Cardno

Shaping the Future

Preliminary Environmental Assessment

Proposed Malting Plant
Lot 201 DP 813362, Stonny Batter Road, Minto

JOE WHITE MALTINGS

Job No. P8008

July 2008

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CARDNO PTY LTD

PROPOSED MALTING PLANT
LOT 201 DP 813362, STONNY BATTER ROAD, MINTO

July 2008

EXECUTIVE SUMMARY

Joe White Maltings Pty Ltd (JWM) has commissioned Cardno to lodge a Part 3A Project Application under the SEPP (Major Projects) 2005. The purpose of the application is to establish a malt processing facility and export grain container packing facility on Lot 201 DP 813362, Stonny Batter Road, Minto.

The property is adjacent to the Main Southern Rail Line and is currently used on a temporary basis for sanitary clothing storage and storage of trailers. For operational differentiation, JWM refers to the proposed facility as "Project Gorilla".

The Minister for Planning has confirmed that the development is a Major Project. This document comprises a Preliminary Environmental Assessment (PEA). Following issue of the Director General's Requirements (DGR's) the required Environmental Assessment (EA) and formal Major Project application will be lodged with the Department of Planning (DoP).

The site has an area of 2.6ha and is located at Minto which is approximately 5km north of Campbelltown in Sydney's south western suburbs. This location is approximately 50kms from Port Botany. The site immediately adjoins the main Sydney to Melbourne railway line and will have rail siding access via the adjoining Macarthur Intermodal Shipping Terminal (MIST).

The major elements of the project comprise:

- *The malting plant will receive approximately 130,000 tonnes of raw barley per annum by rail (approximately 500 tonnes per day).*
- *The plant will outload approximately 110,000 tonnes of malt by rail per annum.*
- *The export packing plant will receive grains and pulses to be packed into containers at the plant for rail dispatch.*
- *The malt processing facility will manufacture malt from barley in a five step process.*
- *The development is valued at $90m and will contain the following major items of plant: grain receival and packing facilities; office building and car parking; workshop;, cleaning bins; four germination vessels; steeping vessels; malt and barley storage silos; analysis bins; drying kiln; switch room; and substation.*
- *The development will employ around 20 operational staff and an average of 50 construction staff.*

The development will use substantial quantities of water, power and gas to operate the plant. Discussions with service authorities have confirmed the availability of all required utilities.

The Minto location enables JWM to take maximum advantage of existing intermodal infrastructure, especially the ability to reduce road freight by utilising rail. Comparison of alternative options at other locations has been undertaken. On a cost basis, this location provides the best logistical solution.

Public benefit will be an increased market for NSW barley, improved freight transport efficiencies by use of rail, and better utilisation of container infrastructure. The malting and packing plants will provide employment opportunities and represent value adding and increased export income for the state and nation.

This PEA identifies the following to be addressed in the EA:

- *Waste water disposal*
- *Stormwater disposal*
- *Odour*
- *Noise*
- *Traffic*

A preliminary review of all legislative requirements has been undertaken. The proposed malt processing facility and grain receival and packing plant are permissible uses under the local planning controls.

Further sections of the PEA address the following matters:

- *Alternative sites and the consequences of not proceeding*
- *Consultation methodology*
- *Environmentally Sustainable Development*
- *Demolition and Construction*

It is proposed to request the Department of Planning to review the material supplied and to issue the DGR's to enable the Environmental Assessment to be finalised and a Major Project application to be lodged.

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1. INTRODUCTION

This section describes the background to the proposal and the reasons for the development.

1.1. OVERVIEW OF APPLICATION

Cardno has been commissioned by Joe White Maltings Limited (JWM) to prepare and lodge an application under Part 3A of the Environmental Planning & Assessment Act 1979 to establish a malt processing plant and export grain container packing facility on Lot 201 DP 813362, Stonny Batter Road, Minto. The property is adjacent to the Main Southern Rail Line and is used on a temporary basis for sanitary fabric storage and stored trailers.

The proposed use is described as a malt manufacturing and grain packing facility. This involves processing barley into malt for use in the brewing process. The grain packing facility will receive and pack into containers a variety of grains and pulses for export customers.

For operational differentiation, JWM refers to the proposed facility as “Project Gorilla”.

This Preliminary Environmental Assessment (PEA) provides an overview of the development and the work which would be undertaken as part of the Environmental Assessment (EA). The proposed use is consistent with the existing and future surrounding environment and, with appropriate controls, will not result in significant adverse impact on the environment.

1.2. OVERVIEW OF PROPONENT

ABB Grain's fully owned malting division, Joe White Maltings Pty Ltd, was established when Joe White Maltings was merged with Adelaide Malting Company following the acquisition by AusBulk in 2002. ABB Grain is the parent company of Joe White Maltings following a merger with AusBulk in 2004.

With a production capacity of 500,000 million tonnes, Joe White Maltings is Australia’s largest malting company.

Malting plants are located in all six states. They are strategically positioned close to international ports and transport links or to Australia’s premium barley growing areas.

Innovation through carefully planned expansion and plant maintenance, along with the development of an advanced Quality Information Management System and the Joe White Malting Systems Micromalting Unit, ensures a continued improvement in the manufacturing process into the future.

Brochures summarising the company’s history and operations are reproduced in **Appendix A**.

1.3. BACKGROUND AND REQUIREMENT

JWM has a malting plant located in Tamworth, NSW. This plant currently produces 45,000 tonnes per year of malt which is sold for export and domestic use. This plant is currently operating at full capacity.

JWM has increasing customer demand overseas, particularly in south east and north Asia. After identification and review of available options the company proposes to meet this demand through the development of a new malt processing facility and grain packing plant and has identified the old 'Hudson' site (Lot 201 DP 813362) adjoining the Macarthur Intermodal Shipping Terminal (MIST) as the most suitable location.

JWM has recently completed the construction of (and is operating) 'Stage Two' of a malt processing facility at Forrestfield, Perth. It is intended that the plant to be built at the Minto site will be, as far as is practical, a replica of the Perth plant. The Perth plant is therefore an operational reference for the Minto project. A company brochure summarising the operational details of the Perth plant is contained in **Appendix A**. Photos of the Perth plant are contained in **Appendix B**.

1.4. MAJOR PROJECT CLASSIFICATION

On June 4, 2008 the Department of Planning (DoP) confirmed that the proposal is classified as a Major Project, under Part 3A of the Environmental Planning and Assessment (EP&A) Act 1979 (as amended).

The proposal is defined as a Major Project in accordance with State Environmental Planning Policy (SEPP) (Major Projects) 2005 as described below:

Clause 6 - Identification of Part 3A projects - SEPP (Major Projects) 2005

Under Schedule 1 sub clause 3 the following use is identified as a major project:

> ***3 Agricultural produce industries and food and beverage processing***
>
> *Development that employs 100 or more people or has a capital investment value of more than $30 million for any of the following purposes:*
>
> *(a) abattoirs or meat packing, boning or products plants; milk or butter factories; fish packing, processing, canning or marketing facilities; animal or pet feed; gelatine plants; tanneries; wool scouring or topping; rendering plants, or*
>
> *(b) cotton gins; cotton seed mills; sugar mills; sugar refineries; grain mills or silo complexes; edible or essential oils processing; breweries; distilleries; ethanol plants; soft drink manufacture; fruit juice works; canning or bottling works; bakeries; small goods manufacture,* ***cereal processing*** *or margarine manufacturing; wineries, or*
>
> *(c) organic fertiliser plants or composting facilities or works, or*
>
> *(d) any purpose that the Minister considers constitutes an agricultural produce industry or food and beverage processing.*

(emphasis added)

At a cost of $90m, the proposed development will have a capital investment value of more than $30m and involves '*cereal processing'*. Consequently, the Minister for Planning is the consent authority for this proposal.

This PEA has been prepared as a precursor to the Project Application to DoP. It provides a description of the proposed development; a review of the regulatory framework; an overview of relevant consultation; and identifies key issues to be addressed in the EA regarding the proposed malt processing facility.

Following consideration of the PEA and consultation with relevant government agencies, the DoP will provide Director General's Requirements (DGR's) for preparation of the EA. Once completed, the EA will be provided to DoP for adequacy review before being placed on public exhibition.

1.5. STRUCTURE OF THIS DOCUMENT

This PEA describes key elements of the proposed Project Gorilla development for which JWM is seeking Project Approval. It is set out as follows:

- **Section 2** describes the existing site use and the proposed malt processing development
- **Section 3** reviews the alternatives to the proposed development and consequences of not proceeding
- **Section 4** assesses relevant Federal, State and Local legislation applicable to the proposed development
- **Section 5** lists relevant stakeholders and the consultation methodology to be employed
- **Section 6** reviews the environmental impacts which will be fully addressed within the EA
- **Section 7** contains a Preliminary Environmental Risk Assessment
- **Section 8** reviews the development in accordance with the principles of Ecologically Sustainable Development
- **Section 9** identifies matters in relation to demolition and construction management
- **Section 10** concludes this PEA.

2. SITE DETAILS AND PROPOSED SITE USE

This section describes the existing use of the subject site and the use proposed by the JWM development.

2.1. SITE LOCATION

The application site is located at Minto which is approximately 5km north of Campbelltown in Sydney's south western suburbs (refer to **Figure 1**). This location is approximately 50km from the port of Port Botany and has access to the main Sydney to Melbourne railway line via an approved rail siding connecting through the adjoining MIST site. The site has access to the Hume Highway/F5 Freeway, which is located approximately 7km away. The links to the highway are predominantly via industrial areas and along arterial status roads.

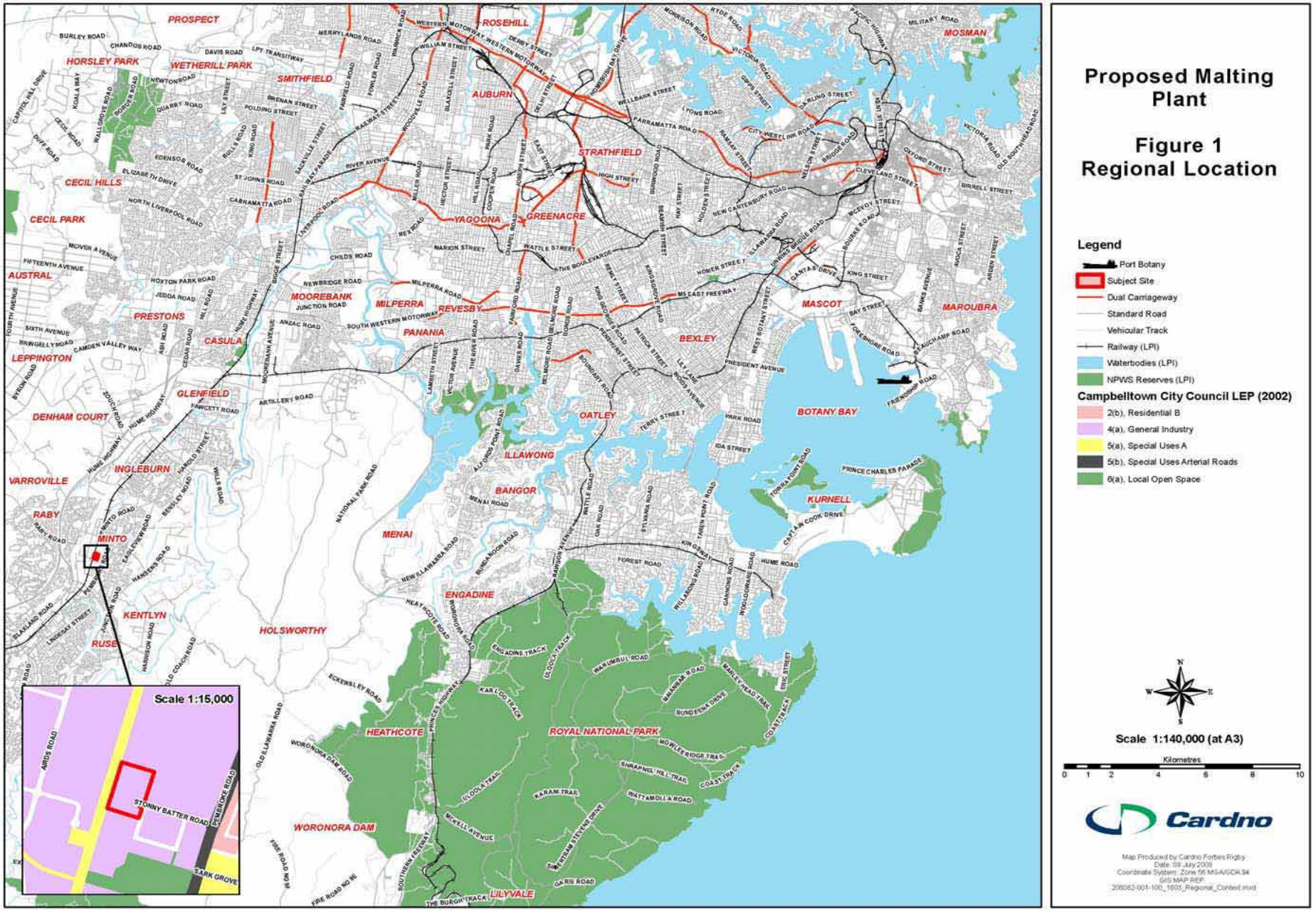
The legal description of the site is Lot 201 DP 813362, and is known as the old "Hudson Site". It is situated within an industrial area and is adjoined by industrial uses (refer to **Figure 2**). Immediately adjacent to the site to the north is the Macarthur Intermodal Shipping Terminal (MIST). The site fronts Stonny Batter Road which is accessed off Pembroke Road.

2.2. SITE DESCRIPTION AND ESTABLISHED LAND USE

Lot 201 is currently used for sanitary clothing storage and trailer parking. The site was previously used for approximately 30 years by Hudsons Timber and Trusses as a timber yard and truss assembly and storage yard.

The site has large areas of cleared open land with extensive hard-standing surfaces (refer to **Figure 2**). There are two old large warehouse style buildings located between the centre of the site and the eastern boundary (refer to **Plate 1**).

Plate 1 – The Hudson Site


Proposed Malting Plant
Figure 1
Regional Location
Legend
Port Botany
Subject Site
Dual Carriageway
Standard Road
Vehicular Track
Railway (LPI)
Waterbodies (LPI)
NPWS Reserves (LPI)
Campbelltown City Council LEP (2002)
2(b), Residential B
4(a), General Industry
5(a), Special Uses A
5(b), Special Uses Arterial Roads
6(a), Local Open Space
Scale 1:15,000
Scale 1:140,000 (at A3)
Kilometres
0 1 2 4 6 8 10
Cardno
Map Produced by Cardno Forbes Rigby
Date: 08 July 2008
Coordinate System: Zone 56 MGA/GDA 94
GIS MAP REF:
20808J-001-100_1803_Regional_Context.mxd
PROSPECT
ROSEHILL
MOSMAN
HORSLEY PARK
WETHERILL PARK
SMITHFIELD
AUBURN
STRATHFIELD
CECIL HILLS
CECIL PARK
YAGOONA
GREENACRE
AUSTRAL
MOOREBANK
MILPERRA
REVESBY
MASCOT
MAROUBRA
PRESTONS
CASULA
PANANIA
BEXLEY
LEPPINGTON
GLENFIELD
DENHAM COURT
OATLEY
BOTANY BAY
ILLAWONG
INGLEBURN
VARROVILLE
BANGOR
KURNELL
RABY
MINTO
MENAI
ENGADINE
KENTLYN
HOLSWORTHY
RUSE
HEATHCOTE
ROYAL NATIONAL PARK
WORONORA DAM
LILYVALE
STONINY BATTER ROAD
PEMBROKE ROAD
ARDS ROAD
DARK GROVE

Proposed Malting Plant

Figure 2
The Site

Legend

- Subject Site
- Cadastre (LPI)

N
W
E
S

Scale 1:2,000 (at A3)

Metres
0 10 20 40 60 80 100

Cardno

Map Produced by Cardno Forbes Rigby
Date: 08 July 2008
Coordinate System: Zone 56 MGA/GDA94
DIS MAP REF:
208082-001-100_1801_Site_Plan_P1.mxd
Aerial Imagery supplied by Google Earth Pro
and associated third party suppliers

There are six smaller buildings and outhouses located directly to the south of the central warehouse building.

The site boundary is enclosed by a chain-wire fence with three strands of barbed wire above resulting in an overall height of approximately 2m. Untended scrub grass is located along the western boundary. The northern, southern and eastern boundaries have minimal landscaping.

Lot 201 is located within a large industrial area and is surrounded by a range of industrial land uses and the railway line, which runs along the western boundary. Each property adjacent to the site accommodates large industrial or warehouse style buildings which are somewhat similar in appearance to the development proposed by JWM. Similar industrial or warehouse developments are located on the opposite side of the rail easement.

The majority of the site area and building are vacant. Small areas of the site are currently used for infrequent open air storage of shipping containers, road transport equipment and the storage of bulk sanitary clothing products (refer to **Plate 2**). This results in a current low level of vehicular activity within the premises.

Plate 2 – North Western Site Corner

JWM propose to demolish and remove all existing buildings and structures on the site.

2.3. PROPOSED SITE OPERATIONS & DEVELOPMENT

2.3.1. General Description

The proposed development involves the construction of a facility to convert barley into malt as well as an export container grain packing plant.

Malt is used principally for brewing. The grain packing facility will receive and pack wheat, oats, barley and a variety of other grain/pulse commodities in export standard containers for dispatch to overseas customers.

Both the malt processing plant and the grain packing plant will use the existing rail facilities to the maximum extent possible for the receival and despatch of grains associated with this project. The malting process is discussed in **Section 2.3.3** of this report.

The site will be self-contained and self-supporting with respect to transport and utilisation of services, including a state-of-the-art water treatment plant.

2.3.2. Layout of Proposed Facility

The proposed facility consists of a number of operational areas totalling some 2.6ha to facilitate the malting process and grain packaging. **Figure 3** comprises the site plan and **Figure 4** the proposed elevations.

It is proposed to build a malt plant with an annual capacity of 110,000 tonnes. The grain packing plant would handle approximately 140,000 tonnes annually.

The facility is aligned north-south along the site, with germination and steeping vessels to the south, kilning to the north. The grain storage and grain packing facility will be adjacent to the malting plant.

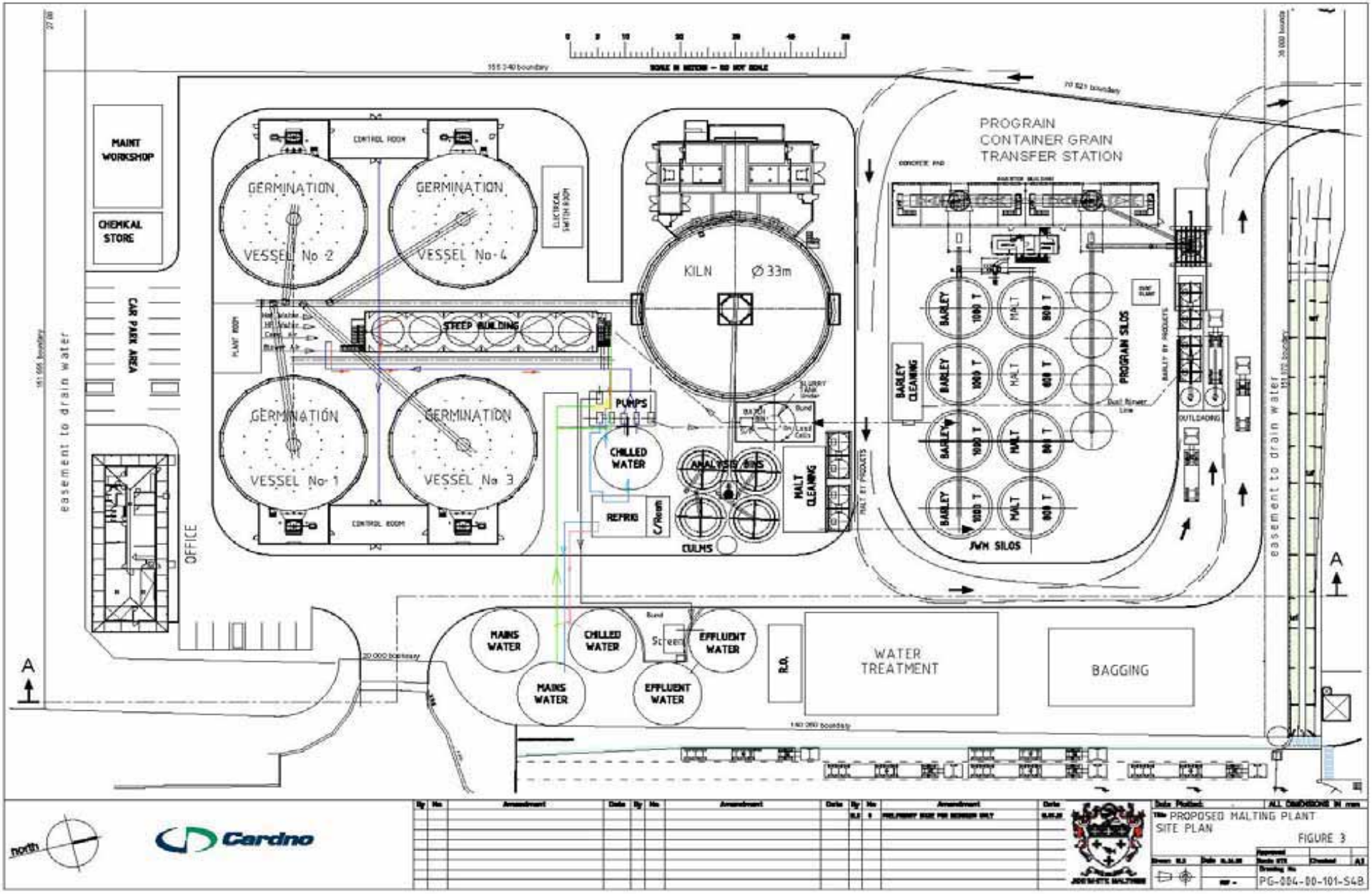
Plant rooms for refrigeration and power would be separately located on the site.

