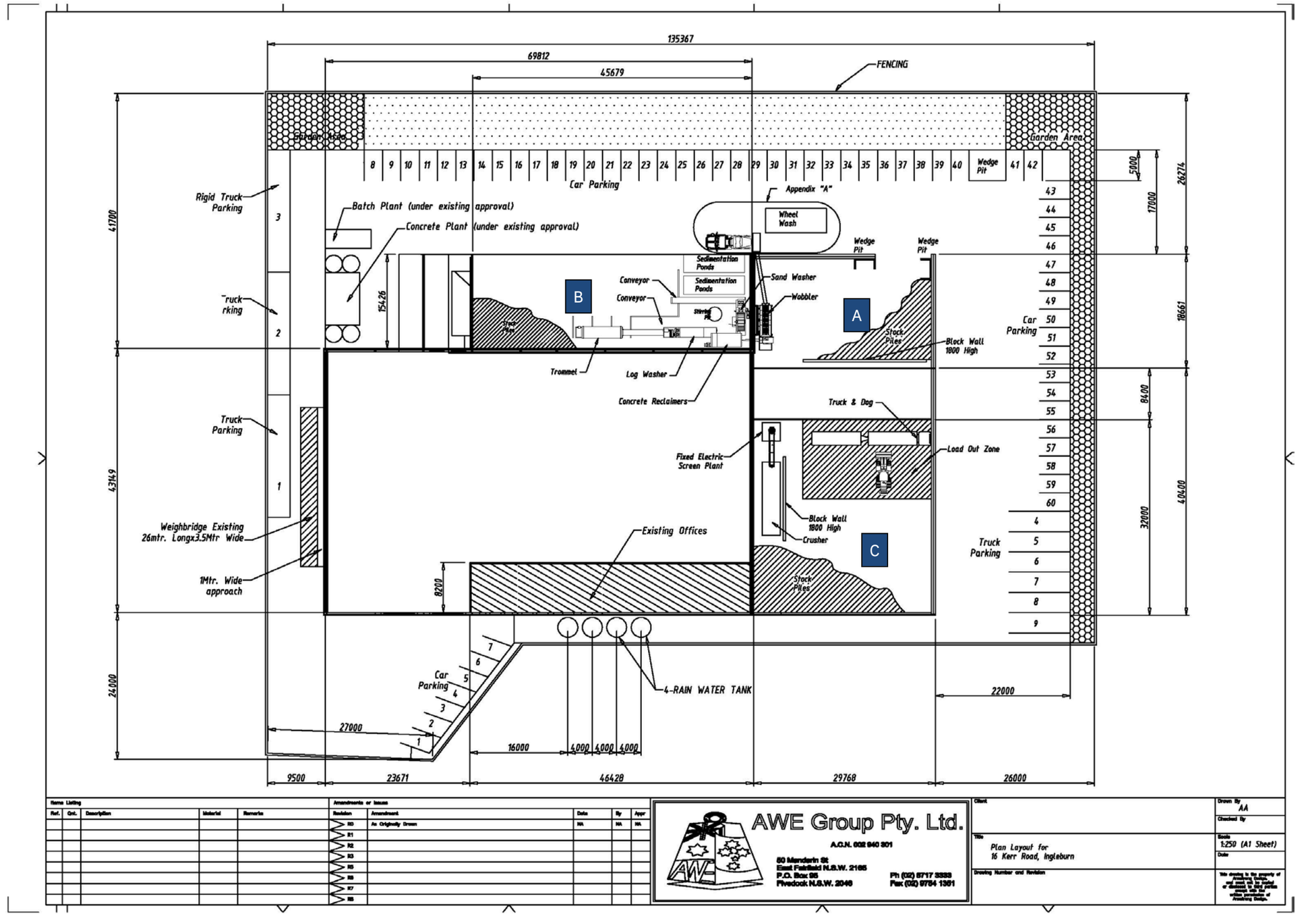
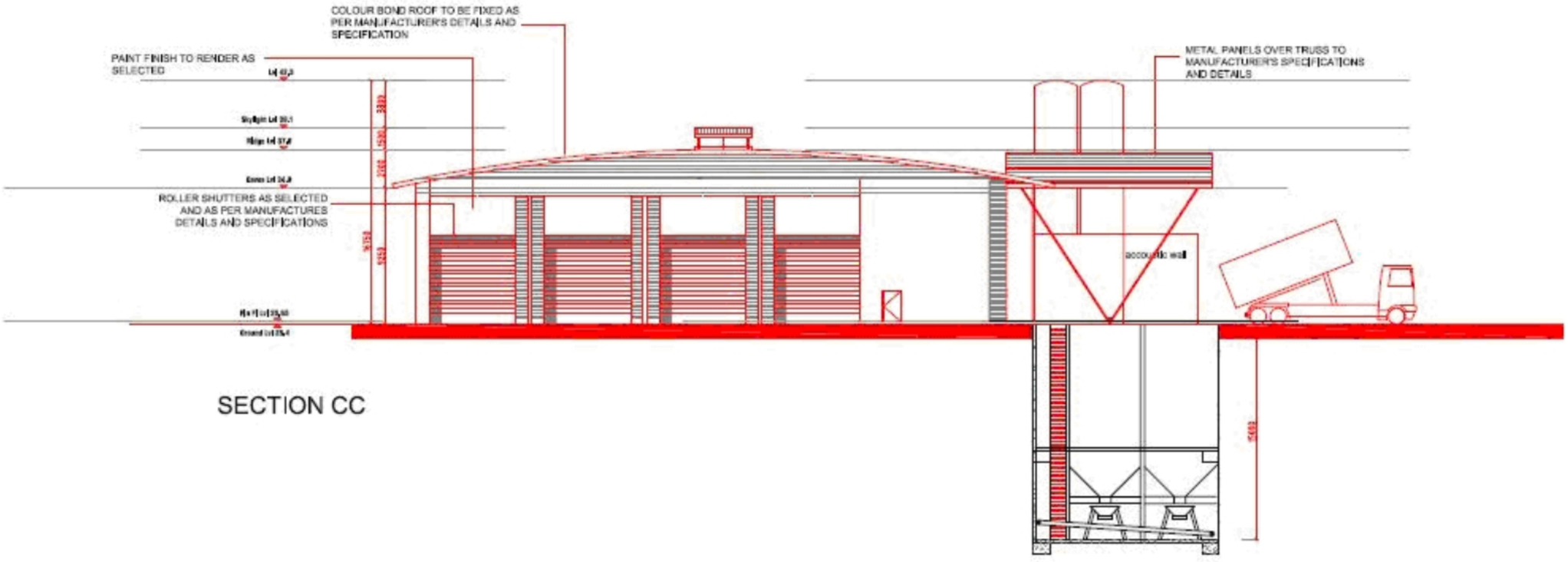


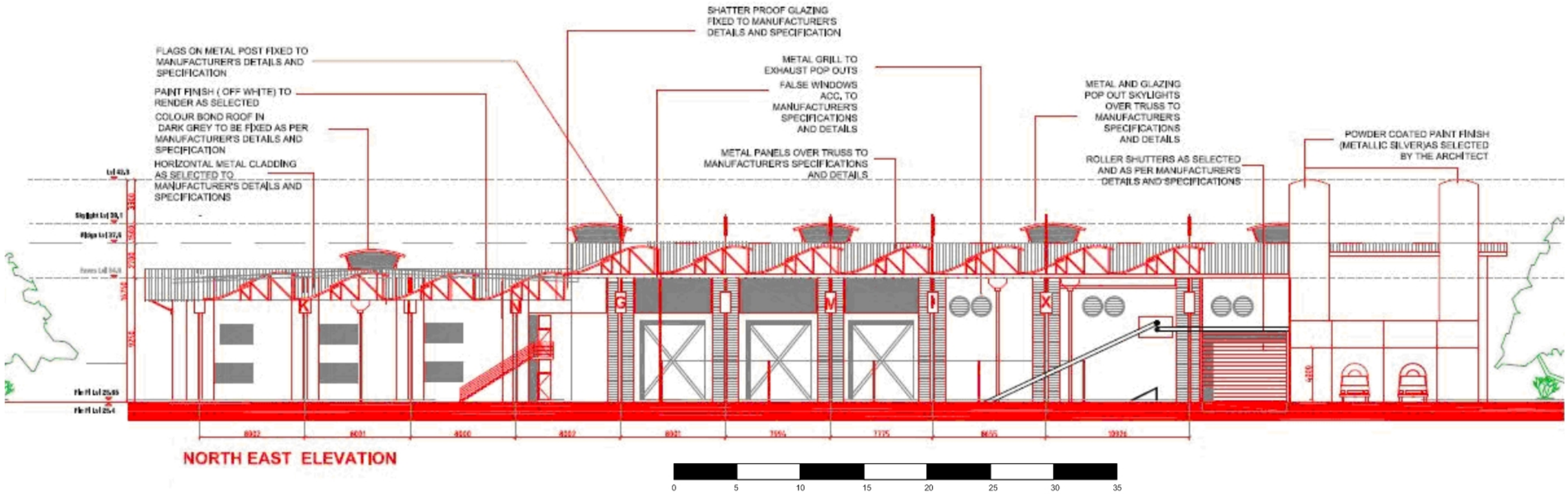
Figure 3-3: Elevations

(Source: Pragmatic Designers, 2007)



SECTION CC

(Source: Pragmatic Designers, 2007)



(Source: Pragmatic Designers, 2007)

3.5 STAGING OF THE DEVELOPMENT

The commissioning of the proposed resource materials recovery facility will primarily involve a single stage, which would be the installation of equipment and machinery.

3.5.1 Site Establishment and Construction

The site has not been fully established for the concrete batching and masonry plants. Installation of these has not proceeded at this stage. As previously noted, the building and associated infrastructure are readily available for use.

3.5.2 Operation of Demolition Materials Recovery Facility

Inert demolition material will be brought onto site. A maximum of 30,000 tonnes of concrete washout material would be brought to site per year.

3.6 DEVELOPMENT OPERATIONS

3.6.1 Receipt of Material

The material to be brought to the site under this proposal is limited to concrete washout material. This is generated by concrete batching plants when the agitators return to the plants and have residual concrete washed out of the agitator bowls.

As a result, the washout materials contain the materials used to produce concrete.

A future application to Council may be lodged to request processing of foundry sand.

The method of operations has been discussed in detail in Section 3.2.

3.6.1.1 Method

The concrete washout materials are brought to site using tipper trucks with or without dog trailers. Provision is also requested to allow agitators to discharge concrete materials from the bowls directly into a hopper.

3.6.1.2 Rates

It is anticipated that the facility would accept 30,000 tonnes of concrete batching plant washout material each year.

3.7 OPERATIONAL DETAILS

3.7.1 Infrastructure and Services

The proposed development will utilise the existing utilities that have been provided to service the industrial complex including water, electricity and sewer. The existing building design and form will not be altered and therefore no further building construction is required. Alteration to the existing local road network or the exit/entry driveways will not be required.

3.7.1.1 Water

The proposed development will use the existing water services available to the site. The volume of mains water used on a continuing basis would be minimal as the process for recovering and recycling will reuse the water sourced from a first flush system, rainwater harvesting and the initial drawing of mains water to commence the washing processes. Dust emissions as detailed in the air quality assessment are minimal. Water would be used on the crusher and the water used is retained on the product.

The emission of dust from the sorting of material is not a major source as the materials consist of damp washout materials from concrete batching plants. There is no requirement to wet down loads during the emptying of trucks or trailers. The Environmental Management Plan would stipulate the conditions under which an individual load from a truck or trailer would need to be wet down using water.

3.7.1.2 Waste Water

No water other than minimal quantities as discussed above, will be used in the processing of the concrete washout material. The process does not generate waste liquids or waste water that need to be removed off-site. Hence, management of waste water is not required. Amenities are connected to Sydney Water's sewerage system.

There is no wash water washing over the floor of the building or external areas. There is no water drawn from aquifers. There is no discharge of wash water to stormwater or sewer. The proponent has designed the processes so that water is reused and cleaned routinely using a filter press.

3.7.1.3 Electricity and Telecommunications

Electricity and telecommunication lines currently provided to site will be used.

3.7.1.4 Fuel and Chemicals

No chemicals or dangerous goods are used in the process. The only dangerous goods to be stored on site is diesel fuel (Class C1 Combustible liquid), which would be used as fuel in machinery such as trucks and the front-end loader. This would be stored in drums on a bunded pallet in the workshop area. Maximum quantity stored would be 820L (pallet of 4 drums).

Minor household quantities of cleaning chemicals would be stored for office cleaning. SEPP33 is therefore not applicable to the proposed development.

3.7.2 Hours of Operations

The site proposes to undertake waste recycling operations from:

- 7am to 6pm Monday to Friday; and
- 7am to 4pm Saturday.

These hours of operation comply with the development consent 336/2006/DA-1. This development consent also stipulated noise levels for a 6am–7am shoulder period and an evening period. At this stage the proposed activity would use day time hours for processing. There may be 1–2 trucks that would leave the site at 6.30am.

The site's operations will be closed on Sunday and public holidays.

3.7.3 Employment

The proposed development would create 5 new employment positions at full production. This number includes process operators, transport drivers and office staff.

4. EXISTING ENVIRONMENT

The following section describes the existing site's environment where the proposed development is located. The surroundings are characterised and a general description of the environment that is likely to be affected is provided.

4.1 EXISTING AND SURROUNDING LAND USE

The majority of the land on site has been developed to the proponent's specifications and in accordance with the local Council's conditions of consent. This includes a defined factory area comprising of a concrete batching and masonry products manufacturing facility, a workshop, raw material storage bins, offices and amenities. Parking spaces have been allocated along the north western boundary of the site.

The site is located in the north eastern portion of the existing Ingleburn industrial precinct. As such, industrial land uses immediately surround the site. Existing Factory units adjoin the site to the north west and south west. The Main Southern Railway is separated from the south eastern boundary of the site by a strip of land approximately 8 m wide. The Main Southern Railway separates the site from the Ingleburn residential area. The nearest resident to the site is approximately 43 m to the south east, on the other side of the Main Southern Railway. The nearest major arterial road is Henderson Road, which runs adjacent to the north eastern boundary of the site. Being an industrial estate, the streetscape surrounding the site is industrial.

The subject site is zoned 4(a) (General Industry) pursuant to the provisions of Campbelltown Council Local Environmental Plan 2002. Figure 4-1 shows the subject site and the zoning for the surrounding land use extracted from Campbelltown Local Environmental Plan. The location of the site in both regional and local context is shown in the following figures.

The draft LEP 2014 continues with a similar zoning for General Industry but zoning is designated 1N which means the development is permitted with consent.

Residential areas of Ingleburn, Macquarie Park and Macquarie Links are within the vicinity of the industrial area to the south, east and north. The nearest schools to the site are Ingleburn Public School and Ingleburn High School – approximately 1km and 1.4km respectively from the site.

Figure 4-1: Surrounding Land Use Zones – LEP 2002

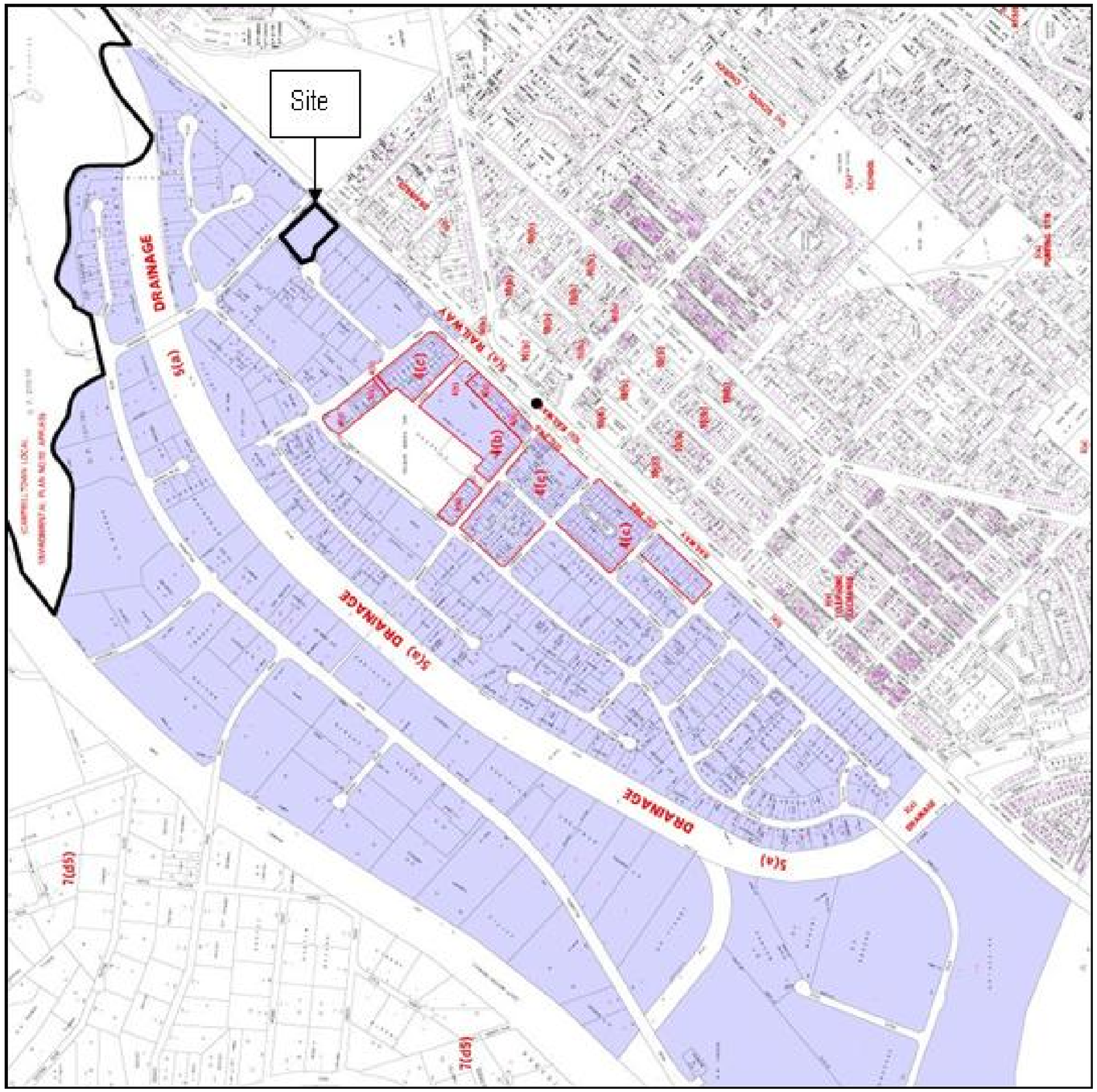


Figure 4-2: Surrounding Land Use Zones – Draft LEP 2014

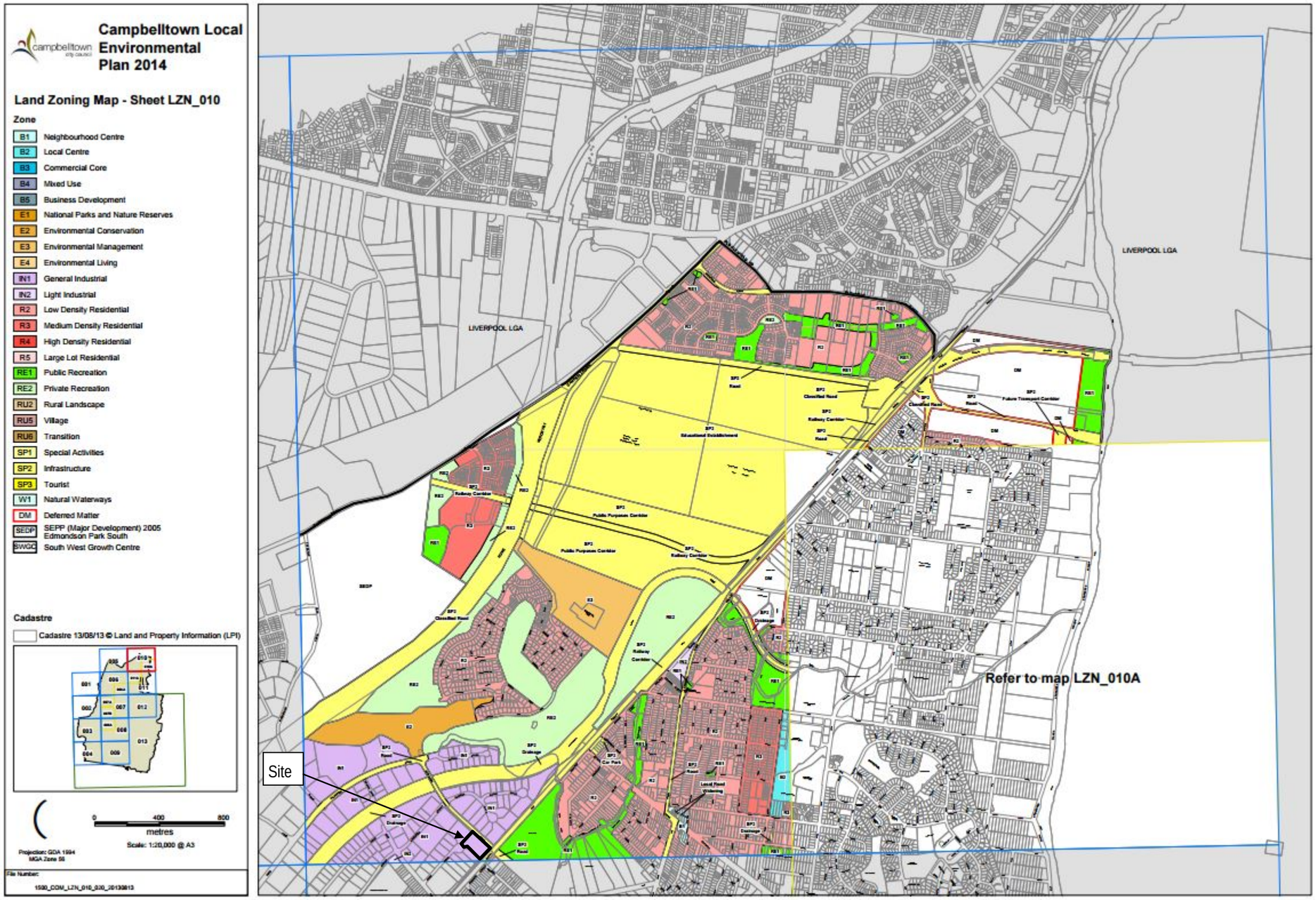


Figure 4-3: Regional Context of Proposed Development

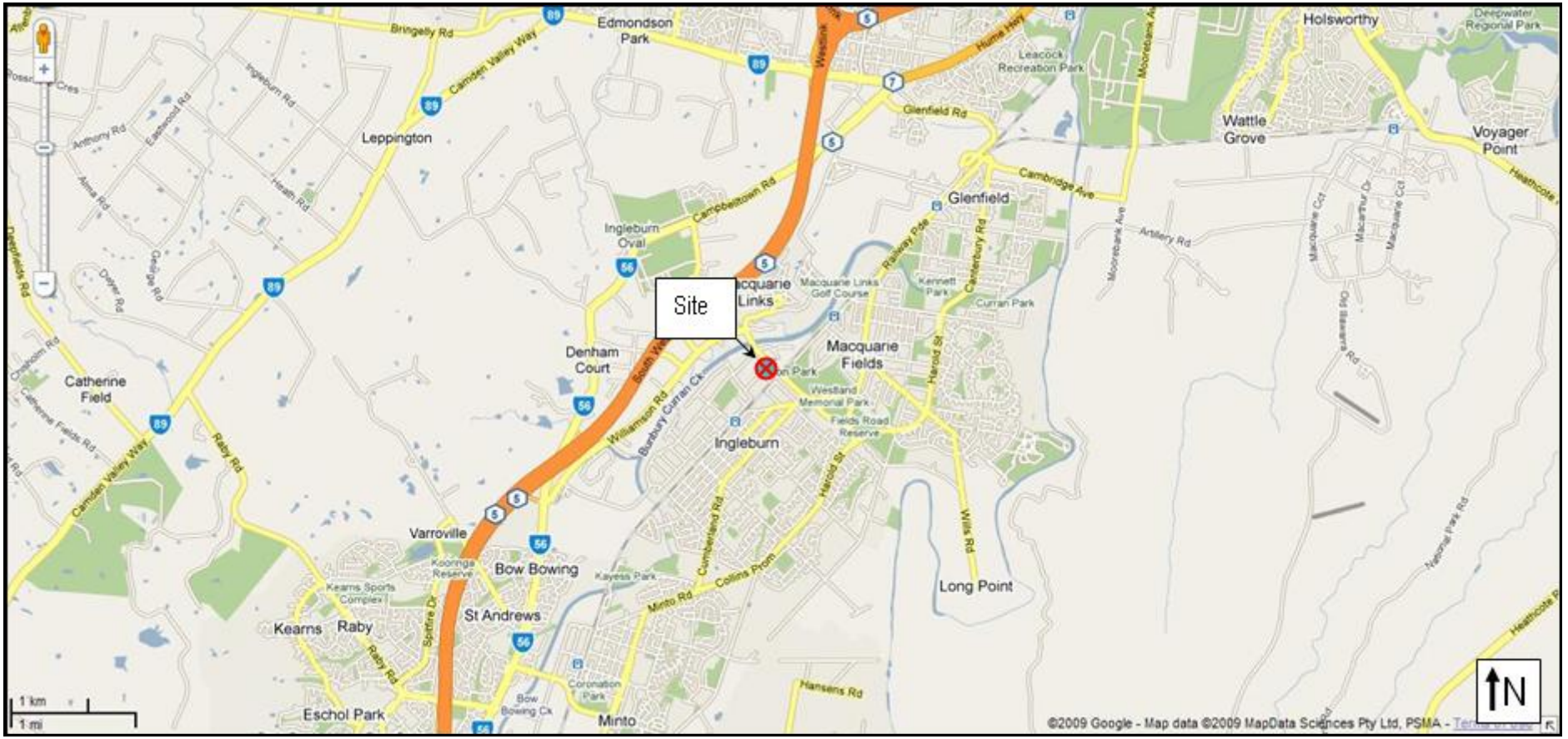


Figure 4-4: Site Locality – Local Context

4.1.1 Existing Infrastructure

The proposed development will utilise the existing utilities that have been provided to service the industrial complex. These include water, electricity and sewer. The existing building design and form will not be altered; therefore no further construction is required as part of the proposed development.

