E1,6.3.1 Pre-existing lots: Provision of hazard management areas for habitable **buildings**

Objective: Hazard management areas, as appropriate, for new habitable buildings on preexisting lots:

- provide sufficient separation from bushfire-prone vegetation, taking into consideration the nature and scale of the hazard;
- reduce the radiant heat levels, direct flame attack and ember attack likely to be experienced at the site of habitable buildings in the event of a bushfire;
- provide an area which offers protection to fire fighters and occupants exposed to bushfire while defending property; and

- are maintained in a minimum fuel condition.

Compliance Measure Comment P1. There must be, in relation to Adequate separation between buildings will be habitable buildings, hazard management provided. The report on bushfire management areas that provide adequate separation which accompanies this application details the from the bushfire-prone vegetation. In matters considered. determining the dimension of hazard management areas, it must be demonstrated that the nature of the hazard has been considered, including: (i) vegetation type, structure and flammability; (ii) other potential forms of fuel and ignition sources; (iii) slope; (iv) any fire shielding structures or Features and that the dimensions, given the nature of the construction, provide adequate protection for the building and to fire fighters and occupants defending property from bushfire. A2 If hazard management areas in The hazard management areas do not rely on relation to a habitable building are to lands outside the subject title. be on land external to the lot where the building is located, the application must be accompanied by the written consent of the owner of that land to enter into a Part 5 agreement that will be registered on the title of the neighbouring property providing for the affected land to be managed in accordance with a bushfire hazard management plan certified by the TFS or an accredited person.

E1.6.3.2 Pre-existing lots: Private access

Objective: Private access on pre-existing lots:

- allows safe access to and from the road network for occupants, fire fighters, and emergency service personnel;
- provides access to ensure that fire fighting equipment can reach all parts of habitable buildings;
- is designed and constructed to allow for fire fighting vehicles to be manoeuvred; and
- provides access to water supply points, including hardstand areas for fire fighting vehicles.

Compliance Measure	Comment
A1. It must be demonstrated in one of the	An accredited person has signed off that the
following ways that private access	proposed private access provides safe access to

provides safe access to habitable	habitable buildings
buildings:	
(a) the TFS or an accredited person	
certifies that, having regard to the	
objective, there is an insufficient	
increase in risk from bushfire to	
warrant specific measures for private	
access for the purposes of fire fighting;	
or	
(b) plans showing private access to	
habitable buildings are included in a	
bushfire hazard management plan	
certified by the TFS or an accredited	
person as being consistent with the	
objective; or	
(c) plans demonstrate that private access	
will be provided to within 30m of the	
furthest part of a habitable building	
measured as a hose lay.	
A2 Private access to all static water	An accredited person has signed off that the
supply points must be provided:	private access to static water meets the objective
(a) as included in a bushfire hazard	of the standard.
management plan certified by the TFS or	of the standard.
an accredited person as being in	
accordance with the objective of the	
standard; or	
(b) to a hardstand area within 3m of the	
3. 7	
static water supply point.	The proposed access will meet the required
A3 Construction of private access, if	standard
required to provide access to habitable	Standard
buildings and static water supply points,	
must as appropriate to the circumstances meet the requirements of Table E3 as	
-	
follower	
follows:	
(a) single lane private access roads less	
(a) single lane private access roads less than 6m carriageway width must have	
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m	
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m	
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart;	
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than	
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway	
 (a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead 	
 (a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m 	
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area	
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 (a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed 	
 (a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed for a minimum vehicle load of 20 tonnes; 	
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(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed for a minimum vehicle load of 20 tonnes; (d) vegetation must be cleared for a height of 4m, above the carriageway, and	
 (a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed for a minimum vehicle load of 20 tonnes; (d) vegetation must be cleared for a height of 4m, above the carriageway, and 2m each side of the carriageway. 	ator county for fire fighting normages
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed for a minimum vehicle load of 20 tonnes; (d) vegetation must be cleared for a height of 4m, above the carriageway, and 2m each side of the carriageway. E1.6.3.3 Pre-existing lots: Provision of w	
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed for a minimum vehicle load of 20 tonnes; (d) vegetation must be cleared for a height of 4m, above the carriageway, and 2m each side of the carriageway. E1.6.3.3 Pre-existing lots: Provision of w Objective: Adequate, accessible and reliab	le water supply for fire fighting purposes on
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed for a minimum vehicle load of 20 tonnes; (d) vegetation must be cleared for a height of 4m, above the carriageway, and 2m each side of the carriageway. E1.6.3.3 Pre-existing lots: Provision of wood of the control of the carriageway of the carriageway.	
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed for a minimum vehicle load of 20 tonnes; (d) vegetation must be cleared for a height of 4m, above the carriageway, and 2m each side of the carriageway. E1.6.3.3 Pre-existing lots: Provision of w Objective: Adequate, accessible and reliab pre-existing lots is available to allow for associated with bushfire.	le water supply for fire fighting purposes on the protection of life and property from the risks
(a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed for a minimum vehicle load of 20 tonnes; (d) vegetation must be cleared for a height of 4m, above the carriageway, and 2m each side of the carriageway. E1.6.3.3 Pre-existing lots: Provision of wood of the control of the carriageway of the carriageway.	le water supply for fire fighting purposes on the protection of life and property from the risks Comment

following ways that access to a water supply for fire fighting purposes is provided: (a) the TFS or an accredited person certifies that, having regard to the objective, there is an insufficient increase in risk from bushfire to warrant any specific water supply measures; or (b) a bushfire hazard management plan certified by the TFS or an accredited person demonstrates that the provision of the water supply is consistent with the objective; or (c) all external parts of habitable buildings that are at ground level, are within reach of a 120m long hose (measured as a hose lay) connected to a fire hydrant with a minimum flow rate of 600 litres per minute and minimum pressure of 200kPa; or (d) a minimum static water supply of 10 000 litres per habitable building is provided and that connections for fire fighting purposes are included.	will be in accordance with the standard.

E4.0 Road and Railway Assets Code

The proposal complies with this Code as use is being made of an existing access point. Discussions have been held with Dept. of State Growth (Roads section) in regard to any upgrades required at the intersection of Auburn Road and the Midland Highway.

As this section of Highway is scheduled for a major upgrade in the next two to three years there is some support for a more innovative approach to heavy vehicles generated by this development turning right off the Highway. State Growth will investigate bringing forward proposed intersection treatment at Roseneath Road to cater for this proposal.

A Traffic Impact Assessment has been prepared for this proposal and is submitted as an attachment to this report (Annexure 4).

E4.6.1 Use and road or rail infrastructure

Objective To ensure that the safety and efficiency of road and rail infrastructure is not reduced by the creation of new accesses and junctions or increased use of existing accesses and junctions.					
Compliance Measure Comment					
A1 Sensitive use on or within 50m of	Not applicable – this is not a sensitive use.				
a category 1 or 2 road, in an area					
subject to a speed limit of more than					

<u></u>	7
60km/h, a railway or future road or	•
railway, must not result in an increase	
to the annual average daily traffic	
(AADT) movements to or from the	
site by more than 10%.	
A2 For roads with a speed limit of	Not applicable
60km/h or less the use must not	
generate more than a total of 40	
vehicle entry and exit movements per	
day	
A3 For roads with a speed limit of	A Traffic Impact Statement is attached with
more than 60km/h the use must not	this application
increase the annual average daily	
traffic (AADT) movements at the	
existing access or junction by more	
than 10%.	
A4 Use serviced by a side road from a	There are no deficient junctions in the area of the
deficient junction (refer E4 Table 2)	subject site.
is not to create an increase to the	
annual average daily traffic (AADT)	
movements on the side road at the	
deficient junction by more than 10%.	

E4.7.1 Development on and adjacent to Existing and Future Arterial Roads and Railways

Objective

To ensure that development on or adjacent to category 1 or 2 roads (outside 60km/h), railways and future roads and railways is managed to:

- a) ensure the safe and efficient operation of roads and railways; and
- b) allow for future road and rail widening, realignment and upgrading; and
- c) avoid undesirable interaction between roads and railways and other use or development.

Compliance Measure	Comment				
A1 The following must be at least 50m	Complies – the development will be more				
from a railway, a future road or	than 50m from a railway, a future road or				
railway, and a category 1 or 2 road in	railway and a Category 1 and 2 road				
an area subject to a speed limit of	subject to more than 60km/h				
more than 60km/h:					
a) new road works, buildings, additions					
and extensions, earthworks and					
landscaping works; and					
b) building envelopes on new lots; and					
c) outdoor sitting, entertainment and					
children's play areas					

E4.7.2 Management of Road Accesses and Junctions

Objective

To ensure that the safety and efficiency of roads is not reduced by the creation of new accesses and junctions or increased use of existing accesses and junctions.

Compliance Measure	Comment
A1 For roads with a speed limit of	N/a in this instance
60km/h or less the development must	
include only one access providing	
both entry and exit, or two accesses	
providing separate entry and exit.	
P2 For limited access roads and roads	A new aces on to Auburn Road is proposed.
with a speed limit of more than	The access point selected has good sightlines
60km/h:	and the road alignment does not interfere
a) access to a category 1 road or	with forward visibility due to crests or bends.
limited access road must only be via	
an existing access or junction or the	Auburn Road is a Category 5 Road and as a
development must provide a	result a new access is an acceptable outcome
significant social and economic	provided it is constructed in a safe manner.
benefit to the State or region; and	
b) any increase in use of an existing	Access to this site is needed to capitalise on
access or junction or development of	the strategic location of this rural type
a new access or junction to a limited	industry. The new access will be designed to
access road or a category 1, 2 or 3	acceptable standards of safety.
road must be dependent on the site	
for its unique resources,	
characteristics or locational attributes	
and an alternate site or access to a	-
category 4 or 5 road is not	
practicable; and	
c) an access or junction which is	
increased in use or is a new access	
or junction must be designed and	
located to maintain an adequate level	
of safety and efficiency for all road	
users.	
A3 Accesses must not be located	Complies – the access will be outside the 6m
closer than 6m from an intersection, nor	distance from an intersection.
within 6m of a break in a median strip.	

E4.7.3 Management of Rail Level Crossings

Not relevant in this instance

E4.7.4 Sight Distance at Accesses, Junctions and Level Crossings

Objective						
To ensure that use and development involving or adjacent to accesses, junctions and						
level crossings allows sufficient sight distance between vehicles and between vehicles						
and trains to enable safe movement of t	raffic.					
Compliance Measure	Compliance Measure Comment					
A1 Sight distances at	Sight distances from the access to Auburn					
a) an access or junction must comply road will be provided to comply with this						
with the Safe Intersection Sight Clause.						
Distance shown in Table E4.7.4; and						
b) rail level crossings must comply						

	42.7 Manual atrol devices	
crossings,	inor devices	- Ranway
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	cess is a tempo	
	consent of the	
authority h	as been obtain	ed.