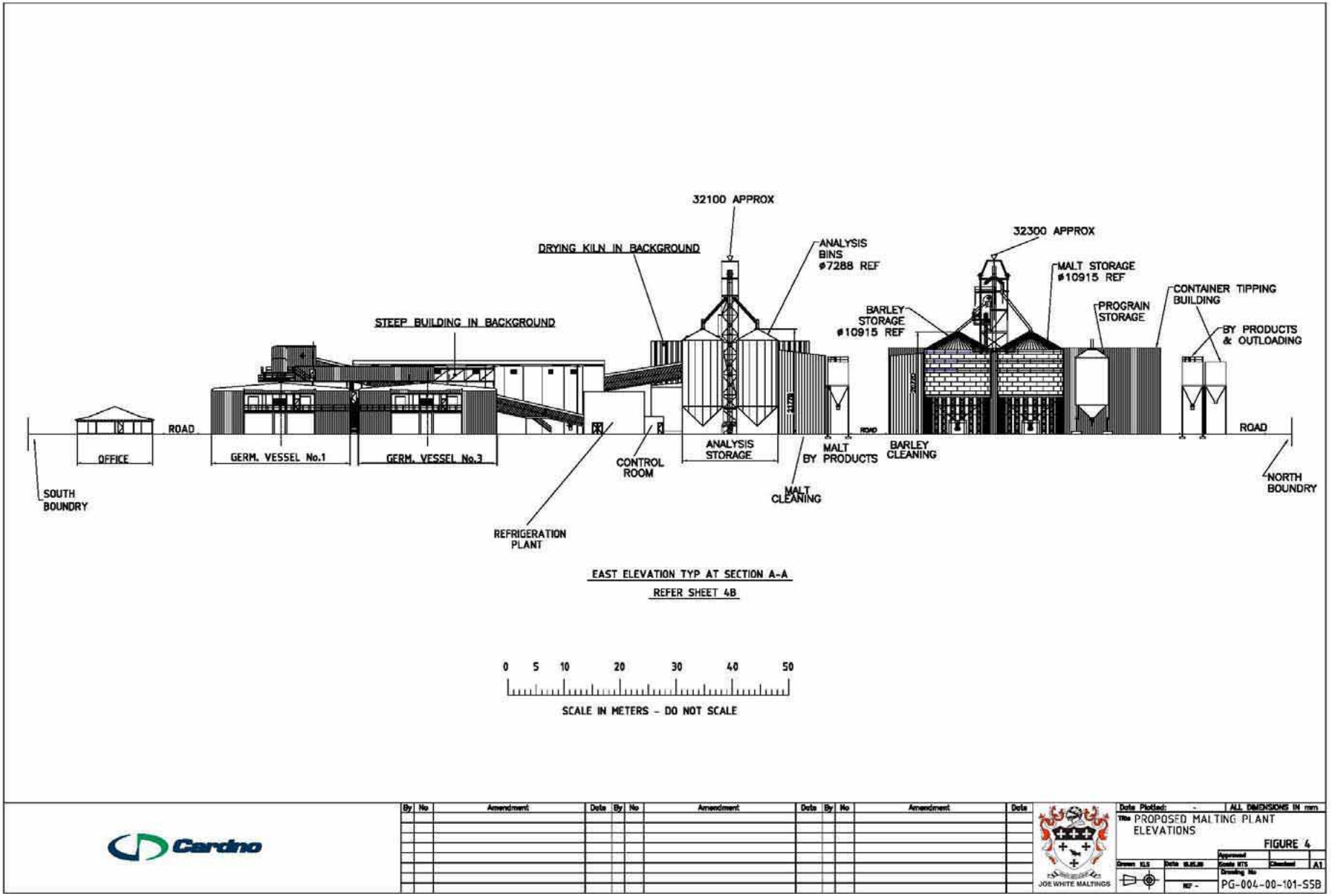
All the operational areas are interconnected by air-belt and drag conveyors, which will carry the grain through to the process vessels. Conventional silo storage with drag conveyors and grain elevators will be utilised in the grain receival and dispatch areas.

There are also a number of other structures integral to the site's function including a maintenance building and water storage tanks. Other uses include an office building containing a works control office, general office, laboratory and administration facilities. The development proposes car parking for approximately 20 staff.

For the packing plant, the main structure would be a shed of approximately 45mx10m enclosing grain receival and out-loading equipment.

Treatment of water will occur on site to recycle water back into the manufacturing process. This will be carried out by a reverse osmosis plant to refine the treated water back to near potable levels, with the resultant brine being discharged to the sewer system.


MAINT WORKSHOP
CHEMICAL STORE
CAR PARK AREA
OFFICE
easement to drain water
GERMINATION VESSEL No 2
GERMINATION VESSEL No 4
GERMINATION VESSEL No 1
GERMINATION VESSEL No 3
CONTROL ROOM
ELECTRICAL SWITCH ROOM
PLANT ROOM
STEEP BUILDING
KILN Ø 33m
PUMPS
CHILLED WATER
REFRIG
C/Room
ANALYSIS BINS
MALT CLEANING
CULMS
PROGRAIN CONTAINER GRAIN TRANSFER STATION
CONCRETE PAD
BARLEY CLEANING
BARLEY 1100 T
MALT 800 T
PROGRAIN SILOS
OUTLOADING
JWH SILOS
MAINS WATER
CHILLED WATER
Screen
EFFLUENT WATER
R.O.
WATER TREATMENT
BAGGING
north
Cardno
PROPOSED MALTING PLANT
SITE PLAN
FIGURE 3
PG-004-00-101-S4B


32100 APPROX
DRYING KILN IN BACKGROUND
ANALYSIS BINS ø7288 REF
32300 APPROX
MALT STORAGE ø10915 REF
CONTAINER TIPPING BUILDING
PROGRAIN STORAGE
BARLEY STORAGE ø10915 REF
STEEP BUILDING IN BACKGROUND
BY PRODUCTS & OUTLOADING
ROAD
OFFICE
GERM. VESSEL No.1
GERM. VESSEL No.3
CONTROL ROOM
ANALYSIS STORAGE
MALT BY PRODUCTS
BARLEY CLEANING
ROAD
SOUTH BOUNDRY
MALT CLEANING
NORTH BOUNDRY
REFRIGERATION PLANT
EAST ELEVATION TYP AT SECTION A-A
REFER SHEET 4B
0 5 10 20 30 40 50
SCALE IN METERS - DO NOT SCALE
By No Amendment Date
JOE WHITE MALTINGS
Date Plotted: - ALL DIMENSIONS IN mm
Title PROPOSED MALTING PLANT ELEVATIONS
FIGURE 4
Drawn KLS
Scale NTS
A1
Drawing No
REF -
PG-004-00-101-SSB

Vehicular access to the plant will be off Stonny Batter Road. There will be minimal additional truck vehicular movements into the site, apart from a truck to remove grain by-products four times a week, a daily truck to remove biomass from the water treatment plant, and contract maintenance vehicles servicing the plant from time to time. Deliveries and dispatch will primarily be by rail with the railway adjoining the site's western boundary.

2.3.3. JWM Proposed Site Operation

The proposed operation involves the conversion of barley into malt which is used principally for brewing beer and ale.

Barley will be brought to the premises via rail along the Main Southern Rail Line. The train will stop in new sidings which have been granted development consent from Campbelltown City Council but are yet to be constructed.

The barley will be unloaded into silos for storage prior to commencing the malting process. It is expected that the proposed plant will receive in the order of 130,000 tonnes of barley per annum which equates to approximately an average of 500 tonnes per day based on deliveries 5 days per week.

A five step overview of the malting process is provided below and is reproduced in **Figure 5**. A specific loading and unloading process flow diagram has been included as **Figure 6**. The trucks shown for loading and unloading are transporting product to/from containers located on the adjoining MIST site and will not be traversing the road system.

Step 1. Steeping

Steeping involves immersing barley in water to initiate the germination process and clean the barley so tanic acids are removed. The duration of the steeping process varies and depends on the barley and customer requirements. Generally, steeping takes 24 hours to complete.

Step 2. Germination

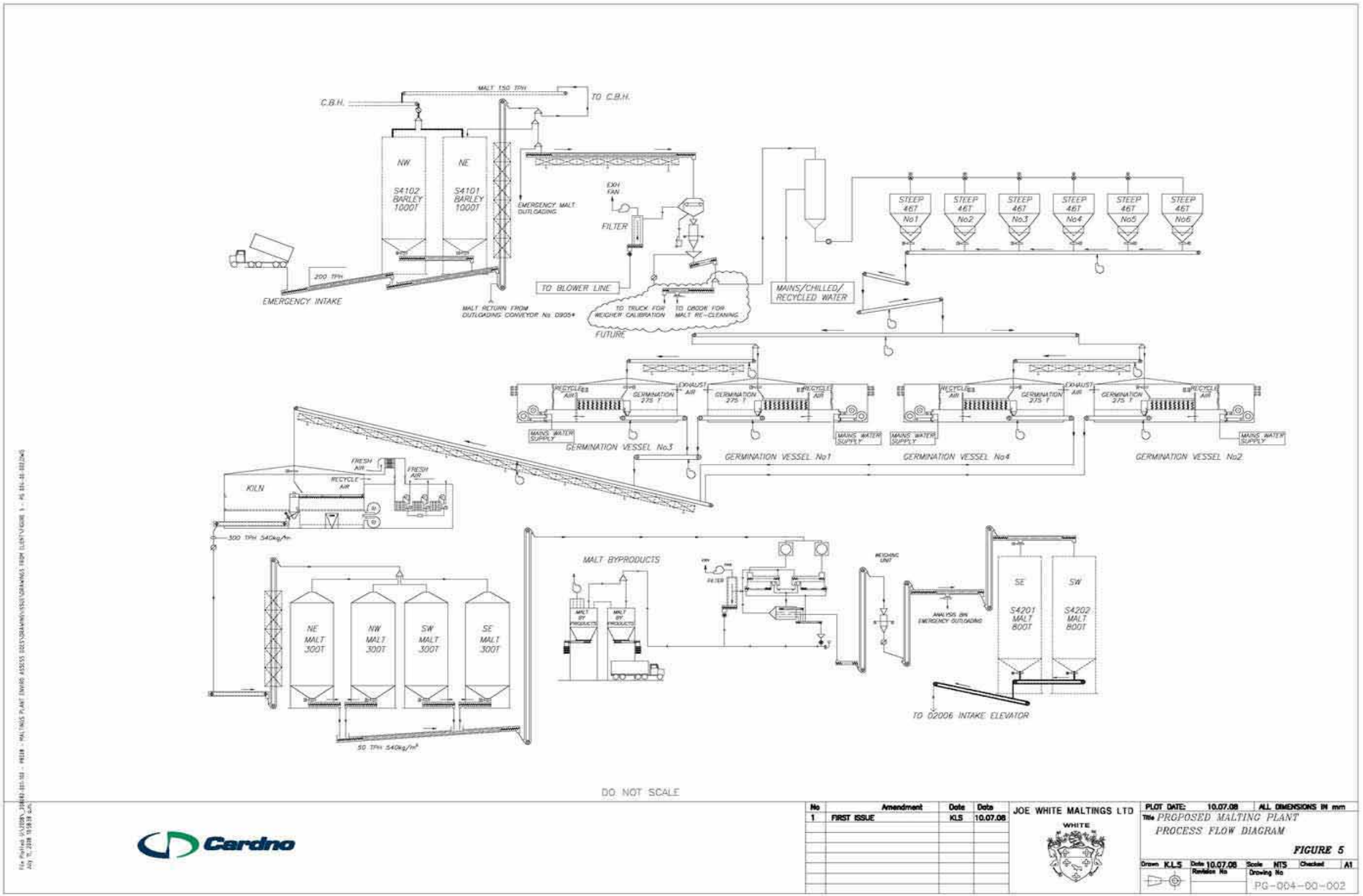
The germination process takes about 4 days to complete. Additional water may be added to the grain to increase moisture content up to 45 – 46%. Again, this will depend on customer requirements. This part of the process may involve 1 or 2 water additions per day by a spray system. The germination process also involves pushing air through the grain. Further development of the root system occurs during this period with acrospire growth along the back of the grain.

Step 3. Kilning

The kilning process takes approximately twenty hours. Kilning stops the germination process and dries the grain by reducing the moisture content of the grain to approximately 4%. The germinated barley now referred to as malt is a stable product (i.e. chemical/physical changes are no longer occurring) and is able to be stored. The kilning process also produces flavour and colour to the malted grain which is essential for the manufacture of quality beer.

Step 4. Analysis

Fully enclosed chain conveyors transfer malt from the kiln to the malt analysis bins before final cleaning. At this stage a chemical analysis is undertaken to determine the specification of the finished malt. There will be four analysis bins, each bin holding one batch of malt.



DO NOT SCALE

No	Amendment	Date	Date
1	FIRST ISSUE	K.L.S	10.07.08

JOE WHITE MALTINGS LTD

PLOT DATE: 10.07.08 ALL DIMENSIONS IN mm

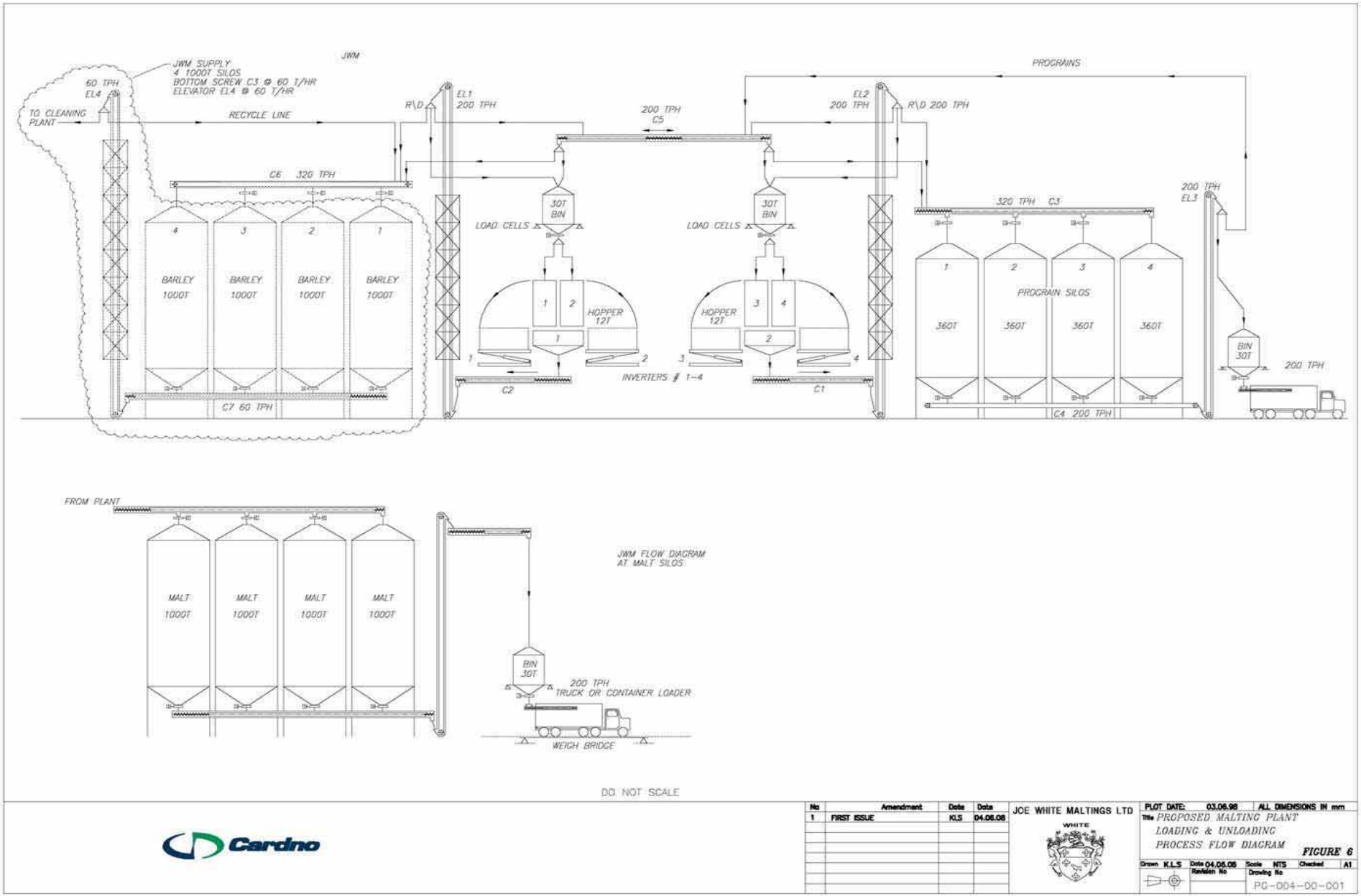
Title PROPOSED MALTING PLANT
PROCESS FLOW DIAGRAM

FIGURE 5

Drawn	Date	Scale	Checked
K.L.S	10.07.08	NTS	A1

Revision No

Drawing No PG-004-00-002


JWM
JWM SUPPLY
4 1000T SILOS
BOTTOM SCREW C3 @ 60 T/HR
ELEVATOR EL4 @ 60 T/HR
60 TPH
EL4
TO CLEANING PLANT
RECYCLE LINE
R\D
EL1
200 TPH
200 TPH
C5
EL2
200 TPH
R\D 200 TPH
PROGRAINS
C6 320 TPH
30T BIN
LOAD CELLS
30T BIN
LOAD CELLS
320 TPH C3
200 TPH
EL3
4 3 2 1
BARLEY 1000T
BARLEY 1000T
BARLEY 1000T
BARLEY 1000T
HOPPER 12T
HOPPER 12T
1 2 3 4
PROGRAIN SILOS
360T
360T
360T
360T
BIN 30T
200 TPH
INVERTERS # 1-4
C2
C1
C7 60 TPH
C4 200 TPH
FROM PLANT
MALT 1000T
MALT 1000T
MALT 1000T
MALT 1000T
JWM FLOW DIAGRAM AT MALT SILOS
BIN 30T
200 TPH
TRUCK OR CONTAINER LOADER
WEIGH BRIDGE
DO NOT SCALE
No
Amendment
Date
Date
1
FIRST ISSUE
K.L.S
04.06.08
JOE WHITE MALTINGS LTD
WHITE
PLOT DATE: 03.06.98
ALL DIMENSIONS IN mm
Title PROPOSED MALTING PLANT
LOADING & UNLOADING
PROCESS FLOW DIAGRAM
FIGURE 6
Drawn K.L.S
Date 04.06.08
Revision No
Scale NTS
Checked
A1
Drawing No
PG-004-00-001
Cardno

Step 5. Final Cleaning Process

The cleaning process is mechanical and involves the removal of rootlets, dust, loose husks, woven grain, undersized grain, oversized grain, foreign seeds, metallics and husks. The removed "malt by-products" constitute approximately 2% of the total batch, this by-product being sold to feed millers for stock feed.