The proposed development will not require alteration to the existing local road network or the exit/entry driveways on to Kerr Road.

4.2 LOCAL COMMUNITY

This section provides information on the local community and the surrounding areas.

4.2.1 Ingleburn and Surrounds

Ingleburn suburb is part of the Campbelltown local government area (LGA) located and is approximately 53 km south west of Sydney. There are three business parks within the Campbelltown LGA, the largest located at Ingleburn. Suburbs surrounding Ingleburn include Minto, Macquarie Fields, Glenfield, Bow Bowing and Leumeah.

4.2.2 Population Demographics

The population within Ingleburn, as determined during the 2006 census conducted by the Australian Bureau of Statistics, was 13,540 people (Australian Bureau of Statistics; 2006 Census). This figure was lower than past census conducted in 2001 (14,225 people). With a mixture of cultural backgrounds, including British, Philippines, India, New Zealand and Bangladesh, over 69% of the population of Ingleburn speak English as their primary language. Almost 40% of the population of Ingleburn are married, of which approximately 35% have children. The median age in Ingleburn is 35 years, compared with 37 years for persons in Australia. Within the labour force, approximately 93% of the residents in Ingleburn are employed on full-time, part-time or on another basis. Occupations comprised of Clerks 20.5%, Technicians and Trades Workers 15.4%, Professionals 14.1%, Labourers 10.8%, Sales Workers 10.1%, Community Service Workers 8.2%, and Managers 8.2%. In Ingleburn, 28.2% of residents owned their homes and 28.5% were renting, with 37% in the process of purchasing a home i.e. paying back a mortgage (Australian Bureau of Statistics; 2006 Census).

4.2.3 Nearest Residences

The nearest resident is located south-east of the site and is separated by the site by the Main Southern Railway Line. This nearest resident is approximately 43 m away on the other side of the railway line. Greenspace separates the site from the railway line and the resident from the railway line.

The next closest group of residents are situated approximately 460 m north-east of the site and shielded from the site by Henderson Road as well as vast green space in the form of a recreation reserve.

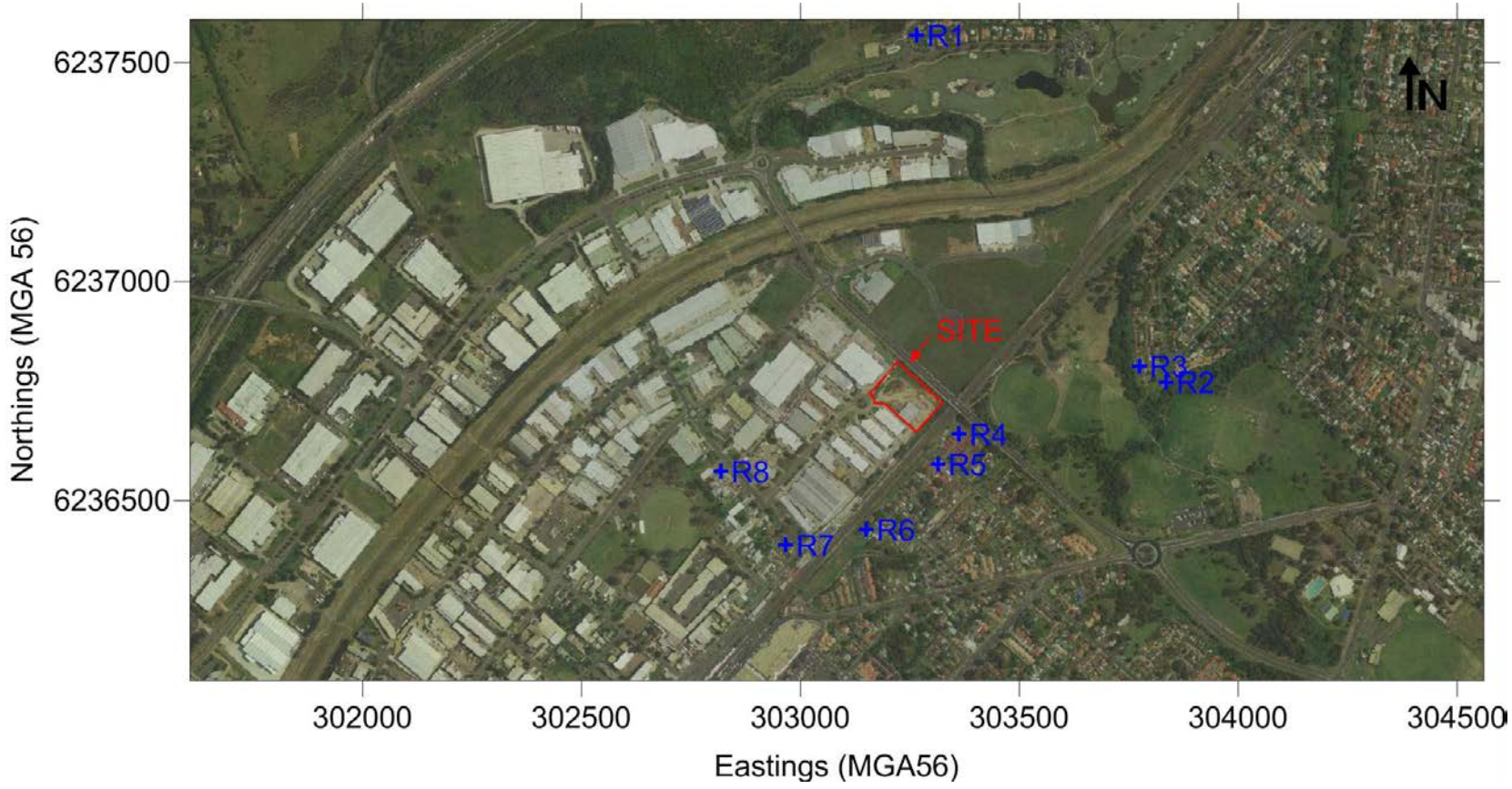
Numerous industrial and commercial buildings shield the site to the west and south west.

Shown on Figure 4-5 are the nearest residences to the site.

Table 4-1: Nearest Residential Receivers

Receiver	Identification	Approximate Distance to Site Boundary (m)	Bearing
R1	Lot 111, DP 850849	750	North
R2	58 Myee Road	517	East
R3	49-53 Waratah Crescent	443	East
R4	2 Gordon Avenue	43	South-East
R5	1 Redfern Street	80	South
R6	1-3 James Street	247	South
R7	3 Stanley Road	392	South-West
R8	28 Aero Road	404	South-West

Figure 4-5: Nearest Residences



Legend:
Site Boundary
Nearest Residential Receivers

Source: © Department of Lands SIX Portal
Link: www.lands.nsw.gov.au

4.3 FLORA AND FAUNA

A targeted search was conducted for threatened and endangered species at the subject site and the surrounding area to assess any possible impacts of the development on these species.

There are no threatened or endangered flora or fauna populations or sightings listed or recorded on the NPWS Atlas for threatened or endangered species at the site. The closest reported sighting of a threatened species is the Cumberland Plain Land Snail (*Meridolum corneovirens*) and *Gyrostemon thesioide*s. These have been reported approximated 0.5 kilometres south of the site. Koalas (*Phascolarctos cinereus*) have also been reported approximately 1.5 kilometres north-west of the site. Threatened species surrounding the site are shown in Figure 4-6 and Figure 4-7 and listed in Table 4-2.

Table 4-2: Threatened Species Within the Campbelltown Local Government Area

	Name	Conservation status*	Approximate distance from site^ (km)	Bearing from site
Fauna	Cumberland Plain Land Snail *Meridolum corneovirens*	Endangered (E1)	0.5 2.5 2.0	S SE W
	Little Lorikeet *Glossopsitta pusilla*	Vulnerable (V)	4.0 2.5 3.0	E SE SE
	Koala *Phascolarctos cinereus*	Vulnerable (V)	1.2 1.7 2.2	NW NW SE
Flora	Woronora Beard-heath *Leucopogon exolasius*	Vulnerable (V)	3.5	SW
	Gyrostemon thesioides	Endangered (E1)	0.5 2.5	S SE
	Downy Wattle *Acacia pubescens*	Vulnerable (V)	3.5 4.0	SW SW
	Needy Beebung	Endangered (E1)	2.5	NE

*As listed under Schedules 1 and 2 of the Threatened Species Conservation Act 1995

^Closest sightings only

Figure 4-6: Threatened Fauna Surrounding the Site

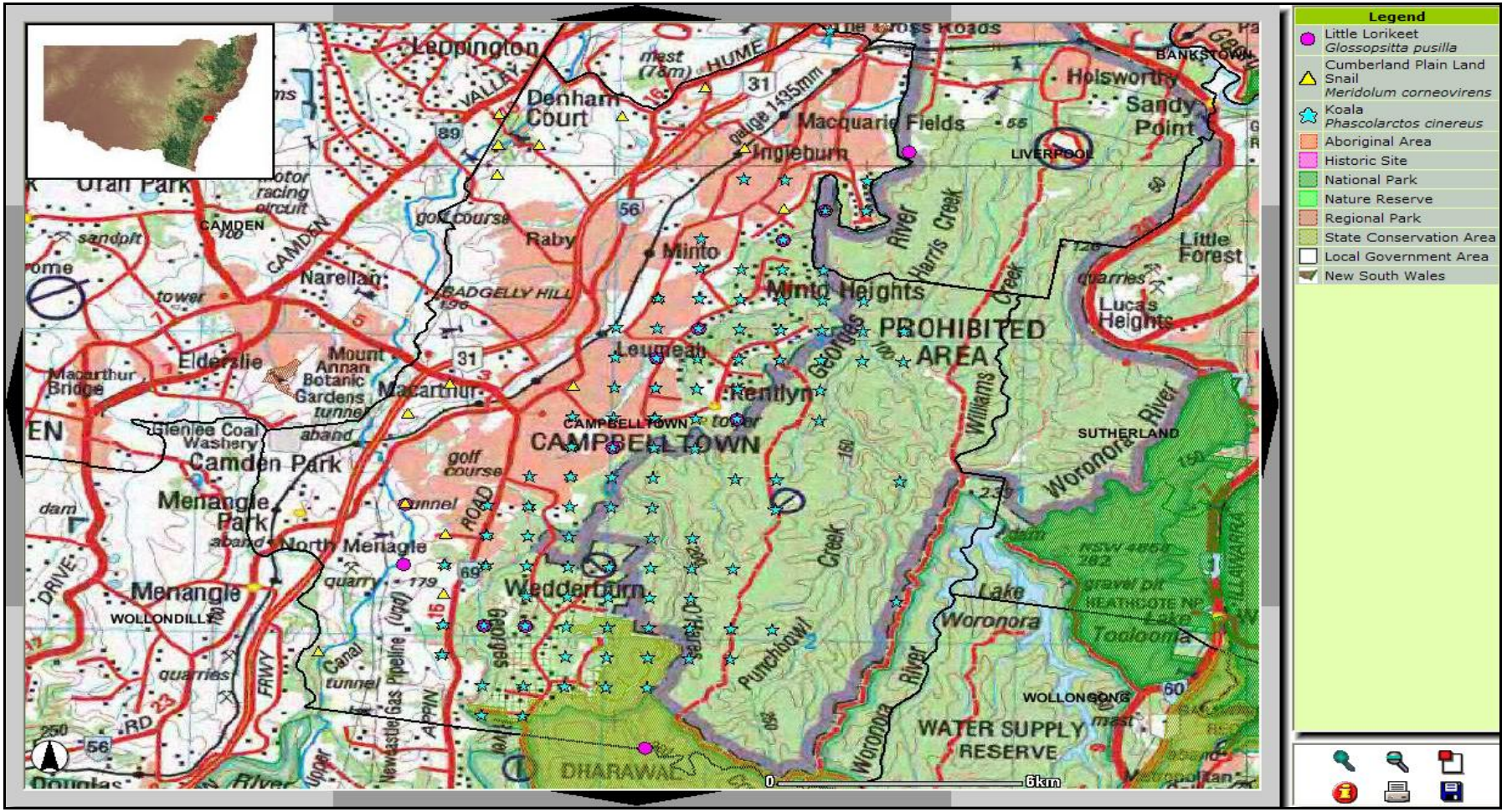
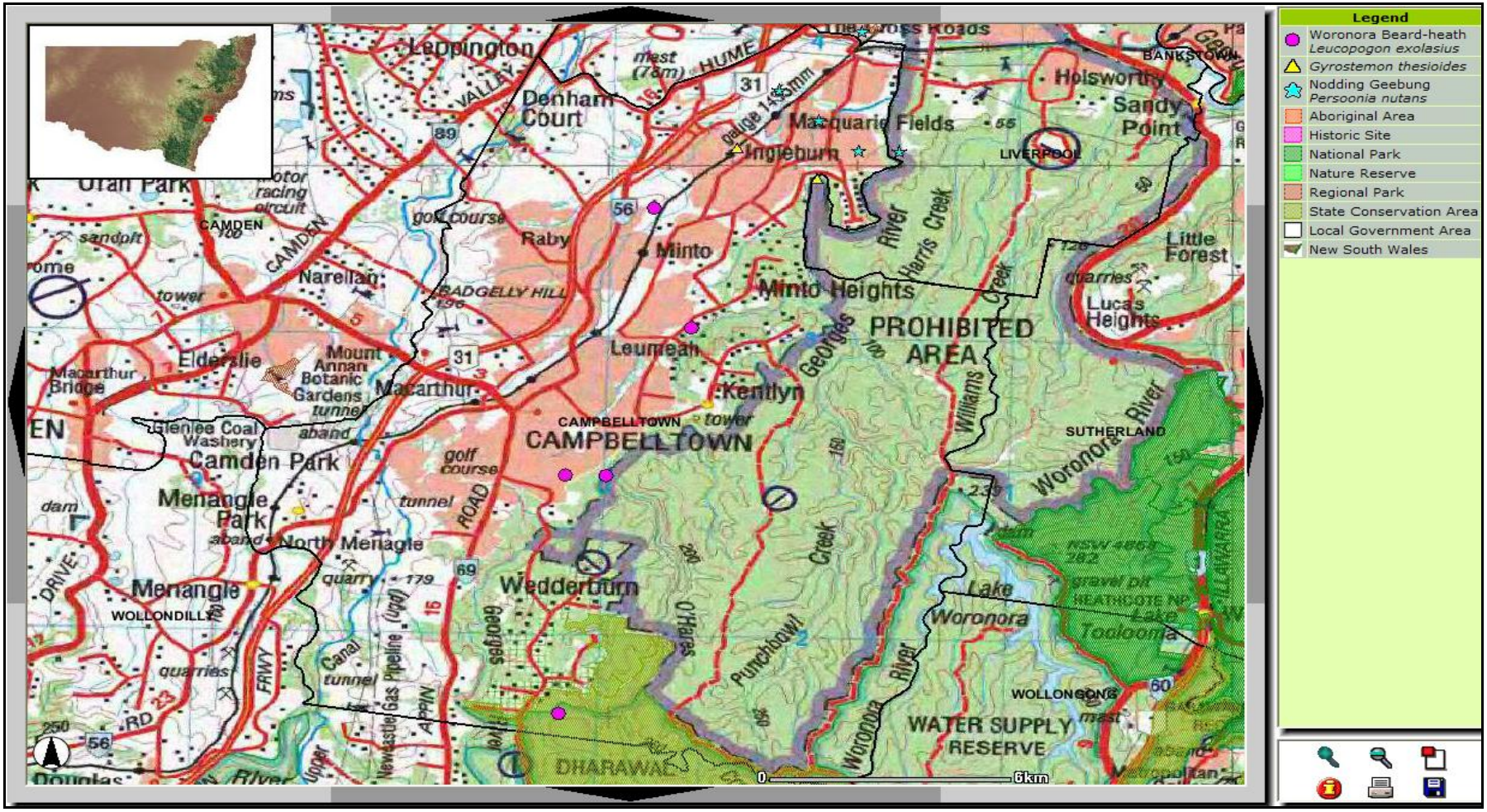


Figure 4-7: Threatened Flora surrounding the Site



4.4 HYDROLOGY

The following section details the hydrological aspect of the site and region. Specifics on the surface water, waterways and groundwater will be addressed as well as the overall catchment issues.

4.4.1 Catchment

The site is within the Georges River catchment which eventually flows to Botany Bay. The Georges River catchment starts from the south west of Sydney in the town of Appin and flows north towards Liverpool, Chipping Norton Lakes and Botany Bay. Currently, over 1 million people lives within the Georges River catchment area, making it one of the most highly urbanised catchments in Australia. Apart from the Bunburry Curran Creek, Georges River has other important tributaries namely, Cabramatta Creek, Prospect Creek, Williams Creek, Salt Pan Creek, Mill Creek and the Woronora River.

The catchment is managed by the Sydney Metropolitan Catchment Management Authority (Sydney CMA). In 1979, Sydney CMA has joint forces with the local Councils and community representatives within the Georges River catchment to form the Georges River Combined Council's Committee (GRCC) which is responsible in monitoring the health of Georges River catchment and protecting, preserving and repairing areas of highest priority.

4.4.2 Surface Water

The proposed site has a predominately flat terrain. According to the EIS prepared for the concrete batching and masonry plant, the site is subject to 1 in 100 years storm event therefore will need to be built considering this factor.

A flood study has been conducted by Lean and Haywood (2002) and this determines the minimum floor level of RL 25.6 m AHD. The 100 year Average Recurrence Interval (ARI) flood level was determined to be RL 25.10 m AHD.

The following easements exist and will be sufficient to contain discharge water from a 1 in 100 year storm event:

- Along the boundary with Henderson Road – 30 m wide;
- Along the boundary parallel to the Main Southern Railway – 30 m wide; and
- Along the north-western side boundary with adjoining property – 10 m wide.

Stormwater runoff currently flows from the south western area of the site to the north east along the easement at Henderson Road and the easement parallel to the Main Southern Railway, and also to the north-west along the north-western side easement (Umwelt Environmental Consultants, 2006).

4.4.3 Nearest Waterway

The nearest waterways from the subject site are Redfern Creek, located 230 m east of the site, and Bunbury Curran Creek, located at 400 m north of the site. Redfern Creek is a tributary to Bunbury Curran Creek which is a tributary to Georges River. In rain events, runoff from the site would flow these local waterways and eventually flows to the Georges River. Both waterways have been heavily modified in the past for flood mitigation purposes. Bunbury Curran Creek also receives stormwater discharges from the Ingleburn industrial area.

4.4.4 Groundwater

Groundwater study has been conducted by Umwelt Environmental Consultants in relation to the EIS prepared for the concrete batching and masonry plant. Three registered groundwater bores were identified within 5 km of the subject site, however near surface groundwater was not encountered during a 4 m depth excavation on site.

The proposed development will not involve excavation works that may have impacts on groundwater system. The building to house the proposed waste transfer and resource recovery facility already exists and groundwater impacts associated with the construction of this building has been addressed in the EIS prepared by Umwelt Environmental Consultants.

4.5 NOISE AMENITY

4.5.1 Background Noise Levels

The level of background noise varies over the course of any 24 hour period, typically from a minimum at 3.00am to a maximum during morning and afternoon traffic peak hours. Therefore the INP requires that the level of background and ambient noise be assessed separately for the daytime, evening and night time periods. The INP defines these periods as follows:

- Day is defined as 7.00am to 6.00pm, Monday to Saturday and 8.00am to 6.00pm Sundays and Public Holidays;
- Evening is defined as 6.00pm to 10.00pm, Monday to Sunday and Public Holidays; and
- Night is defined as 10.00pm to 7.00am, Monday to Saturday and 10.00pm to 8.00am Sundays and Public Holidays.

Background noise levels were measured by Umwelt for King Mix Pty Limited in 2006 and were used to establish noise limits for the site. Table 4-3 shows the cumulative project specific noise levels accepted in the conditions of consent granted for the site.

Table 4-3: Cumulative Project Specific Noise Levels at Nearest Residences		
Location	Day	Evening
R4 2 Gordon Avenue	46	40
R5 1 Redfern Street	40	37

Simultaneous operations on-site associated with the concrete batching plant and the proposed waste recycling facility must comply with the project specific noise levels shown in Table 4-3. The noise impact associated with the batching concrete plant was predicted in the previous EIS undertaken by Umwelt. In order to ensure that the proposed waste recycling facility does not significantly increase the noise levels at the sensitive receptors, particular noise limits have been set for the operations of the proposed waste recycling facility. These project specific noise limits are shown in Table 4-4.

Table 4-4: Project Specific Noise Levels at Nearest Residences Associated with the Proposed Waste Recycling Facility.		
Location	Day	Evening
R4 2 Gordon Avenue	40	40
R5 1 Redfern Street	35	37

Based on the adopted noise limits shown in Table 4-4, simultaneous operations of the concrete batching plant and waste recycling facility would not exceed 47 dB(A) at receptor R4 and 41 dB(A) at receptor R5. These noise levels slightly exceed the noise criteria within the condition of consent granted for the site by 1 dB during the day time period only as the concrete batching plant would not operate after 6pm. This noise exceedance is considered to be insignificant as the human hearing can barely detect a noise increase below 3 dB.

4.5.2 Vibration

There would be no vibration emitted that would be detectable at site boundaries.

4.6 AIR QUALITY

4.6.1 Background Air Quality

Background air quality parameters are unavailable for the subject region of the site. Hence, background air quality parameters were obtained from the nearest NSW EPA air monitoring station located at Rose St, Liverpool.

The only relevant particulate parameters available from the monitoring station are PM_{10} 24-hour and monthly average values, which have been provided as below.

Table 4-5: Background Air Concentration for Liverpool Background Air Station (2014)

PM_{10}	Value Recorded Each month (µg/m^3)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Rose St, Liverpool													
24 Hours Maximum	55.5	49.2	36.3	34.1	47.1	34.6	38.8	28.9	29.8	48.3	41.4	36.5	40.0
Monthly Average	24.3	23.6	16.6	17.3	21.4	15	17.3	14.3	15.3	21.9	23.1	19.2	19.1

Source: NSW Office of Environment & Heritage (2014)

According to the Bureau of Statistics Census data, Liverpool is seen to have a slightly higher population compared to Ingleburn, thus more conservative to estimate air pollutant impact to the nearest sensitive receptors. This furthermore suggests that the ambient air quality of the subject region is well within the National Environmental Protection Measure targets.

Background air quality data for Total Suspended Particulates (TSP) is not available. TSP is classified as particulate matter of less than 100 µm. Therefore, an assumption had been made to reflect the more proper background air concentration data, using PM_{10} background air quality data. A generalised particle size distribution for mechanically generated aggregate and unprocessed ores from AP-42 had been adopted to calculate the representative TSP background air quality.

Table 4-6: AP-42 Generalised Particle Size Distribution for Mechanically Generated Aggregate, Unprocessed Ores

Particle Size (µm)	Cumulative % ≤ Stated Size (Uncontrolled)	Minimum Value	Maximum Value	Standard Deviation
1.0	4	-	-	-
2.0	11	-	-	-
2.5	15	3	35	7
3.0	18	-	-	-
4.0	25	-	-	-
5.0	30	-	-	-
6.0	34	15	65	13
10.0	51	23	81	14

Note: Only values of 2.5 µm, 6.0 µm, and 10 µm were observed. The others were calculated, and thus no statistical parameters are given.

As seen in Table 4-6, the cumulative amount of PM_{10} is 51%. Therefore, the relevant background concentration to be used as background air quality for the air emission modelling is 37.5 μg/m³.

Background data for Dust Deposition modelling is not available; therefore a conservative assumption of 2 g/m²/month is applied.

The NEPM limits were designed based on the desired outcomes of *(a) protection of human health, (b) preservation of ecosystems, and/or (c) restoration of water quality to support aquaculture*. Only PM10 limit is available and this is shown in Table 4-7.

Table 4-7: Ambient Air Quality NEPM Goals

Pollutants	Averaging Period	Maximum Concentration	Goal within 10 years Maximum allowable exceedances
PM_{10}	1 day	50 μg/m³	5 days a year

The referenced existing background air quality is generally in line with the NEPM goals for PM_{10} with only one slight exceedance in the month of May.

4.6.2 Predicted Incremental Air Impacts from the Concrete Batching and Masonry Plant

The local air quality data that is presented in the previous section has not taken into account the activities from the concrete batching and masonry plant. This is because these plants are currently under construction and have not commenced operations. Air quality assessments have been conducted and detailed in the EIS prepared for these developments.

A summary of potential impacts at nearest receptors are presented below. The maximum concentration will be added to the background concentration to determine the overall cumulative air impacts associated with the proposed demolition materials recovery facility.

Table 4-8: Predicted Incremental Air Impacts from the Concrete Batching and Masonry Plant

Pollutants	Averaging Time	Minimum Concentration (μm/m³)	Maximum Concentration (μm/m³)
PM_{10}	24 hours	0.1	1.3
PM_{10}	Annual	0.1	0.7
TSP	Annual	Not assessed	Not assessed
Pollutants	**Averaging Time**	**Minimum Deposition Rate (g/m²/month)**	**Maximum Deposition Rate (g/m²/month)**
Dust Deposition	Monthly	0.1	1.0

4.7 CLIMATE

Detailed meteorological study has not been conducted for this EIS as this has been covered in the previous EIS associated with the concrete batching and masonry plant prepared by Umwelt Environmental Consultants.

The closest monitoring station to the subject site is the Holsworthy AWS monitoring station operated by the Bureau of Meteorology (BOM). This monitoring station is located approximately 10 km north east of the subject site. Weather conditions at this monitoring station are logged hourly and are considered to be applicable for the subject site.