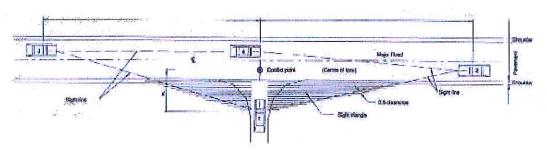


Figure E4.7.4 Sight Lines for Accesses and Junctions

X is the distance of the driver from the conflict point. For category 1, 2 and 3 roads X = 7m minimum and for other roads X = 5m minimum.

E6.0 Car Parking and Sustainable Transport Code

E6.6.1 Car Parking Numbers

arking is provided to service use.			
arking is provided to service use.			
Comment			
The specified car parking requirement is 2			
spaces per 3 employees. There will be 4			
persons employed on site the parking			
provision on site will be 4.			

E6.7.1 Construction of Car Parking Spaces and Access Strips

Objective To ensure that car parking spaces and standard.	access strips are constructed to an appropriate				
Compliance Measure Comment					
P1 All car parking, access strips manoeuvring and circulation spaces	All car parking, access strips manoeuvring and circulation spaces will be constructed for				
must be readily identifiable and constructed to ensure that they are useable in all weather conditions.	all weather use.				

All other matters do not apply in this instance.

E7 Scenic Management Code

E7.2 Application of this Code

E7.2.1 This code applies to use or development of land within the scenic management – tourist road corridor and local scenic management areas.

As the site is some 226m from the Scenic tourist Corridor this Code has no application in this instance.

E9 Water Quality Code

E9.2.1 This code applies to use or development of land:

- a) within 50 metres of a wetland or watercourse; or
- b) within a Water catchment area inner or outer buffer.

As the development is outside the 50m from a wetland or watercourse or a water catchment area this Code does not apply.

6. Strategic Planning

6.1 State Policies

The following State Policies are currently in force:

- Tasmanian State Coastal Policy 1986;
- State Policy on Water Quality and Management 1997;
- State Policy on the Protection of Agricultural Land 2009;
- National Environment Protection Council (Ambient Air Quality) Measure;
- National Environment Protection Council (Assessment of Site Contamination)
 Measure 1999;
- National Environment Protection Council (Movement of Controlled Wastes between States and Territories) Measure;
- National Environment Protection Council (National Pollutant Inventory)
 Measure; and
- National Environment Protection Council (Used Packaging Materials) Measure.

The proposed development is not known to conflict with or contravene any of the above State Policies.

7. Summary

This proposed development in the main conforms to all the necessary requirements of the Northern Midlands Interim Planning Scheme 2013. Any discretion sought is fair and reasonable given the size of the site.

Annexure 1 - Certificate of Title



FOLIO PLAN

RECORDER OF TITLES 510

Issued Pursuant to the Land Titles Act 1980



OWNER ROBERT OLIVER MORRIS JESSICA ANNE MORRIS

FOLIO REFERENCE

CT. VOLIDIBIO FOL I

GRANTEE

PART OF 6180 ACRES, GRANTED TO WILLIAM HILL

PLAN OF TITLE

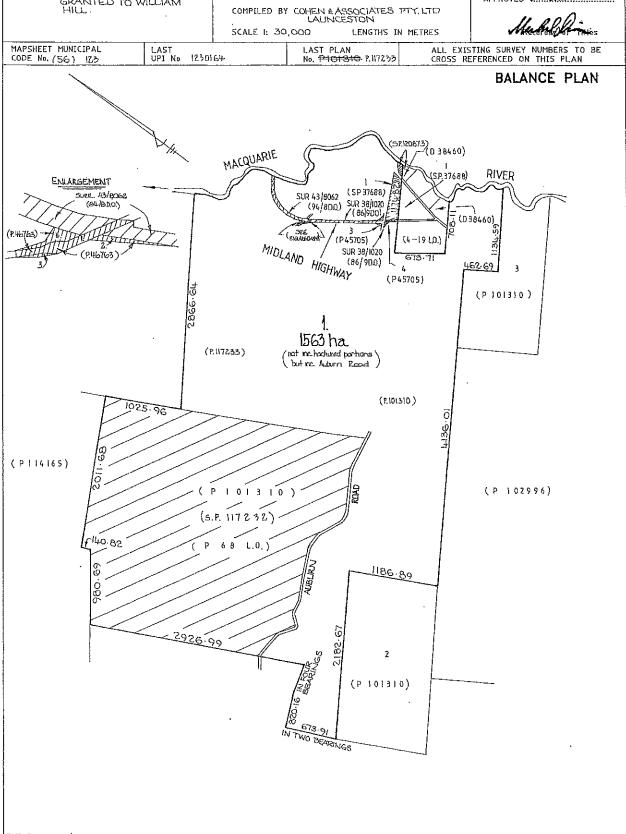
LAND DISTRICT OF SOMERSET PARISH OF ELDON

FIRST SURVEY PLAN No. P. 68 L.O. P. 38459

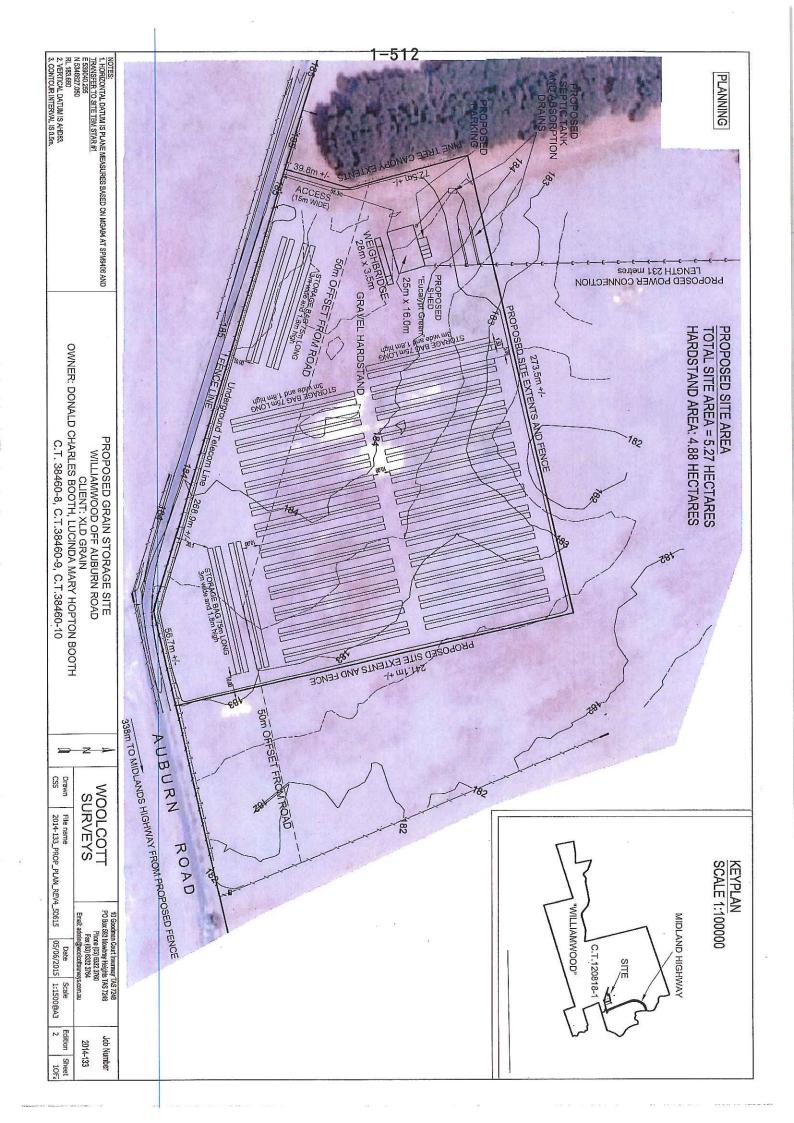
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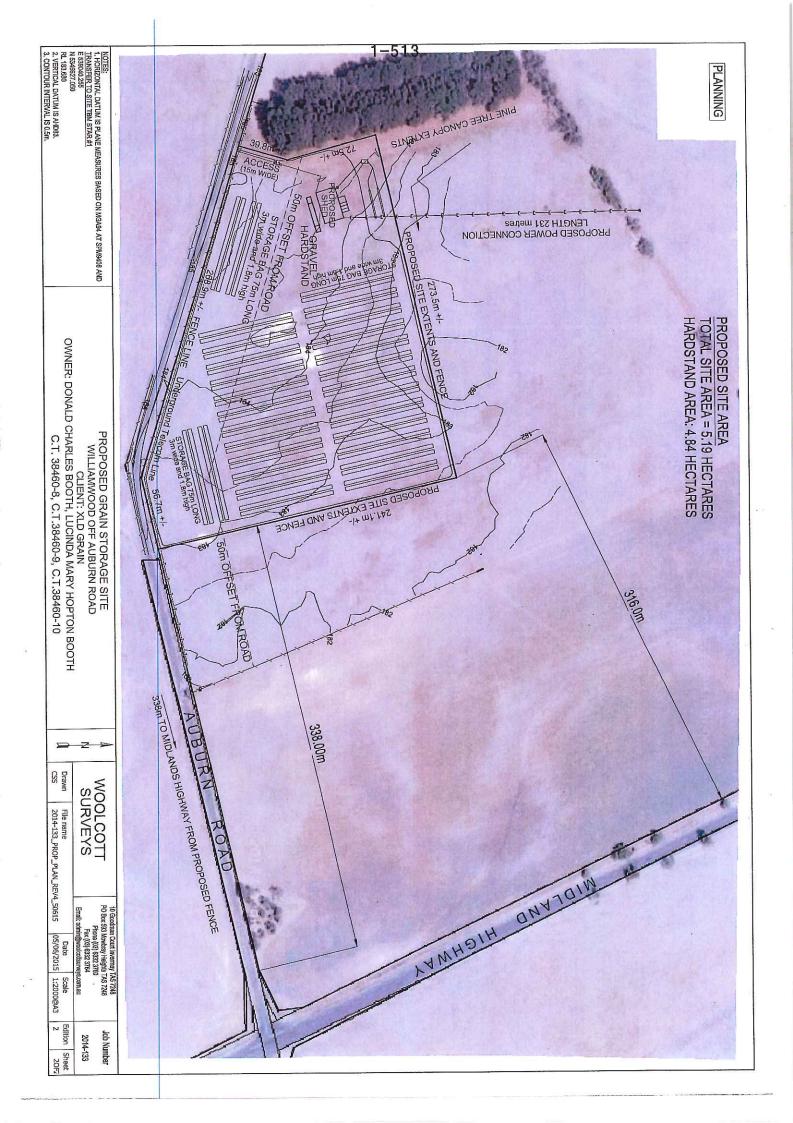
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APPROVED 8 - JAN 1996