Closed conveyors transfer the clean malt, still in grain form, directly from the cleaning process to malt storage silos for storage and packing to rail containers.

It is anticipated that this proposal will out-load 110,000 tonnes of malted barley per annum. This equates to an approximate average of 421 tonnes per day, based on dispatches 5 days per week. An approximate daily average of 10 tonnes of by-products will also be dispatched from the site.

The balance would be either containerised as loose grain into export-quality containers or bagged into 25kg bags and loaded into general purpose containers for export.

2.3.4. Packing Plant

The packing plant will receive grains and pulses from inland New South Wales transported from country areas in purpose-built containers by rail. The containers are offloaded and emptied via lifting frames which tip the contents to flow into the receival pit. From the pit, the grain will be elevated and conveyed in storage bins on the site.

Grains or pulse products will be loaded into containers for export customers using the lifting frames. Loaded containers will then be transported by rail to Port Botany for shipment overseas.

2.3.5. Automation

The entire malting process from barley receival and conversion, through to storage and dispatch is controlled by sophisticated computer systems. Remote controlled video cameras linked to the production office enable visual checks of the malting process and area control.

The control systems optimise of malting conditions. Sensors constantly review the ambient conditions and make pre-programmed adjustments to air temperature, humidity, water additions, fan speeds and batch duration.

Daily inspection and physical checking is still an integral part of the quality control and plant management. All plant processes can also be monitored and adjusted from off site locations.

2.3.6. Staff

Approximately 20 employees are required for the malting and packing operations. This comprises specialised technical plant operators, laboratory personnel, maintenance engineers, logistics and management staff.

During the construction phase, up to 90 workers will be employed for a period of six months, with an average of 50 workers over the whole 20 month construction period.

A plant of this scale will have a significant multiplier effect on manpower requirements in the up-stream supply chain; that is the train crews required for the transport movements of grain to silos in country areas and agricultural workers for farm grain production, etc.

2.3.7. Hours of Operation

The malting process is a continuous 7 day a week 24 hour operation with much of the operation being passive in nature. The facility will be attended by staff during the day. A call-in facility will be triggered by a monitored alarm system. The bulk of the conveying equipment will only operate between 6am and 6pm. The refrigeration system operates 24 hours a day over the summer period.

2.3.8. Landscaping

Appropriate landscaping, as required by local ordinances and in keeping with the overall site amenity, will be part of the project.

2.3.9. Structure Construction Details

Maximum elevation of the plant will be 35 metres above finished ground level and, while grain storage will be required, this will be minimised through the use of modified shipping containers for rail delivery of barley, which will act as 'virtual storage' for the plant.

The proposed plant will include:

- Office building and car parking
- Workshop
- Cleaning bins
- Four germination vessels
- Steeping vessels
- Malt and barley storage silos
- Analysis bins
- Drying kiln
- Switch room and substation.

Precast concrete panels will be used for the switch rooms, plant room, fan rooms and kiln heater room.

The germination and kiln buildings will be of Colourbond cladding on a steel frame with Colourbond roofing. The silos will be of galvanised construction. The workshop and cleaning plant will consist of Colourbond cladding construction. Effluent tanks for the wastewater treatment plant and chilled water tanks will be constructed of cast concrete. All exposed steel walkways and gantries will be galvanised steel.

The packing plant will be a steel framed shed, clad in Colourbond. A purpose built office building will also be provided.

Plate 3 below shows the Perth plant which is of a similar scale and capacity to that proposed at Minto.

Plate 3 – JWM Forrestfield Malting Plant, Perth

3. ALTERNATIVES & JUSTIFICATION

This section provides justification for the project, overviews the alternatives considered and summarises the consequences of not proceeding on the preferred site.

3.1. JUSTIFICATION FOR THE PROPOSED DEVELOPMENT

The Minto location enables JWM to take maximum advantage of the existing intermodal infrastructure, especially the ability to reduce road freight costs and inefficiencies by utilising rail, with access to an excess of containers available for storage and export on the adjacent MIST site. The development thus represents an opportunity to better utilise the MIST facility, which is understood to be a key objective of the State Government.

Access to rail services on site allows for grain receival as well as access to rail services to Port Botany for export deliveries. The operators of MIST have received approval to extend the spur line to service Lot 201 by rail but will only do so if a development of the site, such as that proposed by JWM, is viable.

An extensive evaluation has been undertaken by JWM, and its parent company ABB, to consider this location against other sites both within NSW and elsewhere, especially Victoria. The proposal is for an integrated operation that will combine both a malt manufacturing plant and a grain receival and packing plant, so that the packing plant can be utilised for the barley receival for the malting operation and also the malt outloading function. This optimises efficiency and throughput from the facility.

Comparison of alternative options at other locations has been undertaken. This involved a mix of logistics and complexities for both the raw material inputs and the dispatch of finished products to port. On a cost basis, this location provides the best logistical solution.

The business case for the malting plant is based on expected malt demand in Asia that currently offers significant opportunities for ABB and JWM. The Asian beer market, which drives malt demand, is a rapidly expanding market in the world at this time, and coupled with the premium available for malt in a world of shortage, makes the expansion of JWM's malting capacity an economically sustainable decision.

The development represents opportunities to value add to the NSW barley industry, which is currently limited to exporting barley in an unprocessed form. Prior to deciding on the chosen site, discussions were held with the Local and State Governments and in principle support was given. JWM also discussed the project with key service providers to confirm that all required services were available or could be readily provided to the site.

The chosen site is an underutilised but highly accessible zoned industrial site well separated from residential areas or environmental constraints. It has access to services required for the malting process and will provide local employment opportunities.

In summary, the public benefit will be an increased market for NSW barley, improved freight transport efficiencies by use of rail, and better utilisation of container infrastructure which is currently underutilised. The processing and packaging plants will provide employment opportunities and represent value adding and increased export income for the state and the nation.

3.2. ALTERNATIVES TO THE PROPOSED DEVELOPMENT

In terms of alternative sites, other locations in NSW considered were the Hunter region and the Central West, however both were constrained by logistics and the cost of transport to the port. A site at St Mary's in Sydney's north west was also considered, however site tenure could not be secured.

In Victoria, a facility in the Wimmera region was evaluated but was not as desirable or viable as the Minto site. Sites in South Australia were also evaluated, but were not considered as desirable as the Minto site.

In terms of the malting plant itself, it is not considered that there are any viable alternative methods for malt creations and all existing malting plants operated by JWM are at capacity.

There is only one other company in NSW providing a similar style of malting operation (BBM). BBM has advised JWM that they will not build a similar facility in NSW as the company is committed to a new plant in Brisbane.

3.3. IDENTIFICATION OF A PREFERRED OPTION

The Minto site is the preferred option based on the location, the infrastructure available (primarily rail and containers but also power and water) and the costs associated with the construction of the facility. In particular, the accessibility to rail for transport and containers for storage, receival and dispatch, were unique features leading to Lot 201 being chosen as the preferred site.

3.4. CONSEQUENCES OF NOT PROCEEDING

The operators of the MIST development have received development approval to extend the rail facilities to service Lot 201. However, this upgrading may not be undertaken if a development does not proceed on Lot 201 which can utilise upgraded rail freight facilities. Furthermore, MIST will continue to lose revenue from returning empty containers to the port and from the underutilisation of their operations at Minto.

Should the project not proceed, there will be loss of revenue from port and export charges, as well as loss of payroll and land taxes.

It is likely that a loss of approximately $60m of construction and related activities could result due to the multiplier effects from related support activities.

Further to this, Asian brewers will go outside Australia to source malt and a market opportunity will be lost to NSW barley producers.

A fall-back strategy will be maintained in the event that the Project Application is refused. It is unlikely however, that this will be a site in NSW given the time delays in securing approvals and the urgency for a new facility to be constructed in a timely manner to service existing unmet demand.

4. REGULATORY FRAMEWORK

This section outlines in summary the current regulatory framework which applies to the JWM proposal and considers policies relevant to the project.

Legislation, guidance and policies applicable to the JWM proposed development based on the nature of the work, environmental factors and geographical location, are summarised below.

4.1. FEDERAL LEGISLATION

4.1.1. Environmental Protection & Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is environment and heritage legislation which applies across Australia. This Act requires approval from the Department of the Environment, Water, Heritage and the Arts for any action that has, will have, or is likely to have, a significant impact on the seven listed 'controlled matters' of national environmental significance.

The preliminary assessment indicates that the proposed development does not require referral or assessment in relation to the EPBC Act 1999.

4.2. NSW LEGISLATION

4.2.1. Environmental Planning & Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) in conjunction with the Environmental Planning and Assessment Regulation 2000 legislates the Town Planning process for consideration of all developments within New South Wales. This Act is administered by the DoP and defines the relevant consent authority for proposed developments.

The EP&A Act defines numerous objectives. The objectives relevant to the proposed project are to encourage:

- The proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment
- The promotion and co-ordination of the orderly and economic use and development of land
- The protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats
- Ecologically sustainable development
- The sharing of the responsibility for environmental planning between the different levels of government in the State.

4.2.2. Protection of Environment Operation Act 1997

The *Protection of Environment Operation Act 1997* (POEO Act) 1997 is a major aspect of the NSW Government's legislation to protect the environment. This Act is administered by the Environmental Protection Authority which is part of the Department of Environment and Climate Change (DECC). The POEO Act permits Environmental Protection Licences (EPL) to be granted for air, water, and noise pollution and waste management.

The proposed malting plant is expected to require an EPL as the development is an 'agricultural produce industry' which is a scheduled activity under Schedule 1 of the POEO Act.

Once the Part 3A application has been approved DECC is required to grant an EPL which is 'substantially consistent' with the approval under Section 75V(1) of the EP&A Act.

It should be noted that JWM have an EPL for their existing Tamworth plant (License 1327).

4.2.3. Contaminated Land Management Act 1997

The general aim of this Act is "to establish a process for investigating and (where appropriate) remediating land areas where contamination presents a significant risk of harm to human health or some other aspect of the environment". This Act also ensures the accountability for remediation of contamination and appropriate level and qualification for auditing of such works.

Due to the proposed redevelopment of a site previously used for industrial activities the land must be tested for contamination prior to a development approval being granted. This Act defines contamination as:

> ***Contaminated land*** *means land in, on or under which any substance is present at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment.*

An assessment of potential contamination will be carried out as part of the EA.

4.2.4. National Parks & Wildlife Act 1974

The *National Parks & Wildlife Act* (NP&W Act) 1974 is administered by DECC and manages:

- Conservation of nature
- Conservation of objects, places and features of cultural value
- Public appreciation, understanding and enjoyment of nature and cultural heritage
- Land reserved under this Act.

The proposed development is not within a Park, Reserve or Area designated under Part 4 of the NP&W Act. The cleared nature and historical use of the land has resulted in no protected flora or fauna existing on, or using, this land. The history of activities and development on the site will likely have destroyed any Aboriginal objects.

Due to the proposed malting plant having no impact on matters subject to this Act it is not considered that any further assessment or application is required under the NP&W Act.

4.2.5. Threatened Species Conservation Act 1995

The *Threatened Species Conservation Act* (TSC Act) protects threatened species, communities and critical habitat in New South Wales. Protection is provided under this act for species, populations and ecological communities which are considered to be endangered, vulnerable or extinct. Any activity which may have an impact on protected animals, plants or locations is rigorously assessed to ensure the justification is strong enough to permit the impact to progress.

Due to the disturbed nature of the site there are no:

- Endangered species, populations or communities listed in Schedule 1 of the TSC Act
- Critically endangered species or ecological communities listed in Schedule 2 of the TSC Act
- Vulnerable species or ecological communities listed in Schedule 3 of the TSC Act.

As the proposed activity will not have any impact on matters relating to the TSC Act a licence under Part 6 is not required.

4.2.6. Heritage Act 1977

The *Heritage Act 1977* has responsibility for listing and protecting items and areas of heritage significance to New South Wales. The Act and list is administered by the NSW Heritage Council.

Checks have been made of the following heritage registers:

- World Heritage Register
- Commonwealth Heritage List
- Register of the National Estate
- National Heritage List
- NSW Heritage Register

There are no heritage items or areas within or adjacent to the site which are listed under the Heritage Act 1997. Furthermore, Section 75U, Part 3A of the EP&A Act exempts 'Major Project' applications from having to make applications under the Heritage Act 1977.

4.3. STATE ENVIRONMENTAL PLANNING POLICIES

4.3.1. State Environmental Planning Policy (Major Projects) 2005

Under Schedule 1 sub clause 3 of the Major Projects SEPP the following use is identified as a major project:

> ***4 Agricultural produce industries and food and beverage processing***
>
> *Development that employs 100 or more people or has a capital investment value of more than $30 million for any of the following purposes:*
>
> *(e) abattoirs or meat packing, boning or products plants; milk or butter factories; fish packing, processing, canning or marketing facilities; animal or pet feed; gelatine plants; tanneries; wool scouring or topping; rendering plants, or*
>
> *(f) cotton gins; cotton seed mills; sugar mills; sugar refineries; grain mills or silo complexes; edible or essential oils processing; breweries; distilleries; ethanol plants; soft drink manufacture; fruit juice works; canning or bottling works; bakeries; small goods manufacture, **cereal processing*** or margarine manufacturing; wineries, or*
>
> *(g) organic fertiliser plants or composting facilities or works, or*
>
> *(h) any purpose that the Minister considers constitutes an agricultural produce industry or food and beverage processing.*

*(*highlight added)*

The proposed development will have a capital investment value of more than $30m and involves '*cereal processing'*. The proposed development therefore falls within the terms of a Major Project.

The DoP has confirmed that the project constitutes an application under Part 3A of the EP&A Act. As such the Minister for Planning is the consent authority.

4.3.2. SEPP (Infrastructure) 2007

SEPP (Infrastructure) 2007 has consolidated and updated the planning processes for new public infrastructure. Smaller scale infrastructure is permitted as exempt or complying development whilst large infrastructure projects have a more streamlined and simplistic approval process.

The Infrastructure SEPP has incorporated regulations from many SEPPs, including SEPP 11 Traffic Generating Developments and SEPP (ARTC Rail Infrastructure) 2004. Due to the low number of road vehicular movements and predominant rail usage associated with the proposed development, assessment under this SEPP is not required.

4.3.3. SEPP 33 Hazardous & Offensive Development

This SEPP aims to regulate the control of hazardous or offensive developments through the Planning process. The type of development which is considered to be hazardous or offensive by DoP is listed in this SEPP. An assessment of a hazardous or offensive development is completed as part of the determination of an application under the EP&A Act.

The only hazardous materials to be used on-site are the chemicals Potassium Hydroxide (KOH) and Sodium Hypochlorite (NaOCl) which will be used for cleaning purposes. Storage and utilisation of these chemicals does not pose an environmental or safety hazard. These are aqueous solutions (ie bleaches) and are regarded as a corrosive substance by the Standards Association of Australia.

The chemicals will be transported by road to the site and will be used and stored in accordance with the Standards Association of Australia handling and storage requirements (Australian Standards No. 2780). They will be stored in 200 litre drums in a secured and appropriately labelled storage area adjacent to the germination vessels.

Giberellic Acid (GA) is a manufactured plant hormone which will also be used in processing, but is not defined as hazardous. In the unlikely event of a spillage, the emergency will be dealt with by the appropriate Safety and Emergency Services.

4.3.4. SEPP 44 – Koala Habitat Protection

This policy aims to preserve known or likely Koala habitat to aid in the preservation of the species. The site does not contain any feed species forming Koala habitat and therefore this SEPP does not apply to this site.

4.3.5. SEPP 55 – Remediation of Land

Depending on previous use of the land and contamination testing this SEPP may be relevant. If the site is contaminated works must be carried out in accordance with policies in this SEPP and policies in the Contaminated Land Management Act 1997.

4.3.6. SEPP 64 – Advertising and Signage

Any signage proposed by JWM in relation to the proposed development will be assessed against the requirements and controls of this SEPP.

4.4. REGIONAL ENVIRONMENTAL PLANS

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

This REP is designed to protect the catchment area of the Georges River which flows from near Appin to Botany Bay via the Western Sydney suburbs. The area to which this REP applies is designated by the catchment map (refer to **Figure 7**).

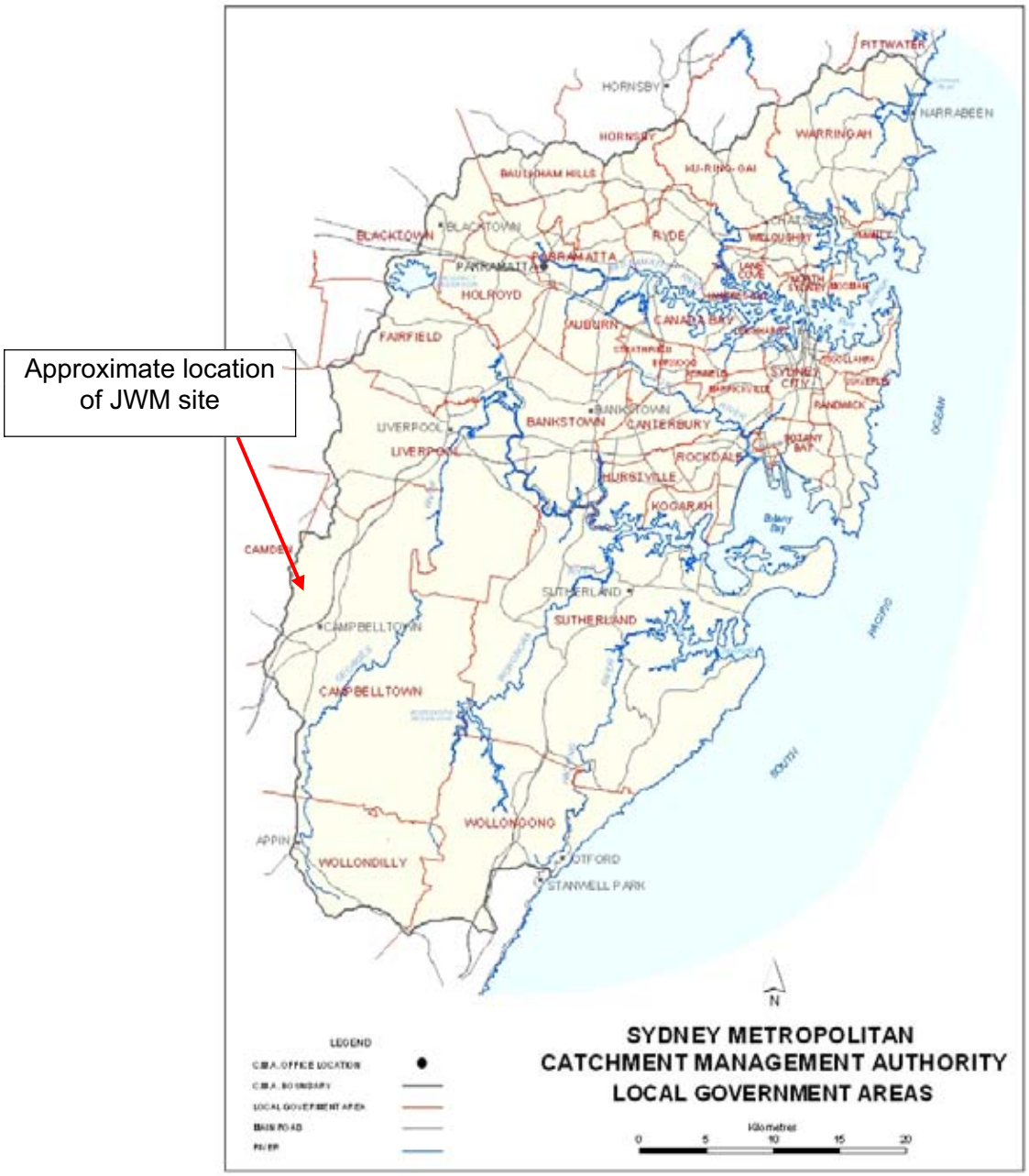


Figure 7 – Greater Metropolitan REP No 2 Catchment Area

The REP details general and specific policies which relate to different development proposals.