This section will provide background information on the meteorological condition of the existing area surrounding the proposed site. This referenced meteorological information has been sourced from the Bureau of Meteorology (BoM) monitoring station at Holsworthy (Holsworthy Automated Weather Station with Station Number 067117). This station is located approximately 10 km north-east of the subject site and is considered suitable for reference to climate conditions in the local area.

4.7.1 Temperature

Long term temperature statistics have been referenced from the BoM Holsworthy AWS. These are shown in Table 4-9.

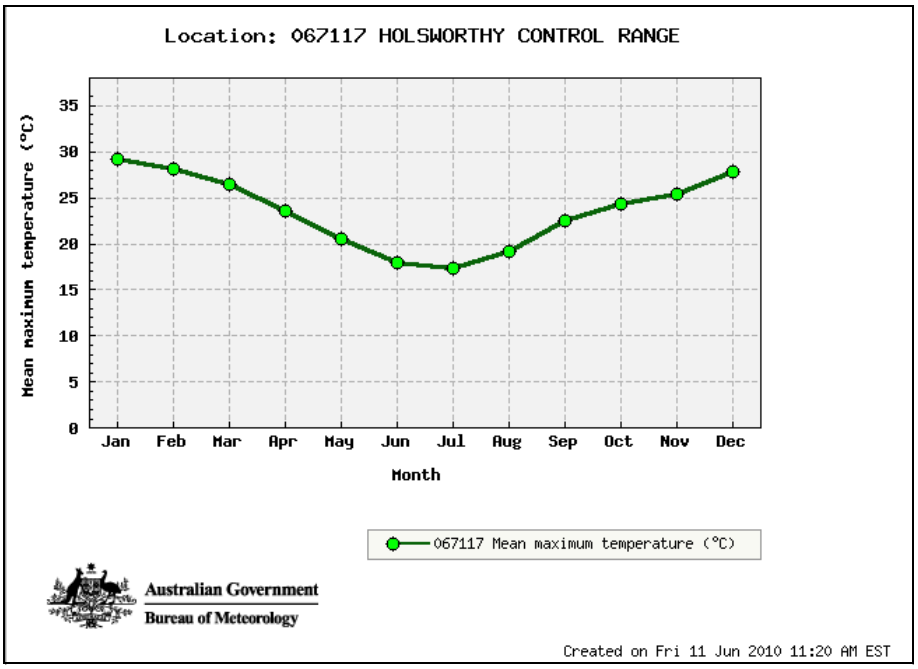
The mean annual temperature at Holsworthy Automated Weather Station ranges between 11.4°C and 23.5°C. The lowest temperatures occur in July where the average temperature ranges between 4.8°C and 17.5°C. The hottest temperatures are recorded in January when temperatures reach an average maximum of 29.2°C.

Table 4-9: Temperature Statistics from Bureau of Meteorology – Holsworthy AWS

Months Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Maximum Temperature (°C)	29.2	28.2	26.4	23.6	20.6	17.9	17.4	19.1	22.5	24.3	25.4	27.8	23.5
Mean Minimum Temperature	17.5	17.5	15.5	12.1	8.3	6.2	4.8	5.5	8.6	10.9	13.7	15.9	11.4

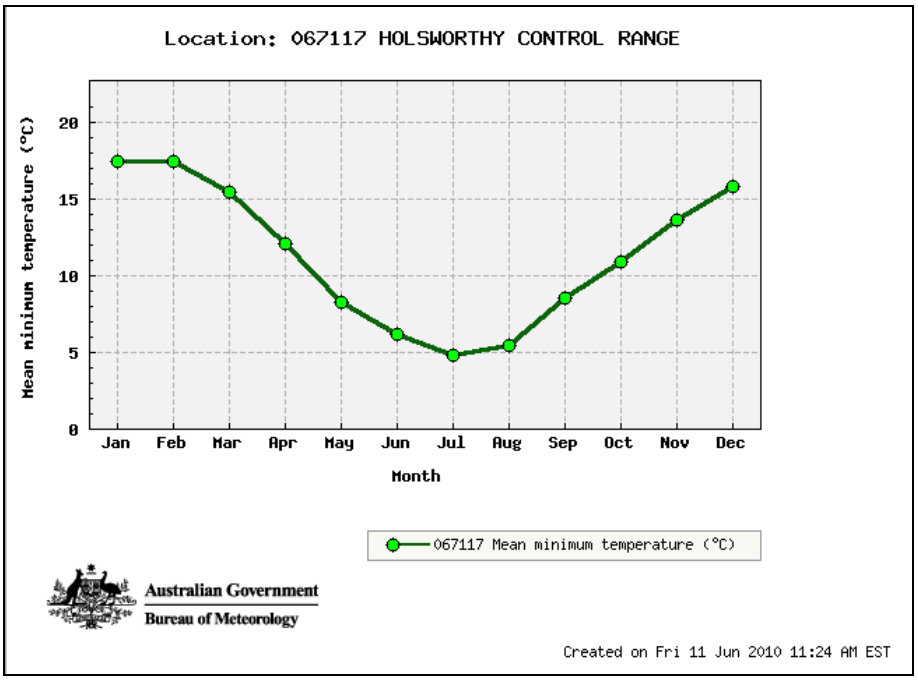
Bureau of Meteorology (2010d)
Statistics are based on data collected from the Year 1998 to 2009.

Figure 4-8: Mean maximum temperature from Holsworthy AWS



Bureau of Meteorology (2010a)

Figure 4-9: Mean minimum temperature from Holsworthy AWS



Bureau of Meteorology (2010b)

4.7.2 Rainfall

The long term rainfall statistics have been referenced from the BoM Holsworthy AWS. This has been shown in Table 4-10.

Rainfall data collected at Badgerys Holsworthy AWS experiences an average monthly rainfall above 64 mm for the first half of the year. February is the wettest month, where mean rainfall readings exceeding 115 mm. The mean annual rainfall is 675.4 mm. The annual means number of rain days (rainfall above 1 mm) is 73 days.

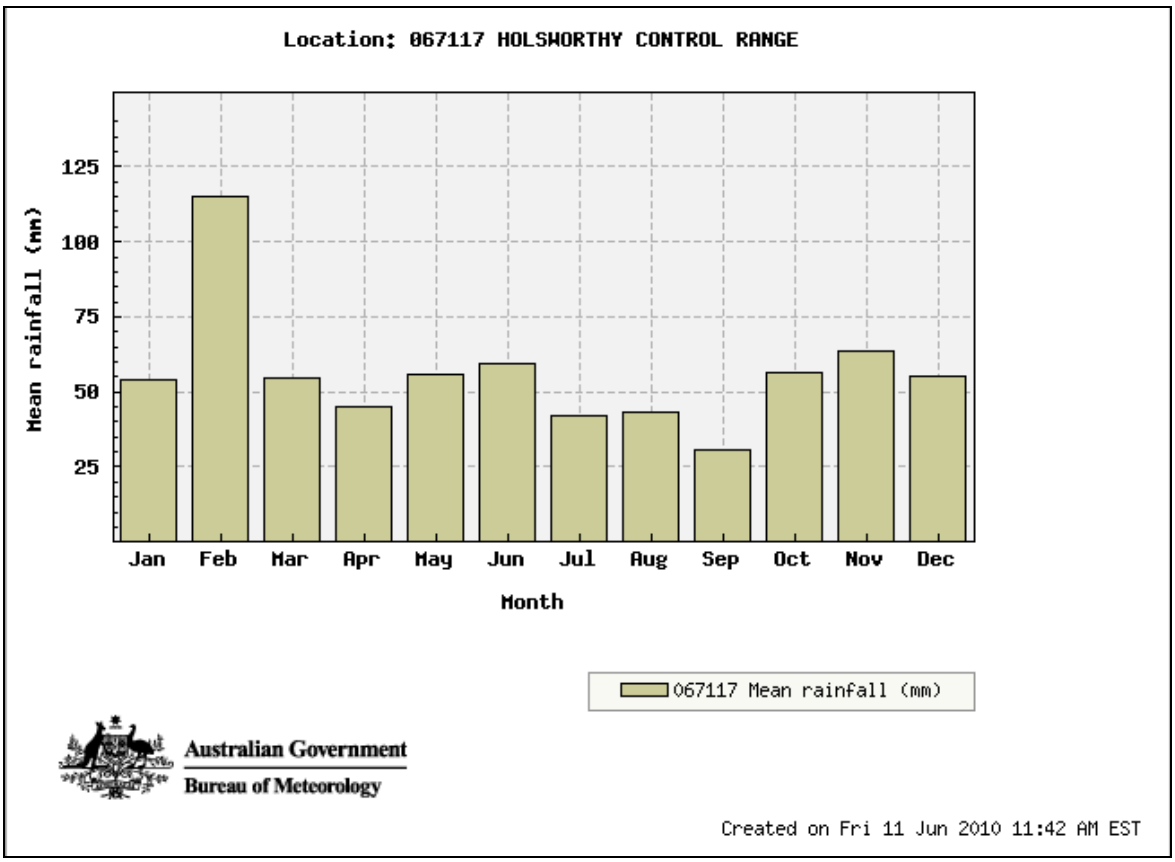
Table 4-10: Rainfall Statistics from Bureau of Meteorology –Holsworthy AWS

Months Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Rainfall (mm)	54.2	115.1	54.8	44.9	55.9	59.4	42.3	43.0	30.5	56.5	63.4	55.4	675.4
Decile 5 (Median) Rainfall (mm)	52.4	97.8	40.6	46.7	27.1	40.8	33.2	26.3	28.5	53.0	50.6	57.8	628.6
Mean Number of Days of Rain ≥ 1 mm	5.8	7.1	6.9	6.4	6.3	6.1	5.9	4.8	4.3	6.0	7.4	6.0	73.0

Bureau of Meteorology (2008d)

Statistics are based on data collected from the Year 1998 to 2009.

Figure 4-10: Mean rainfall from Holsworthy AWS



Bureau of Meteorology (2008c)

4.7.3 Wind

Wind rose plots show the direction from which the wind is coming from with triangles known as “petals”. The petals of the plots in the figure summarise wind direction data into 8 compass directions i.e. north, north-east, east, south-east, etc. The length of the triangles, or “petals”, indicates the frequency that the wind blows from the direction presented. Longer petals for a given direction indicate a higher frequency of wind from that direction. Each petal is divided into segments, with each segment representing one of the six wind speed classes. Thus, the segments of a petal show what proportion of wind for a given direction falls into each class. The proportion of time, for which wind speed is less than speeds in the first class (i.e. 0.5 m/s), when speed is negligible, is referred to as calm hours or “calms”. Calms are not shown on a wind rose as they have no direction, but the proportion of time that constitutes the period under consideration is noted under each wind rose.

These seasonal wind roses showed that winds from west-southwest prevail for all seasons of the year with addition of prevailing winds from the east in summer.

Stability class D, which represents neutral conditions, was the most prevalent throughout the year. In neutral atmospheric conditions, mechanical turbulence is neither enhanced or inhibited resulting in a small to moderate scale of vertical and lateral diffusion of pollutants in the air.

4.8 TOPOGRAPHY

The subject site and the immediate vicinity are relatively flat with undulating terrain. The site has a general elevation of approximately 25 m AHD. The land in the region, approximately 2 km north-west of the site begins to slope upwards to a maximum elevation of 60 m AHD as this feature is associated with the Bunbury Curran Creek.

4.9 GEOLOGY

Detailed study in geology was not deemed warranted given the negligible impacts from the proposed development. Information was extracted from the previous EIS prepared for the concrete batching and masonry plant and has been summarised below.

> *"The site is located on Hawkesbury Sandstone of Middle Triassic age. It is likely that the Mittagong Formation, a relatively thin sequence of interbedded shale, laminate and medium-grained quartz sandstone, directly overlies the medium to very coarse-grained quartz sandstone of the Hawkesbury Sandstone at this site.*
>
> *A four metre deep costean excavated on the site on 20 June 2003 revealed the following sequence: disturbed soil (0 – 5 m), brown, stiff and plastic clay (0.5 – 2 m), grey and brown mottled clay (2-4 m) and extremely weathered sandstone (4 m).*
>
> *The 3.5 m of clay at the surface is likely derived from weathering of shales and laminites of the Mittagong Formation.*
>
> *The underlying rock sequence provides a stable base on which to construct the proposed factory and concrete works."*

5. ENVIRONMENTAL IMPACTS AND SAFEGUARDS – PHYSICAL ENVIRONMENT

5.1 NOISE

An outline of the predictive noise modelling methodology and scenarios has been provided below.

5.1.1 Noise Sources

The sound power levels for the identified noise sources associated with the operational activities have either sourced from Benbow Environmental's extensive noise source database or obtained from the equipment supplier. Approximate A-weighted octave and third octave band centre frequency sound power levels have been used and are presented in Table 5-1. The noise sources utilised as part of this assessment are comprised of the primary noise generating activities associated with the proposed operations.

Table 5-1: A-weighted Sound Power Levels, dB(A)

Area	Overall	Third Octave Band Centre Frequency (Hz)									
		25	31	40	50	63	80	100	125	160	200
		250	315	400	500	630	800	1k	1.25k	1.6k	2k
		2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
Screen: Terex/Finlay 683 Supertrak (running loaded)	109	47	49	64	69	80	81	80	86	87	88
		88	89	95	98	95	97	99	100	100	100
		99	98	96	94	91	87	82	78	72	64
Crusher: Komatsu BR380JG-1 (running loaded)	108	50	63	68	75	82	86	91	94	97	97
		91	90	94	99	101	98	96	97	96	94
		92	89	86	84	81	78	75	71	67	62
Excavator Kobelco SK 135 SR (< 75 KW @ 2000rpm)	104	-	-	-	-	79	-	-	81	-	-
		90	-	-	92	-	-	94	-	-	94
		-	-	101	-	-	91	-	-	-	-
Front End Loader (< 111 kW @ 2000rpm)	102	44	51	59	85	84	77	77	78	80	85
		89	85	85	88	88	90	93	94	93	92
		91	90	88	87	84	81	77	73	66	60
Truck & Dog Maneuvering at 10km/hr	100	50	59	70	75	60	69	75	77	80	84
		82	81	86	87	87	90	90	90	91	91
		89	88	86	83	81	75	69	66	61	52
Truck & Dog Tipping	110	-	73	-	-	77	-	-	85	-	-
		93	-	-	102	-	-	102	-	-	99
		-	-	107	-	-	-	-	-	-	-
Agitator Operating	103	36	48	46	53	61	71	74	70	80	85
		78	83	87	91	99	90	92	92	91	93
		91	89	86	83	81	77	74	68	62	56
Agitator Maneuvering at 10km/hr	89	36	51	50	54	54	59	62	62	67	66
		69	70	74	75	79	80	80	79	80	80
		79	74	72	70	68	65	59	68	64	53

Note: "-" Indicates data has not been considered

5.1.2 Modelling Methodology

5.1.2.1 Noise Model

Predictive Noise Modelling was carried out in SoundPLAN v7.3 using the Concawe algorithm when assessing operational noise. This model has been extensively utilised by Benbow Environmental for assessing noise emissions for existing and proposed developments, and is recognised by regulatory authorities throughout Australia. The model allows for the prediction of noise from a site, at the specified receptor, by calculating the contribution of each noise source.

The noise sources as well as the topographical features of the subject area, surrounding buildings and receiver locations, were all input into the noise model to determine the noise emissions of the proposed development at the nearest potentially affected residences.

The modelling scenario has been carried out using $L_{Aeq,\ 15\ minutes}$ descriptor when assessing operational noise. Using this descriptor, noise emission levels were predicted at the nearest potentially affected sensitive receptors to determine the noise impact against the relevant noise criteria.

5.1.2.2 General Assumptions Made for Noise Modelling

It should be noted that the relevant assessment period for operational noise emissions has been considered to be 15 minutes. Therefore noise source durations detailed in the following assumptions should be considered per 15 minute period in view of potential noise impacts under worst-case scenarios. Each assessment-specific assumption has been detailed below:

- Off-site topographical information was obtained from the Department of Lands, Six Maps, with contour maps having intervals of 10 m whilst on-site contours were supplied by the proponent.
- Off-site and on-site structures such as the primary industrial and commercial buildings have been included in the model;
- Receptors R4 and R5 were modelled at 1.5 m above ground level;
- All ground areas have been modelled considering different ground factors ranging from 0 to 1.
- Trucks have been modelled considering two moving point sources at heights of 1.5 m and 3 m above ground level in order to account for the engine (1.5 m) and the exhaust outlet (3 m). An on-site speed of 10 km/hr has been considered;
- One (1) truck & dog tipping has been modelled as a point source and has been considered to last for 30 seconds;
- Loaders, agitator truck, screens, crusher and excavator have been modelled as point sources and have been considered to operate for 100% of the assessment period;

- The existing roller shutter doors on the southern side of the crushing building have been considered to be made of Spandek Zincalum 0.42 BMT (Rw 19 dB). Data was obtained from BHP Building Products "Zincalume steel cladding – Roof & Walls" document. ; and

- The facades of the crushing building have been considered to be made of concrete 250mm thick (Rw 62 dB). Sound transmission loss predictions were undertaken in Insul v8.0.

5.1.2.3 Noise Modelling Scenarios

Three (3) operational scenarios considering several configurations were established for the modelling of operational noise generation. Each scenario is detailed in Table 5-2. Details of the location of the noise sources are shown in Figure 5-1, Figure 5-2 and Figure 5-3.

Table 5-2: Modelled Noise Scenarios for Proposed Operations

Scenario	Configuration	Areas	Noise Sources for
A	-	1 & 2	2 screens
			2 front end loader
			1 truck & dog tipping
			2 truck & dog maneuvering
			1 agitator
			1 agitator manoeuvring
B	-	3	1 front end loader
			1 truck & dog maneuvering
C	C1: All roller shutter doors open	3	1 screen
	C2: Two roller shutter doors open		1 crusher
	C3: All four roller shutter doors closed		1 excavator

Figure 5-1: Noise Sources Location – Scenario A

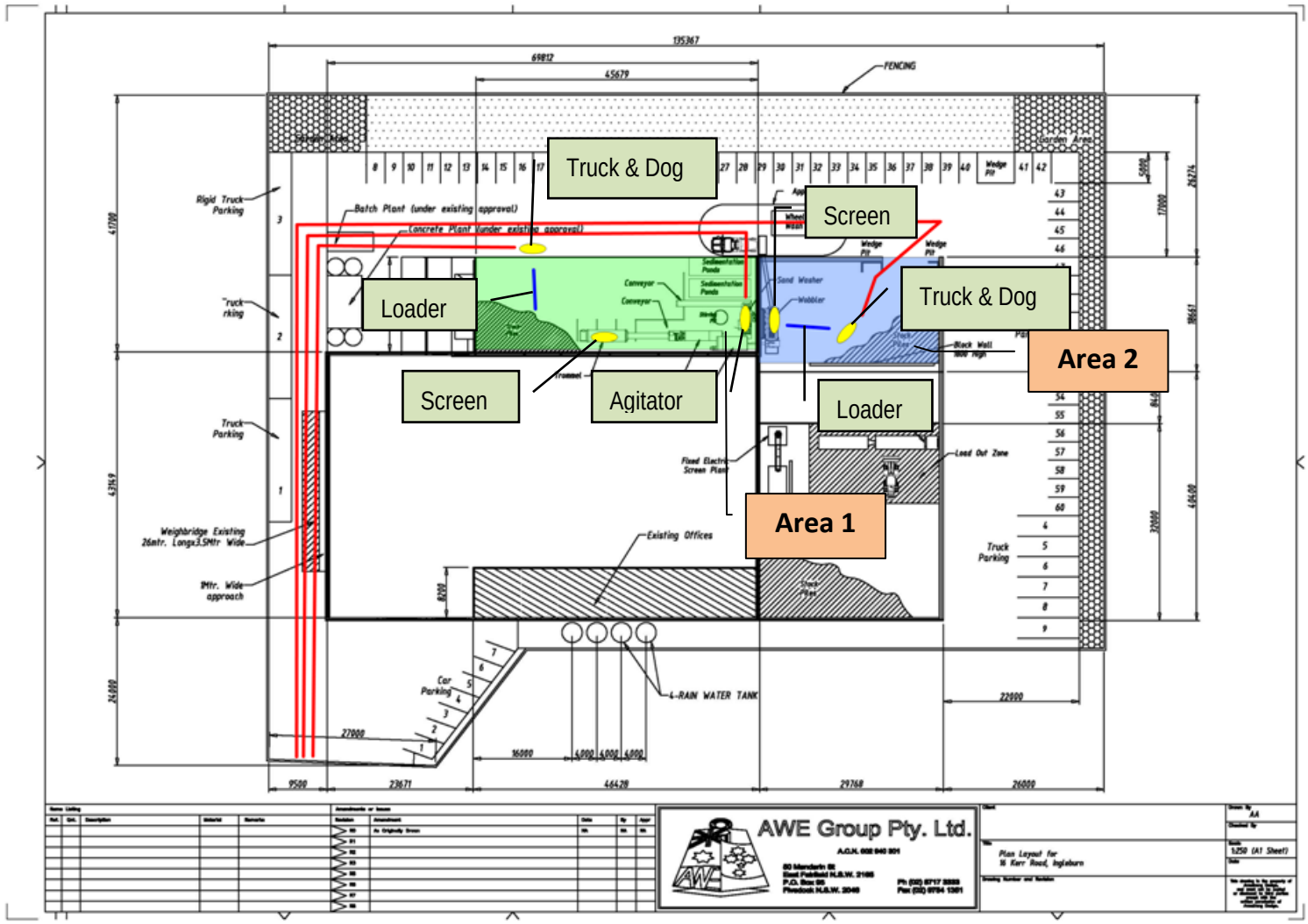


Figure 5-2: Noise Sources Location – Scenario B

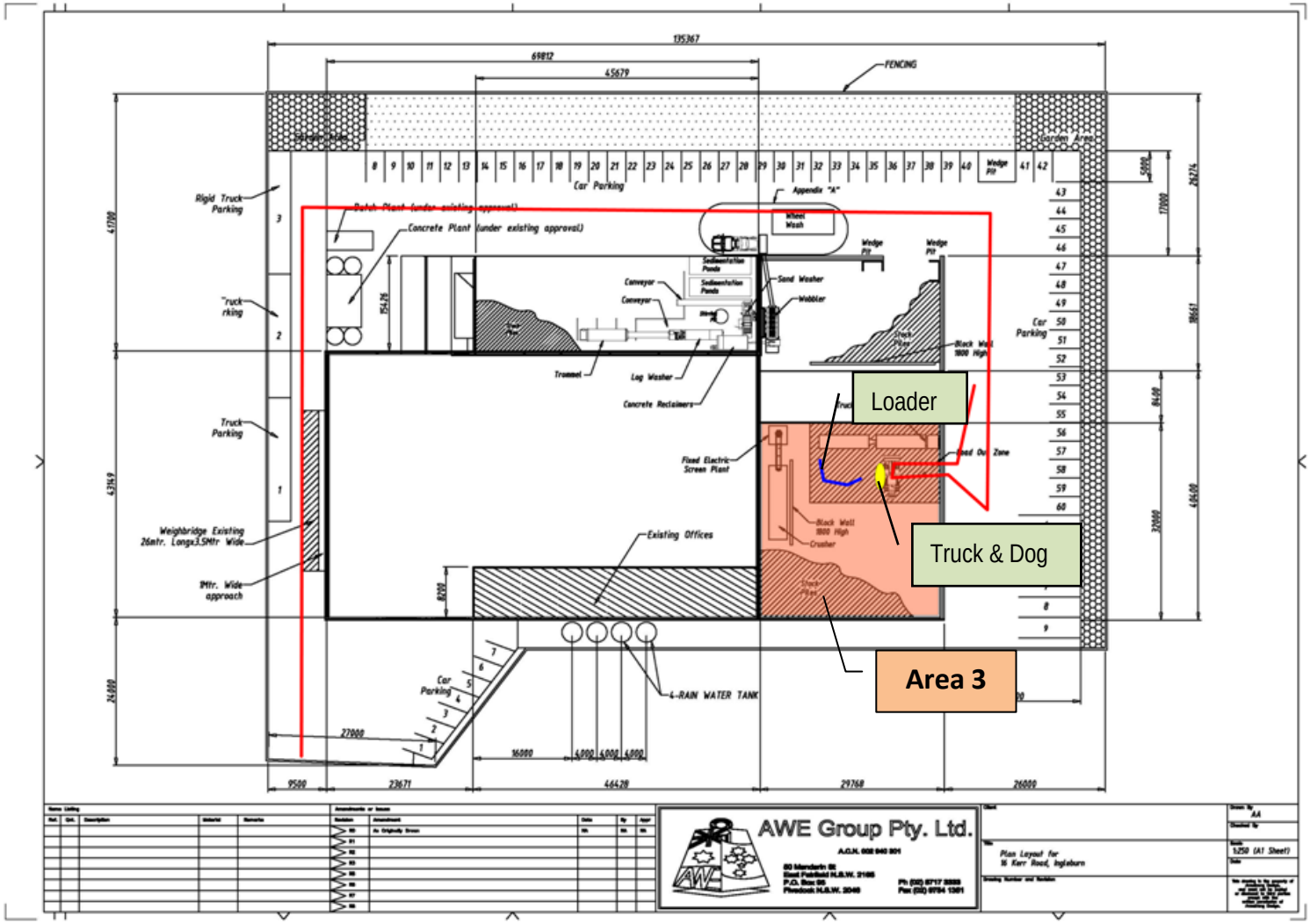
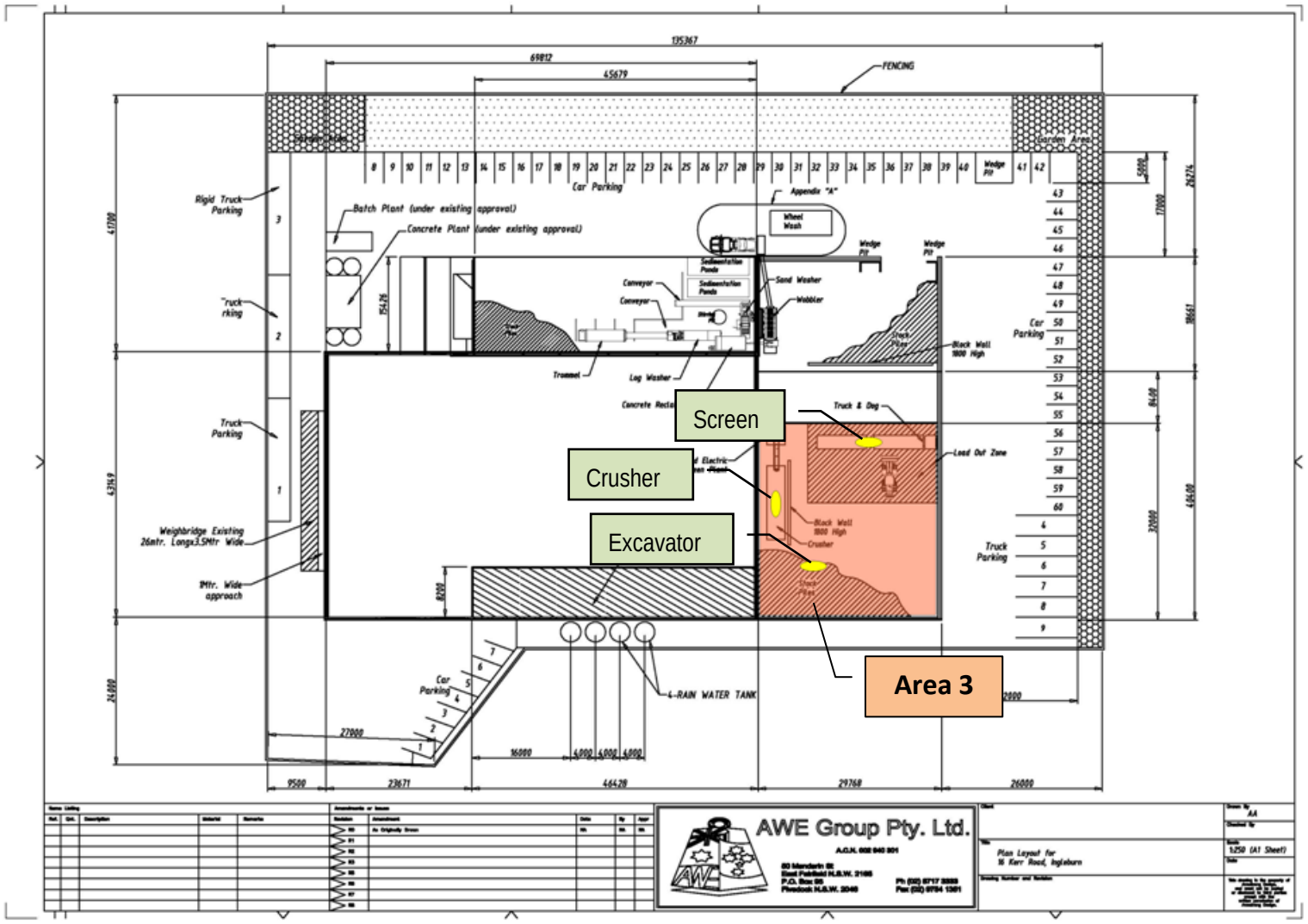


Figure 5-3: Noise Sources Location – Scenario C



5.1.3 Predicted Noise Levels

Results of the predictive noise modelling associated with the proposed facility without considering any control measures have been displayed in Table 5-3.