Annexure 2 - Proposal Plan





FLOOR AREA 402.86 m2 (48.21 800)ARE6)

FLOOR PLAN

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6	5	4	w	2	1	MARK	
420	430	20	8	920	92P	MARK MIDTH	SROUND
GLAZED EXTERNAL DOOR	GLAZED EXTERNAL DOOR	INTERNAL TIMBER DOOR	INTERNAL TIMBER DOOR	INTERNAL TIMBER DOOR	GLAZED EXTERNAL DOOR	TYPE	GROUND FLOOR DOOR SCHEDULE

	GROUND	GROUND FLOOR DOOR SCHEDULE
ÁR	YARK MIDTH	TAPE
	#20 0	GLAZED EXTERNAL DOOR
2	920	NIERNAL TIMBER DOOR
*	OCP	INTERNAL TIMBER DOOR
	420	INTERNAL TIMBER DOOR
j	430	GLAZED EXTERNAL DOOR
,	420	GLAZED EXTERNAL DOOR

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		16000		

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PROPOSED NEW SHED ALUBURAL ROAD, ROSS

Clerinanc XLD GRAIN Drawing FLOOR PLAN



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E EMANST FAN-VENT TO OUTSIDE AR.

2407 SHOKE ALARM

CO CANTY SLIDING DOOR

SO SLIDING DOOR

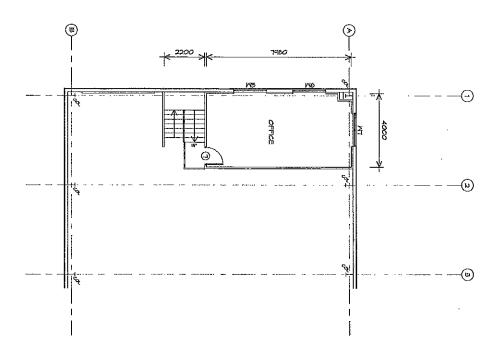
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AL SIDELIGHT

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S Redialor		-

Gledning XLD GRAIN
Dawley FIRST FLOOR PLAN

PROPOSED NEW SHED AUBURN ROAD, ROSS

into@ntimedestentes.com.au 10 Goodman Court , Invermay TAS 7248 Accretted Building Practitioner Frank Geshus-No CC246A

Fax: 6332 3798



LEGEND

(E) EXHAUST FAN-VENT TO OUTSIDE AIR.

© 240V SMOKE ALARM
CAVITY SLIDING DOOR

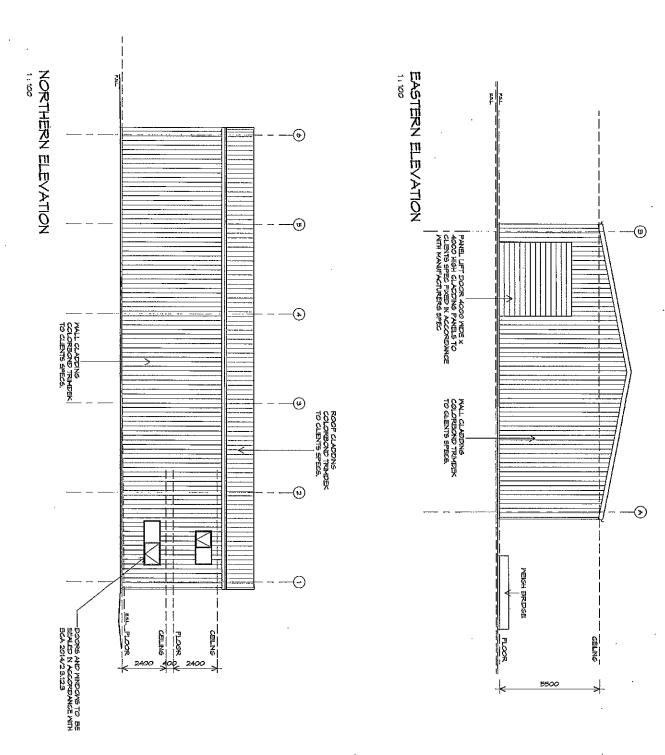
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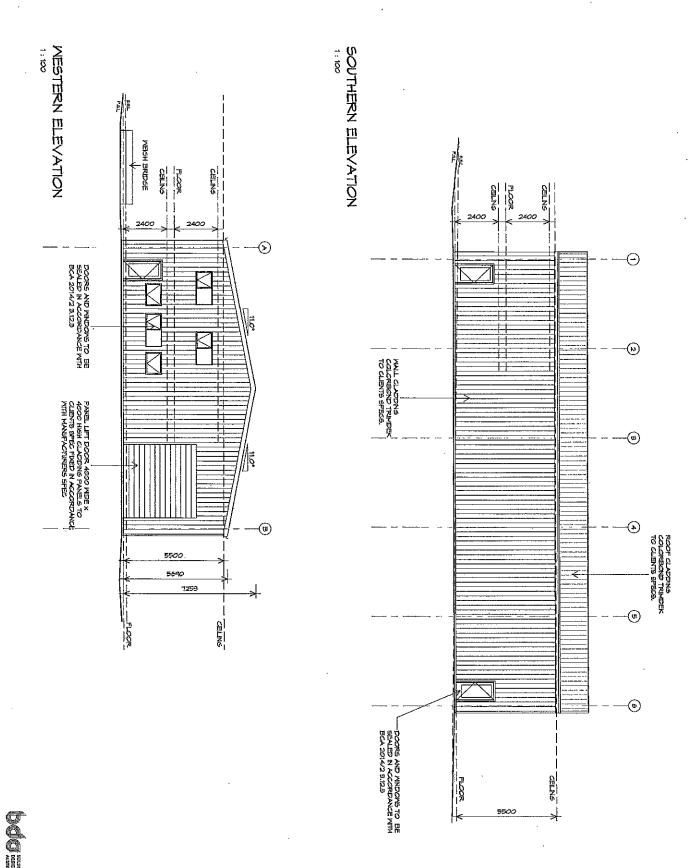


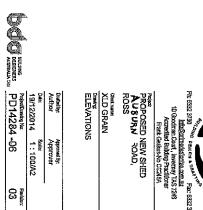
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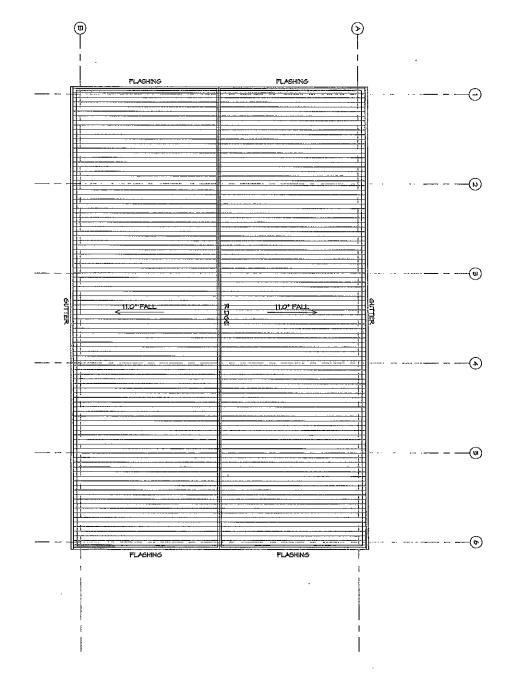




DESIGN



ROOF PLAN



PD14284 -07 PROPOSED NEW SHED AUBURN ROAD, ROSS Danked by: B.S.L. Dale: 19/12/2014 ROOF PLAN Into@primedesignias,com.au
10 Geodinan Court , Invermay TAS 7248
Accredited Building Practitioner
Frank Geskus-No CC246A 8296 1:100/A2 Approved By F.G.G. O3



METAL SHETTING ROOF TO BE NOTALLED IN ACCORDINACE WITH BOA, 2014 35.113. NET RETIRE TO TABLE 35.516 FOR ACCEPTABLE CORROSION PROTECTION PAR SHETT ROOPING. RETIRE TO TABLE 35.116 FOR ACCEPTABLE TO FOALE 35.116 FOR PARTICULATION FOALE 35.116 FOR PARTICULATION SEEDENCE FOALEST PRESIDENCY FOR RETIRE TO BOA 2014 35.118 FOR PANGS SHEET LAWNO SEEDENCE FOALEST PRESIDENCY FOR TRANSPASE IT, ASHINGS AND CAPPINGS, ANTICAPINGS SHEET RESIDENCE FOR PARTICULATION FLASHING DETAILS.

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EXACT LOCATION & NUMBER OF DIP'S REGULED ARE TO BE IN ACCORDINACE WITH EAA CALWEE 39.25. REQUIRED/BY BY AND BEYMEN DOWNERIES WIST NOT BE MORE THAN 1201 & WITHIN 1.201 FROM A VALLEY GUTTER.