The EA will address the relevant provisions of Greater Metropolitan Regional Environmental Plan No 2 – Georges River Catchment.

4.5. LOCAL PLANNING CONTROLS

4.5.1. Local Environmental Plan (LEP)

The subject site is zoned 4(a) General Industrial under Campbelltown's LEP 2002 (refer to **Figure 8**).The intended use is permitted with consent. The EA will demonstrate compliance with the LEP and any Draft LEP's.

4.5.2. Development Control Plans (DCP's)

Campbelltown DCP 99 Advertising Signs

The EA will assess the proposed signage against this DCP.

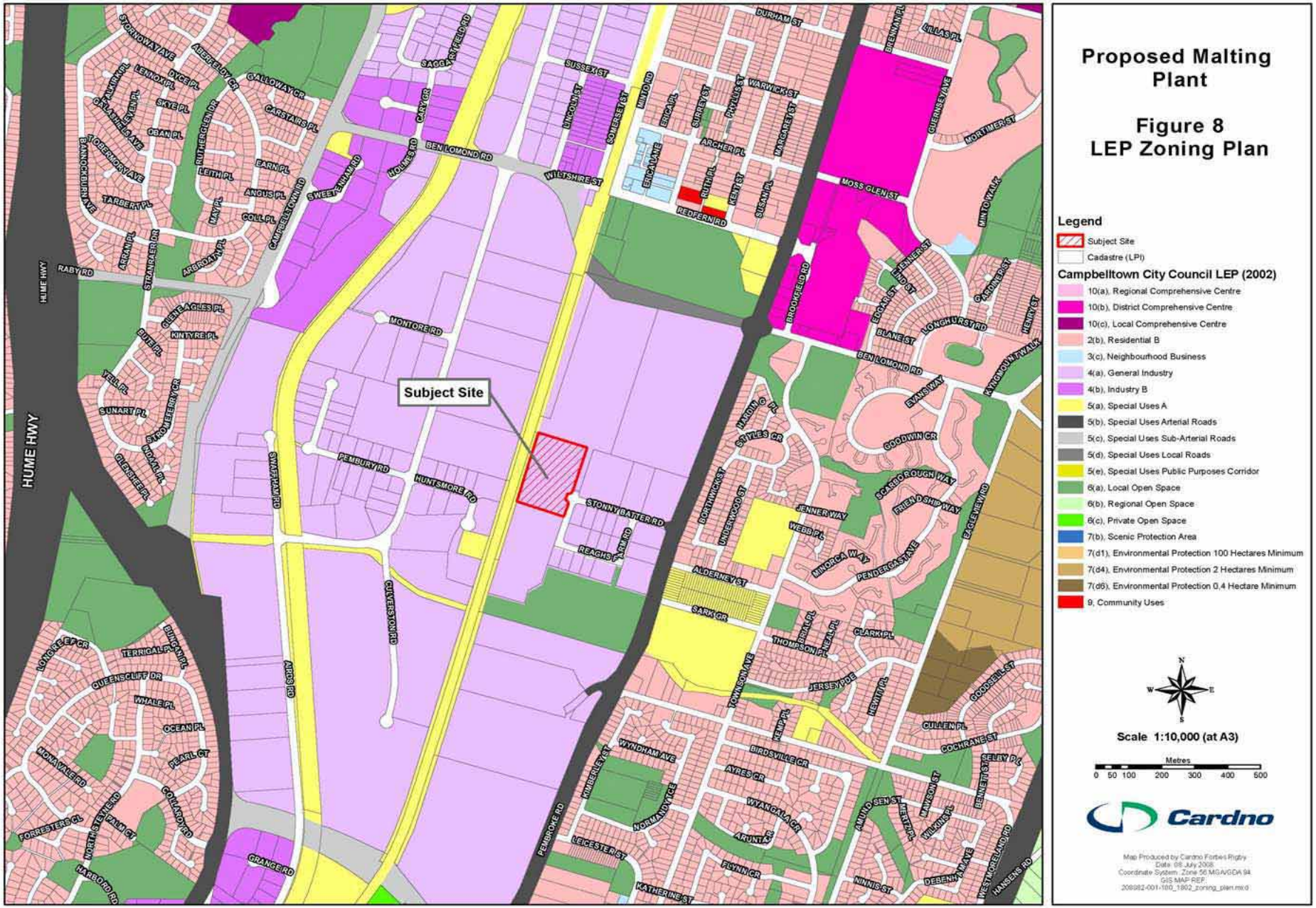
4.5.3. Section 94 & 94A Plans

The EA will assess the development against the requirements of all relevant Section 94 and Section 94A Plans.

4.6. MISCELLANEOUS

Australian Standard 2601-1991: The Demolition of Structures

The EA will confirm the intention to comply with the requirements of this document in relation to the proposed demolition of existing structures on site.


Proposed Malting Plant
Figure 8
LEP Zoning Plan
Subject Site
HUME HWY
BEN LOMOND RD
MONTORE RD
PEMBURY RD
HUNTSMORE RD
STONNY BATTER RD
REAGHS FARM RD
SWAMPHAM RD
CULVERSTON RD
ARDOSS RD
GRANGE RD
WILTSHIRE ST
REDFERN RD
MOSS GLEN ST
BROOKDALE RD
RABY RD
Legend
Subject Site
Cadastre (LPI)
Campbelltown City Council LEP (2002)
10(a), Regional Comprehensive Centre
10(b), District Comprehensive Centre
10(c), Local Comprehensive Centre
2(b), Residential B
3(c), Neighbourhood Business
4(a), General Industry
4(b), Industry B
5(a), Special Uses A
5(b), Special Uses Arterial Roads
5(c), Special Uses Sub-Arterial Roads
5(d), Special Uses Local Roads
5(e), Special Uses Public Purposes Corridor
6(a), Local Open Space
6(b), Regional Open Space
6(c), Private Open Space
7(b), Scenic Protection Area
7(d1), Environmental Protection 100 Hectares Minimum
7(d4), Environmental Protection 2 Hectares Minimum
7(d6), Environmental Protection 0.4 Hectare Minimum
9, Community Uses
N
W
E
S
Scale 1:10,000 (at A3)
Metres
0 50 100 200 300 400 500
Cardno
Map Produced by Cardno Forbes Rigby
Date: 08 July 2008
Coordinate System: Zone 56 MGA/GDA 94
GIS MAP REF:
P8008-001-100_1802_zoning_plan.mxd

5. CONSULTATION

This section describes consultation undertaken as part of this PEA and considers required consultation for the EA.

5.1. STATUTORY BODIES

Consultation has been undertaken with the following Government bodies prior to the preparation of the PEA:

Department of Planning (DoP)

Consultation confirmed that the malting plant is characterised as a Major Project under Part 3A of the EP&A Act. A letter in accordance with Clause 6 of SEPP (Major Projects) 2005 has been submitted to DoP providing a brief description of the proposal. The DoP has advised that the development is a Major Project and that the Minister for Planning will accordingly be the determining authority for this application.

Campbelltown City Council

Meetings have been held with the General Manager, the Director of Environment and Planning and the Council's development assessment co-ordinator and his team. The Council has advised that the project is supported in principle.

Department of Environment and Climate Change (DECC)

A meeting has been held with the Wollongong office of DECC who will assess the proposal. An outline of the project was provided and confirmation of likely environmental issues confirmed.

Department of State and Regional Development

JWM has received support for the project from the Department of State and Regional Development given the associated export income and job generation.

Sydney Water

Discussions have been held with Sydney Water to confirm water supply capacity and to negotiate an agreement to take trade waste associated with the malting plant.

Alinta Gas

Alinta Gas has confirmed that there is sufficient gas supply in the system to service the project.

Integral Energy

Integral Energy has confirmed that there is sufficient electrical capacity to service the project.

Telstra

Telstra services are available at the frontage of the site and can be readily extended to provide the required services to the development.

5.2. COMMUNITY

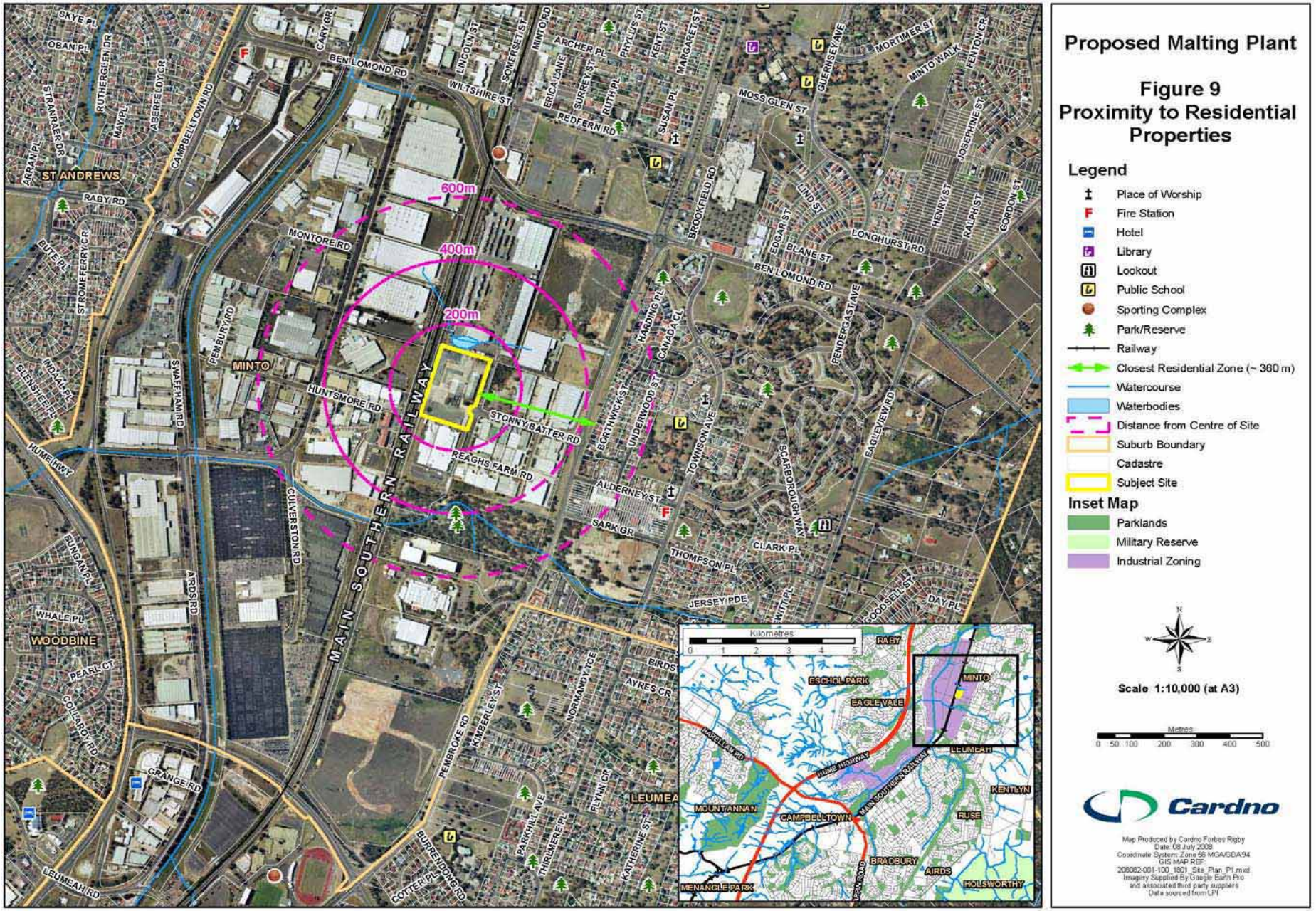
The proposed development is expected to have negligible impact on residential communities. This is because the development site is located within a designated industrial estate and is approximately 400m from the nearest residential property which is located to the east on Borthwick Street, Minto (refer to **Figure 9**). The minimal noise and emission impacts offsite from the proposed development will ensure that residential amenity is not affected.

In addition to the issue of emissions and noise, there will be a negligible visual impact of the development upon residential communities or the locality in general. This is because the development is located within an established industrial area, adjoining the railway and surrounded by existing industrial buildings.

The proposal will have a minimal impact on road traffic. This is because the majority of deliveries and dispatches will be via rail accessed directly from the proposed site. The preliminary assessment indicates that if all 20 staff elect to drive to work, this will not have a noticeable impact on road congestion. As such, it is considered that there will be no public impact of note from this proposal.

Due to the likely limited environmental and amenity impacts associated with the development, the applicant considers community consultation beyond that required by the Major Projects process is unnecessary. However, JWM would be pleased to provide any information sought by the community or by the Council or DoP on behalf of the community.

JWM has received strong support from the State Government and the City Council who are keen to promote appropriate sustainable industrial development with associated employment in Minto, and to capitalise on the facilities provided by MIST.


Proposed Malting Plant
Figure 9
Proximity to Residential Properties
Legend
Place of Worship
Fire Station
Hotel
Library
Lookout
Public School
Sporting Complex
Park/Reserve
Railway
Closest Residential Zone (~ 360 m)
Watercourse
Waterbodies
Distance from Centre of Site
Suburb Boundary
Cadastre
Subject Site
Inset Map
Parklands
Military Reserve
Industrial Zoning
600m
400m
200m
MINTO
ST ANDREWS
WOODBINE
LEUMEAH
MAIN SOUTHERN RAILWAY
HUME HWY
Scale 1:10,000 (at A3)
Cardno
Map Produced by Cardno Forbes Rigby
Date: 08 July 2008
Coordinate System: Zone 56 MGA/GDA94
GIS MAP REF:
208082-001-100_1801_Site_Plan_PI.mxd
Imagery Supplied By Google Earth Pro
and associated third party suppliers
Data sourced from LPI

6. ENVIRONMENTAL IMPACT

This section describes the potential environmental impacts identified from the proposed malting plant. Where appropriate a methodology for assessing and addressing these matters is provided.

Joe White Maltings is an Australian company who has been in operation for 140 years. The firm has established and operates 8 malting plants in 6 states and has an enviable operational and safety record. JWM has an ongoing commitment to invest in the latest technologies in order for their operations to be sustainable and efficient. Their extensive experience and industry knowledge demonstrated by their existing operational plants will ensure that environmental impacts are minimised and any issues addressed in the planning and operational phases of the development.

The proposed JWM development at Minto will incorporate and maintain appropriate environmental standards and comply with all NSW Government policies and legislation. JWM will conduct all operations in an environmentally sensitive manner in order to protect the environment and to minimise potential impacts upon the community. This will be done under an Environmental Protection Licence.

The following issues are identified in the PEA as being of relevance to the proposed Minto plant:

- Air Quality (Dust and Emissions);
- Odour;
- Acoustics (Noise);
- Water Management (including Flooding and Drainage);
- Contamination;
- Waste Disposal and Water Recycling and Disposal;
- Demand on Services;
- Climate Change;
- Transport;
- Visual;
- Lighting;
- Vermin;
- Fire;
- Ecological;
- Heritage (European and Aboriginal); and
- Cumulative Impacts.

6.1. AIR QUALITY (DUST AND EMISSIONS)

Dust generation will be a minor consideration on the site since the majority of the grain being processed in the malting facility will be in wet form. Dry handling will be confined to conveying barley from the barley storage silos into the steep vessels via the cleaning plant and returning from the kiln through the malt cleaning plant back to the malt storage silos. The movement of dry product will be in fully sealed conveyors to contain dust emissions.

Conveyors handling dry product will be subject to negative air pressure to contain dust emissions. Where dry product changes direction, negative air pressure dust systems will be used to prevent dust emission.

Aspiration systems will remove the dust and the dust will be transferred to the by-products collection system.

By-product and collected dust will be transported off-site in sealed trucks and transported to dairy farms to be used as stock feed. A regular site cleaning process will be carried out to collect any dust which has escaped the dust collection system. This also minimises the unlikely threat of spontaneous combustion by regulating the availability of oxygen and maintaining a hygienic environment. On-site hygiene will be maintained at a high standard to minimise any airborne pollution and remove the attraction of waste material as a food for birds and vermin.

In respect of the packing operations, grain movements into receival, storage and for out-loading will be in covered conveyors, with appropriate dust collection and control.

The proposed dust control measures will be of a high standard and will ensure any impacts on the quality of air from the facility will be suitably controlled. Additional measures to protect air quality are therefore considered to be unnecessary.

During the demolition and construction phase of the proposed facility dust emissions may occur. Dust generated during the initial earthworks stage is expected to be well below EPA Guidelines. The demolition and building contractors will implement appropriate erosion and sediment controls to minimise potential impacts of dust generation on surrounding land uses.

A Construction Management Plan will be prepared prior to construction commencing which will provide further details in this regard.

Other than dust emissions and odour (dealt with in the following section), there are no air quality issues associated with the proposed plant.

6.2. ODOUR

Generally, the malting process produces no offensive or unpleasant odour. The process involves the conversion of malting barley into malt over a six day germination and kilning operation. Water is added to the barley to encourage germination and the rate of germination is carefully controlled over the first 5 days. On the sixth day, the germinating malt is in a kiln for 20 hours.

The only distinctive odour that can be detected has been described as similar to a ‘fresh cut lawn’, a ‘grassy smell’, sometimes faintly smelling of ‘cucumbers’. It is not known to be offensive. JWM has operations around Australia and have had no complaints of offensive odour from the malting process. Indeed in Europe, it is common for malting plants to be traditionally located in village/town centres.

Odour will be generated during the germination phase, when the air off the grain bed is passed to atmosphere, but this is rapidly dispersed. During kilning, again, the heated air passed through the grain bed and into the atmosphere will produce the ‘cut-lawn’ odour for a period of time, but as stated above, it is not considered offensive.

For this reason, no odour studies were conducted for this PEA nor have they been required for other plants established elsewhere in Australia. The nearest residential properties are some 400 metres to the east. If any odour issues are identified, mitigation measures will be proposed to limit the occurrence of odour leaving the property boundaries.

In this regard, any offsite odour is likely to be confined to the industrially zoned land.

It should be noted that, for the Perth malting plant, no complaints have been received regarding odours notwithstanding that there are residential properties within a kilometre and the plant has been operational for over a decade.

In summary, given the location of the proposed malting plant in an industrial environment, it is not anticipated, based on other similar operations around Australia, to give rise to any issues of concern related to odour.

6.3. NOISE

As the proposed works are in proximity to existing developments, there is potential for noise impacts during demolition, construction and operation. The industrial nature of the area and the railway contributes to existing background ambient noise levels.

During construction, noise will be generated from construction and demolition works and the movement of trucks and equipment on and off site. Maintenance of construction plant and equipment and restriction of construction hours will minimise short term impacts of construction noise.

A study was undertaken by Herring Storer Acoustics (1996) to evaluate the noise which would emanate from the similar JWM facility at Forrestfield, Perth. This study found that the noise emitted would be dominated by the kiln fans and ventilation systems. Noise assessments were not carried out for other sources, such as conveyors, as they had been designed to minimise noise emissions and had no offsite impacts.

The acoustics report of the JWM Forrestfield plant recommended that, if required, noise levels could be reduced by the implementation of one of the following forms of control:

- Selection of fans which lower output noise levels
- Installation of acoustic silencers to the fan systems as required
- Installation of acoustic louvres to the fan systems as required
- Depending on the final arrangement of the dust extraction systems, the installation of barriers as required around the systems.

In response to this recommendation, fans were installed by JWM with lower output noise levels and similar fans will also be utilised at Minto.

JWM will undertake a noise impact study as part of the EA and comply with the NSW Noise Regulations. There is expected to be minimal impact on properties surrounding the proposed facility as the plant is to be located within an industrial area, approximately 400m from the nearest residential property.

As previously indicated, the Forrestfield plant in Perth has been operational for over ten years and no noise complaints have been received. In 2002, JWM commissioned Herring Storer to do a follow up study of noise emissions from the site boundaries of the Forrestfield plant given it was then fully operational. Their Boundary Survey Study concluded that the plant complied with the requirements of the Environmental Protection (Noise) Regulations (WA). The only noise exceedence was associated with one of the drying kilns but the offsite impact was confined to the adjacent rail reserve hence compliance with the Noise Regulations. A copy of this study is contained in **Appendix C**.