Table 5-3: Predicted Noise Levels for Waste Recycling Facility

Receptor	Predicted Noise Level - $L_{eq, 15min}$ dB(A)					PSNL
	Scenario A	Scenario B	Scenario C			
			C1	C2	C3	
R4	36	40	52	49	37	40
R5	35	37	56	51	39	35

Note: Shaded cell indicates predicted noise levels exceeds the PSNL

Scenario A: operations carried out at areas 1 & would generate noise levels that comply with the PSNL at receptors R4 and R5.

Scenario B: noise emissions associated with the use of a front end loader on the southern side of the crushing building would generate noise levels that slightly exceed the PSNL at receptor R5 by 2 dB. Noise control measures and management practices can be adopted to reduce the noise impact at receptor R5 and ensure compliance with the 35 dB(A) $L_{eq\ 15\ min}$ noise criterion.

Scenario C: several configurations of the existing roller shutter doors located on the southern side of the crushing building were considered in the noise modelling. As can be seen in Table 5-3, the predicted noise levels exceed the PSNL for all configurations primarily due to the crusher and screen operations. The noise impact at receptors R4 and R5 is significantly reduced when all roller shutter doors are kept closed. In addition, the replacement of the existing roller shutter doors by a material with a higher acoustic performance would assist in reducing the noise impact resulting in compliance with the PSNL.

5.1.4 Noise Control Measures and Recommendations

There are several safeguards that can be recommended aimed at reducing potential noise emission issues. These have been detailed below.

- The equipment and vehicles used in proposed facility must be selected in accordance with the information shown in Table 5-1. Alternative equipment/vehicle might be used only if its sound power levels during maximum capacity of operation do not exceed the values shown in Table 5-1. Prior to the purchase of any equipment/vehicle consultation with a qualified acoustic engineer should be made;

- Operations associated with the facility must be carried only between 7am and 6pm Monday to Saturday only to achieve compliance. No night time or evening operations are proposed;

- Simultaneous operations at areas 1&2 (Scenario A) and 3 (Scenario C) must not be undertaken unless further noise control measured are implemented;

- Regarding scenario B, the truck & dog must park parallel to the crushing building and the front end loader must operate in the area within the crushing building and the truck only;

- The existing roller shutter doors must be replaced by a new system that provides a sound transmission loss Rw of at least 26 dB. A single skin of trimdek zincalume 0.8 BMT would satisfy the noise requirements;

- All roller shutter doors must remain closed during crushing and screening operations;

- Vehicle movements:
  Movement of trucks and mobile equipment on-site is to be restricted to the assumptions taken in this report. Site management is to ensure that the necessary timetabling and organisation of contractors is conducted in a manner that accommodates this requirement.

  The following practical on-site vehicle movement practices also need to be enforced:

  - Low on-site speed limits;
  - Minimise the use of truck exhaust brakes on site;
  - No extended periods of on-site revving/idling.

- Maintenance of Equipment:
  Mechanical equipment in poor condition will create more noise than well maintained equipment. It is important to ensure that all vehicles, machinery and ancillary equipment meet the appropriate environmental noise requirements.

Table 5-4 shows the predicted noise levels at receptors R4 and R5 after all noise control measures and recommendations are implemented.

Table 5-4: Predicted Noise Levels for Waste Recycling Facility Considering Noise Control Measures

Receptor	Predicted Noise Level - $L_{eq, 15min}$ dB(A)			PSNL
	Scenario A	Scenario B	Scenario C3	
R4	36	<40	33	40
R5	35	<35	32	35

As can be seen in Table 5-4 compliance with the PSNL would be achieved at both residential receptors after implementation of noise control measures.

5.2 AIR QUALITY

5.2.1 Introduction

This section presents the air quality assessment of the proposal. The air quality assessment is conducted in accordance with the NSW EPA document "Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales" (DEC NSW 2005). This study aims to identify all potential air emission sources on site, quantifies the associated impacts by utilising an air dispersion model, and assesses the impacts and outcomes by comparing them with relevant legislation, standards and guidelines.

5.2.2 Sensitive Receivers

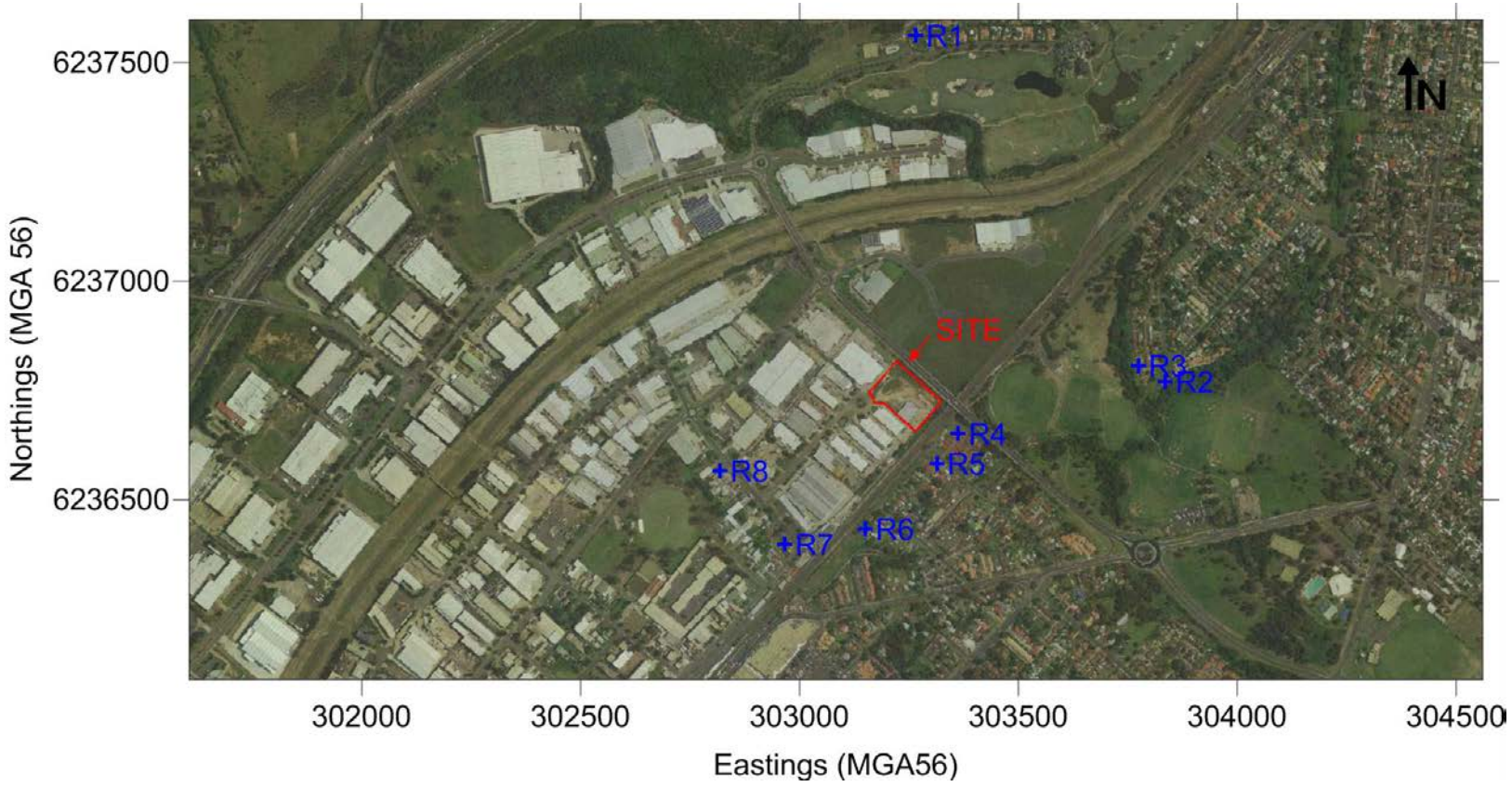
The nearest residential receivers have been discussed in Section 4.2.3 and are shown in Table 5-5.

Table 5-5: Nearest Residential Receivers

Receiver	Identification	Approximate Distance to Site Boundary (m)	Bearing
R1	Lot 111, DP 850849	750	North
R2	58 Myee Road	517	East
R3	49-53 Waratah Crescent	443	East
R4	2 Gordon Avenue	57	South-East
R5	1 Redfern Street	80	South
R6	1-3 James Street	247	South

Figure 5-4 shows the location of the receivers within proximity to the subject site.

Figure 5-4: Location of Nearest Receivers



Legend:
Site Boundary
Nearest Residential Receivers

Source: © Department of Lands SIX Portal
Link: www.lands.nsw.gov.au

5.2.3 Meteorology and Background Air Quality

5.2.3.1 Site Representative Meteorological Data

The closest monitoring station to the subject site is the Holsworthy AWS monitoring station operated by the Bureau of Meteorology (BOM). This monitoring station is located approximately 10 km north east of the subject site. Weather conditions at this monitoring station are logged hourly and are considered to be applicable for the subject site.

The EIS associated with the concrete batching and masonry plant presented a synthetic site-specific meteorological data that was derived from the TAPM (The Air Pollution Model) software incorporating the observed data from the Holsworthy AWS.

In this report, site-specific data is not used since the air impact assessment indicated very low impacts when modelled using a generic worst-case meteorological data. This is a level 1 assessment and is considered to be adequate in conservatively predicting the cumulative air impacts resulting from the proposed development. A comparison of emission rates between the existing and proposed operations are provided in Table 5-11. Detailed results from the 2011 model are shown in Section 5.2.5.5 and discussed later in Section 5.2.5.6.

5.2.3.1.1 Wind Rose Plots

Wind rose plots show the direction from which the wind is coming from with triangles known as “petals”. The petals of the plots in the figure summarise wind direction data into 8 or 16 compass directions. The length of the triangles, or “petals”, indicates the frequency that the wind blows from the direction presented. Longer petals for a given direction indicate a higher frequency of wind from that direction. Each petal is divided into segments, with each segment representing one of the six wind speed classes. Thus, the segments of a petal show what proportion of wind for a given direction falls into each class. The proportion of time, for which wind speed is less than speeds in the first class (i.e. 0.5 m/s), when speed is negligible, is referred to as calm hours or “calms”. Calms are not shown on a wind rose as they have no direction, but the proportion of time that constitutes the period under consideration is noted under each wind rose.

The concentric circles in each wind rose are the axis, which denote frequencies. In comparing the plots it should be noted that the axis varies between wind roses, although all wind roses are the similar in size. The frequencies denoted on the axes of the wind rose are indicated beneath each wind rose.

Wind Rose Plots for the synthetic site-specific meteorological data for the year of 2004 is available from the previous EIS approved for the Concrete Batching and Masonry Plant. These seasonal wind roses showed that winds from west-southwest prevail for all seasons of the year with addition of prevailing winds from the east in summer.

5.2.3.1.2 Atmospheric Stability

The "stability" of the atmosphere is a classification used to describe the structure of the atmosphere in terms of temperature, specifically, how temperature changes in the atmosphere with altitude. Classification is often in accordance with the Pasquill-Gifford classification system that consists of six stability class groups, shown in Table 5-6. The class "A" describes an atmosphere where the air is well mixed and there is little hindrance of dispersion into the atmosphere. At the opposite end of the scale is class "F", which describes conditions under which temperature inversions would occur, where winds are calm or absent and air close to the earth's surface cannot rise into the atmosphere due to the presence of warmer air layers above. The classes in between A and F indicate changing degrees of stability due to variations in temperature in the atmosphere.

Table 5-6: Pasquill-Gifford Stability Class System

Stability Class	Description
A	Extremely Unstable
B	Unstable
C	Slightly Unstable
D	Neutral
E	Slightly Stable
F	Very Stable

Based on the synthetic meteorological data presented in the previous EIS, stability class D, which represents neutral conditions, was the most prevalent throughout the year. In neutral atmospheric conditions, mechanical turbulence is neither enhanced or inhibited resulting in a small to moderate scale of vertical and lateral diffusion of pollutants in the air.

5.2.3.1.3 Terrain and Structural Effects on Dispersion

The proposed waste transfer and recycling plant will be located in the same building housing the Concrete Batching Plant. The site topography is relatively flat, hence is not seen as a significant factor contributing to the atmospheric dispersion process.

5.2.3.2 Background Air Quality

Background air quality parameters were obtained from the nearest NSW EPA air monitoring station located at Rose St, Liverpool. Table 5-7 summarises the background concentrations that will be applied to determine cumulative air impacts associated with the proposed development.

Table 5-7: Background Air Concentration Applied in the Air Impacts Assessment		
Substances	Averaging Period	Background Concentration Applied
Fine Particulates (PM_{10})	24 hours Annual	40.0 μg/m^3 19.1 μg/m^3
Total Suspended Particulates (TSP)	Annual	37.5 μg/m^3
Deposited Dust	Annual	2 g/m^2/month

5.2.3.2.1 Predicted Incremental Air Impacts from the Concrete Batching and Masonry Plant

In addition to the background concentrations, the maximum incremental impacts associated with the concrete batching and masonry plant will also be added as these have not been accounted in the local air quality. The predicted maximum concentrations are listed in Table 5-8.

Table 5-8: Maximum Predicted Incremental Impacts from the Concrete Batching and Masonry Plant Applied in the Air Impacts Assessment		
Substances	Averaging Period	Max Impact from Concrete Batching & Masonry Plant[1]
Fine Particulates (PM_{10})	24 hours Annual	1.3 μg/m^3 0.7 μg/m^3
Total Suspended Particulates (TSP)	Annual	Not available
Deposited Dust	Annual	1 g/m^2/month

5.2.4 Air Quality Criteria and Guidelines

5.2.4.1 Protection of Environment Operations Act 1997 (POEO Act)

The Protection of the Environment Operations Act 1997 (POEO Act) applies the following definitions relating to air pollution.

> *"Air pollution" means the emission into the air of any air impurity.*
>
> *While "air impurity" includes smoke, dust (including fly ash), cinders, solid particles of any kind, gases, fumes, mists, odours and radioactive substances."*

The following clauses of this Act have most relevance to the site.

- Clause 124 (Operation of Plant)

  The occupier of any premises who operates any plant in or on those premises in such a manner as to cause air pollution from those premises is guilty of an offence if the air pollution so caused, or any part of the air pollution so caused, is caused by the occupier's failure:
  a) to maintain the plant in an efficient condition, or
  b) to operate the plant in a proper and efficient manner.

  Where premises is defined within the POEO Act as including: (a) a building or structure, or (b) land or a place (whether enclosed or built or not), or a mobile plant, vehicle, vessel or aircraft.

- Clause 126 (Dealing with Materials)

  (1) The occupier of any premises who deals with materials in or on those premises in such a manner as to cause air pollution from those premises is guilty of an offence if the air pollution so caused, or any part of the air pollution so caused, is caused by the occupiers failure to deal with those materials in a proper and efficient manner.
  (2) In this section:
  a) deal with materials means process, handle, move, store or dispose of the materials.
  b) materials include raw materials, materials in the process of manufacture, manufactured materials, by-products or waste materials.

- Clause 127 Proof of causing pollution

  To prove that air pollution was caused from premises within the meaning of Sections 124 – 126, it is sufficient to prove that air pollution was caused on the premises, unless the defendant satisfies the court that the air pollution did not cause air pollution outside the premises.

- Clause 128 Standards of air impurities not to be exceeded

  (1) The occupier of any premises must not carry on any activity, or operate any plant, in or on the premises in such a manner as to cause or permit the emission at any point specified in or determined in accordance with the regulations of air impurities in excess of:
  a) The standard of concentration and the rate, or
  b) The standard of concentration or the rate.
  c) Prescribed by the regulations in respect of any such activity or any such plant.
  (2) Where neither such a standard nor rate has been so prescribed, the occupier of any premises must carry on any activity, or operate any plant, in or on the premises by such practicable means as may be necessary to prevent or minimise air pollution.

The subject site would be required to adhere to the above listed legislative requirements.

5.2.4.2 Department of Environment and Climate Change NSW Guidelines

The NSW EPA guidelines "Approved Methods for the Modelling and Assessment of Air Pollutants (AMMAAP) in New South Wales" (DEC NSW 2005) was used for this assessment. The NSW EPA AMMAAP aims to provide a list of statutory methods for the modelling and assessment of air pollutants from stationary sources in NSW and is referred to by the Protection of Environment Operations (Clean Air) Regulation 2002.

The ground level concentration criteria have been referenced from the NSW EPA AMMAAP. Pollutants were identified to be particulate matter and are shown in Table 5-9 along with the averaging periods to be assessed in the dispersion modelling. The impact assessment criteria shown are based on the pollutants that could be emitted from the air emission sources on site.

Table 5-9: Impact Assessment Criteria for PM_{10}, TSP and Deposited Dust

Substances	Averaging Period	Impact Assessment Criteria
Fine Particulates (PM_{10})	24 hours Annual	50 μg/m^3 30 μg/m^3
Total Suspended Particulates (TSP)	Annual	90 μg/m^3
Deposited Dust	Annual	2 g/m^2/month [a] 4 g/m^2/month [b]

Source: DEC NSW (2005)
Notes: [a] Criteria for the maximum increase in deposited dust level.
[b] Criteria for the maximum total deposited dust level.

5.2.5 Assessment of Air Quality Impacts

5.2.5.1 Air Emission Sources

The following list shows the potential air emission sources that have been identified from examining the proposed site operations and activities:

- Crushing the waste into aggregates; and
- Screening the aggregates according to the particle size.

No odour emission impacts are expected to occur, given that no green waste (other than timber) will be entering, generated, processed, or exiting the site. Hence, it has not been deemed necessary to model odour impacts for the purpose of this assessment.

Dust emissions from the crushing and screening processes were considered due to the nature of these activities. These activities will be done within a total enclosure being the concrete block factory building. The Dust mitigation controls for these processes were considered in the air dispersion modelling.

5.2.5.2 Air Emission Factors

Site-specific air emission factors were developed using relevant and appropriate methodologies from the National Pollution Inventory (NPI) Guidelines. Fine particulate emission factors for the main activities of the site were estimated based on factors listed in the NPI Guidelines "*Emission Estimation Technique Manual (EETM) for Mining*" (NPI DEH 2012). Calculation methodologies and figures are provided as follows.

The referenced emission factors were used as representative emission factors for the crushing and screening activities of the subject site, which are listed in Table 5-10. It is to be noted that these emission factors are for uncontrolled emissions.

Table 5-10: Adopted Emission Factors from NPI EETM Guidelines for Mining

Activity	PM_{10} Emission Factor	TSP Emission Factor	Units
Crushing	0.012	0.03	kg/tonne
Screening	0.06	0.08	kg/tonne

5.2.5.3 Air Emissions Controls

As previously noted, the proposed activities will be conducted within an enclosed building. This will be the primary control for particulate emissions apart from water spray which is applied on stockpiles. According to NPI Guidelines a reduction of 99% can be achieved when a total enclosure is provided. It was deemed appropriate to use a more conservative reduction in the air emission to predict a worst case scenario of the activity, therefore the reduction factor used is 90%.

5.2.5.4 Air Emissions Inventory

The concrete washing process is considered to have negligible contributions to particulate and dust emissions, and thus has not been included in this study. The main source of emissions would be from the 3,000 tonnes per annum of materials crushed and screened.

Table 5-11 shows the list of estimated site-specific air emission rates from the 2011 EIS prepared by Benbow Environmental. This is based on processing of 15,000 tonnage of materials per year. The calculated emission rates for the proposed development are also shown in Table 5-11. These were derived by multiplying the emission factors by tonnage per year and the reduction factor due to building enclosure under the assumption of operating 11 hours per day, 5 days a week, 50 weeks of the year. It is to be noted that the only emission sources will be from crushing and screening activities. Blending operations would not occur, nor would stockpiles.

Table 5-11: Comparison of Emission Rates for Existing and Proposed Development

Emission Sources	Emission Rates (g/s)			
	Existing		Proposed	
	PM_{10}	TSP	PM_{10}	TSP
Crushing	1.4×10^{-3}	3.5×10^{-3}	1.5×10^{-5}	7.5×10^{-5}
Screening	7.0×10^{-3}	9.3×10^{-3}	3.8×10^{-5}	10.1×10^{-5}
Blending	1.6×10^{-3}	3.4×10^{-3}	N/A	N/A
Wind Erosion from stockpiles	9.1×10^{-6}	1.8×10^{-5}	N/A	N/A
Miscellaneous transfer points	8.6×10^{-5}	1.9×10^{-4}	N/A	N/A

From this comparison, it is evident that both the TSP and PM10 the emission from the proposed development will be substantially reduced from the existing site activities.

Air dispersion modelling for the existing scenario was undertaken as part of the 2011 EIS (detailed below in Section 5-18). Compliance was achieved at all receptors for PM10 24 hours averaging time, PM10 1 year averaging time, TSP 1 year averaging time and dust deposition 1 year averaging time. In consideration of the substantially reduced emission rates, only minor variation for the current background air concentrations and the predominant wind speed and direction; the proposed development would similarly be within the impact assessment criteria at all receptors. Additionally, the development would not have to consider the 'maximum impact from concrete batching and masonry plant' as these operations are not intended to take place. Therefore new modelling was not considered necessary to be undertaken.

5.2.5.5 Existing Modelling

Level 1 Air Assessment was conducted for a preliminary air quality assessment of the site using a worst case meteorological data. The worst case meteorological data is made as per Table 4-1 of the guidelines of The Approved Methods for Modelling and Assessment of Air Pollutants in New South Wales, August 2005, published by New South Wales Department of Environment, Climate Change and Water. The predicted results are therefore conservative.

The air impact modelling is performed using Ausplume (version 6), published by Victorian EPA. It is one of the recommended modelling software to be used by the NSW EPA.

To determine cumulative impacts for each pollutant, the background concentration and the maximum estimated impacts predicted for the Masonry and Concrete Batch Plant were incorporated into the modelling results.

The modelling results from the original EIS are shown in Table 5-12 to Table 5-15. Each pollutant has a specific averaging time as specified in the Approved Methods for Modelling and Assessment of Air Pollutants in New South Wales, August 2005 guidelines.

Table 5-12: Air Dispersion Modelling of Particulate Matter less than 10 µm (PM_{10}) - 24 Hours Averaging Time

Receptors	Incremental Impact (µg/m³)	Background Air Concentration from Local Air (µg/m³)	Max Impact from Concrete Batching & Masonry Plant[1] (µg/m³)	Cumulative Impact (µg/m³)	Limit (µg/m³)	Compliance (Yes/No)
R1	0.5	34.7	1.3	36.5	50	Yes
R2	0.8			36.8		Yes
R3	0.9			36.9		Yes
R4	5.7			41.7		Yes
R5	5.1			41.1		Yes
R6	2.2			38.2		Yes
R7	1.3			37.3		Yes
R8	1.6			37.6		Yes

Source: [1]*Environmental Impact Statement for Proposed Concrete Batching and Masonry Plant at 16 Kerr Road, Ingleburn*, Umwelt Environmental Consultants, February 2006.