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HAVE A MUST OF NOT LESS THAN

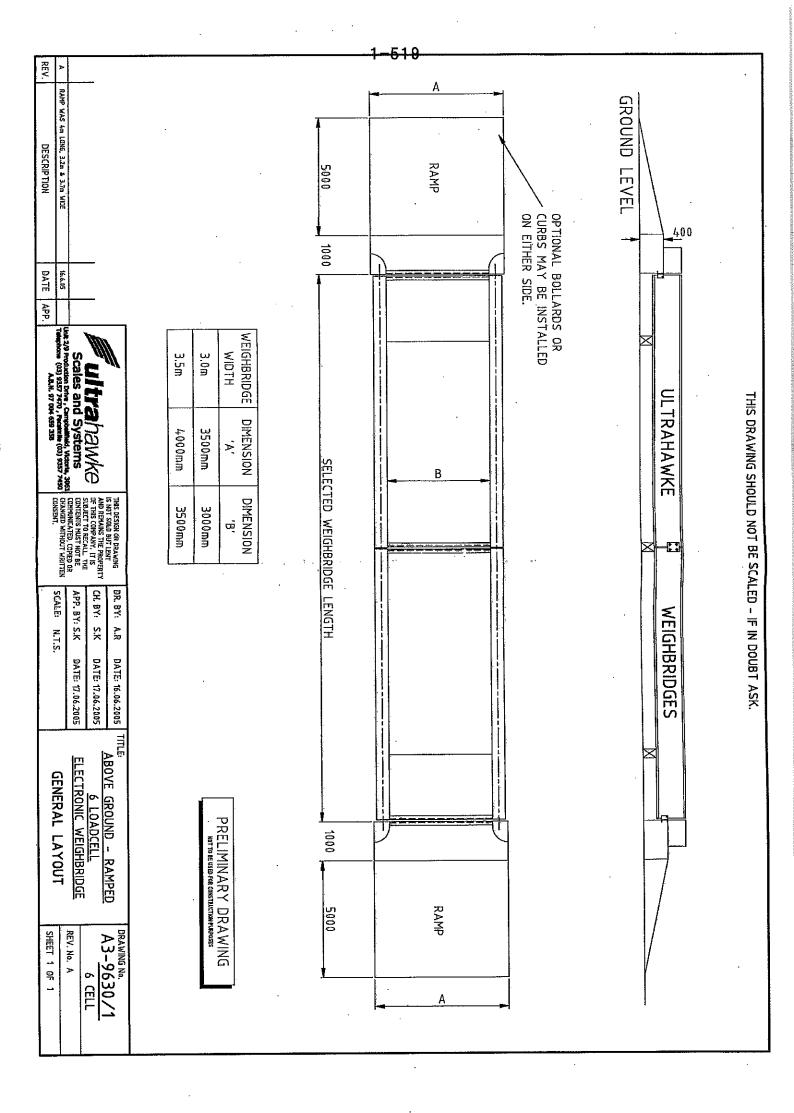
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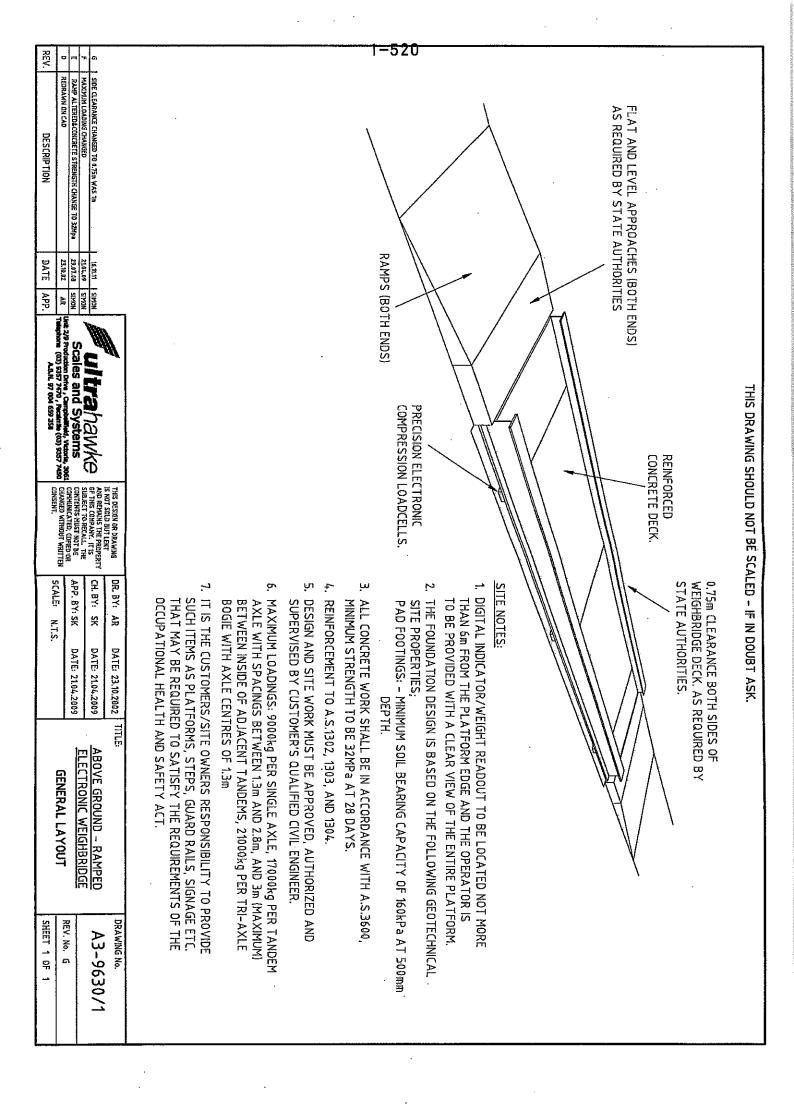
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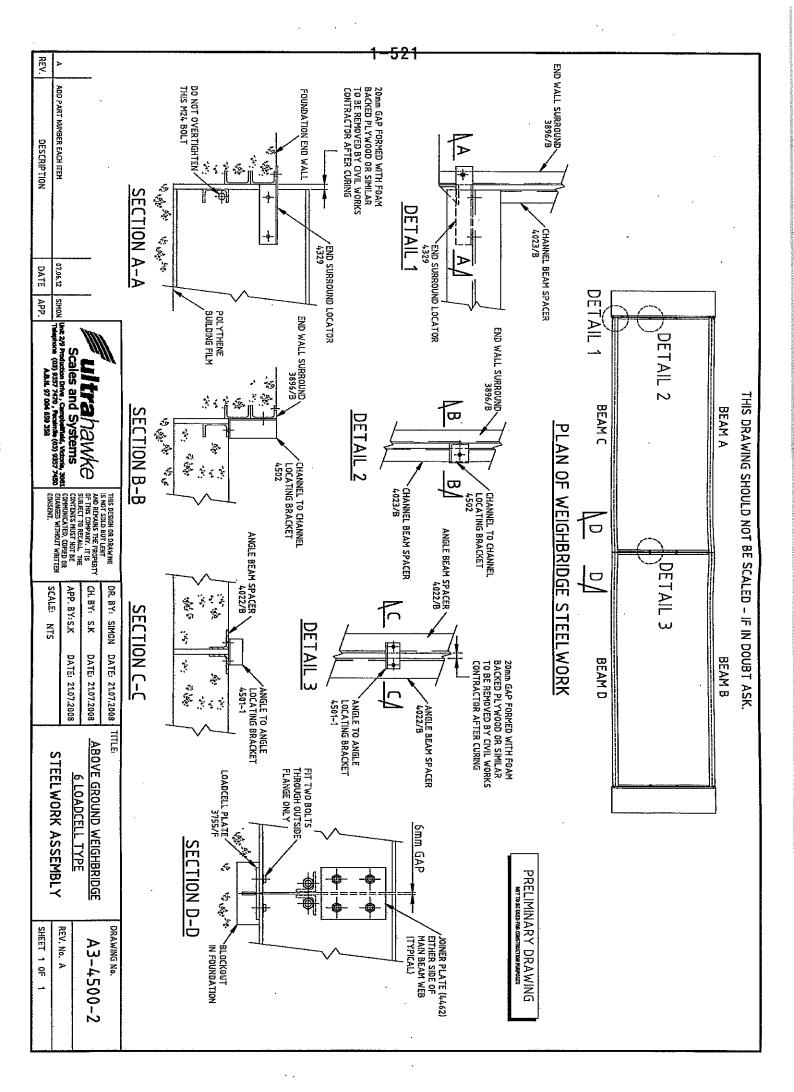
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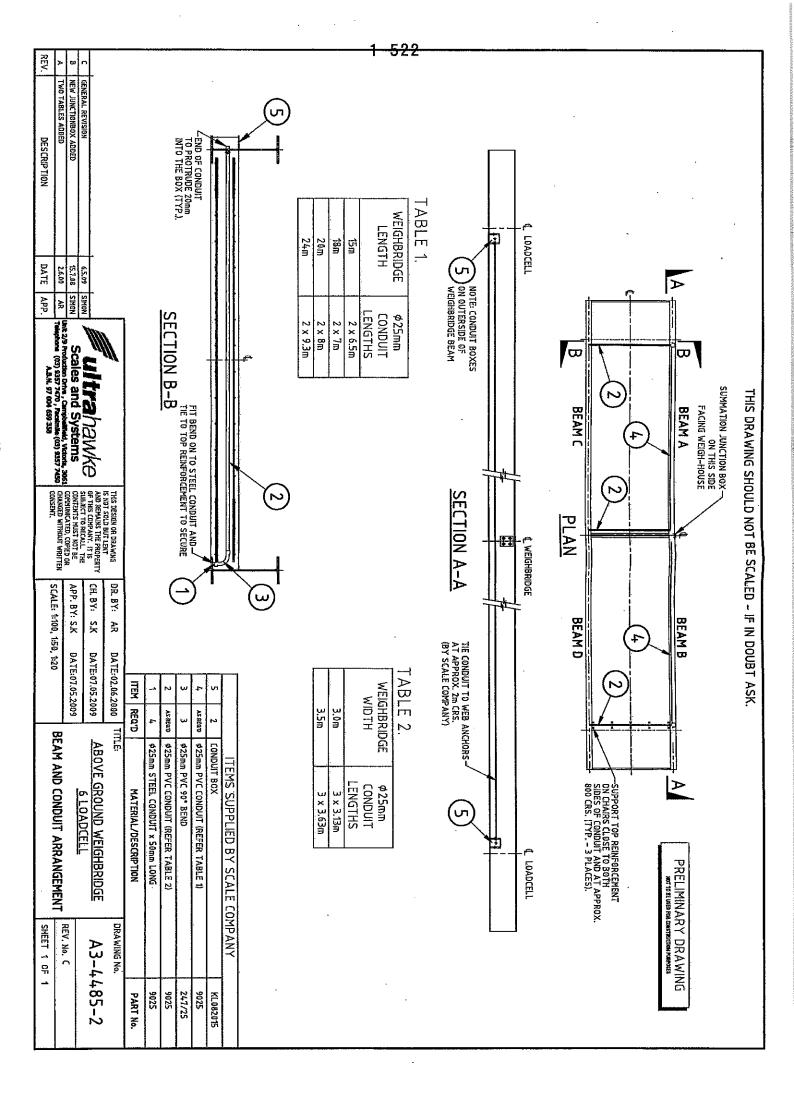
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TO BE IN ACCORDANCE WITH
BCA 2014 PART 8-5-2.4
WITH FALL NO LESS THAN
1100 FOR BOX SUTTERS
11500 FOR EAVES GUTTER