6.4. WATER MANAGEMENT

6.4.1. Flooding

Campbelltown City Council is currently undertaking a study of the Bow Bowing/Bunbury Curran Creek Catchment which includes the subject site. The study is intended to improve the Council's understanding of flood behaviour in the catchment and is expected to be completed in late 2008. Once the study is finalised, the flood affectation of all properties will be reassessed.

In the interim, discussions with the Council have indicated that there are no concerns with flooding associated with this project. The site is already developed and is in an established industrial area. The proposed development works will include a new, upgraded stormwater system designed in accordance with the current Australian and Campbelltown Council Standards. These measures will ensure that flows from the site and upstream catchments will be managed to ensure adequate protection of people and property.

6.4.2. Groundwater

Groundwater is a valuable resource, the contamination of which could be detrimental to the local ecosystem. This is highly unlikely to occur at this site as the development will result in what will be essentially a 100% impervious surface and all surface runoff will be channelled to a formal pit. The pipe stormwater system will be designed to accommodate the expected flows. The limited chemicals stored on-site will be stored in appropriately secured areas and any spillage directed to an appropriate waste disposal system.

The site will be composed of hardstand areas leaving the majority of the site as impervious.

6.4.3. Surface Water (Drainage)

A review of on site catchments and drainage will be undertaken as part of the EA to ensure that surface water runoff is adequately controlled and treated via provision of a proprietary Gross Pollutant Trap (CDS or similar) prior to discharge to Council's stormwater system.

The site is bounded to the south by an existing easement for stormwater which simplifies the drainage strategy by creating a convenient connection point (subject to detailed design). Initial discussions with Council indicate that adequate capacity is available in the downstream stormwater system and that on-site detention (storage) will not be required. A Concept Stormwater Management Plan will be prepared and included within the EA indicating the approximate location and size of pits and pipes, overland flow paths and the connection point to Council's stormwater system.

Surface water runoff during the construction phase of the project will be managed in accordance with an approved Soil and Water Management Plan (SWMP). The SWMP will identify the type and location of sediment and erosion control measures required to ensure that sediment laden water is prevented from leaving the site. It will be included within the Construction Management Plan prepared prior to any development commencing.

6.5. CONTAMINATION

In view of the previous long term usage of the site for timber truss storage and the current sanitary clothing bulk materials storage it is not anticipated that there will be any significant site contamination issues relating to the proposed industrial use.

Nevertheless, a Stage 1 contamination survey will be undertaken to determine potential previous use contamination, if any, and any treatment that may be necessary for site remediation. The findings will be included in the EA.

6.6. WASTE DISPOSAL, WATER RECYCLING AND DISPOSAL TO SEWER

6.6.1. Waste

Demolition and construction will generate general building waste (e.g. timber, masonry, scrap metal, packaging materials and plastics). This phase of the proposal will require the development of a Waste Management Plan to ensure efficient resource recovery and minimise environmental impacts. The Waste Management Plan will form part of the Construction Management Plan.

Waste from proposed day-to-day site operations will be collected in onsite containers designated for different material types. Where appropriate, waste would be sent for recycling, and if this is not possible it will be removed from site by a waste contractor and dealt with in accordance with Local and State guidelines.

The waste generated by the cleaning of the barley will be collected and transported off site in containers. This product will be sold to the agricultural industry for cattle and poultry feed.

6.6.2. Water Recycling and Disposal

The water from the malting process will be processed through a world-best-practice treatment plant. JWM operates a Membrane Bio Reactor (MBR) plant together with a reverse osmosis (RO) plant at its Perth facility in Western Australia to recycle the water used in the malting process for onsite reuse. A similar plant will be installed at the Minto site.

Full sewerage disposal capability would only be required in the rare event of a major treatment plant shutdown as the plant process water is required to be disposed of in a continuous and uninterrupted manner. The treatment plant proposed for the Minto facility will be specifically designed to cater for the malting process. The process water will be treated in an aerobic digester to a standard of around 20 BOD/20 Suspended Solids before being passed through the RO plant. Final water quality will meet a Class A water standard. The brine resulting from the RO process will be around 6000ppm concentration and will be disposed to the sewer at low volume/high concentration levels.

Where possible, process water will be treated on site and recycled to minimise water consumption. Recycled water will provide approximately 55% of the total process water needs of the plant.

There is no water treatment required from the packing operation.

A main trunk sewer runs across the western boundary of the site. Indications from Sydney Water are that it has the capacity to receive the total discharge volume from the malting plant if required. As indicated, it is intended to install a full water treatment plant on the site and this will minimise both water required and discharge to sewer.

Discussions with Sydney Water regarding both water supply and sewer disposal are currently being undertaken.

Further details of the water supply requirements, the water treatment plant and the outcome of the discussions with Sydney Water will be presented in the EA.

6.7. DEMAND ON SERVICES

6.7.1. Electricity

The site requires connected power of 6000 kVa for the proposed operations.

Initial discussions have been held with Integral Energy regarding the supply of power to meet this demand. Supply is readily available as there is a major sub-station located approximately 200 metres from the site, with an available 11,000 volt electrical conduit to the frontage of the site.

A kiosk type sub-station will be provided on the site to provide power to both the malting and packing plants.

6.7.2. Gas

Total gas for the malting plant capacity of 110,000 tonnes will require 900Gj of gas per day, with peak demand of 75Gj/hour. Discussions have been held with Alinta Gas and various retailers regarding gas supply. In terms of gas supply, there is a 100mm secondary (1050 kPa) gas supply main located in Reaghs Farm Road in close proximity to the site. The suitability of this main to meet expected demand for the site will be assessed by Alinta in association with interested retailers. Upgrades to the network, should any be required, are expected to be funded by the gas retailer.

6.7.3. Water Supply

The malting process uses a significant amount of water. A supply of up to 770kl per day is required for the plant's operation, but with a recycling of the plant process water, incoming supply can be reduced to around 280kl per day, with 55% water savings from the recycling process.

Initial discussions with Sydney Water indicate that sufficient capacity is available to supply the required water.

Water supply issues will be addressed further with Sydney Water via a formal feasibility application and will be detailed in the EA.

6.8. CLIMATE CHANGE

If required, the level of greenhouse gas (GHG) generated by the proposal can be calculated and the level of impact on the environment documented in the EA.

6.9. TRANSPORT

The development site is located within an existing industrial estate which is well serviced by road and rail.

6.9.1. Rail

The Main Southern Rail Line runs adjacent to the western boundary of the proposed site. Development consent has been granted to construct rail sidings to access the site.

The proposed integrated malting and packing facility at Minto will utilise rail for grain movements both into and from the plants. Barley will be received in purpose built, reusable rail containers through the rail siding on the MIST site. The containers will be offloaded and emptied via a special inverter unloader, a device that will elevate and tip the container into a receival pit. From this pit, the barley is elevated and conveyed into barley silos. From these silos, the grain is conveyed into the process facilities.

It is anticipated that the maximum utilisation of rail for all receival and dispatch movements (excluding the domestic deliveries), will replace some 12,500 truck movements that would otherwise have been required to effect an operation of this scale.

The existing and approved rail infrastructure will accommodate the freight requirements of the proposed malting and packing plants.

6.9.2. Road

It is possible that small quantities of deliveries and dispatches will be via road transportation. There will also be a design capability to receive barley by road in an emergency situation.

The proposed site has direct access to Stonny Batter Road which provides easy access to Pembroke Road. Access to the northbound carriageway of the Hume Highway is just over 7km from site and exits from the south and northbound carriageways are approximately 4km from the site. This provides excellent access to the site for deliveries and to Port Botany for exports.

The expected use of road transportation for the proposed malting plant is very low due to the focus upon rail transportation. It is anticipated that vehicles associated with JWM can be accommodated upon the existing road transport network without any detrimental impacts on congestion, surrounding land uses and the construction standard of the road network. Truck movements will be confined to those detailed elsewhere in this report including for removal of product waste, delivery of supplies and maintenance. Car movements will be limited to employees (maximum 20) and visitors to the site (minimal). Given the site location in an established industrial estate, the high utilisation of rail and the fact that the development is replacing an existing storage use of the site, a Traffic Impact Assessment is not considered necessary.

Onsite parking requirements will be provided in accordance with the RTA's Guide to Traffic Generating Developments and any relevant local Development Control Plan.

Demolition and construction will utilise road transport for the delivery of plant and machinery. A Traffic Management Plan will be developed and included within the Construction Management Plan.

6.10. VISUAL

The bulk and height of buildings and other structures forming the malt processing facility are illustrated in the drawings in **Figure 4.** The height and scale of the proposed development will be a not insignificant feature in the locality. The various operational areas such as the germination vessels and kilns are designed specifically to process malt and as such, cannot be greatly altered but are not considered aesthetically unattractive to the surrounding built environment.

The industrial zoning of the area gives rise to an expectation that industrial development will result on the site. Existing developments on the proposed site and on adjacent lots are industrial in nature and in some instances could be considered to be in a poor state of repair. This results in the locality not being visually attractive. The visual impact from the proposed development is not believed to have an overall detrimental impact on a locality of this nature and could be viewed as an improvement to the existing site development.

Landscaping around site boundaries will be provided, as appropriate, to mitigate visual impacts at ground level.

6.11. LIGHTING

Lighting of the proposed facility has the potential to impact upon adjoining land. Accordingly, lights will be placed in suitable locations to minimise light spill around the facility while maintaining safe operational conditions. The onsite traffic route will be lined with street lights as well as flood lights being installed in the operational areas of the facility. There will also be walkway lighting in the gantries.

The impact of the lighting of the JWM site on the immediate area is not anticipated to be of major concern as the adjacent land uses are industrial in nature. Lighting will be directed downward at angles to minimise light spillage.

The development will comply with Australian Standard AS 4294 – 1997 Control of the Obtrusive Effects of Outdoor Lighting. This sets the requirements to be met for external lighting arrangements, particularly with regard to the potentially adverse effects of outdoor lighting on nearby residents, users of adjacent roads, transport signalling systems and astronomical observations.

6.12. VERMIN

The presence of feral animals on-site is undesirable due to health and safety requirements. Feral animals, such as the Black Rat (Rattus rattus) and the House Mouse (Mus domesticus) are potential feeders of spilled barley grain. Rats are capable of transmitting the diseases leptospirosis and salmonellosis to humans. Pigeons are also possible site pests, which again feed on spilled grain.

Strict health standards will be maintained throughout the processing operation. Building design will pay close attention to construction and finishing details to preclude the entry of vermin. Any grain spills will be immediately cleaned up. In the event of any vermin being located on-site, appropriate control measures will be undertaken.

As an export facility the plant would be controlled by AQUIS requirements which require a higher level of hygiene and monitoring than domestic based industries.

6.13. FIRE

The process of malting barley is of six day duration, during which the grain is wet for 5 of those days, only becoming 'dry' and potentially flammable for the last 4 hours of the whole process time.

The process begins when barley is drawn from the silos at about 12% moisture, weighed through a drop-weigher and then mixed immediately with water to form a slurry. This slurry is then pumped to the steep vessels, where more water is added and the grain remains alternatively under water and drained in the vessel for 24 hours. In this part of the process, the grain is not capable of combustion.

After 24 hours, the grain is conveyed by belt conveyor to the germination vessel. Here it resides for the next 96 hours, with water being sprayed onto the grain to encourage and control the rate of germination every 12 hours or so. Again, in this part of the process, the product is not combustible.

At the end of this period, the grain, which is now around 43% moisture, is moved by belt conveyor into the kiln. Here it is subject to low heat over the next 20 hours, as the moisture is gradually reduced from 43% down to around 4%. It is only during the last 4 hours or so as the moisture content is reduced that the grain is potentially combustible.

It should be noted that JWM has had no experience with, nor have heard of any combustion of, drying malt in their experience in Australia or around the world.

Heat for the kiln is provided by a gas burning heat exchange system, which is physically separated from the process and fully alarmed and monitored back to the fire control panel. Smoke detectors are fitted in the kiln, similarly connected to the fire control panel. The heated air through the grain bed starts off at around 50°C, reaching a maximum of around 80° C, during the 20 hour kilning cycle.

At the end of the malting process, the dry grain is then conveyed by steel drag conveyor and stored in vertical steel silos, pending analysis and eventual dispatch to customers.

The dry barley and dry malt is moved around the storage system by bucket elevators, which are all fitted with under-speed sensors which are inter-locked to motor controls, so that if a failure of a belt or pulley is detected, the elevator is shut down.

All production vessels are of steel/stainless steel internal construction, with external "Colourbond" cladding. The grain cleaning plant is similarly of steel construction, with smoke detectors wired back to the main fire control panel. The small office which will accommodate 20 people is of brick construction, alarmed and monitored.

Extensive interlocks are provided between motors, switchboards and conveying or elevating systems, with shut down and alarm default settings. A full fire control panel with links to appropriate fire station completes the fire prevention and control system.

All personnel complete full fire response training, with Fire Wardens trained and appointed. Fire safety equipment is also in place around the plant as required by the fire authorities. The site is designed for emergency vehicle access. Provision is made for fire hydrants and hose reels located at strategic points around the site.

6.14. ECOLOGICAL

The site is currently almost entirely developed with either buildings or hard surface areas. The Campbelltown City Council has confirmed that the site does not comprise critical habitat A formal ecological assessment is not considered necessary given the site is a cleared industrial lot amidst an industrial area as confirmed by **Figure 2**.

6.15. HERITAGE (EUROPEAN AND ABORIGINAL)

The site is currently almost entirely developed with either buildings constructed post 1970 or hard surface areas. Campbelltown City Council has confirmed that the land is not within a designated Conservation Area and there are no items of environmental heritage recorded for the site.

A formal heritage assessment is therefore not considered necessary.

Register searches will be undertaken and documented in the EA confirming that there are no recorded Aboriginal objects or places given the disturbed and developed nature of the land.

6.16. CUMULATIVE IMPACTS

The proposed site is located within an existing industrial area and is zoned for industrial purposes.

As off site impacts are minimal no cumulative impacts are likely.

7. PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT

A preliminary environmental risk assessment has been undertaken of the project specific construction and operation risks. Risks were identified based on the site location and an understanding of the technology utilised in the malting process. The preliminary environmental assessment provides further context to the risk assessment.

The risk assessment is based on an index formed from the perceived likelihood of an occurrence, and the subsequent consequence of that occurrence. Both likelihood and consequence were measured on a scale of 1 – 5 (with 1 corresponding to improbable/negligible and 5 corresponding to frequent/catastrophic). A subsequent index was developed and all identified risks classified as belonging to either Low, Moderate or High risk categories (refer **Table 1**). This is a conservative index, emphasising the number of Moderate and High risks identified.

Table 1: **Environmental Risk Assessment Matrix**

Likelihood	Consequence				
	Insignificant	**Minor**	**Moderate**	**Major**	**Catastrophic**
Improbable	Low	Low	Low	Moderate	Moderate
Remote	Low	Low	Low	Moderate	High
Occasional	Low	Moderate	Moderate	High	High
Probable	Moderate	Moderate	Moderate	High	High
Frequent	Moderate	High	High	High	High

The results of the risk assessment are shown in the following pages. All risks identified are seen to be of a 'Low' or 'Moderate' nature.

The management techniques employed during construction, nature of operations and industrial nature of the lands surrounding the site significantly limits the risks associated with noise and visual amenity as a result of the proposed malting facility. Similarly, the operation of the malting plant within an enclosed, negatively-pressured building reduces the risk of impacts beyond the site boundary associated with rare events such as system failure.

The use of rail as the key mode of transport for the majority of incoming materials (barley) and outgoing products (malt and packaged grain) is a significant factor in the management of the external impact of site operations. The majority of risks identified to be 'moderate' relate to either environmental or plant specific issues. Most social impacts are expected to be low risk.

Strict adherence to construction and operational environmental management plans, environmental licensing and the establishment of regular operation, plant and equipment checks and inspections will further manage and minimise risks associated with the proposal.

Table 2 - Preliminary Environmental Risk Assessment - Proposed Joe White Malting Malt Processing Facility

Environmental Impact	Process/Activity	Potential Impacts from Malting Plant	Risk	Comments and Mitigation Actions
Odour and Air Quality	Processing the barley into malt	Unexpectedly high odour or dust emissions due to plant or process malfunction resulting in impacts on residences and businesses	**LOW**	Installation of air filtration/fan technologies if required will limit the risk of odour emissions. Installation of emergency shut-down procedures to a neutral state will ensure causes of emissions are as short-lived as possible.
	Demolition of existing buildings and Construction of Malting Plant	Exceedance of acceptable dust limits during construction, particularly at sensitive receivers (eg residential areas).	**MEDIUM**	Effective dust management can be established through the implementation of suitable sediment and erosion controls. The location of the works and nature of the area diminishes the likelihood of dust levels exceeding guidelines.
	System Failure/Shut Down (eg associated with loss of power)	System failure resulting in odour emissions	**LOW**	The handling and processing of barley is entirely contained with a negatively pressured system and should malt processing systems fail, all effects are expected to be localised to the site and immediate surrounds.
Traffic and Transport	Construction traffic	Pedestrian incident associated with construction traffic	**MEDIUM**	No incidences have occurred in the 8 other malting plants JWM have constructed elsewhere in Australia. A detailed construction traffic management plan will be developed and implemented.
		Road traffic incident resulting from changed transport routes	**MEDIUM**	Detailed and visible signing of road changes and speed limits will be provided.
	Operational traffic	Pedestrian incident associated with road-related delivery traffic	**MEDIUM**	The majority of materials and operational malted product will be received and dispatched via rail; diminishing the risk of traffic related accidents. Detailed and visible signage of road changes, pedestrian access and speed limits will be provided.
		Waste/chemical spillage during transport	**MEDIUM**	Measures will be taken to minimise spillage risk for loading and unloading of rail.

Environmental Impact	Process/Activity	Potential Impacts from Malting Plant	Risk	Comments and Mitigation Actions
Traffic and Transport (cont.)	Rail Transport	Train breakdown or accident	**LOW**	The rail spur is currently under-utilised and capable of carrying a greater capacity. Unexpected breakdowns or accidents would have a limited impact. All rail usage will be appropriately scheduled with other users of the lines.
	Road Traffic Congestion	Congestion along Stonny Batter Road resulting from increased traffic flows	**LOW**	Few vehicles are expected to visit the site during the operational phase as major deliveries and despatches are via rail.
Noise	Construction of Malting Plant	Exceedance of acceptable noise limits during construction, particularly at sensitive receivers	**LOW**	Effective temporary noise barriers can be established. The location of the works and the industrial nature of the area diminishes the likelihood of noise levels exceeding acceptable noise limits.
	Operation of Malting Plant	Exceedance of acceptable noise limits during operation, particularly at sensitive receivers	**MEDIUM**	Effective noise barriers, low noise fans and acoustic louvers can be installed on or adjacent to equipment. The location of the works and nature of the area diminishes the likelihood of noise levels exceeding guideline levels.
	Operational road and rail traffic	Higher volumes of vehicles and trains than anticipated, resulting in increasing noise levels	**LOW**	Scheduling of vehicles to avoid peak traffic times and avoiding out of work hours for train deliveries areas can be implemented if further analysis indicates this is necessary.
Water/ Wastewater	Water usage within the Malting process	There will be an initial and ongoing demand for potable water.	**MEDIUM**	Once the plant is established recycling of approximately 55% of the process water will occur by a Membrane Bio Reactor Plant. This treated water will be reused by the plant. Stormwater will also be harvested from roof areas to reduce the potable water demand.

Water/ Wastewater	Water usage within the Malting process	Overflow of wastewater from the process into the stormwater system.	**MEDIUM**	Wastewater will normally be treated before reuse or discharge to the Sydney Water system under a trade waste licence. Where this capacity is exceeded, an overflow facility capable of capturing specific volumes will be provided.
Trade Waste	Operation of Malting Plant	Increased Trade Waste from the Malting process on existing loads within the Sydney Water system.	**MEDIUM**	There will be a need for a Trade Waste Agreement with Sydney Water. The sewer system must be able to cope with a continuous supply of trade waste.
Flooding	Construction of Malting Plant	Floodwaters entering the site under a large wet-weather event	**MEDIUM**	A detailed sediment and erosion control plan will limit the impact of any flooding events.
	Operation of Malting Plant	Floodwaters entering the buildings under a large wet-weather event	**LOW**	The enclosed nature of the building makes flooding unlikely. Low level bunding can be provided at all access/egress points for all buildings.
Heritage	Construction of Malting plant	Inadvertent destruction or damage to known or unknown items of aboriginal or European heritage	**MEDIUM**	Public registers indicate no heritage items exist on site. A search of Aboriginal sites on the register will be undertaken. Should any items be identified, the appropriate authorities would be informed and procedures adopted. Construction employees will be informed of the need to halt works should any potential heritage items be unearthed during the course of works. It is considered unlikely that heritage items are present on site.
Visual Amenity	Lighting resulting from 24 hour operation	Light disturbance (including night lighting, security lighting and traffic lighting during operation)	**LOW**	Location of site and nature of surrounding areas will prevent night lighting impacting residential areas. Shielding will be provided on exposed external lighting.
	Construction of Malting Plant	Disturbance to Visual amenity during construction	**MEDIUM**	There will be some short-term impact. The industrial nature of the area will minimise this impact.