Table 5-13: Air Dispersion Modelling of Particulate Matter less than 10 µm (PM_{10}) - 1 Year Averaging Time

Receptors	Incremental Impact (µg/m³)	Background Air Concentration from Local Air (µg/m³)	Max Impact from Concrete Batching & Masonry Plant[1] (µg/m³)	Cumulative Impact (µg/m³)	Limit (µg/m³)	Compliance (Yes/No)
R1	0.02	18.9	0.7	19.6	30	Yes
R2	0.03			19.6		Yes
R3	0.03			19.7		Yes
R4	0.25			19.9		Yes
R5	0.23			19.8		Yes
R6	0.10			19.7		Yes
R7	0.06			19.7		Yes
R8	0.06			19.7		Yes

Source: [1]*Environmental Impact Statement for Proposed Concrete Batching and Masonry Plant at 16 Kerr Road, Ingleburn*, Umwelt Environmental Consultants, February 2006.

Table 5-14: Air Dispersion Modelling of Total Suspended Particulates (TSP) - 1 Year Averaging Time						
Receptors	Incremental Impact (**µg/m^3**)	Background Air Concentration from Local Air (**µg/m^3**)	Max Impact from Concrete Batching & Masonry Plant[1] (**µg/m^3**)	Cumulative Impact (**µg/m^3**)	**Limit (µg/m^3)**	Compliance (Yes/No)
R1	0.03	37.3	Not Available	37.3	90	Yes
R2	0.05			37.3		Yes
R3	0.06			37.4		Yes
R4	0.42			37.7		Yes
R5	0.38			37.7		Yes
R6	0.17			37.5		Yes
R7	0.10			37.4		Yes
R8	0.10			37.4		Yes

Source: [1]*Environmental Impact Statement for Proposed Concrete Batching and Masonry Plant at 16 Kerr Road, Ingleburn*, Umwelt Environmental Consultants, February 2006.

Table 5-15: Air Dispersion Modelling of Dust Deposition - 1 Year Averaging Time						
Receptors	Incremental Impact (g/m^2/month)	Background dust deposition from Local Air (g/m^2/month)	Max Impact from Concrete Batching & Masonry Plant[1] (g/m2/month)	Cumulative Impact (g/m^2/month)	Limit (g/m^2/month)	Compliance (Yes/No)
R1	0.01	2.00	1.0	3.01	4.00	Yes
R2	0.01			3.01		Yes
R3	0.02			3.02		Yes
R4	0.13			3.13		Yes
R5	0.12			3.12		Yes
R6	0.05			3.05		Yes
R7	0.03			3.03		Yes
R8	0.03			3.03		Yes

Source: [1]*Environmental Impact Statement for Proposed Concrete Batching and Masonry Plant at 16 Kerr Road, Ingleburn*, Umwelt Environmental Consultants, February 2006.

5.2.5.6 Discussion

The cumulative impacts have satisfied the assessment criteria for all pollutants assessed. This is expected as the presence of building enclosure will minimise off-site emissions. The predicted impacts associated with the proposed waste transfer and recycling facility were very low therefore posing negligible impacts at the nearest sensitive receptors in regards to deposited dust, PM10 and Total Suspended Particulates.

5.2.5.6.1 Recommendations

A low impact is predicted with specific controls in place. All activities needs to be conducted within the enclosed building with access doorways closed except when used for entering or exiting the plant. Water will be needed to dampen the surface of the materials as these are processed. The surface of stock piles will also need to be kept damp even though these are within the building. Housekeeping and operational procedures need to be established to ensure appropriate storage of raw materials and correct operation of equipment within the capacity recommended by the manufacturers.

5.2.6 Statement of Potential Air Impacts

The NSW EPA "Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales" was followed in the preparation of this air assessment. The assessment criteria for the pollutants were used to determine whether the potential impacts from the site were within reasonable limits or in exceedances with the guidelines.

The emissions from the proposed operations were assessed using AUSPLUME based on Level 1 worst case scenario. The impacts on the residential areas within the vicinity of the subject site were determined to be in compliance with the NSW EPA guidelines, provided that the proposed activities are conducted within an enclosed building.

The assessment of the background air quality, location of sensitive receptors, the existing land use of the regional area of the site, and the nature of the proposed operations and associated air emission sources have lead to a conclusion that the air impacts from the subject site are minimal and would not degrade upon any of the nearest identified receptors or the existing ambient air quality of the subject location.

5.3 WATER RESOURCES

This section presents discussion on the potential impacts of the proposed development on water resources including water consumption, groundwater and surface water.

5.3.1 Water Consumption

The proponent requires 100,000 L of water to be in circuit within the washing, screening and crushing operations. Approximately 5,000 L would be required as make-up water for the loss of washing water retained on the separated finished products.

5.3.2 Groundwater

The proposed development will not involve excavation works that may have impacts on groundwater system.

All activities associated with the proposed development will be conducted in a bunded enclosed building. Floor areas within the building and the majority of external areas will be sealed.

The raw materials handled on site are not dangerous or hazardous.

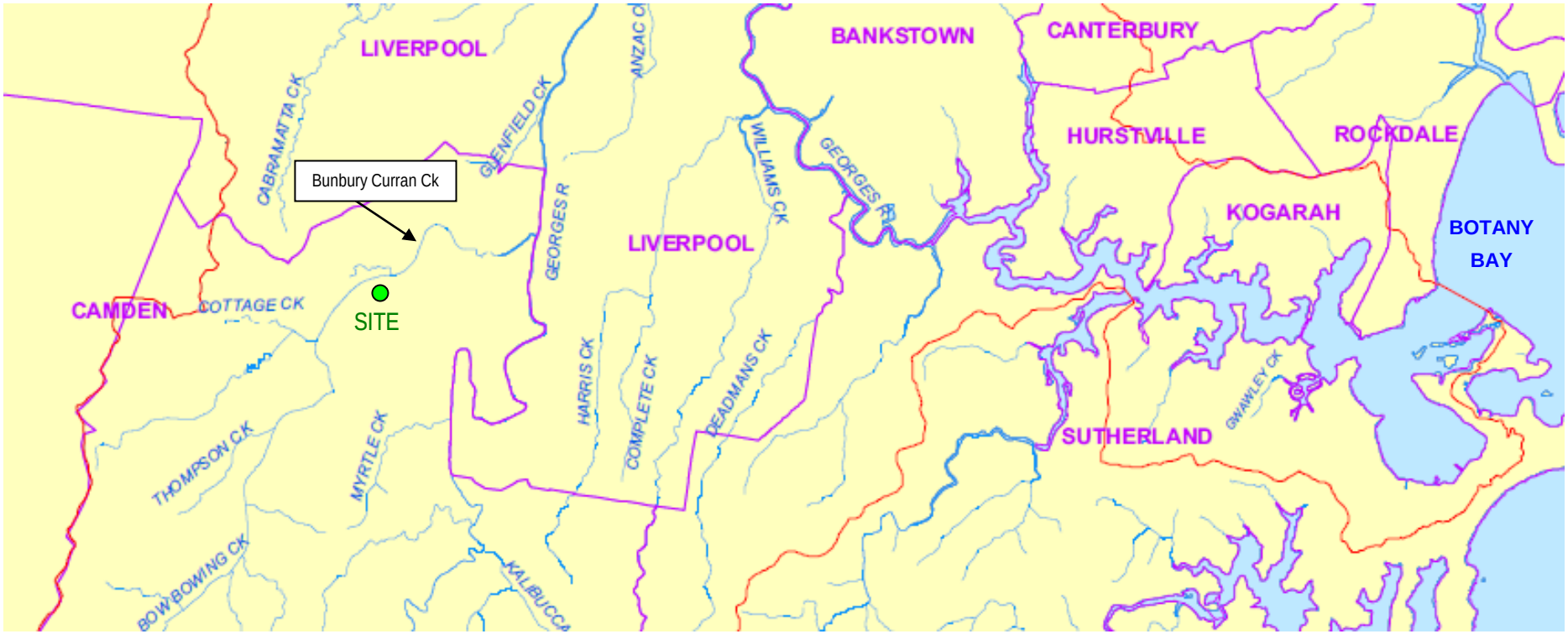
There would be no storage of chemicals on site and hence there is minimal threat of groundwater contamination from the processes. Groundwater contamination would be restricted through correct storage and management procedures. The site will store a minor volume of diesel fuel for trucks, and front end loaders. This will be stored in drums on a bunded pallet in the workshop building. Appropriate spill control procedures would be implemented on site.

Considering the nature of materials handled and the preventative controls in place, the likelihood for contaminants entering the soil and affecting groundwater is negligible.

5.3.3 Surface Water

The nearest waterways from the subject site are Redfern Creek, located 230 m east of the site, and Bunbury Curran Creek, located at 400 m north of the site. Redfern Creek is a tributary to Bunbury Curran Creek which is a tributary to Georges River. In rain events, runoff from the site would flow these local waterways and eventually flows to the Georges River. Both waterways have been heavily modified in the past for flood mitigation purposes. Bunbury Curran Creek also receives stormwater discharges from the Ingleburn industrial area.

Figure 5-5: Georges River Catchment Area



Legend:
- Approximate Site Location
- Georges River Catchment Boundary
- Drainage
- Local Government Boundary

Source: Sydney Metropolitan Catchment Management Authority
Link: http://www.sydney.cma.nsw.gov.au/bbcci/images/maps/BBCCI_GEORGES_CATCHMENT_LGA_V1.pdf
Note: The map only shows part of Georges River catchment area relevant to the subject site.

The Georges River catchment starts from the south west of Sydney in the town of Appin and flows north towards Liverpool, Chipping Norton Lakes and Botany Bay. Figure 5-5 shows part of the 960 km^2 catchment area that is relevant to the site. Currently, over 1 million people live within the Georges River catchment area, making it one of the most highly urbanised catchments in Australia. Apart from the Bunburry Curran Creek, Georges River has other important tributaries namely, Cabramatta Creek, Prospect Creek, Williams Creek, Salt Pan Creek, Mill Creek and the Woronora River.

The Georges River Combined Councils' Committee (GRCC) conducted the first water quality sampling campaign in spring 2009 to determine the general health of the Georges River. As a whole system, the water quality of the Georges River Catchment is fair. A high degree of urbanisation primarily occurs in the lower and mid catchments. This is believed to result in a loss of riparian and estuarine vegetation and deterioration in water quality and microinvertebrate diversity.

The subject site is located in the upper catchment of the Georges River. The Cambridge Avenue sampling point at Glenfield was the closest one to the subject site. The sampling results indicated a fair water quality and river health in this section of the catchment.

The proposed development will not result in any disturbance to the bank of the natural watercourse that flows to nearby Redfern Creek or Bunbury Curran Creek. The site does not extend to the foreshore of the Redfern Creek or Bunbury Curran Creek and accordingly, river related use is not relevant to the subject site.

5.3.3.1 Potential Flood Impacts

The EIS for the Concrete Batching and Masonry Plant describes the surface water flow on the site. The site is subject to the 100 year Average Recurrence Interval (ARI) flood in the nearby Bunbury Curran Creek. Minimum floor level has been determined based on a flood study prepared by Lean Haywood in 2002. The 100 year ARI flood level was RL 25.10 m AHD and the proposed floor level as RL 25.10 m AHD. This will not be altered as the proposed development will not involve construction activity that will affect the approved floor levels of the site.

As previously mentioned in Section 4.4.2, the three existing easements along Henderson Road, parallel to the Main Southern Railway and along the north-western side, would be sufficient to contain the 1 in 100 year storm event.

The flood easements need to be kept free of any stored materials as this would impede the flow of floodwaters and increase the risk of localised flooding.

5.3.3.2 Water Quality

Surface water has the potential to become contaminated by construction waste material and general litter. Storing materials indoors will prevent stormwater becoming contaminated from the proposed activities.

Potential impacts to water from the proposed development are summarised in the table below.

Table 5-16: Potential Water Contaminants and Controls

Potential Contaminant and Source	Potential Impact on Water	Control
Washout material	Littering of the stormwater system	Material is stored indoors.
General Litter	Littering of the stormwater system	Rubbish bins, designated storage areas, regular housekeeping.
Oil, fuel, sediment from car parking and use of driveways	Spills of fuel and build up of sediment causing contamination of stormwater and sedimentation of local waterways	Spill Kits, stormwater collection for reuse, road sweeping, vehicle maintenance, use of sealed surfaces by all vehicles.
Sediment from hard stand areas	Sedimentation of local waterways	Site maintenance.
Contaminated fire fighting water	Contamination of stormwater	Not an issue for these materials and production processes as the processes have minimal fire risk.

The environmental safeguards are therefore the following:

- Locate the waste transfer facility wholly within the existing concrete built areas. This ensures that there are no materials that could deposit onto hard stand areas.
- The process for recovering and recycling is essentially a dry process. There is water used for misting and spraying of materials to control dust. The rate of application of this water is insufficient to cause runoff onto the floor of the factory.
- The processes inside the concrete factory have the potential to spread sediment that in turn could be tracked outside by the tyres of vehicles. The trafficked areas inside the concrete factory are to be kept clean by routine sweeping.
- The stormwater floor onsite is captured for reuse hence sediment runoff from hardstand areas would be collected in this system.

Considering the above environmental safeguards, the proposed development is unlikely to result in any industrial discharges to land that significantly affect the stormwater runoff quality from the site, hence the water quality within the Georges River catchment area.

The environmental management system for the activities of the site will need to address work practices in a set of standard operating procedures.

5.4 SOIL

Soil landscape has been described in the EIS approved for the Concrete Batching and Masonry Plant. The site comprised of South Creek soil landscape which is developed on a flat to gently sloping alluvial plain topography with soil materials derived from Wianamatta Group shales and Hawkesbury Sandstone. The soil erosion hazard is minimised due to the flat topography, implementation of paving over the majority of the site and landscaping.

Aside from designated landscaped areas at the front, side and rear of the premises, the site is entirely hardstand. Contamination of soil and land is typically through chemical spills – however given no liquid chemicals are stored on site in significant quantities and the site is hardstand, the potential for soil and sub-surface contamination to occur is minimal to negligible.

Littering would also have a negative impact on the local landscape however as outlined in the previous section would be maintained through the use of rubbish bins and regular housekeeping practices.

Table 5-17: Potential Soil Contaminants and Controls

Potential Contaminant and Source	Potential Impact on Soil & Land	Control
Petrol, oil, fuel, sediment for car parking and use of driveways	General use by vehicles resulting in leaks of petroleum products	Spill Kits, road sweeping, vehicle maintenance, use of sealed surfaces by all vehicles.
General Litter throughout the site	Littering the site	Rubbish bins, designated storage areas, regular housekeeping.

The environmental safeguards to prevent soil and land contamination are the following:

- The process is carried out inside a building (the concrete factory);
- The process involves inert building materials; and
- The process does not generate waste liquids or waste water.

5.5 FLORA AND FAUNA

As previously discussed in Section 4.3, a targeted search was conducted for threatened and endangered species at the subject site and the surrounding area and found no threatened or endangered flora or fauna populations or sightings listed or recorded on the NPWS Atlas.

Given the site is located within an existing industrial estate and the proposed development would not significantly alter features of the built environment, the development is not expected to impact threatened flora and fauna in the local area.

5.6 WASTE GENERATION AND MANAGEMENT

The Protection of the Environment Operations (Waste) Regulation 2014 is administered under the POEO Act 1997. This regulation identifies provisions relating to waste management and disposal.

Waste and recycling operations have legal obligations under the Protection of the Environment Operations (Waste) Regulation 2014.

Under the Regulation, the threshold quantity of waste a facility can accept for processing without holding an Environment Protection Licence is 6,000 tonnes per annum.

The threshold quantity for storage or processing at any one time is now 1,000 tonne.

Part 3 of this Regulation details the requirements associated with tracking waste. Certain types of waste (listed in Schedule 1 of this legislation) which have the potential to be harmful to the environment are required to be tracked from the source to the waste disposal facility. Bulk Recovery Solutions Pty Ltd would produce minor quantities of waste oil that require tracking under this legislation.

Bulk Recovery Solutions Pty Ltd would ensure wastes that require tracking is done so accordingly.

- "The on-line waste tracking system can be used to track waste movements both within NSW and from interstate to waste facilities in NSW;
- A single transport certificate printed from the online system is the only tracking documentation needed to accompany waste when it is being transported;
- The progress of waste being tracked can be viewed on the online system, overcoming the need for phones calls and faxes to confirm the waste has arrived at and been processed by the waste facility;
- Creation of accurate consignment authorisations and transport certificates is easier as most data required is selected from dropdown lists;
- For regular shipments of waste, transport certificates are easy to create as most of the required information is stored in the system; and
- Users of the online waste tracking are not required to submit separate HIGA quarterly reports to DECCW." (DECCW, 2008).

Section 48 of this Regulation also states: "A person who stores waste on premises (whether or not the waste was produced on the premises) must ensure that it is stored in an environmentally safe manner." This clause applies to general waste produced by site, in addition to materials brought onto site for process operations. Bulk Recovery Solutions Pty Ltd has designed their facility to ensure recovered and sorted materials are able to be predominately reused.

Minor volumes of material (5%) will be deteriorated to the extent that these will need to go to an approved landfill site.

The nearest site is Eastern Creek that will be licensed to accept this material and this is likely to be the final destination for materials that are inert and unrecoverable.

The waste transfer facility proposed for their Ingleburn site is therefore a part of an integrated system designed to assist the greater community of Sydney in economising the resource recovery of construction materials.

5.6.1 Relevant Legislations and Guidelines

5.6.1.1 Waste Avoidance and Resource Recovery Act 2001

The Waste Avoidance and Resource Recovery Act 2001 does not directly identify waste management requirements for companies such as Bulk Recovery Solutions Pty Ltd. Rather, it provides an overview of the guiding principles of waste management.

The main objectives of this Act are to ensure the following:

- Efficient resource use is encouraged in accordance with the principles of Ecologically Sustainable Development;
- Waste management is considered where avoidance of unnecessary resource consumption is considered first, resource recovery is the second option, and finally disposal where alternative management methods are exhausted;
- The amount of waste being generated is continually reduced; and
- Waste management – reduce, reuse, recycle is further encouraged to minimise consumption and waste disposal.

5.6.1.2 NSW Waste Classification Guidelines

Waste is described within the NSW EPA Waste Classification Guidelines as:

a) any substance whether solid, liquid or gaseous that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment; or
b) any discarded, rejected, unwanted, surplus or abandoned substance; or
c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, reprocessing, recovery or purification.

Classification of waste enables the generator to determine the appropriate handling, transport and disposal requirements if the waste cannot be reused or recycled. Consignment authorisation must be obtained for the transport and disposal of wastes classified as hazardous, special and liquid wastes. Waste classification guidelines were updated in 2014. In accordance with this document, waste can be classified into 6 different streams as detailed in Table 5-18.

Special, hazardous and restricted wastes are not anticipated to be generated throughout the development. Waste streams and respective management are described and identified for each stage.

To ensure appropriate waste management and disposal is conducted, all waste must be classified according to waste classification guidelines.

Table 5-18: Waste Classes Identified in the NSW Waste Classification Guidelines

Class	Example
1) Special waste	• Clinical and related wastes. • Asbestos waste. • Waste tyres.
2) Liquid waste	• Waste that has an angle repose <5 degrees. • Waste that becomes free flowing at or below 60ºC. • Is not generally capable of being picked up by a spade or shovel.
3) Hazardous waste	• Waste with a pH ≤ 2 or ≥12.5. • Containers that have not been cleaned and contained dangerous goods within the meaning of the Australian Code for the Transport of Dangerous Goods by Road and Rail.
4) Restricted solid waste	• This type of waste is determined by chemical tests.
5) General solid waste (putrescible)	• Waste from litter bins collected by local councils. • Food waste. • Grit or screenings from sewage treatment systems that have been dewatered so that the grit of screenings do not contain free liquids.
6) General solid waste (non-putrescible).	• Paper or cardboard. • Glass, plastic, rubber, plasterboard, ceramic, bricks, concrete or metal. • Containers previously containing dangerous goods as defined under the Australian Code for the Transport of Dangerous Goods by Road and Rail, from which residues have been removed by washing or vacuuming.

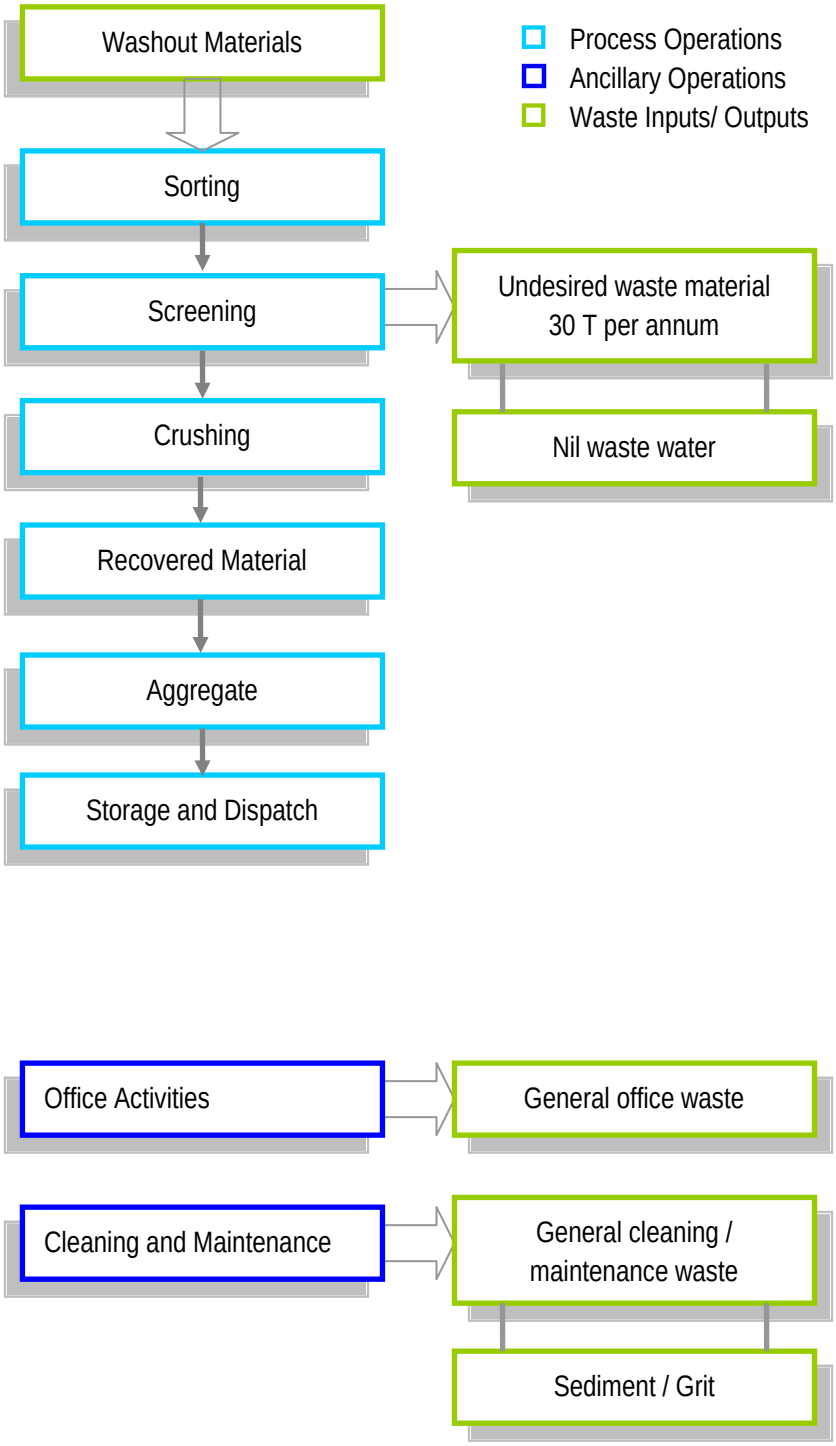
Waste produced and handled on site shall be classed into the categories listed above even though minor quantities would be produced.

5.6.2 Waste Streams

Bulk Recovery Solutions Pty Ltd proposes to operate an operation that produces minimal waste products. Recovered materials that are produced throughout the recycling process are sold for reuse off site. Waste outputs during the operation phase are identified in the following figure and further outlined below. While any newly acquired larger pieces of machinery would typically be delivered with no packaging, it can be anticipated that limited quantities of packaging waste such as plastics and cardboard would be produced.

Plastic material and cardboard would be recycled off site at existing facilities operated by contractors.

Figure 5-6: Site Operations and Waste Outputs



The proponent will provide further details directly to NSW EPA.

Minor quantities of waste would be produced by Bulk Recovery Solutions Pty Ltd, comprising primarily unrecoverable or undesired waste items.

Waste material passes through the trommel screen where the waste is sorted into various types of materials, typically aggregate and fine materials such as sand.