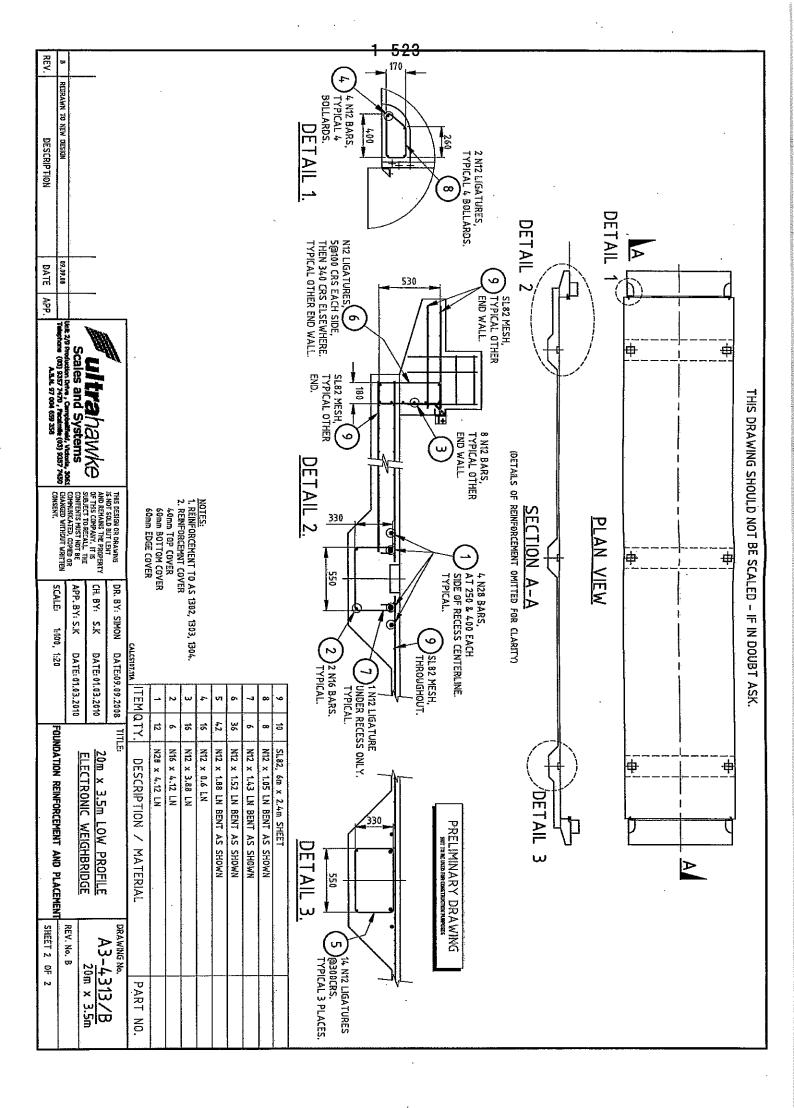
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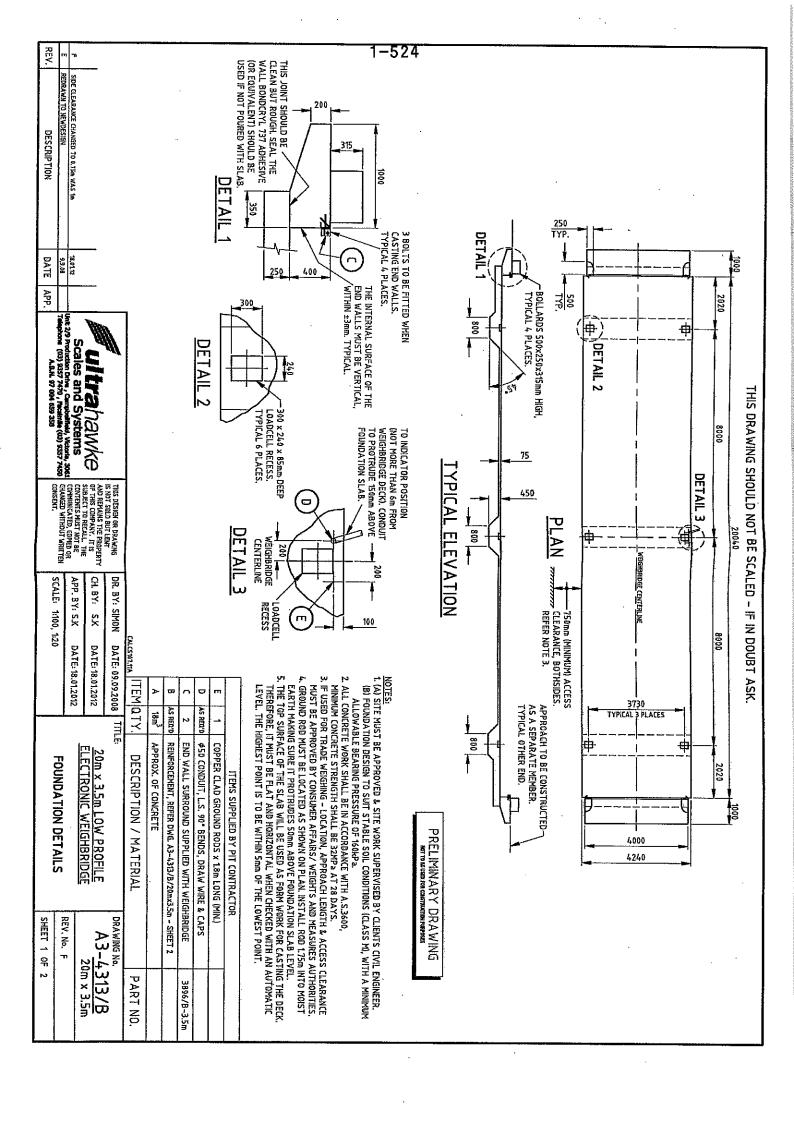