Visual Amenity	Operation of Malting Plant	Disturbance to Visual amenity during operation	**LOW**	The facility will be located within an existing industrial area and is expected to visually blend into the area. Landscaping around the site boundary would further mitigate visual impacts at ground level.
Energy Use	Operation of Malting Plant Operation of Malting Plant	Higher usage of electricity than expected Higher usage of gas than expected	**LOW** **LOW**	A major sub-station is within 200m from the site and a smaller substation will be provided onsite. A gas supply line is in close proximity to the site. In the event that this is found to be insufficient an upgrade of the supply line may be required.
Flora and Fauna	Construction of Malting Plant Operation of Malting Plant	Destruction of remnant vegetation on site. Fauna and Flora species affected by emissions from the site.	**LOW** **LOW**	The site is fully developed with hardstand areas. There is no significant remnant vegetation on-site. Landscaping, including screening vegetation will comprise native species and improve the natural environment. The enclosed nature of the proposed works will limit external impact. Management of waste will be in accordance with a waste management plan and it would be expected that the site is licenced for emissions under the *Protection of the Environment Operations Act*, 1997. No emissions are proposed which would adversely impact flora or fauna.
Health	Operation/system failure of Malting Plant	Illness of employees resulting from exposure to harmful materials.	**MEDIUM**	Appropriate safety equipment and training will be provided to all employees.
Vermin	Operation of Malting Plant	Infestation of vermin and pests leading to health risks for workers and surrounding premises.	**MEDIUM**	Strict on-site hygiene and health regulations, plant design and regular plant and equipment inspections will minimise the attraction of vermin to the site. AQUIS requires this to be ensured in order for export status to be maintained.
Fire Hazard	Operation/system failure of Malting Plant	Fire hazard, including that associated with combustible grain on-site.	**MEDIUM**	Employee training and regular plant and equipment inspections will minimise fire hazard.

8. ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

This section summarises the ESD principles of relevance to the project.

Ecologically Sustainable Development is founded upon four basic principles to ensure that proposed developments minimise their ecological footprints. These are:

- The precautionary principle
- Inter-generational equality
- Conservation of biological diversity and ecological integrity
- Improved valuation, pricing, and incentive mechanisms in relation to environmental factors.

JWM's proposed malting plant at Minto is seen to be compliant with these four guiding principles. This is because:

- Due to the nature and location of the development and the inbuilt environmental protection measures there are no threats of serious or irreversible environmental damage;
- The health, diversity and productivity of the environment is maintained by this proposal due to the reuse of an otherwise underutilised brownfields site which does not accommodate a diversity of plant or animal life;
- Conservation of land is achieved through the reuse of previously developed land as opposed to potentially developing a greenfields site and affecting the existing natural ecological environment;
- JWM will meet the polluter pays principal through expenditure on their own used water recycling plant and the reuse of this water on site. JWM has set credible environmental goals for their operations and these are pursued as part of this development; and
- The development will utilise existing rail facilities for freight rather than add to road freight costs and associated societal disbenefits.

9. DEMOLITION & CONSTRUCTION MANAGEMENT

This section provides information regarding safety measures proposed during the demolition of existing buildings on site and construction of the proposed facility.

9.1. DEMOLITION

It is proposed to demolish the existing site buildings prior to commencing construction of the malt processing and packing plants. JWM will employ a company experienced in demolition to be the Lead Contractor to carry out this work.

A Construction Management Plan (CMP) will be developed and endorsed prior to demolition commencing. The CMP will provide information on expectations of the Lead Contractor in relation to:

- Environmental protection measures during works
- Preparation of an Environmental Management Plan where necessary
- Safe work practices and relevant legislation requirements
- Equipment inspections and secure storage
- Site access
- Location of existing services
- Reporting to JWM

The CMP will also provide information on the following matters in relation to demolition works:

- Anticipated environmental impacts:
    - Noise
    - Dust
    - Waste
    - Traffic
- Expected date for commencement of demolition
- Expected duration of work
- Onsite work hours per day
- Expected number of jobs generated

9.2. CONSTRUCTION

JWM has in-depth knowledge of the construction proposed in this Part 3A application. This is due to the recent construction of the malt processing plant in Perth and given the construction of 7 other smaller plants throughout Australia.

JWM will employ an experienced construction company to be the Lead Contractor for this work.

The CMP will provide information on expectations of the Lead Contractor in relation to:

- Preparation, approval and implementation of an Environmental Management Plan

- Expected environmental impacts:
    - Noise
    - Dust
    - Waste
    - Traffic
- Environmental protection measures
- Safe work practices and relevant legislation requirements
- Equipment inspections and secure storage
- Site establishment and removal
- Location of existing services
- Site access

The CMP will also discuss expected impacts on surrounding land uses and residential amenity in relation to the:

- Duration of construction activities
- Onsite operational hours
- Extent of environmental mitigation measures.

10. CONCLUSION

This section highlights the key findings of the PEA and concludes the report.

Joe White Maltings (JWM) is proposing the construction of a state of the art malting plant, and an associated packaging plant, on an industrial site in Minto in south western Sydney.

The site has been chosen primarily for the following key reasons:

1. It is appropriately zoned and in an established industrial estate, well separated from residential landuses;

2. The site has access to rail which offers significant benefits in terms of reducing the cost and societal impacts associated with transporting raw grain from the rural areas of NSW and processed product to Port Botany for export;

3. The Macarthur Intermodal Shipping Terminal (MIST) immediately adjoins the site to the north. This will provide JWM with access to containers for storage and transport of both raw and processed product, offsetting the cost and lost opportunities experienced currently by MIST in the transport of empty containers to Port Botany and minimising the need and issues associated with storage of raw and finished product under alternative arrangements on the site;

4. There is Local and State Government support to the project and to the location chosen as the proposed facility will offer local and regional employment opportunities as well as allow better utilisation of the existing rail and MIST facilities;

5. The environmental impacts of the JWM facility irrespective of location are considered to be minimal and manageable. However, the site offers the added advantage of being centrally situated within a complimentary industrialised location; and

6. There is ready access to the required utilities and services.

The project represents a $90m investment in a clean industry which will offer substantial export opportunities for the state and nation. It will see the redevelopment of an underutilised site of limited existing amenity and will enable the extension and utilisation of a rail facility, which has existing approvals.

The malting plant is similar to a plant which has been approved and constructed in Perth. That plant is in a not dissimilar suburban industrial location and was approved following full environmental assessment. It has been operational for a decade without any complaints or license breaches. As with all 8 existing malting plants across Australia, the proposed plant will be operated in accordance with JWM strict quality controls. As an export industry, these controls are more stringent than might otherwise apply.

The proposed JWM facilities will meet all NSW licensing requirements.

The development represents an opportunity to promote downstream processing of NSW barley which otherwise is only exported in its natural state offering value adding to this local agricultural industry.

11. RECOMMENDATIONS

This section provides the recommendations of this PEA.

It is recommended that Joe White Maltings:

- Lodge this PEA as an initial application for the Part 3A process, to support the proposed malt processing plant and grain packing facility; and
- Request the Department of Planning to issue a set of Director General's Requirements to guide the preparation of the full Environmental Assessment.

12. REFERENCES

This section cites references and background information used in this Preliminary Environmental Assessment.

Australian Greenhouse Office, Department of Environment and Water Resources, State and Territory Greenhouse Gas Inventories

BSD Consultants (1996) Application for Approval to Commence Development for a Malting Facility on a Portion of the Forrestfield Marshalling Yard

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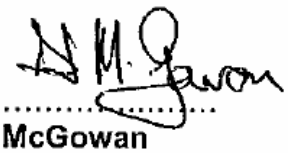
Department of Planning (2001) State Environmental Planning Policy 64 Advertising and Signage

Department of Planning (2005) State Environmental Planning Policy (Major Projects) 2005

Department of Planning (2007) State Environmental Planning Policy (Infrastructure) 2007

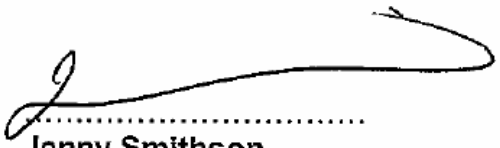
Joe White Maltings, website

Prepared by
for and on behalf of
CARDNO PTY LTD



David McGowan
(Project Planner)

Reviewed by

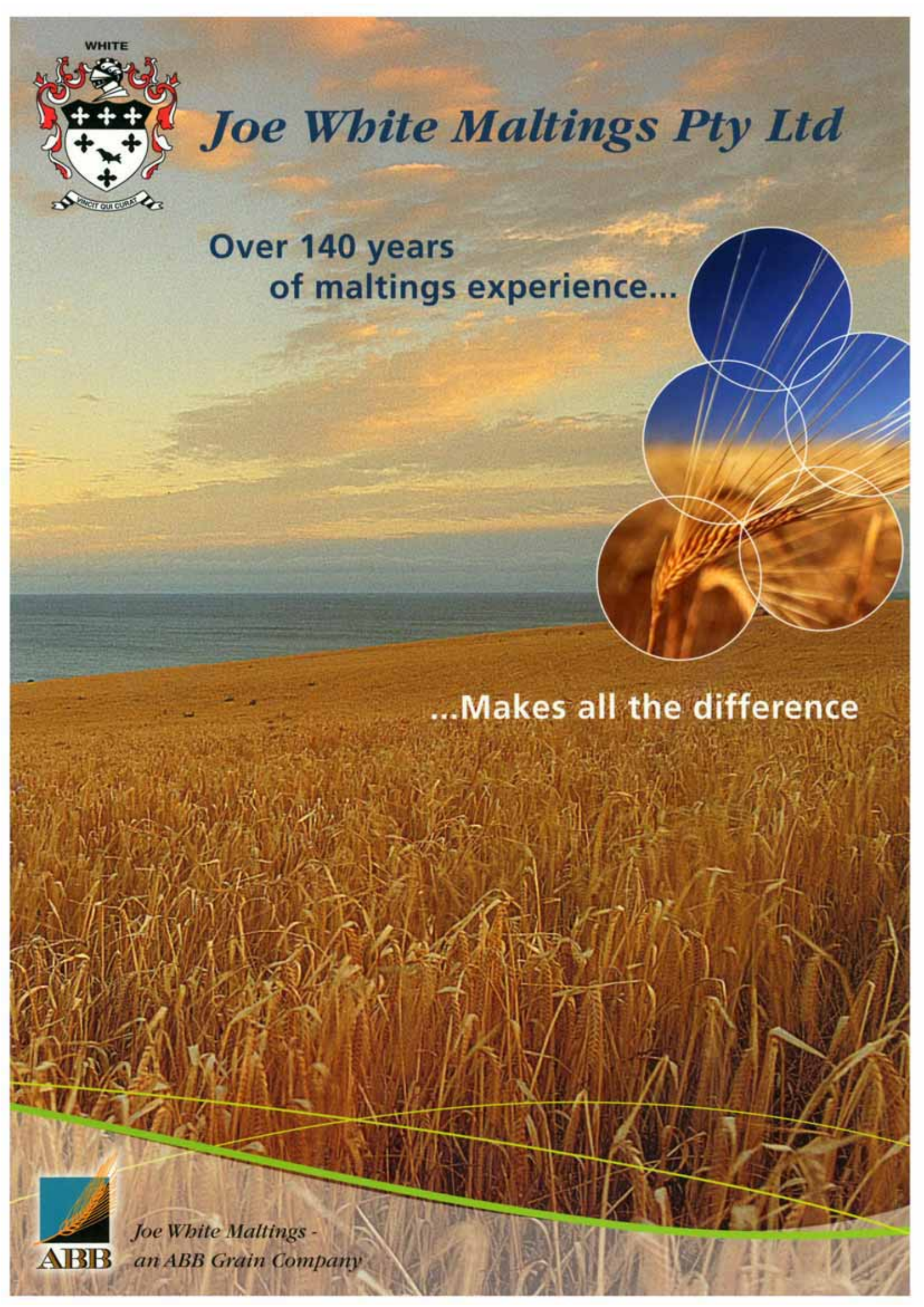


Jenny Smithson
(Director)

APPENDICES

APPENDIX A

JWM COMPANY BROCHURES


WHITE
VINCIT QUI CURAT
Joe White Maltings Pty Ltd
Over 140 years
of maltings experience...
...Makes all the difference
ABB
Joe White Maltings -
an ABB Grain Company

Joe White Maltings: Australia's Largest Maltings Company

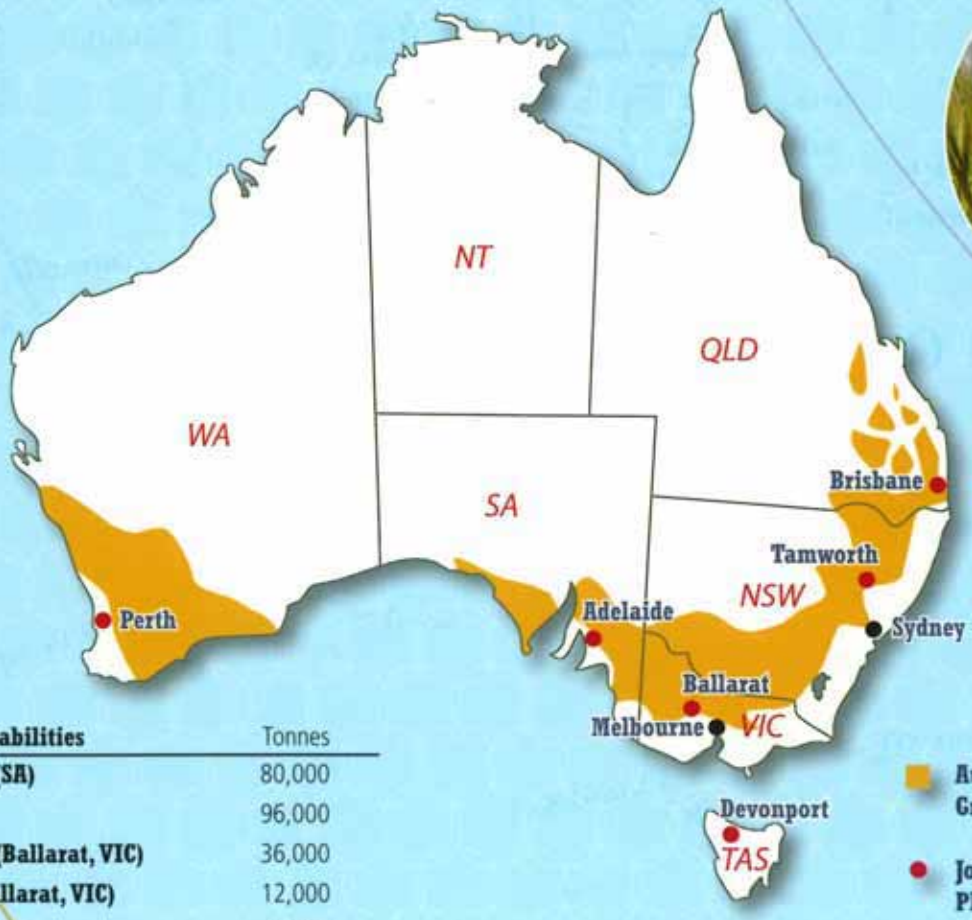
For almost 150 years, Joe White Maltings have been making quality malt. Joe White Maltings, a wholely owned subsidiary of ABB Grain Ltd, is Australia's largest malting company and produces 500,000 tonnes of malt a year. Of this, around 80% is exported into the growing markets of Asia.

About ABB Grain

As one of Australia's leading agribusinesses, ABB Grain's activities extend along the entire grain supply chain from farm production, accumulation and storage to logistics, shipping, processing, fertiliser, financial services and marketing. Joe White Maltings is able to capitalise on these strengths to provide significant advantages to its customers worldwide.

Australia Wide Supplying Worldwide

With eight plants across six states Joe White Maltings' plants are strategically located either near international ports and transport links, or close to Australia's premium barley growing areas, ensuring the delivery of high quality malt to both Australian and international customers.



Malthouse Capabilities	Tonnes
Port Adelaide (SA)	80,000
Cavan (SA)	96,000
Lake Gardens (Ballarat, VIC)	36,000
Delacombe (Ballarat, VIC)	12,000
Devonport (TAS)	6,000
Tamworth (NSW)	45,000
Brisbane (QLD)	25,000
Perth (WA)	200,000
	500,000

A Range of Malts for a Variety of Tastes

Specialty malts

Joe White Maltings is Australia's largest specialty malt producer with a range of malts to suit a variety of customer needs, for both the brewing and food industries.

Quality farming practice

Australia's environment is one of the cleanest in the world. Australian malt has a reputation for being clean and plump with golden colour. Encouraging growers to use good agricultural practices, has resulted in Australia producing arguably the finest naturally grown barley in the world.

A Clean Fresh Environment

Good barley selection: the key to quality malt

The best malt comes from the best barley. With the backing, knowledge and expertise of ABB Grain, Joe White Maltings acquires the cream of Australia's crop. We have developed strategic alliances with grain marketers, and by working with ABB Grain we have forged enduring links across the breadth of the country with Australia's top growers. All of our malting plants comply with ISO and HACCP accreditation to ensure our product is of the highest standard.

Pilsener Malt

Munich Malt

Caramalt

Crystal Malt

Dark Crystal Malt

Caramel 450

Chocolate Malt

Roasted Malt 1400

Roasted Barley

Joe White Maltings Pty Ltd

Perth Plant

Joe White Maltings -
an ABB Grain Company

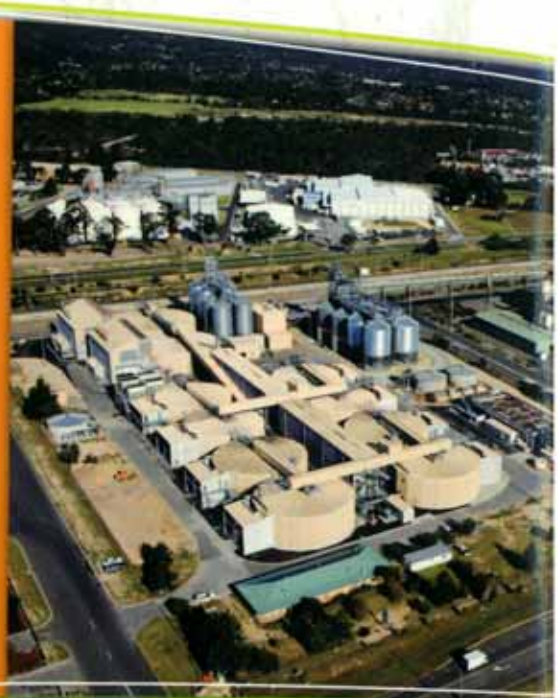
With almost 150 years of operation Joe White Maltings have a reputation as a quality supplier of malting products

Plant Features

Joe White Maltings' Perth plant is capable of producing 200,000 tonnes of premium malt each year. This facility reflects the latest in design technique, hygiene and automatic process control. All these features combine to produce malt of the finest quality to meet individual customers' specifications.

The plant is located approximately 12km from the centre of Perth on the rail grain corridor between grain growers and the export port facilities at both Fremantle and Kwinana. It is adjacent to the Cooperative Bulk Handling Metro Grain Centre (MGC). The MGC is a key 'partner' in the storage and dispatch of grain from the Joe White site. It handles the receival of all incoming barley, cleans the barley, and transfers the barley to Joe White Maltings. After malting the MGC stores the malt and dispatches it for shipping.

The recent doubling of the Joe White Maltings plant's capacity mirrored the original design concept. The innovations originally adopted have been utilised and enhanced, to create a truly great malthouse that sets the standard for the malting process.