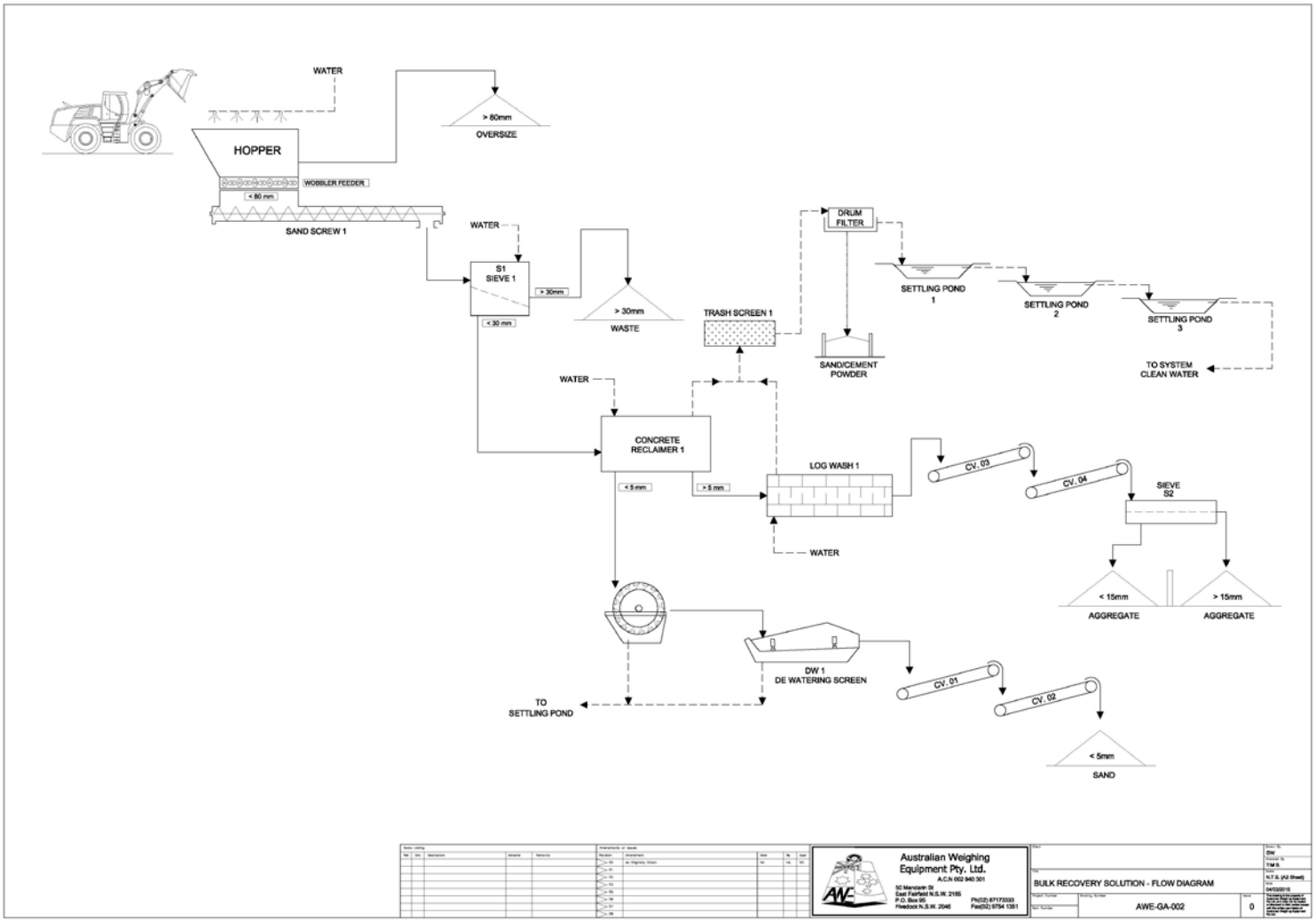
Water is used to wash the materials and as a result of the screening and crushing aspects of the operations. There is no waste water generated.

Processing machinery will require routine cleaning. Waste collected during routine housekeeping including tidying the factory area is disposed of in designated general waste bins that are collected weekly.

Oils and lubricants generated following the maintenance of company vehicles and mobile equipment and machinery are collected in 205 L drums awaiting waste recycling offsite.

Figure 5-7 presents a flow diagram of the conversion of the washout materials into reusable products.

Figure 5-7: Conversion Flow Diagram



5.6.2.1 Permitted Incoming Materials

The proposed operation would only accept washout materials from concrete batching plants. This material will primarily be sourced from the concrete batching plants, however there may be occasions when delivery would be received from a concrete agitator. Demolition material sourced from other demolition contractors would not be included. Typical inert waste such as bricks, concrete, glass, timber, metals, asphalt and plasterboard would not be included. General solid waste that has been pre-classified in the Waste Classification Guideline by the NSW EPA as solid waste non-putrescible (i.e. inert material) would not be accepted on site. Non-putrescible solid wastes associated with demolition waste, which would not be accepted are listed below.

- Glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal;
- Paper or cardboard;
- Wood waste;
- Building cavity dust waste removed from residential premises or educational or child care institutions, being waste that is packaged securely to prevent dust emissions and direct contact;
- Synthetic fibre waste from materials such as fibreglass, polyesters and other plastic, being waste that is packaged securely to prevent dust emissions, but excluding asbestos waste which is special waste and would not be permitted on site under any circumstances;
- Virgin excavated natural material;
- Building and demolition waste;
- Asphalt waste, including asphalt resulting from road construction and waterproofing works; and
- Fully cured and set thermosetting polymers and fibre-reinforcing resins, glues, paints, coatings and inks.

The development as proposed is restricted to the receipt and processing of the washout material generated at concrete batching plants. A future application would be made to bring foundry sand on-site for processing.

5.6.2.2 Managing Washout Material

The quality of incoming washout material would be controlled through management procedures. Manual checks would be conducted for truck loads prior to receipt on site. The washout material is sourced from concrete batching plants and is therefore very unlikely to contain other waste materials. The processing equipment is highly specialised and is not designed to be able to process other general solid wastes or demolition type wastes.

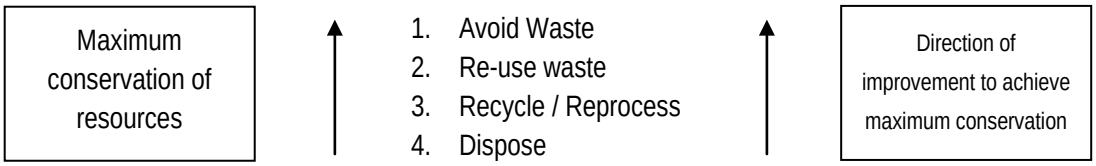
A set of standard operating procedures would be prepared prior to operation of the site to standardise protocols for accepting washout materials at the facility. These procedures would include record keeping for all incoming and outgoing material movements. These procedures would be prepared as part of the environmental management system for the site and fully satisfy the requirements of the Environment Protection Licence.

5.6.3 Waste Management

Bulk Recovery Solutions Pty Ltd would thus comply with S48 of the Protection of the Environment Operations Regulation 1997 which states the facility must store and manage waste in an environmentally safe manner.

In accordance with the Waste Avoidance and Resource Recovery Act 2007, Bulk Recovery Solutions Pty Ltd would participate in waste avoidance and reuse.

Figure 5-8: Hierarchy of Waste Management



No water other than minimal quantities will be used in the waste transfer facilities operation.

Bulk Recovery Solutions Pty Ltd could consider to further manage their waste on-site by including:

- Undertaking regular waste audits via housekeeping inspections – items to consider include: checking that wastes are segregated into recyclable and non-recyclable wastes, waste oils and lubricants are stored in a bunded area; and
- Developing a Waste Management Plan to address waste management and minimisation procedures.

The proposed development provides an example of best practice in terms of the waste avoidance, re-use, and recycle and disposal hierarchy. The proposed development will provide an improved method for the recovery of aggregate and sand from the washout material from an extensive number of concrete batching plants across the Greater Metropolitan Area of Sydney. Products produced on site will be transported off site and would also be re-used as engineered construction materials – typically materials requiring clean aggregate, road base and construction fill.

The recycling process generates minimal waste streams. Only general waste would be disposed of to landfill and this would be restricted to ~30T per annum.

Waste minimisation and resource recovery would be practised as part of the company's commitment to the principles of Ecological Sustainable Development (ESD).

6. ENVIRONMENTAL IMPACTS AND SAFEGUARDS

This section of the EIS examines the environmental impacts and develops the safeguards needed to ensure there are no uncontrolled impacts from the proposed operations.

The impacts examined include potential health, social and physical outcomes from the proposed operations.

6.1 HEALTH

6.1.1 Introduction

Health impacts of this development have been addressed with reference to the Health Impact Assessment Guidelines (enHealth, 2001). The Health Impact Assessment (HIA) process covers the following steps:

1. Screening – Determining the need for a Health Impact Statement;
2. Scoping – Identifying the impacts that need to be assessed, the boundaries of these impacts, and additional tasks and requirements to complete the assessment;
3. Profiling – Establishing a profile of communities likely to be impacted. Collecting data required to assess health impacts;
4. Risk Assessment – Assessing the significance of health impacts by qualitative and/or quantitative measures;
5. Risk Management – Investigation options to minimise potential risks;
6. Implementation and decision making – Justifying significant health impacts and providing recommendations to reduce potential impacts; and
7. Monitoring, environmental and health auditing, post-project evaluation – Evaluating health impacts and the success of the Health Impact Assessment and monitoring plans following development approval and implementation of recommendations.

Each of these seven aspects are now examined.

6.1.2 Screening

Screening is an integral part of the HIA and the overall screening process. All proposed developments that are required to undergo an EIA should be screened for possible health impacts (enHealth, 2001).

Providing the nature of the health concerns are common for many industries, and the potential for impacts to be mitigated, a full scale Health Impact Assessment is not considered to be warranted. This is the case for this proposal as there would be no hazardous materials in the washout materials brought to site.

Washout materials are essentially premixed concrete of a nature similar to the materials that make up concrete.

These materials consist of aggregate, sand, cement, fly ash, water and chemical additives in dosed quantities to alter the setting time of the concrete.

These materials in this matrix are non-hazardous and remain non-hazardous when washed out of the truck mounted concrete agitator drain (occasionally referred to as a bowl).

Washout water is used inside the agitator drum to ensure the complete removal of remnant concrete, hence the washout material is washed by this water.

This water drains from the bunkers where the washout material is stored at the concrete batching plant. This water and any sediment removed with it drains into the water recycling system at the concrete batching plants. The washout material removed from these plants is "spadeable" and is dug out using a front end loader. It is not a free flowing material.

6.1.3 Scoping

Environmental, physical and social health impacts associated with the development are listed in the following table.

Table 6-1: Potential Health Impacts Associated with the Development

Health Aspect	Positive Impacts	Negative Impacts
Environmental	• Bulk Recovery Solutions Pty Ltd will serve the local region, reducing health impacts associated with long-distance transport, e.g. Greenhouse gas emissions, air pollution, potential vehicle accidents. • Recovered materials are suitable to be used as recycled construction materials, hence reducing the consumption of virgin materials in construction industry.	• Noise, vibration and dust impacts from crushing and screening. These will have minimal off-site impacts as the activities associated with the proposed development will be carried out inside the building.
Physical		• Irritation to eyes or to respiratory tract (coughing) due to dust (or Total Suspended Particulates – TSP). As previously noted, due to the presence of the enclosed building, 90% emissions reduction will be achievable and off-site impacts will be negligible.
Social	• The development would increase employment opportunities in the region.	• Should environmental impacts not be controlled, environmental nuisances could restrict outdoor recreation of nearby residences.

Noise and air are identified as presenting the greatest concern and form the main focus in this section.

6.1.4 Profiling

The proposed site is situated in the suburb of Ingeburn, approximately 53 km south west of Sydney, within the Campbelltown local government area (LGA). Excepting the population of Ingleburn, the community most affected by potential health impacts of the site are the residences closest to the site. These 8 residences have been modelled in the air and noise impact assessment where they are referred to as receptors. Demographic information on these receptors is not known.

The demographic profile of Ingleburn suburb and the Campbelltown LGA, as indicated by the 2006 Australian Census (Australian Bureau of Statistics 2006) is as follows:

Table 6-2: Ingleburn and Campbelltown LGA Demographics (2006 Australian Census)

Profile Parameter	Quantity	
	Ingleburn	Campbelltown LGA
Personal Characteristics		
• Population	13,540	143,076
• Female	6,693	70,332
• Male	6,847	72,744
Age		
• 0-4 years	820	10,657
• 5-14	1,987	23,363
• 15-24 years	2,089	23,735
• 25-54 years	5,869	60,240
• 55-64 years	1,394	14,471
• 65 years and over	1,382	10,609
• Median age of persons	35	32
Labour Force		
• Total labour force (includes employed and unemployed persons)	6,736	68,350
• Employed full-time	4,429	42,973
• Employed part-time	1,470	16,029
• Employed away from work	178	2,121
• Unemployed	459	5,093
• Not in the labour force	3,360	33,664

6.1.5 Risk Assessment and Management

Total Suspended Particulates and particulate matter of less than 10 μm in diameter (PM_{10}) are unlikely to be emitted particularly during the processing of the materials. The washout materials will be delivered in covered trucks therefore the level of emission is considered to be insignificant.

Fine particulate matter, if exposure occurs, enters the body through inhalation. Generally, particulate matter could have the following health effects:

- Toxic effects by absorption of the toxic material into the blood (e.g. lead, cadmium, zinc);
- Allergic or hypersensitivity effects (e.g. some woods, flour grains, chemicals);
- Irritation of mucous membranes; and
- Increased respiratory symptoms, aggravation of asthma and premature death. The risks are highest for sensitive groups such as the elderly and children. (Department of the Environment, Water, Heritage and the Arts).

Washout materials from concrete batching plants have already been mixed together in a matrix. Sand and cement contain crystalline silica which on their own and able to be inhaled, are considered to be hazardous to workers.

The process of recycling washout materials will be damp and relatively free of particulate emissions such that the exposure to hazardous particulates would not occur.

6.1.6 Statement of Potential Health Impacts

The potential off-site health impacts from dust generation are considered minimal as the activities associated with the waste transfer and recycling operations will be conducted in an enclosed building with access doorways closed except when used for entering or exiting the plant. In addition, there will be other dust control measures such as water to control dust emissions from the processed material stockpiles.

The washout materials are damp at the concrete batching plants and are delivered to a roofed built space surrounded on three sides by high walls in this same condition. The material undergoes simple separation processes and these generate minimal dust levels.

6.1.7 Employee Health and Safety

The health and safety issues associated with the facility would primarily relate to the washout material accepted, processed and handled on site. All employees would undergo appropriate training as part of site induction. The employer would ensure the operation is conducted as approved and appropriate resources are available for work safety. The operation would be required to comply with the following Acts and Regulations relating to health and safety:

- Work Health and Safety Act 2011; and
- Work Health and Safety Regulation 2011.

6.2 HAZARDS AND SECURITY

6.2.1 Overview

The site contains features that if improperly handled or managed may constitute a threat to the site and surrounding environment. Aspects primarily considered are hazards generated by human behaviour.

The first aspect would be unintentional hazards caused either on-site or off-site with the potential to impact site operations. This includes aspects of operations such as accidents and unforeseen incidents during the course of day to day operations. All risks such as spills, fires and impact accidents would be identified and mitigated through the safety management system of the site.

The second is intentional hazards caused either on-site or off-site with the potential to impact site operations. These would be addressed through site induction, the presence of work practice procedures and appropriate training.

The third consideration is natural hazards which are present at the site. These include aspects such as storms including hail and strong wind damage, flooding and bushfires.

All aspects identified above and those identified during the course of risk assessments at the site would determine inclusions and controls in an Emergency Response Plan and in the Safety Management System.

Controls for the identified hazards would be mitigated permanently where appropriate, otherwise Automatic, Physical, Procedural and Behavioural controls would be put in place to further reduce potential for incident occurrence.

In addition it is expected that the environment Protection Licence will require an Environmental Management Plan and Pollution Incident Risk Management plan. This later plan ideally can be developed into an Emergency Response Plan and work practice procedures flow across and be integrated into the Safety Management System for the proposed development.

6.2.2 Chemicals and Dangerous Goods

No chemicals and a very limited quantity of dangerous goods would be stored and handled on site. A dangerous good is an article or substance capable of posing significant risk to health, safety or property. Dangerous goods are divided into different classes based on the particular risk posed by the product. The only dangerous goods would be C1 combustible liquid i.e. diesel in 4 x 200 L drums on a bunded pallet stored within the building (Area C on the site layout) that was previously the workshop.

Minor household quantities of cleaning chemicals would be stored for office cleaning. The maintenance of machinery would store lubricating oils and grease on shelving. A hydrocarbon spill kit would be kept nearby.

Given the limited quantities stored on site, placarding and manifest requirements stipulated in the Work, Health & Safety Regulation 2011 do not apply. In addition, the State Environmental Planning Policy 33 – Hazardous and Offensive does not apply. Development would not be applicable as the quantities of dangerous goods stored are well below the threshold that triggers SEPP33.

Within the section of the building that would be used for the waste transfer, storage and resource recovery, there would be no chemicals or dangerous goods stored.

6.2.3 Site Security

The site is secured by the existing man proof boundary fencing. The site will be monitored after hours by a security company.

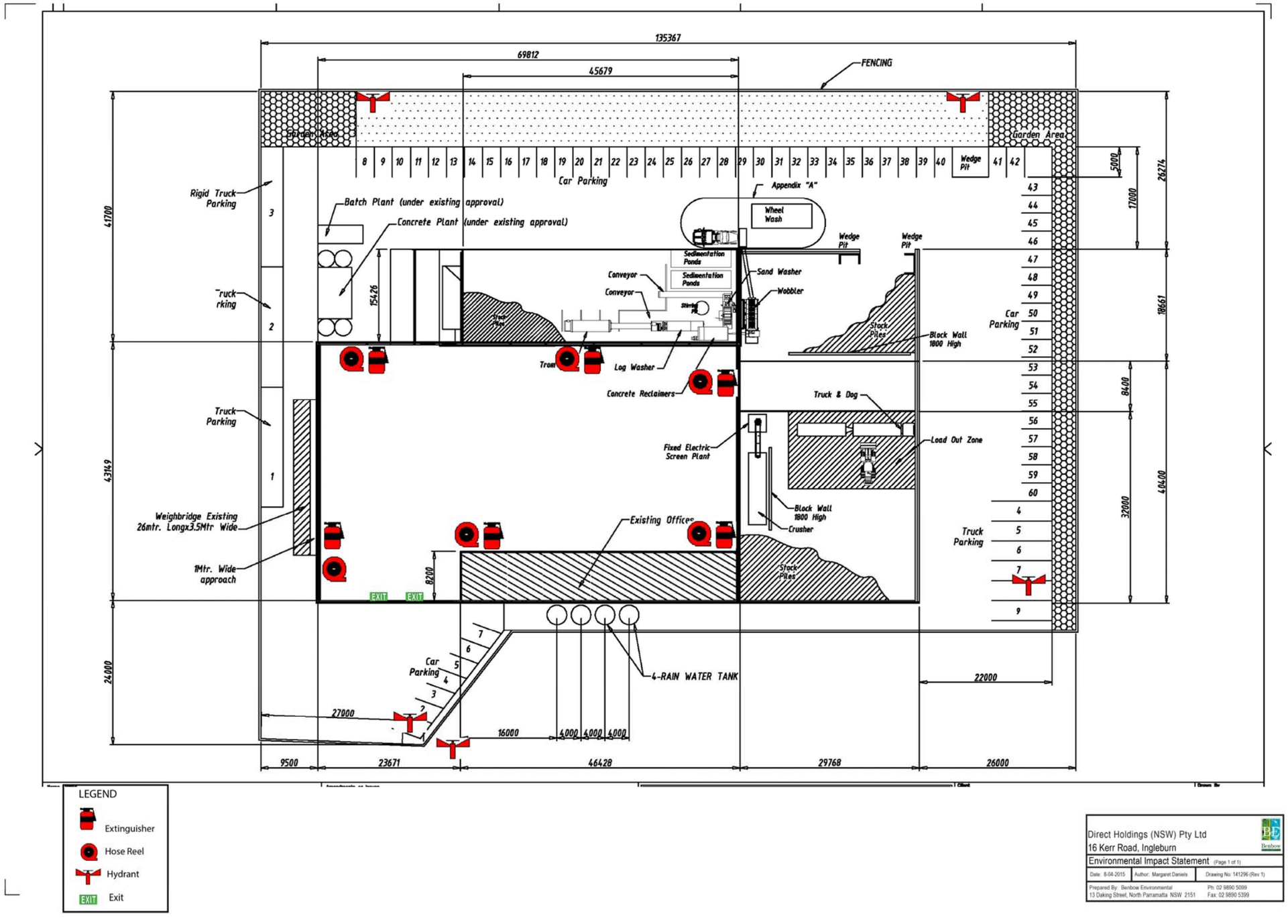
6.2.4 Fire Safety

The site has fire services in place that address the requirements of BCA. The materials involved with waste transfer are incombustible.

The building to house the plant and the waste materials is equipped with hose reel and hydrants. This is considered to be adequate for the risk level that will exist.

To mitigate fire risks associated with the proposed operations, fire protection equipment will include the use of fire hose reels, fire extinguishers and fire hydrants. The locations of fire safety equipment are illustrated in the Fire Safety Drawing provided below as Figure 6-1.

Figure 6-1: Fire Safety Drawing



6.3 VISUAL AMENITY

This section addresses the visual aspects of the proposed development.

6.3.1 Existing Visual Amenity

The existing visual amenity is one that is typical of an industrial area. The land surrounding the subject site is dominated by industrial installation including two-storey factory building and a brick metal clad two storey building located adjacent to the proposed development.

The already approved masonry plant and concrete batching facilities will comprise of a factory building and cement silos which will have a minimal visual impact to the existing view. Details on the proposed facilities associated with the masonry plant and concrete batching development can be found in the EIS prepared by Umwelt Environmental, 2006.

6.3.2 Visual Impacts of the Development

The proposed waste transfer and recycling facility will be situated inside the building already approved for the past uses. Visual amenity will remain unchanged as no other building is to be constructed or landscaping changed as a result of the proposed development.

6.3.3 Statement of Potential Visual Impacts

The potential visual impacts from the proposed waste transfer and recycling facility will be negligible as the facility will be installed inside an already approved building.

6.4 HERITAGE

The site is not listed as being a heritage item or containing items under Schedule 1 of the Campbelltown Council Local Environmental Plan 2002.

6.4.1 Introduction

A search of the NSW State Heritage Register was also conducted. The nearest heritage items found within the vicinity of the site were found approximately 650 m south-east (The Pines - resident), 950 m to the south-west (Ingleburn Community Hall and Ingleburn Primary School) and 1.3 km to the south-east (Boronia – resident). No further heritage studies for the site were justified.

6.4.2 Aboriginal Heritage

No Aboriginal heritage locations have been identified or uncovered in the vicinity of the site as stated in the local heritage register.

6.4.3 European Heritage

No European heritage locations have been identified or uncovered in the vicinity of the site as stated in the local heritage register.

6.5 SOCIO-ECONOMIC ENVIRONMENT

6.5.1 Introduction

Ingleburn is part of the vibrant and growing economy of the Campbelltown LGA in the western region of Sydney. The following describes the factors that support economical growth within the Campbelltown area. This information was extracted from the Campbelltown Council Website.

> *"From a base of 34,000 people in 1971 Campbelltown now has a population approaching 150,000 and continues to grow although the rates of growth have slowed. The City of Campbelltown is one of the ten largest local government authorities in New South Wales.*
>
> *Campbelltown has a "young" population with 29% of our population aged 0 to 19 years. 31% are aged 25 to 44, which constitutes the parent age groups. There is currently 5.2% of the population aged 65 or more but this figure will increase over the next decade as our community matures. Though 75% of residents are Australian born, the remainder of the population comes from more than 30 other countries. Significantly 15% of our population are people from non-English speaking countries. The most common languages spoken after English are Arabic and Spanish.*
>
> *In addition to the residential and industrial development of the past twenty years, the City also boasts an attractive natural environment. The Georges River Nature Reserve, surrounded by spectacular sandstone gorges, is one of Australia's most beautiful bushland areas.*
>
> *Now encompassing thirty-two suburbs, Campbelltown has become a cosmopolitan urban City set in a rural background. Reflecting the uniqueness of a planned City, Campbelltown combines both the opportunities of business and the facilities for recreation in a natural environment. The City of Campbelltown is now a regional centre offering a wide range of options for work, education, recreation and community activities."*

6.5.2 Existing Socio-Economic Environment

6.5.2.1 Employment

The employment status of the local residents of Ingleburn is quite diverse. The median weekly individual income of the local residents of Ingleburn is $486 whilst the median weekly household income is $1,053. These figures are in line with the Sydney metropolitan area. The size of labour force residing in Ingleburn in 2006 was 6,736 persons, of which 1,470 were employed part-time (21.8%) and 4,429 were full time workers (65.8%) (Australian Bureau of Statistics, 2006).

The following summary on the labour market conditions within the Campbelltown LGA is considered relevant for the Ingleburn suburb. This study was conducted by the NSW Government - Office of Western Sydney in 2005:

> *"Labour market conditions in Campbelltown worsened in the past year (2004), with declines recorded in employment (down 0.4%) and a significant increase in the number of unemployed persons (up 18.7%).*
>
> *Overall, the unemployment rate in Campbelltown was 7.9% in the December Quarter 2005, 1.0% points higher than at the end of the financial year and 1.3% points higher than in the December Quarter 2004.*
>
> *In 2001, the majority of Campbelltown's workforce worked in the retail trade (20.7%), manufacturing (19.1%), education (12.0%) and health & community service (10.9%) industries".*

6.5.2.2 Economic Activities

There are three business parks in the Campbelltown LGA. These are located in the suburbs of Campbelltown/Leumeah, Minto and Ingleburn. The largest industrial estate is located in the Ingleburn suburb.

Construction industry and property/business service are the most common business found in Campbelltown area. In 2004, these sectors contribute to 23.8% and 22.3% respectively to the total business activities in the region. Plans for major development projects are underway and this will boost the activity in the construction industry throughout the Western Sydney area (NSW Government - Office of Western Sydney, 2005). The proposed development will therefore be seen as appropriate as it will support the increasing demand in construction industry.

6.5.3 Socio-Economic Impacts of the Development

The development of this site supports local employment and Australian owned business ventures. The management of the proposed development is intending on recovering viable materials currently in demand in the Sydney and regional markets.

The proposed development would benefit the local economy, with the majority of these benefits generated from new employment positions, the multiplier effects and increased reuse of valuable resources.