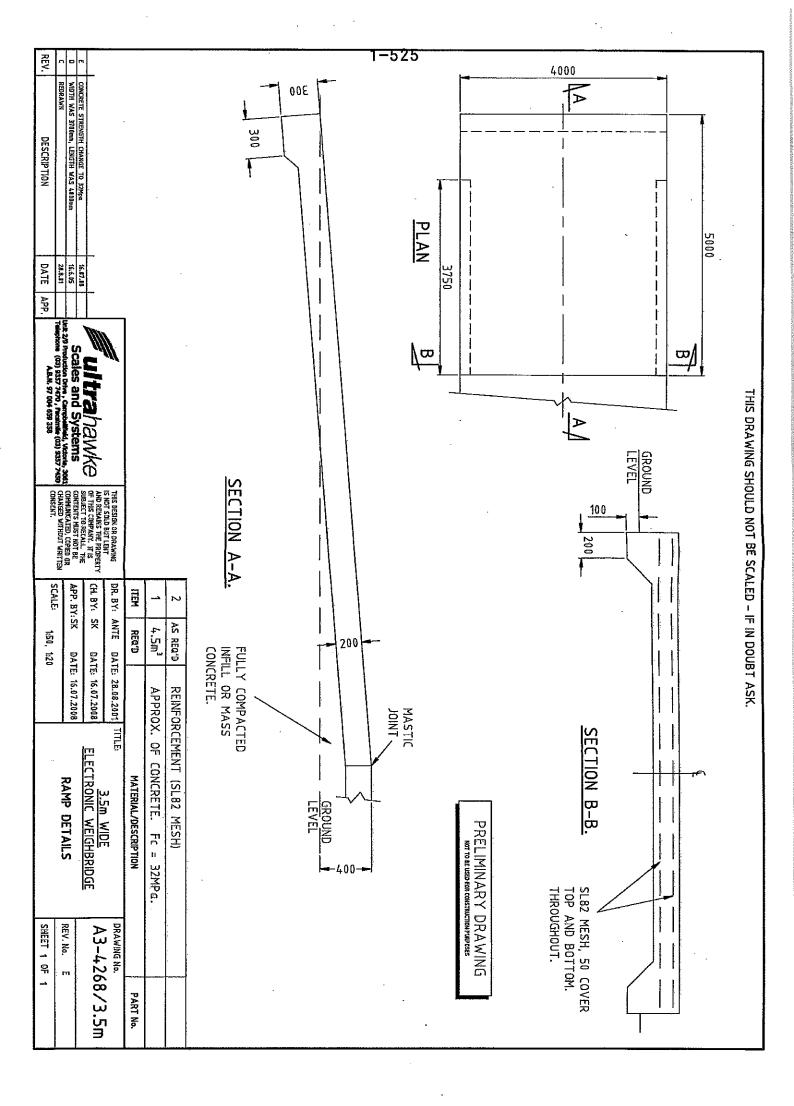


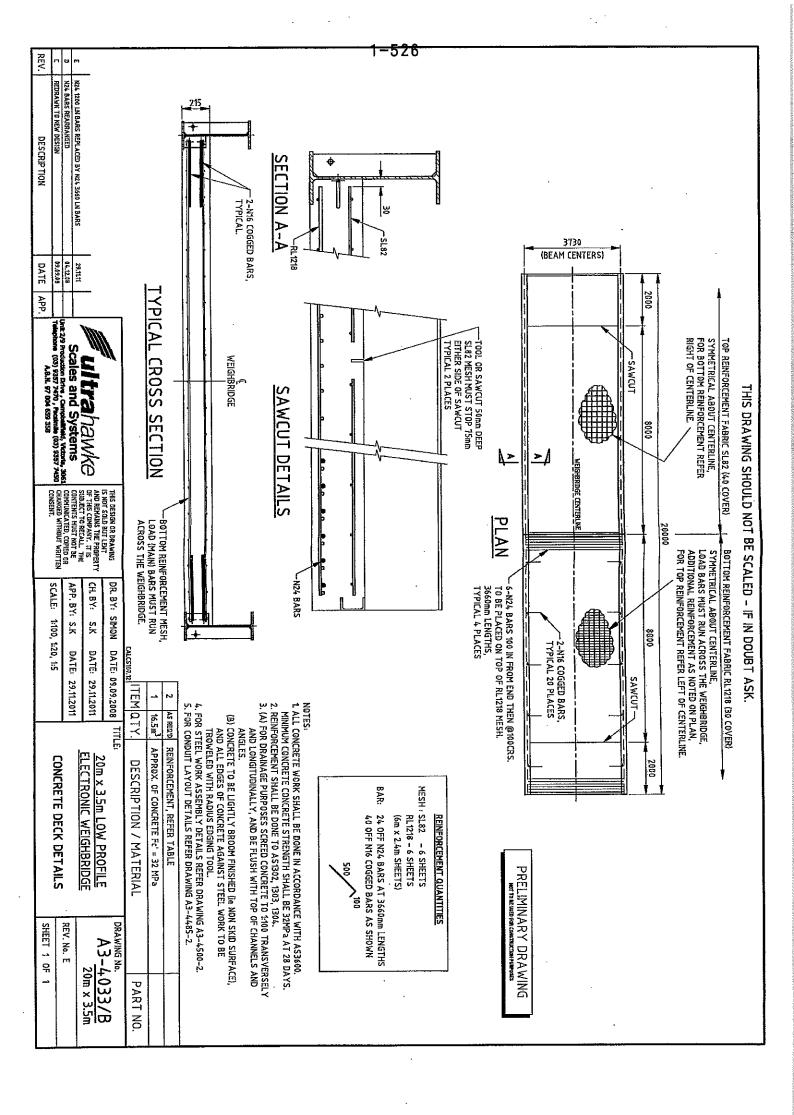












Annexure 3 – Bushfire Report and Certificate



Approved Form of a Bushfire Hazard Management Plan

Version:	1 Issue Date: 7 February 2014							
Purpose	To provide an approved form for a Bushfire Hazard Management Plan in accordance with:							
	Section 60A of the Fire Service Act 1979 -							
	bushfire hazard management plan means a plan showing means of protection from bushfires in a form approved in writing by the Chief Officer.							
	Section 3 Land Use Planning and Approvals Act 1993							
k	bushfire hazard management plan means a plan showing means of protection from bushfires in a form approved in writing by the Chief Officer;							
	Chief Officer means the person appointed as Chief Officer under section 10 of the Fire Service Act 1979;							
Declaration	A Bushfire Hazard Management Plan (BHMP) is in a form approved by the							
	Chief Officer if:							
	 The BHMP is consistent with a Bushfire Report that has been prepared taking into consideration such of the matters identified in Schedule 1 a 							
	are applicable to the purpose of the BHMP; and							
	 The BHMP contains a map, plan or schedule identifying the specific measures required to provide a tolerable level of risk from bushfire for the purpose or activity described in the BHMP having regard to the considerations in Schedule 2; and 							
	3. The BHMP is consistent with all applicable Bushfire Hazard Management Advisory Notes issued by the Chief Officer.							
	Mike Brown AFSM							
	Chief Officer							
	Tasmania Fire Service							

Schedule 1 - Bushfire Report

A Bushfire Report is an investigation and assessment of bushfire risk to establish the level of bushfire threat, vulnerability, options for mitigation measures, and the residual risk if such measures are applied on the land for the purpose or activity described in the assessment.

A Bushfire Report must include:

- a) A description of the characteristics of the land and of adjacent land;
- b) A description of the use or development that may be threatened by a bushfire on the site or on adjacent land; and
- c) Whether the use or development on the site is likely to cause or contribute to the occurrence or intensification of bushfire on the site or on adjacent land; and
- d) Whether the use or development on the site, and any associated use or development, can achieve and maintain a tolerable level of residual risk for the occupants and assets on the site and on adjacent land having regard for
 - i. The nature, intensity and duration of the use;
 - ii. The type, form and duration of any development;
 - iii. A Bushfire Attack Level assessment to define the exposure to a use or development; and
 - iv. The nature of any bushfire hazard mitigation measures required on the site and/or on adjacent land.

Schedule 2 - Bushfire Hazard Management Plan

A BHMP is a document containing a map, plan or specification and must:-

- a) Identify the site to which the BHMP applies by address, Property Identifier (PID), and reference to a Certificate of Title under the *Land Titles Act 1980*;
- b) Identify the certifying Bushfire Hazard Practitioner, Accreditation Number, and Scope of Accreditation.
- c) Identify the proposed activity to which the BHMP applies by reference to any plans, specifications or other documents that are applicable for the purpose of describing the proposed use or development;
- d) Indicate the bushfire hazard management and protection measures required to be implemented by the Bushfire Report;
- e) If intended to be applied for the purpose of satisfying a regulatory requirement, identify the regulation by its statutory citation and indicate the applicable provisions for which the BHMP applies; and
- f) Have, as a schedule, the Bushfire Report that details specific bushfire hazard management and bushfire mitigation measures required to achieve a tolerable level of residual risk for the proposed activity and any building or development on the site, including:
 - Measures to achieve compliance with any mandatory land use planning requirement in a planning process required under the Land Use Planning and Approvals Act 1993 (Attachment 1);
 - ii) Measures to achieve compliance with any mandatory outcome for a building or work undertaken in accordance with the *Building Act 2000* and the Building Regulations 2004 (Form 55).

Attachment 1: Certificate of Compliance to the Bushfire-prone Area Code under Planning Directive No 5

Code	E1 – Bushfire-prone Areas Code	Office Use
Certifi Act 1	icate under s51(2)(d) <i>Land Use Planning and Approva</i> 1993	Is Permit Application No PID
1	Land to which certificate applies ¹	
	of planning scheme or instrument: Northern Midlands Interim Plan	ning Scheme 2013(The Scheme)
Ivanic	or planning scheme of motivation working making scheme	,
Use or I	Development Site	Certificate of Title / PID
Street A	Address	120818/1
109 Auk	burn Road, Ross	
105 Auk	ourii Noau, Noss	4
	at is not the Use or Development Site relied upon for bushfire hazard ement or protection Address	Certificate of Title / PID
2.	Proposed Use or Development (provide a description in the space	
Ch	below) nanges of Use and erect a building	
	Vulnerable Use	
	Hazardous Use	
	Subdivision	
	New Habitable Building on a lot on a plan of subdivision approved in acco	ordance with Bushfire-prone Areas Code.
Х	New habitable on a lot on a pre-existing plan of subdivision	
	Extension to an existing habitable building	
	Habitable Building for a Vulnerable Use	

¹ If the certificate relates to bushfire management or protection measures that rely on land that is not in the same lot as the site for the use or development described, the details of all of the applicable land must be provided.

3. Documents relied upon²

	Document or certificate description:
Х	Description of Use or Development ³ (Proposal or Land Use Permit Application)
	Documents, Plans and/or Specifications Title: proposed New Shed and Change of USe Author: Woolcott Surveys 2015 Date: 2015
Х	Bushfire Report ⁴
	Title: BUSHFIRE ASSESSMENT
	Auburn Road, Ross
	Author: Ian Abernethy
	Author: Ian Abernethy
	Date May 2015
	Bushfire Hazard Management Plan ⁵
	Title:
	Author:
	Date
	Other documents
8110	Title:
	Author:
	Date:
	*

² List each document that is provided or relied upon to describe the use or development, or to assess and manage risk from bushfire, including its title, author, date, and version.

³ Identify the use or development to which the certificate applies by reference to the documents, plans, and specifications to be provided with the permit application to describe the form and location of the proposed use or development. For habitable buildings, a reference to a nominated plan indicating location within the site and the form of development is required.

⁴ If there is more than one Bushfire Report, each document must be identified by reference to its title, author, date and version.

⁵ If there is more than one Bushfire Hazard Management Plan, each document must be identified by reference to its title, author, date and version

	4. Nature of Certificate ⁶		
	Applicable Standard Assessment Criteria	nent Compliance Test: Certificate of Insufficient Increase in Risk	Compliance Test: Certified Bushfire Hazard Management Plan
<	F1.4—Use or development exempt from this code		
	E1.4. (identify which exemption applies)	No specific measures required because the use or development is	X Not Applicable
		consistent with the objective for each of the applicable standards identified in this	
	E1.5.1 - Vulnerable Use		
	E1.5.1.1 – location on bushfire-prone land A2	Not Applicable	Tolerable level of risk and provision for evacuation
	E1.5.2 - Hazardous Use		
	E1.5.2.1 — location on bushfire-prone land A2	Not Applicable	Tolerable level of risk from exposure to dangerous substances, ignition potential, and contribution to intensify fire
ΙГ			
	E1.6.1 - Subdivision		
	E1.6.1.1 - Hazard Management A1 Area	No specific measure for hazard management	Provision for hazard management areas in accordance with BAL 19 Table 2.4.4 AS3959
	E1.6.1.2 - Public Access A1	No specific public access measure for fire fighting	☐ Layout of roads and access is consistent with objective
	E1.6.1.3 - Water Supply A1 Reticulated		Not Applicable

⁶ The certificate must indicate by placing a 🗸 in the corresponding 🗆 for each applicable standard and the corresponding compliance test within each standard that is relied upon to demonstrate compliance to Code E1

⁷ Identify the Bushfire Risk Assessment report or Bushfire Hazard Management Plan that is relied upon to satisfy the compliance test

		Water supply is consistent with objective	No specific water supply measure for fight fighting	A1	E1.6.3.3 - Water Supply
		Private access to static water supply is consistent with objective	Not applicable	A2	
		Private access is consistent with objective	No specific private access measure for fire fighting	A1	E1.6.3.2 - Private Access
		Provision for hazard management areas in accordance with BAL 29 Table 2.4.4 AS3959 and managed consistent with objective		Tank Page 199	
		Provision for hazard management is consistent with objective; or	No specific measure for hazard management.	A1	E1.6.3.1 - Hazard Management Area
					E1.6.3 - Habitable Building (pre-existing lot)
		Water supply is consistent with objective	No specific water supply measure for fight fighting	A1	E1.6.2.3 - Water Supply
		Ve	Not Applicable	A2	
		Private access is consistent with objective	No specific private access for fire fighting	A1	E1.6.2.2 — Private Access
		α -	hazard management		
		7	No specific measure for	A1	☐ E1.6.2.1 - Hazard Management Area A1 No specific measure for
. 2				water supply	
		Water supply is consistent with objective	No specific water supply measure for fight fighting	A2 Non- reticulated	
	J			supply	

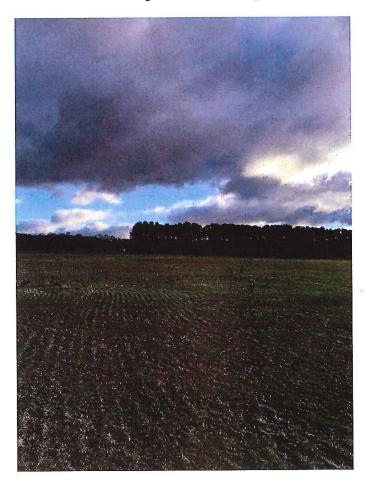
E1.6.5.1 – hazard management	E1.6.5 – Habitable Building for Vulnerable Use					בדיטידיד וומבמומ ווומוומטיניוטויי		E1.6.4 - Extension to Habitable Building
A1						i	AI	
No specific measure for hazard management		V 2			(A)	management measure	No specific hazard	
	-]			<u> </u>				
Bushfire hazard management consistent with objective; or Provision for hazard management areas in accordance with BAL 12.5 Table 2.4.4 AS3959 and managed consistent with objective		consistent with objective	Table 2.4.4 AS3959 and managed	Provision for hazard management areas in accordance with BAL 12.5		is consistent with objective; or	Provision for hazard management	*
C	J				ן			
				**				