The Malting Process

Cleaned barley is steeped over 24 hours, with alternating immersion and air rest stages. While the grain is under water, the germination process is initiated. It is aerated with external air blowers, and carbon dioxide, a product of the grain's respiration, is extracted.

The steeped barley is then transferred to the germination vessels, where it continues to grow under controlled conditions of air temperature and humidity, with water being automatically added to assist in the growth phase.

Germination takes place over the next four days with the development of substantial rootlet growth.

Upon assessment of its development, the 'green malt' as it is now called, is transferred to the kiln for drying (kilning). It takes around 20 hours to dry the green malt to its final moisture level of around 4 percent. This moisture level is important for both the long-term storage and the further processing of the malt by the brewer.

After kilning, the malt is cleaned. Dried rootlets are removed along with any loose husk or small grains. The malt is then held on-site for analysis prior to transfer to the MGC for storage and dispatch to customers.

Quality

The plant is accredited with ISO and HACCP certifications as befits a food grade production facility, as well as Halal and Kosher certification. Quality control of all stages of the process is assured, with great attention to individual batch segregation and subsequent storage and handling, making Joe White Maltings' product the malt choice for the world' s top breweries.

Hygiene & In-Process Cleaning

The emphasis at all stages of production is on hygienic handling of this food grade product. The plant design has made extensive use of stainless steel production vessels and clean-in-place washing systems that allow thorough cleaning of the steeps after each batch.

Stainless steel germination vessels and equipment have been specially designed for optimising a hygienic environment.

There are special in-built high pressure washing systems above and below each germination vessel. These systems rotate and clean the ceilings, walls and floors of each vessel after each batch.

Another key hygiene feature is the use of air-belt conveyors for the movement of product throughout the conversion process. These air belt conveyors are especially gentle on the grain during its movements and therefore minimise any product damage. The air-belts have unique belt washing systems to keep the belts from accumulating residual grain matter.

Caring for the Environment

The conversion of barley into malt uses only gas, air, water and electricity. The use of each of these valuable resources is carefully computer controlled by utilisation of high efficiency fans and heat recovery systems. Waste water is treated to a high quality level and is available for cleaning and hygiene functions.

Complete Control

The entire malting process from barley receival and the conversion process, through to storage and dispatch is controlled by sophisticated computer control systems. Remote controlled video cameras linked back to the production office enable visual process and area control. The control systems allow for the optimisation of malting conditions. Sensors constantly review the ambient conditions and make pre-programmed adjustments to air temperature, kilning temperature, humidity, water additions, fan speeds and batch duration. Daily inspection and physical checking is still an integral part of the quality control and plant management. All plant processes can be monitored from remote locations.

Perth Site Layout and Location

FORRESTFIELD TECHNICAL DATA

	PLANT 1	PLANT 2
Annual Capacity (Tonnes)	90,000	110,000
Operating Period (days/annum)	360	360
Site Area	4 Hectares	
MGC Conveyor	2 x 125 meters in length air belt conveyors.	
Barley Delivery	600 tonnes/hour with 3360 tonnes site storage.	
Malt Transfer	200 tonnes/hr with 2480 tonnes site storage.	

Steeps - with aeration, carbon dioxide extraction, CIP washing and dissolved oxygen measurement.

Stainless Steel (tonnes Barley)	6 x 50	6 x 60
(diameter)	6.0 m	6.0 m
(deg Cone)	55	55
Filling Time (hrs)	2	2.5

Germination Vessels – with computer process control features.

Stainless Steel (tonnes Barley)	4 x 300	4 x 360
Diameter (metres)	25.4	25.4

Schmidt-Seeger loader / unloader / turner

Transfer / Turning Time (hrs)	2	2

Above and Underfloor Rotating High Pressure Washing System in each G.V.

Kiln – with computer process control features, auto load and unload system and heat recovery.

Stainless Steel		
Capacity (Tonnes)	300	360
Diameter (Metres)	28.4	33.4
Schmidt-Seeger loader / unloader		
Loading / unloading Time (hrs)	2	2
Kilning Cycle (hrs)	19 – 21	18 – 20

Heating – Fluorrex Indirect with heat recovery system

Utilities

Connected Power	5,200 kW – 22,000 Volts	
Burner capacity (kW)	3 x 6,000	3 x 6,000
Refrigeration capacity (kWR)	9,800	
Chilled water storage (kL)	800	

Water Treatment Facility

MBR System designed by Tenix Alliance which includes Pre-Screening and equalisation, Biological Reactor with aeration system, Koch Membrane system and R.O.

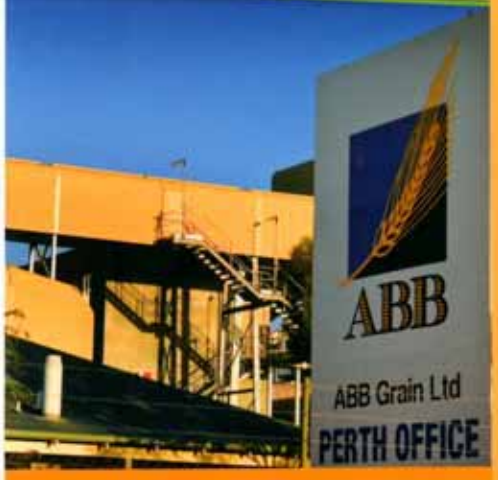
About Joe White Maltings

Joe White Maltings commenced operation almost 150 years ago and since then, has established a reputation as a quality supplier of brewer's malt and other food products to many of the world's largest brewers and food manufacturers.

As part of the ABB Grain Ltd group of companies, Joe White Maltings manufactures around 500,000 tonnes of malt annually in its eight malthouses, located in each state of Australia. Of this production, approximately 80 per cent is exported and 20 per cent supplies the Australian market.

Joe White Maltings exports to more than 20 countries around the world, focusing on the growing markets in the Asian region.

Joe White Maltings is a major purchaser of Western Australian barley sourcing around 250,000 tonnes of the best malting barley annually.



About ABB Grain

ASX listed ABB Grain is a leading Australian agribusiness with activities across the entire supply chain, including fertiliser, storage, processing, logistic, marketing and trading services.

With a history spanning nearly 70 years, and facilities or offices in all states and New Zealand, ABB Grain is a global grain trader exporting to all continents including Saudi Arabia, China and Japan.

WHITE

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Joe White Maltings Pty Ltd

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Fax: +61 8 8124 0142
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APPENDIX B

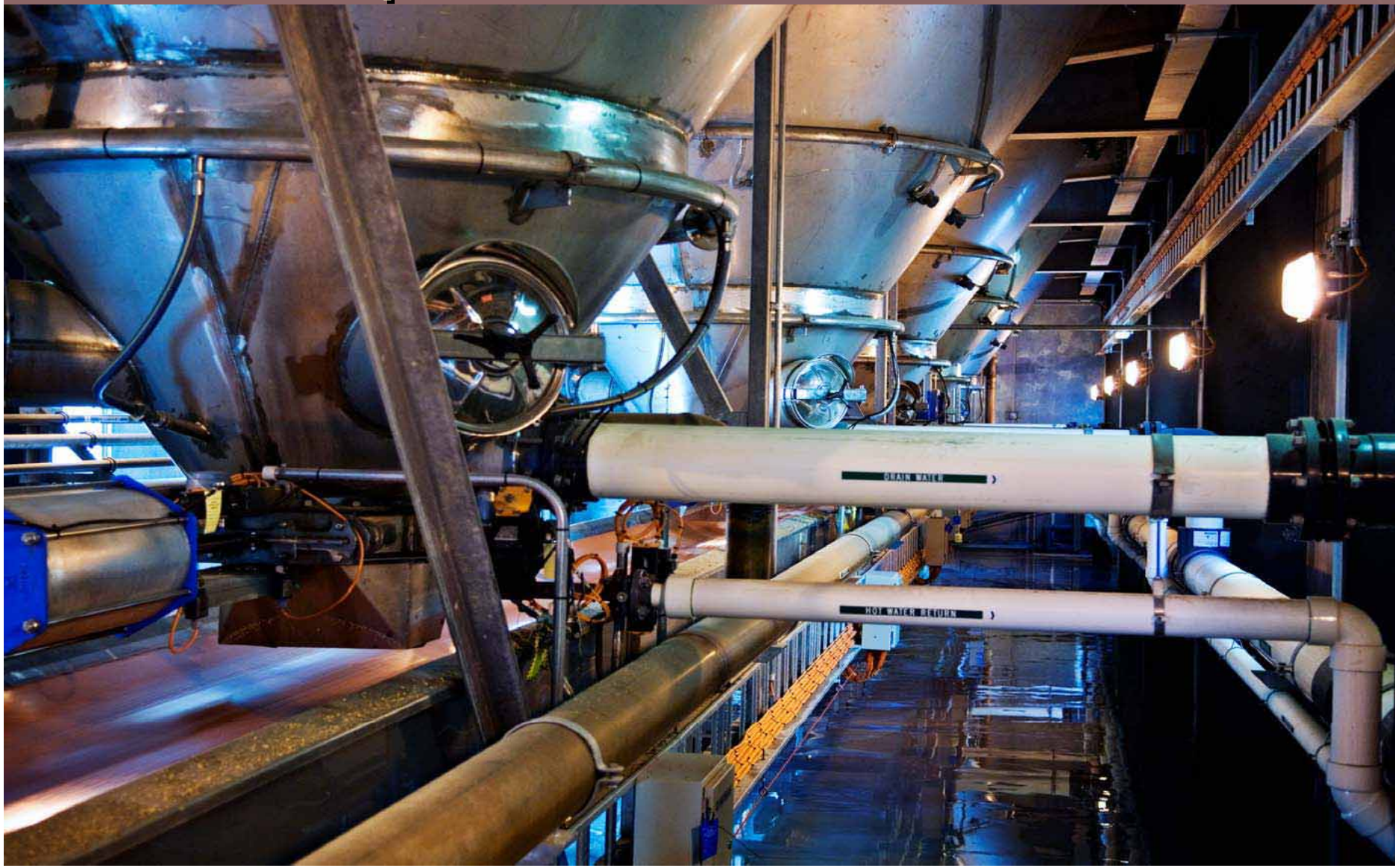
PHOTOS OF THE JWM FORRESTFIELD PLANT (PERTH)