When operating at full capacity the proposed development will support a maximum of 3–5 new employment positions. This number includes process operators, transport crew and office staff.

The introduction of any development into an area has a multiplier effect within the local economy as local products and services are purchased by the new facility and the local employees and contractors spend wages within the vicinity. There has been no attempt to quantify the economic benefits that these complex economic interdependencies deliver on the proposed development, although this does not reduce the reality of their impact.

6.5.3.1 Greenhouse Gas Emissions

Greenhouse gases are essential to sustain life on earth by trapping the sun's heat and preventing this warmth escaping the atmosphere. Without these naturally occurring, heat trapping gases – mainly water vapour, CO_2 and methane, the earth would be too cold to inhabit.

The rapid increase of carbon dioxide and other greenhouse gases during the 20th Century are of growing concern due to their impact on climate change. The UN Intergovernmental Panel on Climate Change state "There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activity".

The proposed development involves a number of activities, such as operation of machinery and transportation associated with the resource recovery process. All of these activities impact the generation of greenhouse gases.

Fossil fuels such as coal, oil and natural gas, are a major source of the world's energy and one of the significant contributors to human generated greenhouse gas emissions. Methane, another of the greenhouse gases has 21 times as much global warming potential as carbon dioxide.

The generation of greenhouse gases such as, carbon dioxide (CO_2), carbon monoxide (CO), oxides of nitrogen (NO_x), sulphides (SO_x) and traces of non-combustible hydrocarbons (C_xH_x) are considered in the following sections. Greenhouse gas emissions related to the development also need to be considered in the broader context of the associated reduction of greenhouse gases related to the end use and full life cycle of the products produced.

A preliminary assessment of the greenhouse gas emissions from the site have been conducted on a comparative basis. Items used as part of the site activities are assessed against alternatives that have a more efficient potential outcome. The proposed operations consist of recycling activities that would be more efficient than producing virgin materials which could offset some of the greenhouse gas generating activities.

6.5.3.2 Greenhouse Gas Emissions from Site Operations

The site operations and management have environmental commitment at the forefront of management thinking. The management of the recycling activities will be undertaken to ensure all impacts from site operations are mitigated and minimised.

This includes monitoring resource use such as limiting double handling of materials reducing total fuel use at the site for equivalent product processing. Other aspects of site operations include a site environmental management system which would ensure ongoing compliance and identify opportunities for continual improvement. Section 6.8 details the site operations from a carbon perspective.

6.5.3.3 Greenhouse Gas Emissions from Transport

Transfer of material around the site have been minimised to limit unnecessary movements and enable efficient operations. Equipment at the site would only be used as intended and equipment would only be used if consistent with manufacturer specifications. Any equipment not operating within manufacturers' specifications would be decommissioned from use at the site to limit improper operation of equipment and potential influences.

6.5.4 Statement of Potential Socio-Economic Impacts

The proposed operations will provide job opportunities in the south-western area of Sydney in line with business turnover and market forces.

The operations would also support local jobs in associated industries such as construction industries, transport, service professionals and contractors.

The operations would support Australian businesses investing in the project, generating resources for the government through tax which are distributed for the wider benefit of the community through community services, infrastructure and government.

6.6 ECOLOGICAL SUSTAINABLE DEVELOPMENT (ESD)

Ecological sustainability requires a combination of good planning and an effective and environmentally sound approach to design, operations and management. The principles of ESD throughout the project's life cycle are outlined in the following paragraphs.

Decision making should be based on sound environmental management principles which consider not only the present, but also the future, particularly in relation to:

- Precautionary principle – if threats of serious or irreversible environmental damage exist, lack of full scientific evidence should not be used as a reason for postponing measures to prevent environmental degradation;

- Inter-generational equity – the present generation should ensure that health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;
- The conservation of biodiversity and ecological integrity – the conservation of biological diversity and ecological integrity should be a fundamental consideration; and
- The valuation of the environment and resources and the establishment for the efficient use of resources.

The above principles have been incorporated into the need for the project and overall design which is reflected in the studies prepared in this document. The EIS outlines safeguards that would be implemented on site so that the proposed operations would cause minimal harm to the environment and resources would be sustained to ensure availability to future generations, through reducing the communities need for virgin resources.

The main environmental safeguards to be implemented so that the environment is maintained are as follows:

- Dust and particulate Control;
- Noise Mitigation;
- Waste minimisation; and
- Environmental management system.

The proponents would pro-actively manage those areas of their operations that have the potential to impact on the surrounding environment.

Management Plans including noise, dust, waste, stormwater and sediment would be introduced to control these potential impacts. These will be integrated with the masonry plant and concrete batching operations.

Multiple indicators, including those indicated in the Environmental Management Plan would continue to monitor the sustainable performance of the development. The multiple indicators used to measure sustainability cover a broad range. These indicators are outlined below.

Table 6-3: Indicators Used to Measure Sustainability

Indicators	Description
Input rule	Renewable: The depletion rates of renewable resources would be within the regenerative capacity of the natural system that generates them. Non-renewable: The depletion rates of non-renewable resources would be equal to the rate at which sustained income or renewable substitutes are developed by human intervention or investment.
Output rule	The waste emission rates or other forms of degradation will be reduced from current levels, which is within the capacity of the environment to assimilate or regenerate, without unacceptable degradation of the ecological integrity, biodiversity or its future waste absorptive capacity.
Community	• Increase in employment opportunities; • Level of social services available increased; • Strengthening of local economy; • Level of education/knowledge based/research investment increased; • No nett loss of heritage or other features, buildings, places of high community importance; • No nett loss of flora and fauna species or natural environments of high community importance; • No loss of community integrity; • Increase in resource recovery; and • Increase in waste re-use and recycling.
Ecosystems	• No nett reduction in richness or abundance of plant species in aquatic or terrestrial environments; • No nett reduction in richness or abundance of fauna species in aquatic or terrestrial environments; • Net gain in the existing landscaping of the site to provide diversity and further habitat for local fauna; • Increased or improved knowledge of ecosystem resources and management of threats; • No nett increase of pests or disease threats to the health of the ecosystem; and • Reduction of natural hazards which are threats to the health of the ecosystem (fire, pollution, etc.).
Soils	• No nett topsoil erosion; • No increase in area of land affected by salinisation; and • No reduction in soil pH below certain levels.
Water	• Stormwater released off site, Wastewater treated for reuse; • No nett increase in levels of acidification or toxic substances, heavy metals, nutrient and sediment levels; and • No nett reduction of water bodies as aquatic habitats.
Air	• No nett reduction in air quality; • Programs in place to reduce release of “greenhouse” gases due to transportation; and • Comparable reduction in the use of “greenhouse” gas emissions through site location and management.

Table 6-3: Indicators Used to Measure Sustainability	
Indicators	Description
Energy	• Programs to reduce the use of fossil fuels for transportation; • Reduction in energy consumption through increase in recycling content in product, consolidation, location and facility design; and • Increase in efficiency of transport for inputs and outputs.

The environmental management plan will be used to maintain the principles of ESD. The environmental management plan will be routinely updated (typically every 2-3 years) to ensure all new environmental measures are incorporated in line with the precautionary principle. The maintenance of intergenerational equity will be a key factor in the management of waste and use of resources.

The site is considered suitable for the proposed operations. The effective use of existing (recycled) resources in the community represents intelligent environmental design.

The proposed development is an excellent demonstration of how to apply ESD to a new development in terms of the following aspects:

- Recover resources and enable their reuse in the same industry that generated the waste material;
- Encourage effective recycling and minimise waste disposal cost in the construction industry;
- Recovered materials can be used to produce engineered construction materials, winning valuable materials that replace new resources;
- Construction of new developments using recycled construction materials would be less carbon intensive compared to using new materials;
- Maximising the use of space available within the building rather than reconstructing new areas means less construction materials and resources used; and
- The subject site is situated in a well established industrial estate therefore not changing the existing land use. The land has already been cleared and designated for industrial purposes for many years.

6.7 ROAD, TRAFFIC AND TRANSPORT

6.7.1 Summary of Findings

The site is accessed through a driveway on Kerr Road. This driveway also serves as the only egress from the site.

Adequate parking is provided. Current Conditions of Consent provide 25 car parking spaces. This exceeds the number of employees at the site. Truck parking on site can accommodate 7 trucks.

Tipper trucks will be used to transport the washout material to and from the site. Dog trailers may be attached to the trucks to transport finished products.

Table 6-4: Typical Transport Vehicles Entering and Leaving the Site

Transport Vehicle Description	Typical Frequency	
	Daily	Weekly
Tipper trucks delivering washout materials to the site	8	40
Delivery finished products	8	40
Employee Cars	5	30
Visitors Cars	1	6
Total	22	116

6.8 LIFE-CYCLE ANALYSIS

In 2006-07 Australia generated about 22,707 kilo-tonne of waste and of this, 42% (16,635 kilo-tonne) were construction and demolition (C&D) wastes, 36% were industrial and commercial stream wastes and the remaining were municipal wastes (Department of Environment, Water, Heritage and the Arts, 2010). Within the Greater Sydney Region, about 4,500 kilo-tonne of C&D wastes are generated every year out of which 1,500 kilo-tonne are land filled. The current recovery rate for C&D waste in NSW is approximately 69% and the NSW government has set a target of 76% recovery rate to be achieved by 2014 (Waste Management Association of Australia - WMAA, 2006).

Over the last decade, the C&D recycling industry has rapidly grown, recycling from 270 kilo-tonne in 1996 to around 3,000 kilo-tonne in recent years. Recycled building products have replaced approximately 10% of virgin materials being resourced from increasingly remote locations (WMAA, 2006). The use of recycled building materials have realised some environmental benefits from reduction in consumption of non-renewable resources and environmental emissions throughout the entire life cycle. With recycling centres located close to major markets for the construction industry in NSW, further benefit due to reduced transport costs can be gained. Ingleburn and the greater Campbelltown LGA are growing suburbs where new housing developments have been and will continue to be established to cater for the increase in population growth.

A number of Life Cycle Assessments (LCA) have been conducted to determine the environmental benefit from a proper management (i.e. recovering reusable building materials and reduce land filled materials) of the end of life phase of a building as opposed to landfilling the entire demolition wastes. A typical cradle to grave life cycle diagram for building materials is described in Figure 6-2. It consists of 3 phases:

- Pre-use phase – the extraction, manufacturing and building construction activities;
- Use phase – occupancy of the building; and
- End of life phase – demolition, recycling and disposal of building materials include wastes from concrete batching.

The life cycle boundary that is relevant to the proposed development would be the end of life phase.

In the study, the overall environmental impacts were weighted based on the following relevant indicators. (Blengini, 2009):

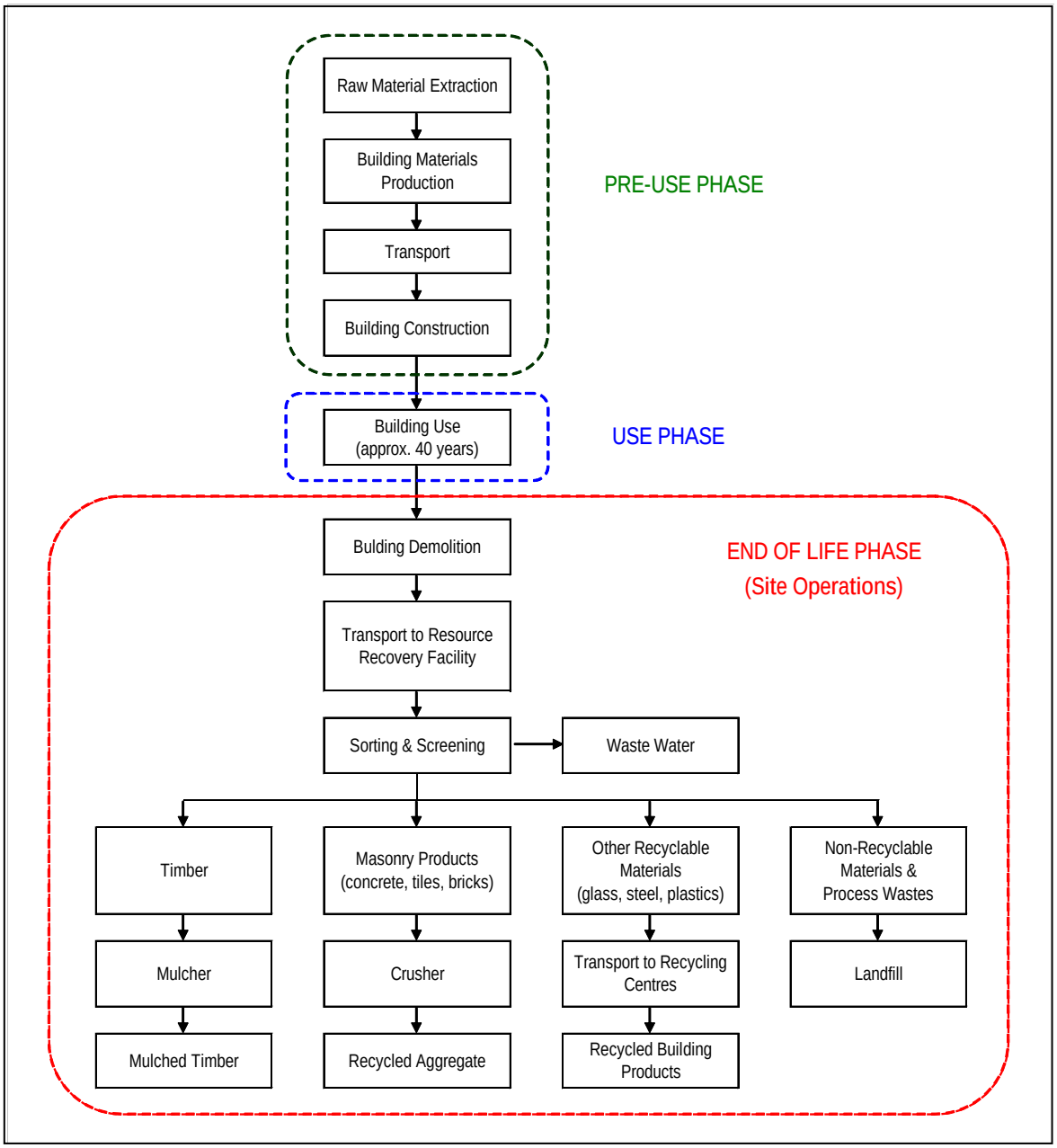
- Gross Energy Requirement (GER) – indicator for energy resource consumption;
- Global Warming Potential (GWP) – indicator for greenhouse gas impact;
- Ozone Depletion Potential (ODP) – indicator for stratospheric ozone depletion phenomenon;
- Acidification Potential (AP) – indicator for the acid rain phenomenon;
- Eutrophication Potential (EP) – indicator for surface water eutrophication; and
- Photochemical Ozone Creation Potential (POCP) – indicator for photo-smog creation.

The study found that in a cradle to grave LCA, the use phase greatly overshadows the other two phases. The use phase accounts for the energy consumption during the occupancy of the building, for example energy used for heating and cooling.

The end of life phase with recycling included, only offsets about 2% of the impacts (Blengini, 2009). This can be expected as consideration of energy efficiency would have been taken lightly in the previous times especially 40-50 years ago, therefore factors affecting energy efficiency such as selection of building materials, implementation of insulation or positioning of windows, would not be widely considered.

Using today's technology and extensive knowledge in the construction industry, the use phase is likely to contribute to less impact, resulting in a more reasonable offset gained from recycling building materials.

Figure 6-2: Life Cycle Overview for Building Materials



A more significant benefit was realised when the end of life phase is compared to the pre-use phase. This study was aimed at comparing the environmental impact from using recyclable materials instead of virgin materials. The analysis was focused on two of the most important indicators, i.e. the total energy used (GER) and the greenhouse emissions (GWP). The overall environmental impacts were also compared using the Eco-Indicator 99 (EI-99), a weighting method that considers other factors such as human health, ecosystem quality and use of resources. The result showed different magnitude of savings was achievable depending on the materials being recycled.

The proposed development does not involve energy intensive activities that would significantly increase the carbon emissions. The primary source of energy used will be electricity for machineries (e.g. screening and crushing) and ancillary activities (e.g. pumps, conveyor belts, and lighting).

Diesel fuel is used for mobile equipment such as front end loaders. This equipment is used in stockpiling and material handling activities. Site design and equipment positioning have taken into account handling efficiencies where practical.

Due to the nature of operations the material recycled would receive some consideration as to the positive carbon credits achieved from this recycling activity. These positive credits would offset carbon emissions from other energy consuming activities at the site or further downstream of the life cycle. As previously discussed, recovering and recycling valuable building materials would achieve energy savings and result in less greenhouse gas emissions compared to manufacturing virgin materials. In addition, recycling would conserve new resources for future generation, which is in line with the principles of Ecologically Sustainable Development.

7. ENVIRONMENTAL IMPACTS AND SAFEGUARDS – CUMULATIVE IMPACTS

7.1 CUMULATIVE IMPACTS

Cumulative effects are changes to the environment that are caused by an action in combination with other past, present and future human actions (Hegmann *et al.* 1999). An assessment of cumulative effects considers the combined and incremental impacts of a proposed development with existing and future developments in mind.

There is no prescribed method to undertake a cumulative impact assessment, the approach is usually dependent on the nature and scale of the proposal. This cumulative impact assessment broadly follows the guiding principles of the "Cumulative Effects Assessment Practitioners Guide", prepared for the Canadian Environmental Assessment Agency (Hegmann *et al.* 1999).

The proposed development is for a resource recovery facility located within an established industrial area of Ingleburn, a suburb of Campbelltown LGA in Western Sydney. The Campbelltown region is a developing area with three industrial parks, proposed residential growth centres and an existing road network with the capacity to sustain future expansion of the area.

This cumulative assessment considers the local impacts on potential traffic, flora and fauna, land use, water, noise, air quality, heritage, and visual impacts associated with the proposed development and in combination with the following issues:

- Surrounding industrial developments;
- Surrounding proposed future developments; and
- The roads network associated with the area.

7.1.1 Methodology

Valued Ecosystem Components (VEC) were determined based on issues raised during the Community consultation process of the EIS, those raised by Regulatory Authorities during the planning process and outcomes of assessments undertaken as part of the EIS. Table 7-1 presents the VEC's and the related regional issues of concern and indicators. It has been used as a guide in assisting assessment of cumulative impacts.

Table 7-1: Valued Ecosystem Components

Environmental Component	Regional Issues of Concern	Indicators
Noise	Annoyance due to noise generated by additional traffic and site operations	Noise levels at sensitive receptors
Vibration	Annoyance	Effects rattling of window glass, doors, paintings.
Air	Greenhouse gas emissions, odours, dust, particulates and regional air quality	Dust and particulate concentrations at sensitive receptors
Traffic	Increased traffic in existing road network and the ability to support this increase	Traffic volumes and noise levels
Surface Water	Contamination of waterways and reduction in water quality – not considered significant	Water quality components affecting drinking water standards
Ground Water	Contamination of groundwater, groundwater as a potential resource of water for the Sydney area – not considered significant	Groundwater quality components
Resource use	Consumption of fuel and electricity	Energy consumed for operating the facility
Flora and Fauna	Loss of habitat, reduction in biodiversity, listed threatened species within the region, conservation of bushland – not considered significant	Cumberland plain woodland, Sydney Coastal River flat forest.
Land use	Disturbance to land, sustainable growth of the area – not considered significant	Land use plans
Heritage	Preservation of indigenous heritage – not considered significant	Items (if any) to be determined
Visibility	Preserve visual amenity whilst area develops – not considered significant	Changes in views, bushland
Waste	Generation and disposal of waste	Quantities of waste generated at the site.

7.1.2 Surrounding Land Uses

The subject site is located within an established industrial site. The Main Southern Railway separates the site from the Ingleburn residential area. The nearest resident to the site is approximately 43 m to the south-east, on the other side of the Main Southern Railway. The nearest major arterial road is Henderson Road which runs adjacent to the north-eastern boundary of the site. Being an industrial estate, the streetscape surrounding the site is industrial.

Existing land uses of the surrounding area include the following:

- North of the site – adjoining industrial premises and open green-space;
- West of the site – adjoining industrial premises;
- South of the site – adjoining industrial premises and the Main Southern Railway; and
- East of the site – the Main Southern Railway and open green-space.

Cumulative impacts associated with the proposed development and surrounding land uses listed above have been divided into biophysical and socio-economic impacts and presented in the following sections.

7.1.3 Cumulative Biophysical Impacts

7.1.3.1 Noise

Operational noise is a critical environmental impact in any industrial area with surrounding residential receivers. This in itself should not preclude development but rather result in the development and application of management plans for these employment generating areas. The background noise levels were used in modelling the potential environmental impact of the operational and construction phases of proposed development and also to assess road traffic noise, hence assessing the cumulative impact on the community. A number of recommendations have been made to ensure criteria are met. A slight increase in the accepted noise levels have been requested to enable the process equipment to operate effectively (i.e. without restrictive noise enclosures).

7.1.3.2 Vibration

The experience with similar processes is that no significant levels of vibration are generated. The jaw crusher is a small machine and would not generate significant levels of vibration.

7.1.3.3 Air

The air quality impact has been assessed using existing background data from the nearest NSW EPA air monitoring station located at Liverpool for the year of 2014 and the maximum predicted concentrations associated with the concrete batching and masonry plant currently being constructed. This enables a cumulative impact assessment to be undertaken in the modelling undertaken, hence assessing the cumulative impact on the community. A detailed air assessment was undertaken to predict the total incremental impact that site activities would have on the air quality. The following were addressed within the study:

- Stockpiling;
- Transferring materials for processing;
- Crushing some of the larger pieces of washout material into aggregates;
- Screening the aggregates according to the particle size; and
- Blending aggregates to form materials that can be used in concrete production.

The assessment showed that the building enclosure would function as the primary control and would ensure all the NSW EPA air quality criteria are met.

7.1.3.4 Surface Water

Surface water has the potential to become contaminated by construction waste material and general litter. With surface water controls in place, the water quality discharged from the site into the local waterways and the Georges River catchment is expected to meet ANZECC guidelines. The site may store a small volume of oil and grease for machinery and diesel fuel on a bunded pallet. This will be stored in containers on shelves within the built space. Appropriate spill control equipment would be kept on site.

7.1.3.5 Ground Water

Ground water interactions on the site would unlikely be altered as a result of the proposed development. Similar to surface water issues discussed above, controls recommended for the site during operation would reduce the potential for contamination of groundwater to occur. There are no in-ground pits that are required. There is no process waste water discharged on site. Any wash water is kept within the building space within the two sedimentation ponds and within the various items of machinery where washing takes place.

7.1.3.6 Resource Use

Efficient use of resources is required for the proposal to be economically viable. The management of the recycling activities will be undertaken to ensure all impacts from site operations are mitigated and minimised. This includes monitoring resource use such as limiting double handling of materials reducing total fuel use at the site for equivalent product processing. Other aspects of site operations include a site environmental management plan which would ensure ongoing compliance and identify opportunities for continual improvement.

7.1.3.7 Flora and Fauna

A targeted search was conducted for threatened and endangered species at the subject site and the surrounding area. No threatened or endangered flora or fauna populations were found or sightings listed or recorded on the NPWS Atlas.

Given the site is located within an existing industrial estate and the proposed development would not significantly alter features of this built environment, the development is not expected to impact threatened flora and fauna in the local area.

7.1.3.8 Waste

All waste generated as part of the operational phases of the proposed development would be managed in accordance with waste guidelines. The nature of the proposal is such that resource material is brought onto the site to be recovered and converted to recyclable products suitable for use in engineered construction materials as well as in new concrete production. The cumulative aspects of waste associated with the proposed development would in fact improve compared to what would happen should the project not go ahead.

7.1.4 Cumulative Socio-economic Impacts

7.1.4.1 Traffic

A cumulative assessment relating to traffic impacts associated with the proposed development was proven to be minimal and would not significantly increase the traffic volume along the existing road network.

7.1.4.2 Land use

The nature of the proposed development would not alter the existing land use of the site. The site has been used for industrial activities since the 1970s.

Development of the surrounding land is expected to happen rapidly over the coming years due to the land being within the South West Growth Centre and a future industrial precinct. Aspects of the proposed development are appropriate with the Government's plan for the area. The development would therefore not preclude surrounding land uses for proposed future developments and the cumulative impact associated with land use is expected to be positive.

7.1.4.3 Visibility

The existing visual amenity of the site and the surroundings is typical of an industrial landscape. The proposed waste transfer and recycling facility will be situated inside the building already approved for past uses. Visual amenity will remain unchanged as no other building is to be constructed or landscaping changed as a result of the proposed development.

7.1.4.4 Heritage

A desktop study has indicated no heritage items, Indigenous, European or otherwise has been identified on or within the vicinity of the site. Providing no heritage items are uncovered, it is not expected that any cumulative impacts would result from the proposed development.

8. MITIGATION AND MANAGEMENT

8.1 SUMMARY OF IMPACTS

Table 8-1: Summary of Impacts

Aspect	Potential Impact
Noise	• Project Specific Noise Levels were applied from the previous development consent. • Noise would be generated through several activities. • Modelling different scenarios has shown noise mitigation can be achieved to acceptable levels through noise control measures.
Vibration	• Minimal generated and no vibration expected to be detected external to the building.
Air	• Several sources on the development site have the potential to generate dust emissions, including: screening, crushing, transfer and handling material, stockpiling and transport movements on site. • Dust emissions can be controlled and are shown to achieve air quality criteria at nearest receptors. • Odour potentially generated from the site not considered an issue given no putrescible waste would be accepted on site and no vegetation/green waste (except for timber) would be brought to site. Consequently, odour impacts were not assessed in detail in this EIS.
Water	• Site activities would be unlikely to result in changes in the water cycle and would potentially impact groundwater and surface water. • The proposed waste transfer and recycling operations will not require process water as the operations involve dry processes. • All activities including the storage of construction waste materials would be indoors preventing stormwater contamination. • Chemical spills could potentially contaminate surface and groundwater. No chemicals are used.
Soil and Land use	• The proposed development will not alter the existing land use of the site. No excavation or construction works will be required as the building is already available. • No liquid chemicals are stored on site in significant quantities and the site is hardstand, the potential for soil and sub-surface contamination to occur is minimal to negligible. • The soil erosion hazard is minimised due to the flat topography, implementation of paving over the majority of the site and landscaping.