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ddress:	Level 4/1	.13 Cimitiere S	St Launceston		Fax	x No:		
				Email address	iabern	ethy	/@pitt	sh.com.a
<i>re Servic</i> ccreditat	ce Act 1979 tion No:	BFP- 124		Scope:				
6.	Certificati	on						
2	Ian Aberne ervice Act 19		ertify that in accorda	nce with the autho	ority given u	nder	the Par	rt 4A of the
	e lise or deve	lonment describ	ed in this certificate i	s exempt from api	olication of	Code	E1 –	х
inc. bus	shfire-Prone rease in risk shfire protec	Areas in accorda to warrant speci tion in order to b	ed in this certificate in Ince with Clause E1.4 Ific measures for bush The consistent with the This Certificate	(a) because there ofire hazard mana	is an insuffi gement and	cient Vor		Х
inc. bus	shfire-Prone rease in risk shfire protec	Areas in accorda to warrant speci tion in order to b	ince with Clause E1.4 fic measures for bush be consistent with the	(a) because there ofire hazard mana	is an insuffi gement and	cient Vor		Х
inc. bus sta or The ma	shfire-Prone rease in risk shfire protec indards iden ere is an insu anagement d	Areas in accorda to warrant speci tion in order to b tified in Section 4 officient increase and/or bushfire p the objective for	ince with Clause E1.4 fic measures for bush be consistent with the	(a) because there offire hazard mana, objective for all office ecific measures for the use or develo	is an insuffic gement and f the applica bushfire ha oment desci	cient l/or able azard ribed	to be	X
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Signed

Date 19 May 2015

Bushfire Assessment Report AUBURN ROAD, ROSS For XLD Grain Prepared by



IAN ABERNETHY
MAY 2015

PROPOSAL

It is proposed to use the subject site for the collection and distribution of grain (in bags); erection of an office amenity block and installation of a weighbridge.

This is a new site on the west of the Midland Highway – away from the Ross Township.

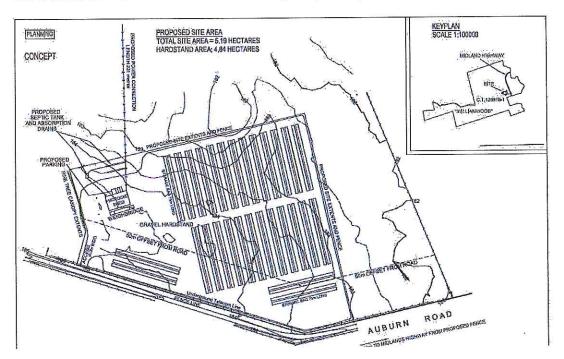


Figure 1 - Proposal Plan

TITLE

Property Address	'WILLIAMWOOD' - 109 AUBURN RD ROSS TAS 7209 7570639		
Property ID			
Title Reference	120818/1		

LAND USE PLANNING

The land use control document covering this site is the Northern Midland Interim Planning Scheme 2013. The site is zoned Rural Resource use under the Planning Scheme.

CURRENT USES IN AREA

The site is currently used for grazing purposes. It is a site which sits between two pivot irrigators and their respective spray circles. To the south is Auburn Road. To the east is the Midland Highway – some 226m away. To the south, west and north is land within the title of Williamswood



Figure 2 - Site location

CRITICAL THREAT AREAS

The critical threat area comes from grassland (grazing and cropping) which surrounds the site. Given the management of this land falling under the same ownership the risk is low. It should also be noted that at the height of the fire season (summer) the surrounding land will be subject to irrigation practices — reducing the risk even further.



Figure 3 – Risk Area

ENVIRONMENTAL MATTERS

Reference to Tas VEG 3 classifies the vegetation on the site and surrounding lots as agricultural land

There are no threatened flora or fauna on this site or within 500m of the site.

ACCESS

Access to the site will be from Auburn Road a fully formed sealed public road. Auburn Road is an 8.5m wide sealed carriageway set within a 20m wide road reserve with access off the Midland Highway. Within the site all accessways will be crushed rock giving two wheel drive, all weather access.

WATER

The site will be serviced by a water tank system for both domestic (low use) and firefighting purposes. Rainwater will be collected from the roof of the shed and stored in tanks for domestic and firefighting purpose. At least two 10,000 litre water storage tanks will be located on site specifically for fire fighting purposes.

SLOPE

The site is generally flat – with maybe a slight decline to the Highway.

POWER LINES

There are no overhead powerlines impacting on this site.

VEGETATION

The site is surrounded on all sides by grasslands managed as farmland – on three sides under irrigation.

FIRE PATH (LIKELY)

The prevailing wind impacting on this site comes from the west - slightly uphill to the site and across irrigation land.

ASSESSMENT OF RISK

The effective bushfire risk is graphically illustrated below. There is an on-going opportunity to use the hardstanding area within the site as a barrier for bushfire prevention.

The assessment of risk is presented in a table form below:-

	North	South	East	West
Vegetation	Grassland	Grassland	Grassland	Grassland
Slope	Flat	Flat	Flat	Flat
Distance	Nil	Nil	Nil	Nil

Table 1 – Bushfire Risk Assessment



Figure 3 - Plan of bushfire risk assessment

CONSEQUENCE

Given the proposal to include water tanks on site for firefighting purposes, the extensive irrigated areas around the site, the current private/public access arrangements and the extent of hardstanding around the proposed building the consequence of any bushfire in this area would be low.

CONCLUSIONS

As a result of the low risk and other factors outlined above the proposal can be classed as Exempt from the Bushfire Code – the development as proposed presents an insufficient increase in risk to warrant specific measures for bushfire hazard management.

RECOMMENDATIONS

No specific recommendations are required.

REFERENCES

Northern Midlands Interim Planning Scheme 2013.

Standards Australia. (2009). AS 3959-2009 Construction of Buildings in Bushfire Prone Areas.

Guidelines for development in Bushfire Prone Areas in Tasmania - 2005

Building Code of Australia (Tasmanian Section)

PREPARED BY

IAN ABERNETHY – 19 may 2015

BFP 124

Annexure 4 - Traffic Impact Assessment



TRAFFIC IMPACT ASSESSMENT

AUBURN ROAD, ROSS

Prepared on behalf of XLD Grain

Prepared By:

Risden Knightley BE (Civil), MIEAust, CPEng NPR, CC 2539X

PO Box 128, Prospect 7250

Mobile: 0400 642469 Fax: 6343 1668 Email: rikmail@netspace.net.au

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5.	Assessment	Pg 7
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7.	Communication with Local Government/State Growth	Pg 8
8.	Conclusion	Pg 9

1. Introduction

XLD Grain is proposing to establish a grain receival, processing and distribution site on Auburn Road near the township of Ross. This complex will receive grains produced within a 150 kilometre radius and process them on site, for forwarding to processing customers within Tasmania and on the mainland.

As part of the development application documentation, a Traffic Impact Assessment is required to accompany the planning application. This report, prepared by Risden Knightley, an experienced traffic engineer, is provided for that purpose.

Preparation of the report has included a site visit, together with discussions with the applicant's representatives, Northern Midland Council Officers and Roads Section Officers of Department of State Growth.

2. The Site

The site is a large rural lot of some 5.19 hectares located on the northern side of Auburn Road, as indicated below.

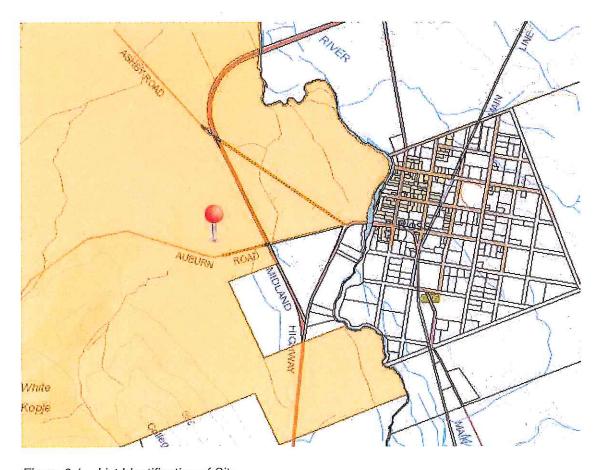
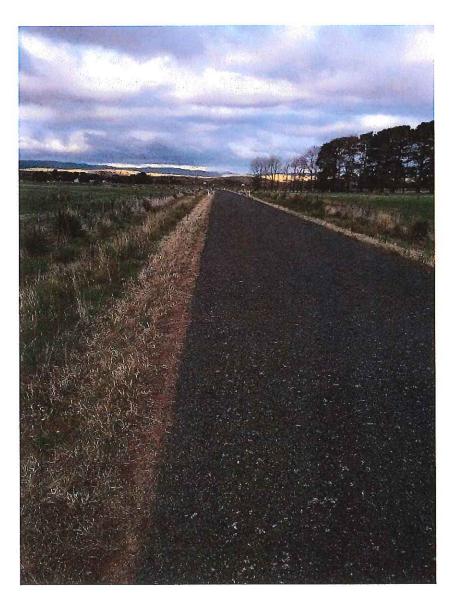


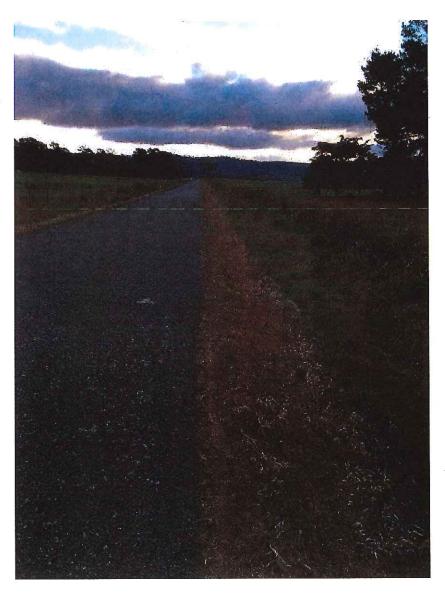
Figure 2.1 - List Identification of Site

Currently no development has taken place on the proposed site however as part of the application, one large shed and weigh scale for grain receival and processing are proposed together with the establishment of large grain bags for the storage of grain seeds.