Site Layout

Perth Maltings

Steep

Steep House Bottom View

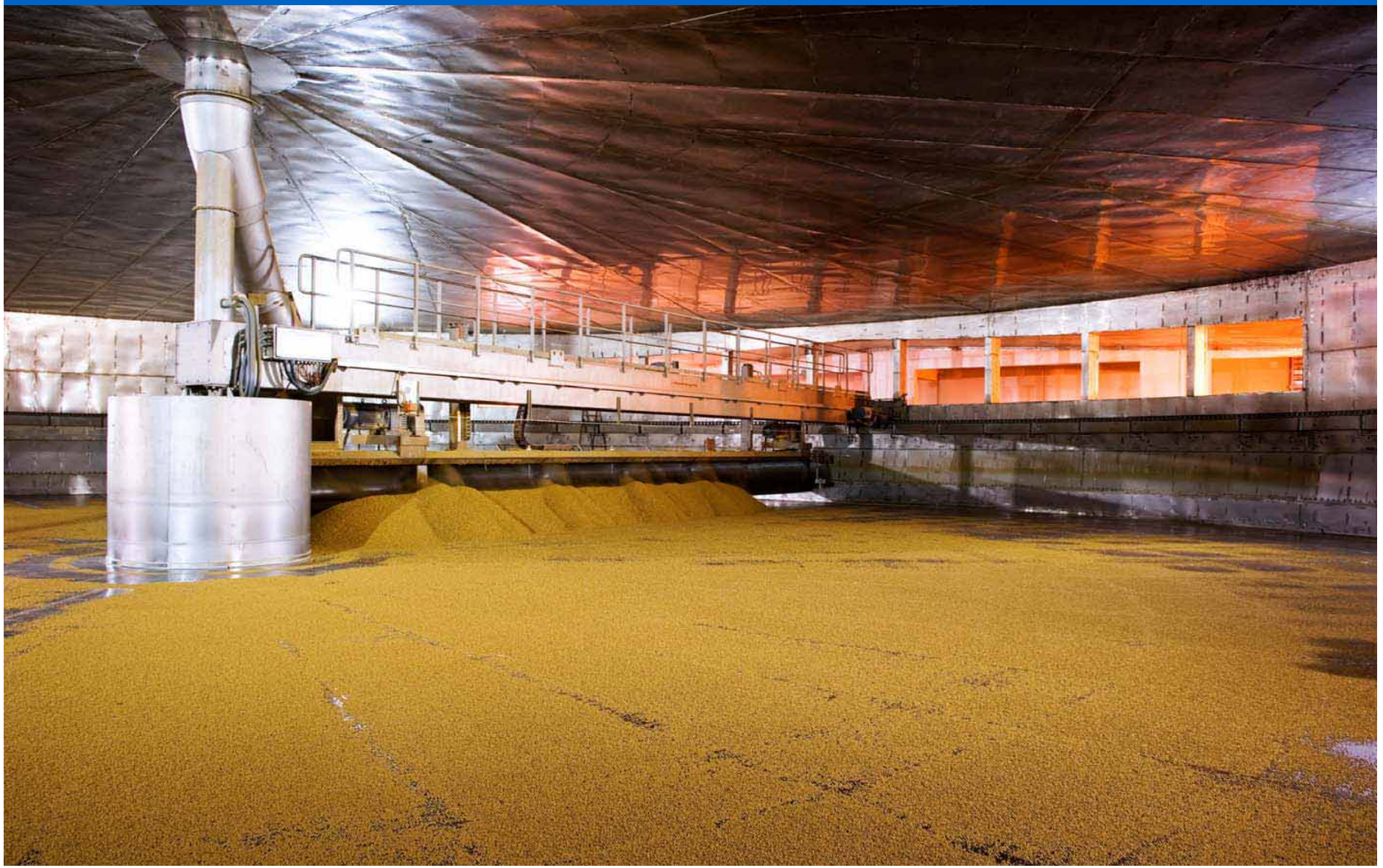


Germination

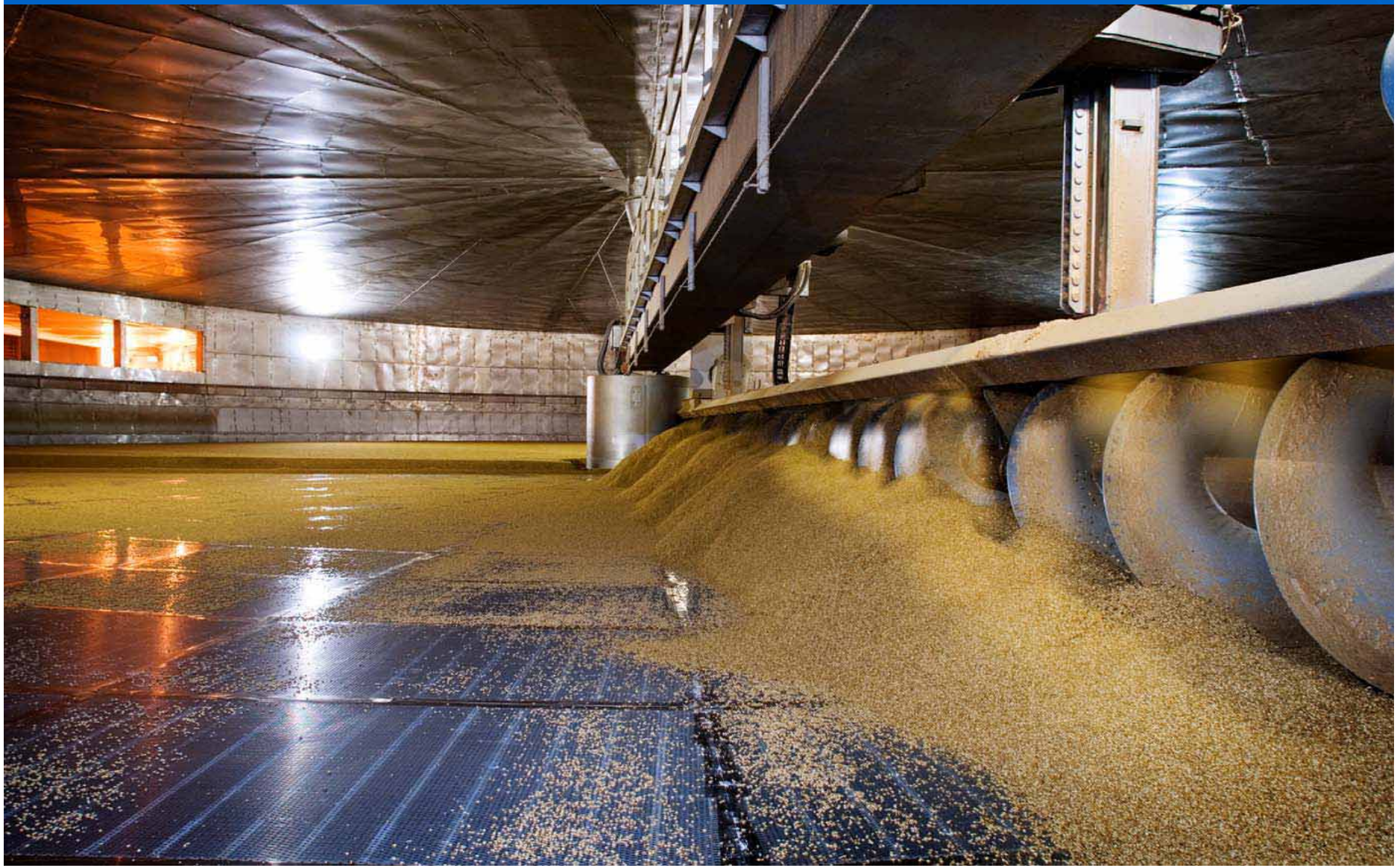
Germination

Germination

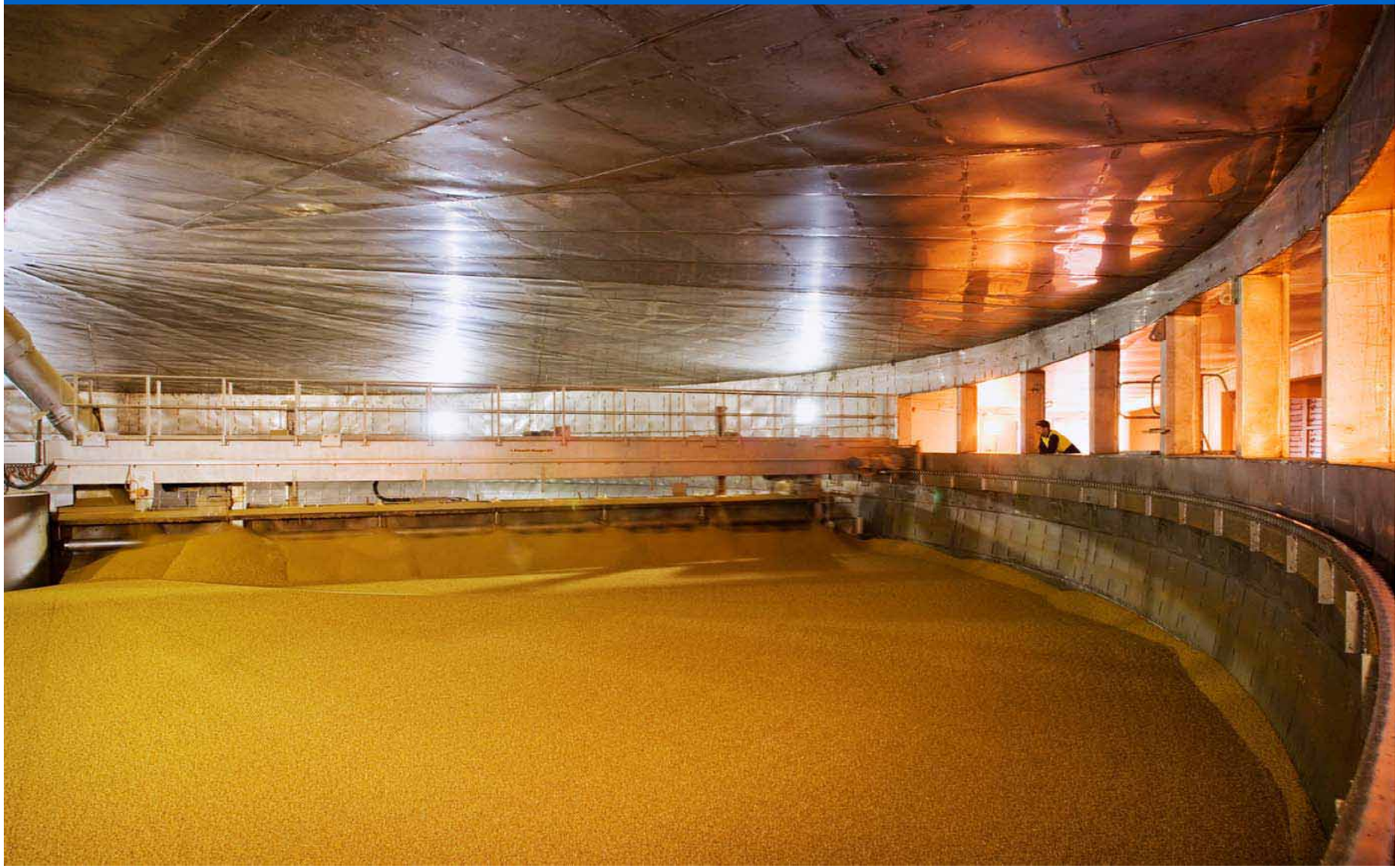
Kiln



Kiln

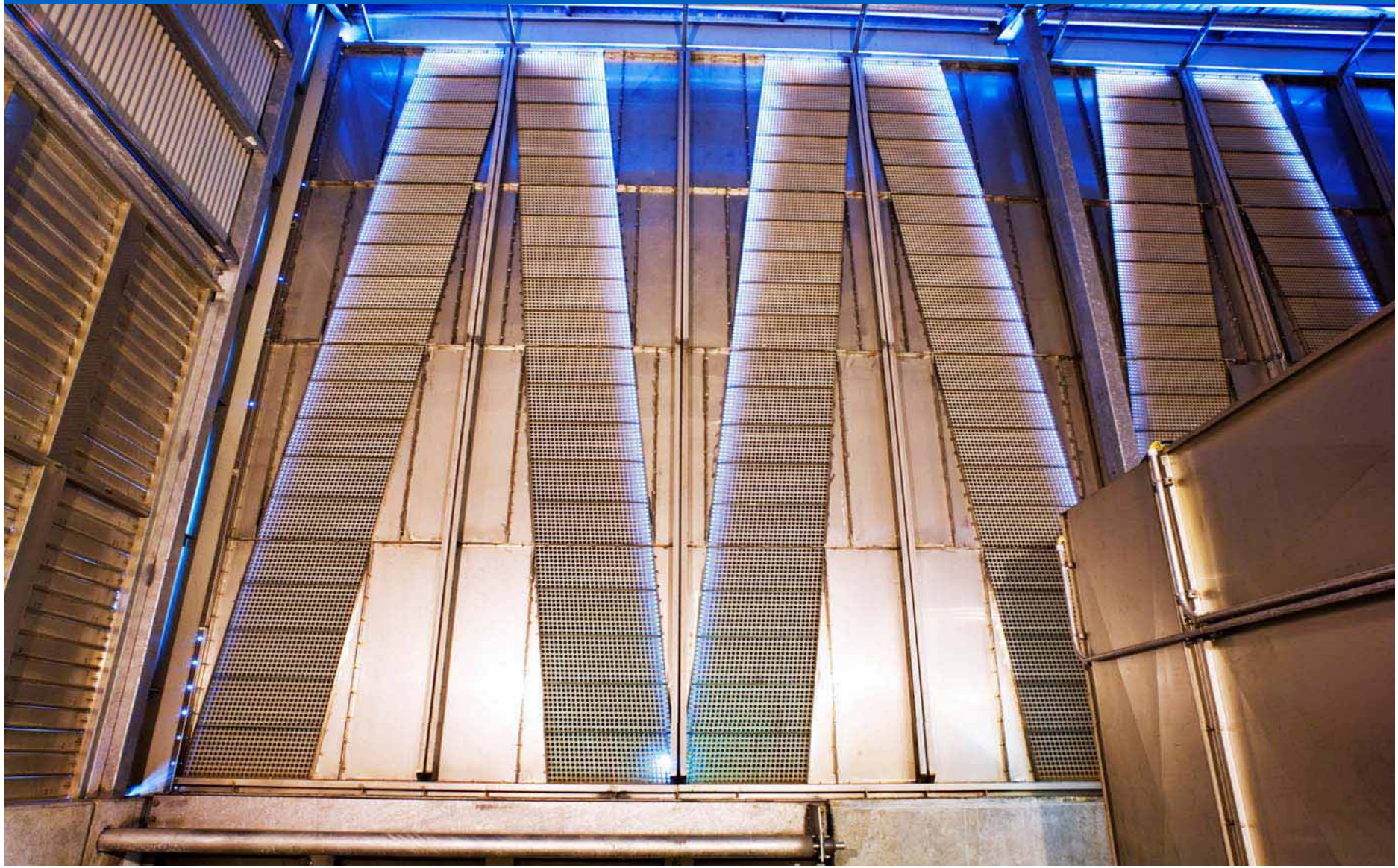


Kiln



Kiln Burner Room

Kiln – Glass Tube Heat Exchanger



Malt Analysis Bins

Malt Analysis Bins

Refrigeration

Refrigeration

Laboratory

Laboratory

Construction Stage - Echo

Kiln earthworks complete ready for excavation of footings

GV's 6 & 8

Construction Stage - Echo

GV 8 Vessel Slab Pour

Steep Footings

Construction Stage - Echo

Installing GV 8 fan

GV 6 fitting running rail fins

Construction Stage - Echo

Steep tank being installed

Steep house slab poured and steep tanks installed

Construction Stage - Echo

Glass heat exchanger

Waste water treatment plant

Construction Stage - Echo

GV 6 & 8 Completed

APPENDIX C

BOUNDARY NOISE STUDY, PERTH PLANT

Rochdale Holdings Pty Ltd A.B.N. 85 009 049 067 trading as:
HERRING STORER ACOUSTICS
Suite 34, 11 Preston Street, Como, W.A. 6152
P.O. Box 219, Como, W.A. 6952
Telephone: (08) 9367 6200
Facsimile: (08) 9474 2579
Email: hsa@hsacoustics.com.au

ALLAN HERRING M.I.E. AUST. M.A.A.S.
LYNTON STORER M.A.I.E.A., M.A.A.S.
TIM REYNOLDS M.I.E. AUST. M.A.A.S.

Our ref: 10943-1-02079

8 April 2002

Joe White Maltings Limited
PO Box 1072
CLOVERDALE WA 6985

Attention: Mark Hambly

Dear Sir,

BOUNDARY NOISE SURVEY

Here is the report on the boundary noise survey carried out on Wednesday 3 April 2002. This report. Presents the results and provides information on compliance the Environmental Protection (Noise) Regulations 1997.

REGULATIONS

The Environmental Protection (Noise) Regulations 1997 (As Amended) stipulate the allowable noise levels that can be received at a one premises from another premises. The allowable noise level when received at an industrial premises are as listed in Table 1.

TABLE 1 - ASSIGNED NOISE LEVELS FOR INDUSTRIAL PREMISES

Time of Day	Type of Assigned Noise Level		
	L_{A10}	L_{A1}	L_{max}
At All Times	65	80	90

The assigned noise levels are also conditional on no annoying characteristics existing such as tonal components etc. If such characteristics exist, then any measured level is adjusted accordingly. The adjustments that apply are shown in Table 2.

TABLE 2 - ADJUSTMENTS

Tonality	Modulation	Impulsiveness
+5 dB	+5 dB	+10 dB

Note: These adjustments are cumulative to a maximum 15 dB

NOISE LEVELS

Noise levels measurements were carried out between 1015 and 1130 hours on Wednesday 3 April 2002 using a Rion NA 27 1/3 Octave Band Analyser.

As requested noise level measurements were recorded around the boundary of the site, as well as locations closer to the plant. The inner measurements were either recorded at the outer edge of the bitumised area or in a line positioned 10 metres to the north west of the Germination Vessels. The results are shown on the attached Figure 01. Also attached are 1/3 octave band data for the locations noted.

DISCUSSION

Noise emissions from the plant complies with the requirements of the Environmental Protection (Noise) Regulations 1997, even though noise emissions from the drying kiln exceed 65 dB(A). This is because the Regulations are based on the noise received at a premises and the railway reserve is not a premises. The closest premises is across the other side of the railway reserve.

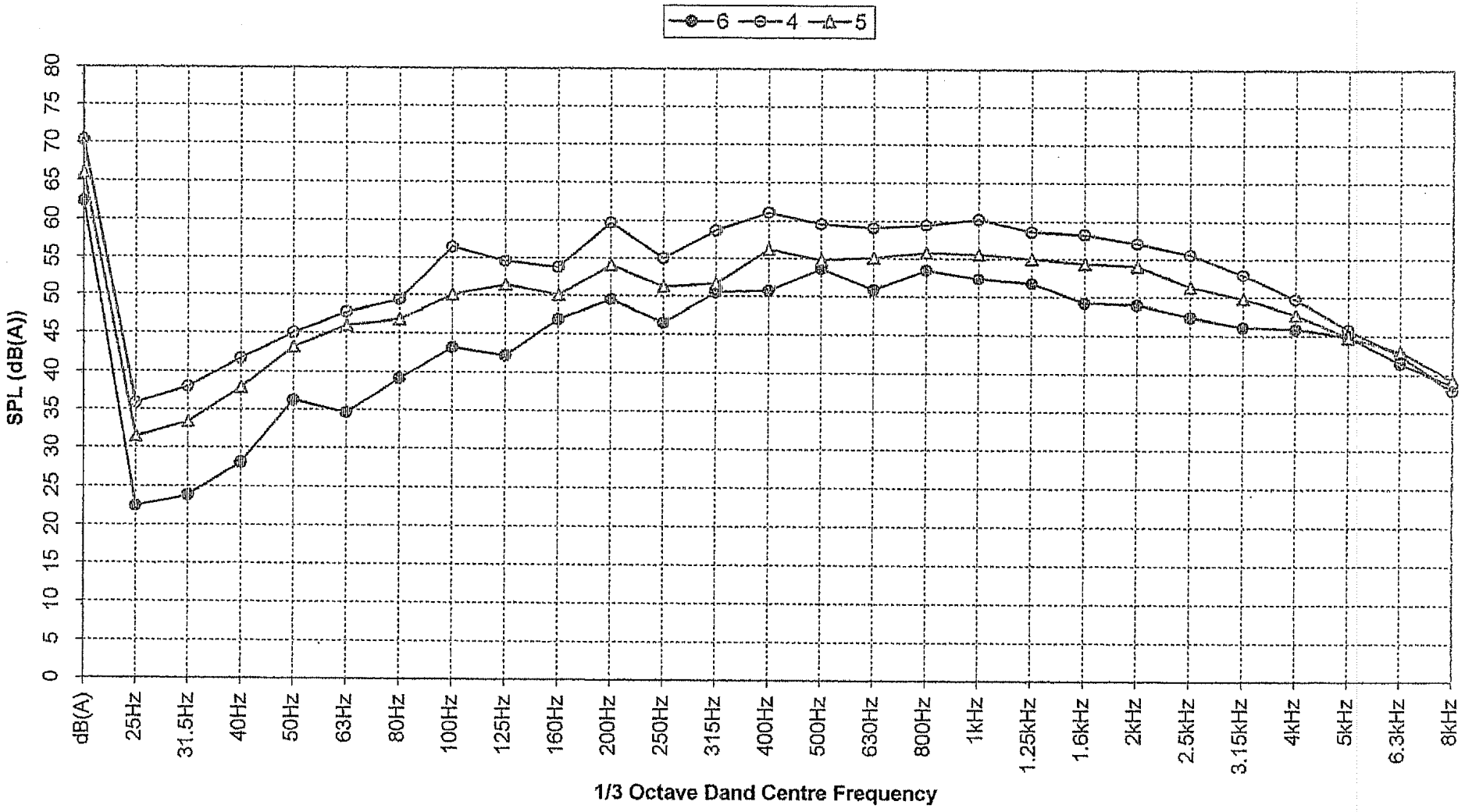
We trust that the above information suits your present requirements. Should you have any queries, please do not hesitate to contact this office.

Yours faithfully,
for **HERRING STORER ACOUSTICS**

T.C. Reynolds

Tim Reynolds

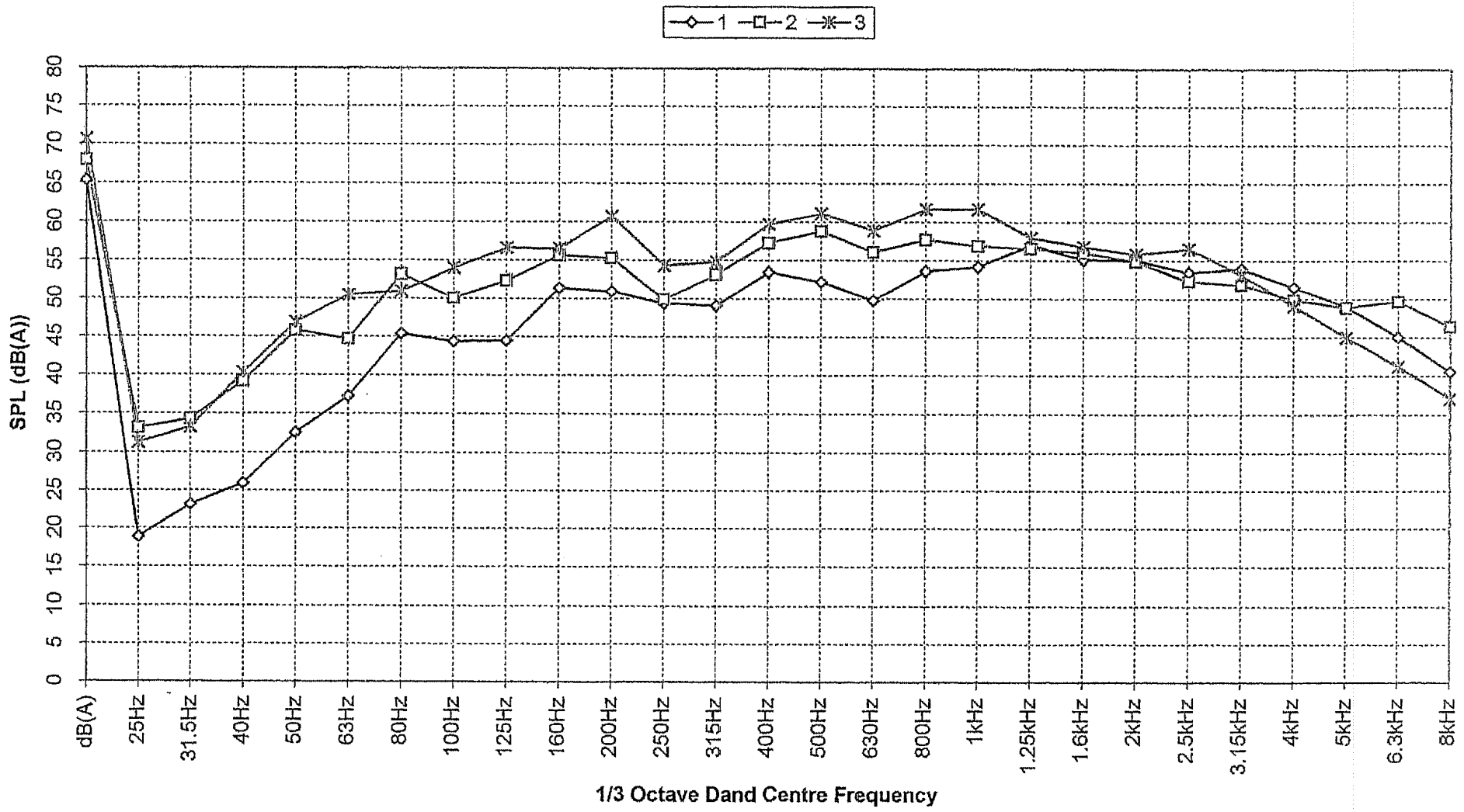
JOE WHITE MALTINGS - BOUNDARY NOISE SURVEY

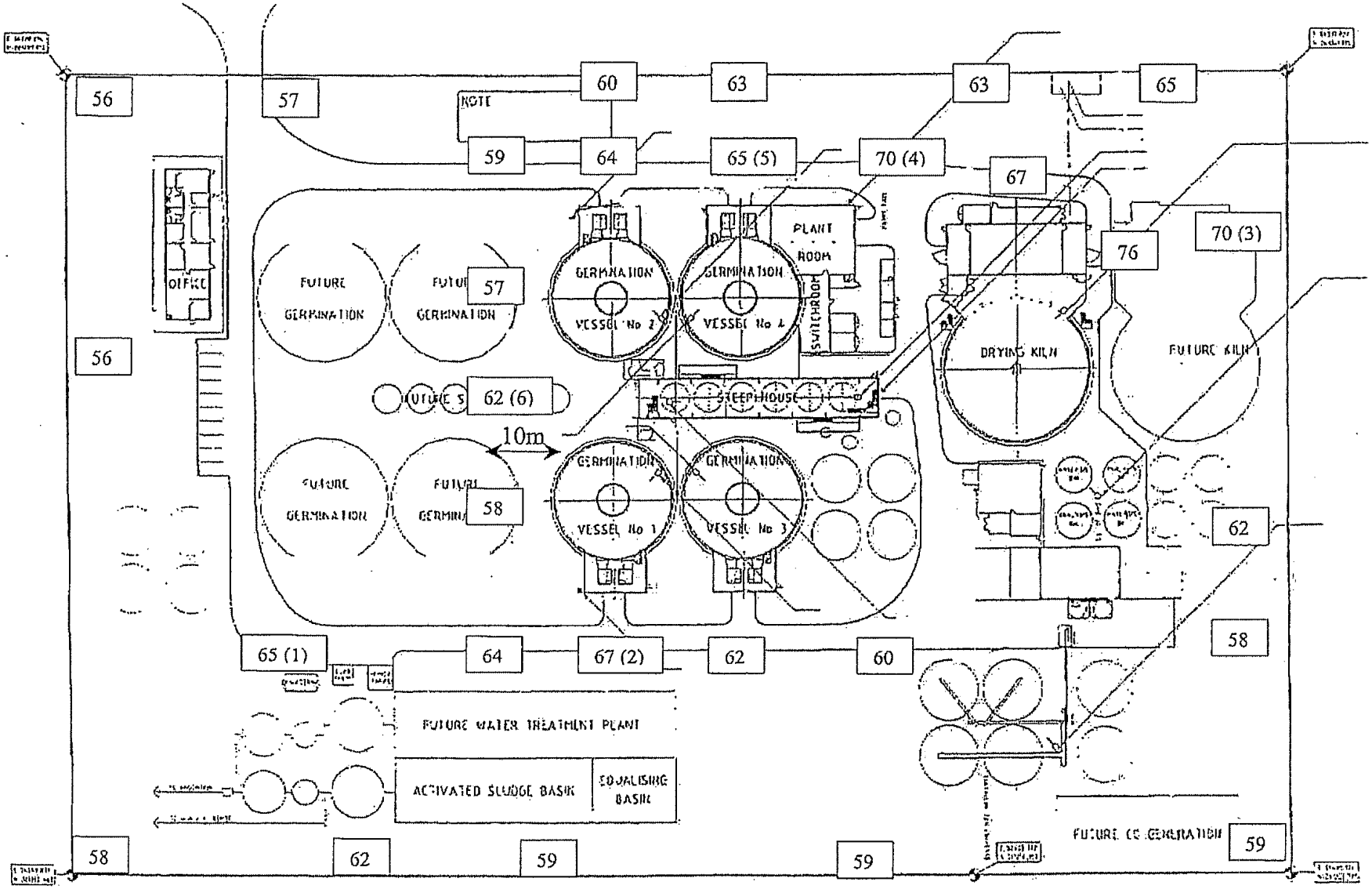


Herring Storer Acoustics

Figure 03
Job No ; 02079

JOE WHITE MALTINGS - BOUNDARY NOISE SURVEY





JOE WHITE MALTINGS Limited
BOUNDARY NOISE SURVEY

Herring Storer Acoustics
Job No : 02079

Figure 01

(1)	1/3 Octave Band Measurement
56	Measured Noise Level dB(A)