Table 8-1: Summary of Impacts

Aspect	Potential Impact
Flora and Fauna	• No significant impact is expected as no threatened or endangered flora or fauna populations found within the vicinity of the site.
Waste Generation and Management	• Minimal waste would be generated from site activities. Generation of these waste streams would be disposed of in a legal and appropriate manner. • No hazardous waste would likely be generated as a result of the proposed development. • Incoming washout materials are not considered as "waste". This material would be brought on-site, where it would be screened and crushed to produce recycled aggregates. Crushing activities would generate dust. These would be suitably controlled through use of water.
Health	• Potential health impacts have been identified as noise and vibration impacts, irritations caused by dust, potential restriction on outdoor activities if environmental impacts are not controlled. • Dust emissions have been identified as the primary health impact caused by the development. However dust emissions can be controlled primarily by the building enclosure and selective use of water.
Hazards and Security	• Potential hazards would include intentional, unintentional and natural hazards. These would include chemical spills, fires (bushfires or otherwise), arson, bomb threats, civil disturbances, theft, storms and flooding. • Potential hazards would be controlled through security systems including fences, and also emergency response procedures developed as part of an Emergency Plan and Pollution Incident Risk Management Plan.
Visual Amenity	• Visual amenity will remain unchanged as no other building is to be constructed or landscaping changed as a result of the proposed development.
Heritage	• No potential impacts have been determined as a result of desktop studies.
Socio-Economic Environment	• Improvements in the socio-economic environment is expected with an increase in local employment. The industry would also support the local economy with a new business enterprise, injection into the economy and associated multiplier effects.
Road, Traffic and Transport	• Traffic volumes would not significantly increase a result of the development. • A traffic impact assessment was not considered warranted due to the small number of additional truck movements.
Future Land Use	• Site activities would not limit future land use potential.

8.2 ENVIRONMENTAL CONTROLS AND MITIGATION MEASURES

Table 8-2: Environmental Controls and Mitigation Measures

Aspect	Control or Mitigation Measures
NOISE AND VIBRATION	
Operational controls	Housing equipment in a building; perimeter acoustic walls; selecting equipment to comply with noise levels used in the noise modelling; no evening or night time operations; detailed controls as stipulated in the noise section.
AIR	
Dust emissions	Dust would be primarily controlled through containment within the building enclosure.
	Water sprays will be utilised on the crusher.
	Stockpiles would be stored indoors.
Use of vehicles and equipment	Vehicles and equipment would be maintained and used within manufacturer's specifications to reduce air emissions from machinery.
WATER	
Control surface water drainage on-site	The operations involve wet processes and will occur within a bunded building. No other controls are deemed necessary.
Water contamination	Chemical spills could potentially contaminate surface and groundwater. Minimal quantity of lubricating oils (80 L) will be stored on site on a shelf. Site staff would be trained in the use of spill kits.
SOIL	
Soil Contamination	As previously stated, only minimal quantities of potential liquid contaminants is stored on site.
FLORA AND FAUNA	
Impact to threatened species	No controls are required as there are no threatened species identified within the vicinity of the site.
WASTE GENERATION AND MANAGEMENT	
Minimise waste, maximise resource recovery	Receipt of wastes shall be regularly audited on site to ensure no putrescible or hazardous waste is accepted to site, and maximum appropriate recovery is occurring.
Minimise non-compliance and rejected loads	Records of acceptance shall be regularly audited to ensure no putrescible or hazardous waste is accepted to site.
Wastewater	No controls are required as the volume of wastewater generated will be minimal.
Waste disposal	All waste would be segregated where possible. All waste generated on site would be disposed of in a legal and appropriate manner.

Table 8-2: Environmental Controls and Mitigation Measures	
Aspect	Control or Mitigation Measures
	On site, waste would be stored appropriately in designated waste storage areas within existing built spaces.
	Washout materials processed on site would generate dust. Water suppression would control these impacts.
HEALTH	
	Dust controls including water suppression, would reduce dust emissions and associated health impacts. Noise mitigation measures will be employed at the site.
HAZARDS AND SECURITY	
	Fencing would safeguard the site against potential security threats. An Emergency Response Procedure would be prepared for control in the event of an emergency. Appropriate fire protection equipment is available on site.
VISUAL AMENITY	
	Not required as the proposed development would not have any impact on visual amenity.
HERITAGE	
	Heritage items are not expected to be impacted by the development. Should Aboriginal heritage items be identified during site investigations, appropriate actions would be undertaken in line with Local Aboriginal Land Council recommendations.
SOCIO-ECONOMIC ENVIRONMENT	
	Management would be undertaken to ensure sustainability of site operations and employment positions.
ROAD, TRAFFIC AND TRANSPORT	
	Not required as the proposed development would not result in a significant increase in traffic volume or alteration to the existing road network.
FUTURE LAND USE	
	Operations would be monitored and managed to ensure maximum land use value can be maintained in line with site activities.

8.3 SITE MANAGEMENT PLANS

Several management plans would be prepared by expert consultants detailing environmental management of the site during site operation. These plans would be prepared prior to operation commencing and may be incorporated with the concrete batching and masonry plant operation where appropriate. A list of management plans required include the following:

- Emergency Plan (EP);
- Waste Management Plan (WMP);
- Environmental Management Plan (EMP); and
- Pollution Incident Risk Management Plan (PIRMP).

Further details of selected site management plans are provided below.

8.3.1 Environmental Management Plan

Bulk Recovery Solutions Pty Ltd would develop their own Environmental Policy that would incorporate their commitments to environmental management of the site. The environmental policy would then form the basis of an EMP. The EMP would provide environmental procedures that incorporate the following major elements:

- Legal and Regulatory Requirements;
- Site Description including Environmental Characteristics and General Infrastructure;
- Operational Conditions and Controls;
- Environmental Management Activities in relation to particular aspects and impacts;
- Reporting, Staffing and Training Requirements; and
- Environmental Monitoring and Review.

The EMP Framework adopted would be to maximise consistency and simplicity in the administration and overriding policies, implementation and training of the EMP procedures. The specific differences then relate to the identified environmental aspects and impacts of the activities and the procedures developed to manage these impacts.

The implementation and operation element of the EMP would address the critical function of training and competency of the EMP. This would be the basis of the Environmental Management System for the site.

8.3.1.1 Environmental Management Procedures

The Environmental Management Plan would consist of environmental procedures to ensure that Bulk Recovery Solutions Pty Ltd manage their environmental interactions responsibly. Some procedures will need to be developed in line with regulatory requests.

The following outlines the main procedures that would be included in the EMP:

8.3.1.2 Air Management

This procedure relates to controlling air emissions such as dust and particulate matters on-site to prevent degradation to the local amenity. Inspections would be carried out by Bulk Recovery Solutions Pty Ltd Management to ensure compliance. Potential non-conformances would be mitigated through the use of corrective and preventative actions. Corrective actions would be monitored to ensure their suitability and effectiveness.

8.3.1.3 Noise Control

This procedure outlines the noise management that would be required on site in relation to proposed activities that are identified as having the potential to create noise. This procedure also indicates levels for noise compliance monitoring as part of the environmental monitoring program. A noise monitoring assessment would be carried out by an acoustic engineer, based on results recorded a suitable monitoring system would be employed. Predictive modelling of site noise has demonstrated requirements for noise controls, their effectiveness will be assessed during the life of the project.

8.3.1.4 Waste Management and Minimisation

This procedure outlines waste control and management on site. This procedure would be sourced from the site's detailed Waste Management Plan. Managements' procedure for diligent waste control would detail several operational measures to manage waste following the waste management hierarchy and to ensure that waste requiring disposal is done so according to the NSW EPA regulations. Waste minimisation and resource recovery would be practised as part of the company's commitment to the principles of Ecologically Sustainable Development.

8.3.1.5 Emergency Preparedness

This procedure outlines the site's response in an emergency situation. This takes the form of the site's Emergency Plan (EP) (also referred to as an Emergency Response Plan, ERP). This is site-specific and is based on the various types of emergencies that may arise on site. This procedure would need to be modified to account for any future adjustments, different layout and systems the plant may require on the site.

Any required procedures from the PIRMP would be integrated into the Emergency Plan.

8.3.1.6 Environmental Monitoring

This procedure outlines the monitoring Bulk Recovery Solutions Pty Ltd would be required to undertake if specified in the Environment Protection Licence. Any requirements would be integrated into the EMP.

8.3.2 Site Procedures

Other procedures that are likely to be included in the EMP are:

- Environmental Training and Awareness;
- Workplace Inspections;
- Control of Documents and Records;
- Communication;
- Complaints and Incident response;
- Corrective and Preventative Actions;
- Use of Fire Fighting Equipment;
- Internal Environmental Auditing;
- Pollution Control Equipment Maintenance;
- Spill procedure; and
- Receipt of "wastes" in accordance with NSW EPA regulatory requirements.

8.4 STATEMENT OF COMMITMENTS

The following table summarises activities Bulk Recovery Solutions Pty Ltd are committed to undertake to ensure environmental impacts associated with the development are minimised and appropriate rules and regulations determined by local and state governments are followed.

The statement of commitments closely follows environmental controls and mitigation measures outlined in Section 8.2 and 8.3.

Table 8-3: Statement of Commitments

Aspect	Commitment
Noise	• Recommended noise controls and/or regular noise monitoring would be implemented to achieve project specific noise limits.
Air	• Dust emissions suppressed through the use of water and by means of building enclosure would ensure air quality criteria are met.
	• Equipment that contributes to air emissions (e.g. fossil fuelled equipment) and company vehicles will be maintained on regular basis.
Water and Soil	• Dangerous goods except ~80L of lubricating oil on site and 820 L of diesel in steel drums on a bunded pallet.
	• Staff would be trained to control chemical spills.
	• Housekeeping procedures will be established to ensure appropriate management of resource materials on site.
	• Containment system such as bunding will be maintained on regular basis.
Land use	• The site will only be utilised for approved activities, which are associated with the operation of the proposed washout materials recovery facility and the already approved concrete batching and masonry plant. Approval from the Council and other relevant authorities will be sought should significant alteration to these facilities that will affect the land use of the site occur in the future.
Flora and Fauna	• No development activities shall take place outside the designated development footprint.
	• Commitment to protect threatened species should any be identified in the area in the future.
Waste Generation and Management	• A washout material reception procedure shall be developed to ensure only permitted materials are accepted on site.
	• Regular independent audits of material accepted to the site shall be conducted on a regular basis.
	• Waste would be stored and disposed of legally in an appropriate manner.
	• A Waste Management Plan will be established and implemented throughout the life of the operation.
Health	• Dust and noise mitigation measures shall be employed to mitigate potential health affects.
	• Dust and noise would be monitored on regular basis to ensure criteria are met.
Hazards and Security	• Security fencing would be constructed around the perimeter of the development and operational area.
	• An Emergency Response Plan shall be prepared prior to site operation.
Visual Amenity	• Landscaping and will be maintained on regular basis.
	• Litter management will be established as part of the waste management plan.
Heritage	• Commitment to protect heritage artefacts should any be found in the future.
Road, Traffic and Transport	• Access points and driveways will be maintained to ensure safety for vehicle entering and exiting the site.
	• Traffic flow into and from the site will be managed by scheduling delivery or dispatch times.

Signatures: Tim Baillie: …… Ivan Biscan: ……

9. JUSTIFICATION AND CONCLUDING REMARKS

This section of the EIS examines the justification for the proposal and then concludes the EIS Project.

9.1 PROJECT JUSTIFICATION

The proposal has potential environmental impacts and these have been considered in detail. Engineering controls have been designed into the development to prevent the impacts from occurring.

The proposed site layout is a pragmatic approach. The need to screen and crush materials sourced from concrete batching plants is a very simplistic operation.

The proposal is considered to satisfy the precautionary principle as summarised in the following subsection.

9.1.1 Precautionary Principal

There are three aspects to the precautionary principal to which the proposal is evaluated.

9.1.1.1 Inter-Generational Equity

In simple terms this principal equates to the current generation given consideration to their consumption of future generation's rights to an equal share of the Earth's resources.

The current consumption of fossil fuels and the diminishing resources of oil is the most glaring example of Inter-Generational Equity.

For the proposed development the use of the site for the recovery of washout materials and converting these into recoverable materials supports this principal.

The recoverable resources are at the bottom end of the construction materials and are used for manufacturing engineered construction materials. A degree of these recovered materials will be aggregates and able to be used for load bearing concrete.

9.1.1.2 Conservation of Biological Diversity and Ecological Integrity

The studies of flora and fauna found no sensitive or endangered species within the vicinity of the site.

The site is located in an established industrial area which has been used for industrial activities for many years. Control of environmental emissions are implemented to reduce potential downstream impacts such as the aquatic ecosystem in the Georges River catchment.

9.1.1.3 Improved Valuation, Pricing and Incentive Mechanisms

The relevance of this aspect is assessed against the opportunities that the proposed development provides for the business entity.

- Recovery of valuable materials for use as aggregates and sand for the production of new concrete;
- Use of recycled materials conserve natural resources available; and
- Any use of a recoverable material reduces the quantity of material that is sent to landfill.

This is considered to fulfil the intent of this third aspect of the Precautionary Principle.

9.2 CONCLUDING REMARKS

The proposal for the recovery of valuable materials from concrete batching plant washout materials is considered to be appropriate for the site considering that ample room is readily available to maximise the use of the site.

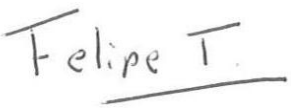
Detailed impact assessments have been conducted and found that activities associated with the proposed development are considered to have low environmental impacts providing recommended controls are in place.

The proposed development would improve the ways concrete batching wastes are being managed. In addition, the process of recovering and recycling building materials could result in a significant energy saving and greenhouse gas reduction when compared to extracting and manufacturing virgin materials.

The development as proposed is considered to be suited to this site and the request is made that approval be granted.

This concludes the report.

Prepared by:



Felipe Torres
Acoustical Engineer

R T Benbow
Principal Consultant

Katie Trahair
Environmental Scientist

10. REFERENCES

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ATTACHMENTS

Industry Assessments
Contact: Matthew Meyerson
Phone: (02) 9228 6378
Fax: (02) 9228 6455
Email: matthew.meyerson@planning.nsw.gov.au

Mr Richard Benbow
Benbow Environmental
PO Box 687
Parramatta NSW 2124

15/02290

Dear Mr Benbow

Resource Recovery Facility, Campbelltown
Secretary's Environmental Assessment Requirements (SEAR) 894

Thank you for your request for the Secretary's Environmental Assessment Requirements (SEARs) for the preparation of an Environmental Impact Statement (EIS) for the above development proposal. I have attached a copy of these requirements.

In support of your application, you indicated that your proposal is both designated and integrated development under Part 4 of the *Environmental Planning and Assessment Act 1979* and requires an approval under the *Protection of the Environment Operations Act 1997* and *Water Management Act 2000*.

In preparing the SEARs, the Department has consulted with the Environment Protection Authority and the Department of Primary Industries. Copies of their requirements for the EIS are attached.

If other integrated approvals are identified before the Development Application is lodged, you must undertake your own direct consultation with the relevant agencies, and address their requirements in the EIS. The Department has also consulted with the Roads and Maritime Services (RMS) as required under *State Environmental Planning Policy (Infrastructure) 2007*. Unfortunately, the RMS were unable to respond in time and you are required to consult directly with them during the preparation of the EIS.

If your proposal contains any actions that could have a significant impact on matters of National Environmental Significance, then it will require an additional approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This approval is in addition to any approvals required under NSW legislation. If you have any questions about the application of the EPBC Act to your proposal, you should contact the Commonwealth Department of the Environment on (02) 6274 1111.

Should you have any further enquiries, please contact Matthew Meyerson, Planning Services, at the Department on (02) 9228 6378.

Yours sincerely

C. Ritchie 4/3/15.

Chris Ritchie
Manager
Industry Assessments
as delegate of the Secretary

Environmental Assessment Requirements

Section 78A (8) of the *Environmental Planning and Assessment Act 1979.*

Designated Development

SEAR Number	894
Proposal	Waste Transfer and Resource Recovery Facility
Location	16 Kerr Road, Ingleburn, Campbelltown. (Lot 16 DP 717203)
Applicant	Bulk Recovery Solutions Pty Ltd
Date of Issue	March 2015
General Requirements	The Environmental Impact Statement (EIS) must meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000.*
Key Issues	The EIS must include an assessment of all potential impacts of the proposed development on the existing environment (including cumulative impacts if necessary) and develop appropriate measures to avoid, minimise, mitigate and/or manage these potential impacts. As part of the EIS assessment, the following matters must also be addressed. • **strategic context** – including: – a detailed justification for the proposal and suitability of the site for the development; – a demonstration that the proposal is consistent with all relevant planning strategies, environmental planning instruments, development control plans (DCPs), or justification for any inconsistencies; and – a list of any approvals that must be obtained under any other Act or law before the development may lawfully be carried out. • **waste management** – including: – details of the type, quantity and classification of waste to be received at the site; – details of the resource outputs and any additional processes for residual waste; – details of waste handling including, transport, identification, receipt, stockpiling and quality control; and – the measures that would be implemented to ensure that the proposed development is consistent with the aims, objectives and guidelines in the NSW Waste Avoidance and Resource Recovery Strategy 2014-2021. • **hazards and risk** – including: – the Environmental Impact Statement must include a preliminary risk screening completed in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011), with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the development. Should preliminary screening indicate that the project is "potentially hazardous" a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011). • **air quality and odour** – including: – a description of all potential sources of air emissions and odour; – an air quality impact assessment in accordance with relevant Environment Protection Authority Guidelines; and – a description and appraisal of air quality impact mitigation and monitoring measures.

	• **noise and vibration** – including: – a description of all potential noise and vibration sources during construction and operation, including road traffic noise; – a noise and vibration assessment in accordance with the relevant Environment Protection Authority Guidelines; and – a description and appraisal of noise and vibration mitigation and monitoring measures. • **soil and water** – including: – a description of local soils, topography, drainage and landscapes; – the details of stormwater and wastewater management; – the details of sediment and erosion controls; – the details of water usage including water supply and licences; – an assessment of impacts to surface and groundwater resources, flooding impacts, and impacts to groundwater dependant ecosystems; and – a description and appraisal of impact mitigation and monitoring measures. • **traffic and transport** – including: – details of road transport routes and access to the site; – road traffic predictions for the development during construction and operation; and – an assessment of impacts to the safety and function of the road network; and the details of any road upgrades required for the development. • **biodiversity** – including: – accurate predictions of any vegetation clearing on site or for any road upgrades; – a detailed assessment of the potential impacts on any threatened species, populations, endangered ecological communities or their habitats, groundwater dependent ecosystems and any potential for offset requirements; and – a detailed description of the measures to avoid, minimise, mitigate and offset biodiversity impacts. • **visual** – including an impact assessment at private receptors and public vantage points. • **heritage** – including Aboriginal and non-Aboriginal cultural heritage.
Environmental Planning Instruments and other policies	The EIS must assess the proposal against the relevant environmental planning instruments, including but not limited to: • *Campbelltown Local Environmental Plan 2002;* • *Draft Campbelltown Local Environmental Plan 2014;* • *State Environmental Planning Policy 33 – Hazardous and Offensive Development;* • *State Environmental Planning Policy (Sydney Drinking Catchment) 2011;* • *Greater Metropolitan Regional Environmental Plan 2 – Georges River Catchment;* • *State Environmental Planning Policy (Infrastructure) 2007; and* • Relevant development control plans and section 94 plans.
Guidelines	During the preparation of the EIS you should consult the Department's Register of Development Assessment Guidelines which is available on the Department's website at planning.nsw.gov.au under Development Proposals/Register of Development Assessment Guidelines. Whilst not exhaustive, this Register contains some of the guidelines, policies, and plans that must be taken into account in the environmental assessment of the proposed development.
Consultation	During the preparation of the EIS, you must consult the relevant local, State and Commonwealth government authorities, service providers and community groups, and address any issues they may raise in the EIS. In particular, you should consult with the: • Environment Protection Authority; • Office of Environment and Heritage; • Department of Primary Industries;

	• Department of Resources and Energy; • Roads and Maritime Services; • Campbelltown City Council; and • The surrounding landowners and occupiers that are likely to be impacted by the proposal. Details of the consultation carried out and issues raised must be included in the EIS.
Further consultation after 2 years	If you do not lodge an application under Section 78A (8) of the *Environmental Planning and Assessment Act 1979* within 2 years of the issue date of these SEARs, you must consult with the Secretary in relation to any further requirements for lodgement.

Land and Property Information Division
ABN: 84 104 377 806
GPO BOX 15
Sydney NSW 2001
DX 17 SYDNEY Telephone: 1300 052 637

NSW GOVERNMENT Land & Property Information
A division of the Department of **Finance & Services**

TITLE SEARCH

Title Reference: 16/717203

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 16/717203

SEARCH DATE	TIME	EDITION NO	DATE
22/2/2013	12:01 PM	12	29/9/2011

LAND

LOT 16 IN DEPOSITED PLAN 717203
AT INGLEBURN
LOCAL GOVERNMENT AREA CAMPBELLTOWN
PARISH OF MINTO COUNTY OF CUMBERLAND
TITLE DIAGRAM DP717203

FIRST SCHEDULE

JEFFREY WAYNE BAILLIE
SUZANNE LEE BAILLIE
AS JOINT TENANTS IN 1/2 SHARE
TREVOR JOHN BAILLIE
CLAIRE MAREE BAILLIE
AS JOINT TENANTS IN 1/2 SHARE
AS TENANTS IN COMMON (T AG529457)

SECOND SCHEDULE (9 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 M398768 COVENANT
3 DP260710 EASEMENT TO DRAIN WATER AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 DP717203 EASEMENT TO DRAIN WATER AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM
5 DP717203 EASEMENT FOR WATER SUPPLY WORKS AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 DP717203 EASEMENT TO DRAIN WATER AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM
7 DP717203 EASEMENT FOR GAS PIPELINE AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM
8 DP717203 RESTRICTION(S) ON THE USE OF LAND
9 AG529458 MORTGAGE TO WESTPAC BANKING CORPORATION

NOTATIONS

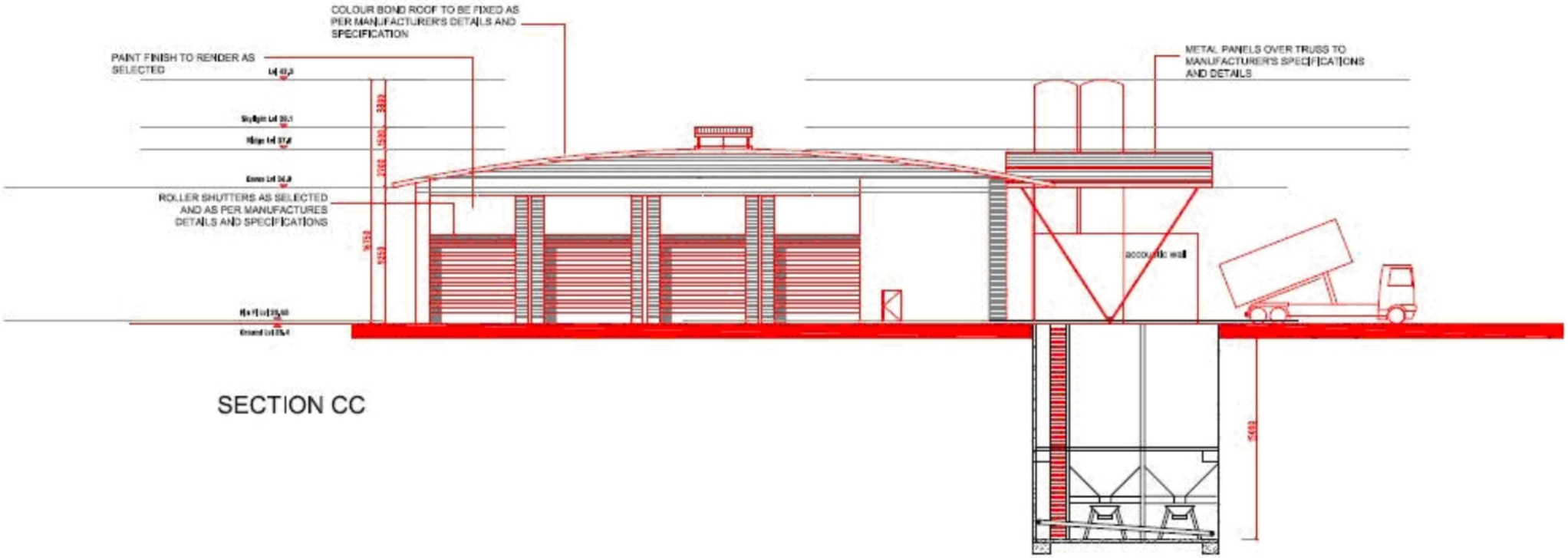
UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

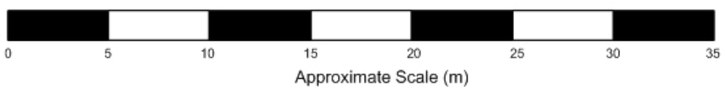
PRINTED ON 22/2/2013

** ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE CERTIFICATE OF TITLE.*
WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER.

Attachment 3: Previous Site Plan showing Excavation Site


COLOUR BOND ROOF TO BE FIXED AS PER MANUFACTURER'S DETAILS AND SPECIFICATION
PAINT FINISH TO RENDER AS SELECTED
METAL PANELS OVER TRUSS TO MANUFACTURER'S SPECIFICATIONS AND DETAILS
ROLLER SHUTTERS AS SELECTED AND AS PER MANUFACTURES DETAILS AND SPECIFICATIONS

SECTION CC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