Access to the site is by a new crossover some 10 metres wide and set back 15 metres from the front boundary, connecting to Auburn Road, from an entrance at the south western corner of the lot (*Refer to Appendix A*). The driveway access within the road reserve is to be widened to some 15 metres to provide for the swept path of negotiating trucks. The throat width at edge of seal will then be some 19 metres. The driveway length from the edge of seal to gateway will be some 25 metres. Sight distance at Auburn Road is in excess of 250 metres to the west and in excess of 250 metres to the east from the proposed driveway.



Photograph 1 - View to left, back to Midland Highway



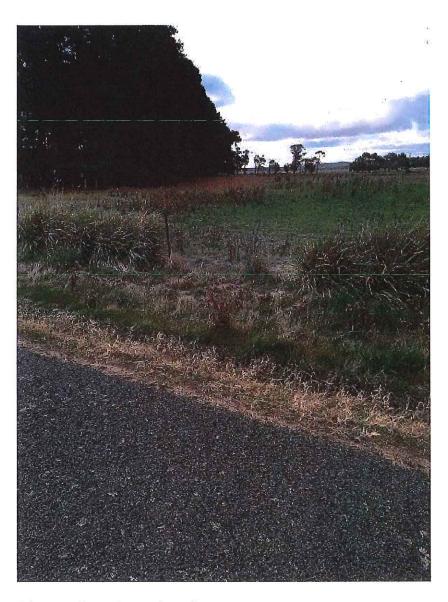
Photograph 2 - View to right

3. Auburn Road

This road is considered a local rural road (Category 5 classification) linking rural communities to the Midland Highway.

The road is constructed, in the vicinity of the site, with a sealed pavement some 5 metres wide, grass verges and edge drains some 2 metres from edge of shoulder at frontage. 100 km/hr speed limit is in place past the site. To the east of the proposed site access (approximately 500 metres) is the intersection between Auburn Road and the Midland Highway. This intersection is well signposted and line marked.

The Department of State Growth, crash history unit, was contacted regarding any recorded statistics in the last five years. Email response was received that no crash history was evident at the proposed site.



Photograph 3 – Access Location

4. Traffic Data

Auburn Road

The indicative weekday traffic volume for Auburn Road is some 100 to 150 vehicles, with peak hours at 10% distributed 70/30 from west to east for the morning and evening peak hours respectively.

Traffic growth at the typical regional growth rate of 1.25% suggests a plus 20 year average weekday value of some 160 vehicles.

Site

Information for the site indicates weekday use at some 30 movements in and out daily during peak grain harvesting season, i.e. total two-way volume at 60 vehicles, with some 100% of heavy traffic vehicle movements to / from the east (direct from Midland Highway). Traffic movements for this site are limited by the amount of grain that can be processed within the 24 hour period.

5. Assessment

Assessment in accordance with section E4.0 of the Road and Railway Assets Code indicates:

- E4.6.1 P3 c The assessed site traffic movements, being some 60 per day, is greater than 10% of the passing traffic. As such a new access will be required. This access will be constructed to Tasmanian Council Standard Drawing TSD Ro3 V1 which provides safe and efficiency access onto Auburn Road. Site distance at the access point is noted to be well in excess of SISD requirements of 250 metres as per TSD RFO1 V1 meets acceptable solution.
- E4.7.1 The site access is more than 50 metres from the Midland Highway, a Category 1 Road complies.
- E4.7.2 P2 c The site access is a new access entering onto a Category 5 road. The new access affords in excess of 250 metres each way and will be constructed to Tasmanian Council Standard Drawing TSD Ro3 V1 meets acceptable solution.
- E4.7.3 Not applicable.
- E4.7.4 The available sight distances are considered to comply with table E4.7.4 complies.

Assessment of the Auburn Road traffic service allowing for a weekday through volume of 160 vehicles and 30 movements to / from the site indicates:

- i) Morning peak hour (15 vehicles)
 11 vehicles toward Midland Highway, 4 vehicles heading west on Auburn
 Road
- ii) Worst case 27 exiting site vehicles as left turn.

Allowing for truck classified vehicles with 8 second gap time and 4 second move up time, the average delay to exiting vehicles is some 3.5 seconds, i.e. ideal traffic service conditions.

6. Car Parking

The site area and developed standing areas are considered suitable for parking requirements with the nearest workshop, office and parking area some 50 metres from Auburn Road, i.e. all activities associated with the site uses should be contained within the site and relatively remote from Auburn Road.

7. Communication with Local Government/State Growth

Discussions were held with the Department of State Growth regarding the impact of larger traffic on the intersection of Midland Highway and Auburn Road. Department of State Growth confirmed that the intersection will be upgraded in the next year as part of its funding process. This upgrade is designed to accommodate the traffic movements of this development occurring and other heavy vehicle usages along Auburn Road.

Further to this, discussions were held with Northern Midlands Council. It was confirmed that the design was sound as long as the access was suitably designed to accommodate turning movements.

8. Conclusion

A traffic impact assessment for a grain processing and storage facility at Auburn Road, Ross including the new crossover, indicates the proposal complies with section E4.0 of the Interim Planning Scheme. The site development is relatively remote from Auburn Road such that site activities and parking needs should not be detrimental to other traffic using Auburn Road.

May 2015

1-553

Our ref: 400200.01; P15-157; Woolcott Surveys (obo XLD Grain)

via email: colin.smith@woolcottsurveys.com.au √

Enquiries: Paul Godier

5 June 2015



Woolcott Surveys (obo XLD Grain)



Dear Mr Smith

Planning Application P15-157 - Information Required Resource processing (grain processing & distribution facility) at 'Williamwood' (accessed from Auburn Road), 109 Auburn Road, Ross

I refer to the abovementioned application, which has been reviewed by Council's Planning Officers. The following information is required to allow consideration of your application under the *Northern Midlands Interim Planning Scheme 2013*:

- Full site plan to show dimensions of site area and distances from Midland Highway and Auburn Road.
- Part site plan to show dimensions of grain bags, distances between the bags, dimensions of shed and weighbridge, dimensions of storage site, distances from Midland Highway and Auburn Road.
- A description of how the grain storage facility will operate.
- Advice of proposed shed colour.

Therefore, in accordance with Section 54 of the Land Use Planning and Approvals Act 1993, the statutory period for processing the application will not recommence until the requested information has been supplied to the satisfaction of the Planning Authority. It is a requirement of the Planning Authority that all correspondence, if emailed, is sent to Planning@nmc.tas.gov.au and referenced with the planning application number P15-157. If you have any queries, please contact Council's Planning Section on 6397 7301, or e-mail Planning@nmc.tas.gov.au.

Yours sincerely

Jan Cunningham

PLANNING ADMINISTRATION OFFICER

Copy: C & L Booth, via email: charles.booth@sfg.com.au √

Note: Due to privacy laws, Council officers only hold discussions with applicants (eg when an applicant is acting as the owner's agent, all enquiries must be directed through the applicant).





C

Our Ref: 2014-133

Your Reference: P15-157

5/06/2015

The Planning Department Northern Midlands Council P.O. Box 156 LONGFORD TAS 7301

To Whom It May Concern,

RESOURCE PROCESSING (GRAIN PROCESSING & DISTRIBUTION SITE) & TITLE CONSOLIDATION AT 'WILLIAMWOOD', 109 AUBURN ROAD,

In response to your letter dated 5th of June 2015 we offer an explanation of how the Grain Storage Facility will operate.

The development is for a grain processing, testing and storage facility involving erection of a shed "Eucalypt Green" in colour, weighbridge, new access and Hardstand area for storage of grain silo bags.

The shed will contain a grain bagging facility, grain drying area, laboratory testing facility and a small office and amenities area for 2 proposed office staff. In addition a 60 horse power tractor and grain auger will be stored in the shed when not in use. The weighbridge will handle in-coming and out-going vehicle weighs.

The grain will be grown on large agricultural properties in and around the Ross area a portion of which will come from the Williamwood property.

Onsite the grain will be tested in the Laboratory in a quite extension process. The grains are tested for their qualities and suitability for various uses. As an example Barley is tested and depending on its qualities may be used for use in beer or if of a lower quality simply used as animal feed. The grains are then segregated and packaged according to their qualities and end use. As mentioned this will include a Bagging Plant inside the proposed shed. The grain will be tested again for its qualities before being sent to the end user.

WOOLCOTT SURVEYS

Ph: (03) 6332 3760 F: (03) 6332 3764 10 Goodman Court, Invermay, TAS, 7248 PO Box 593, Mowbray Heights, TAS, 7248 Email: admin@woolcottsurveys.com.au **EAST COAST SURVEYING**

Ph: (03) 6376 1972 Avery House Level 1 48 Cecilia Street, St Helens, TAS, 7216 PO Box 430, St Helens, TAS, 7216 Email: admin@ecosurv.com.au





The qualities of the grain that are tested include but are limited to:

- Germination qualities.
- Protein Levels.
- Gluten content.

Grain will also be dried inside the shed area should it arrive onsite with a moisture level too high. This is another test which will be performed on the grain prior to storage.

The grain will enter the site in the back of a truck where it will be weighed. Samples will be taken to determine moisture content. The grain will also be tested for quality and suitability for various uses. Depending on the outcome of the tests the grain will either go into the shed to dry or into large white silo bags to be stored in the open air onsite. If placed into bags, bags will be stored alongside other bags in rows in the open air until such time as orders require the grain to be taken to from the site. The grain could remain in bags for around 4-6 months. When ready to leave the site, the grain will then be re-tested, and if required, repacked into bags ready to leave the site. The bags or loose grain will leave the site in the back of a truck, weighed on the site, then delivered to the end user.

Bird and Wildlife Control

We enclose a separate document which describes XLD Grains Site Management Protocols. The site will be fenced so livestock from surrounding paddocks and wildlife do not interfere with the Silo bags or gain access to the site. It is not in XLD Grains interest to have wildlife or livestock entering the Grain Facility Site and interfering with the Grain Silo Bags and should this take place appropriate measures and actions will be taken in line with general Rural Agricultural Practices and state regulations.

Chemicals to be used Onsite

- a) For weed control Normal use of Roundup in doses that are recommended by the manufacturer in accordance with local regulations. This is accepted Agricultural Practice.
- b) For grain weevil control- Normal use of Phosphine Tablets that are used in confined storages. Ie, in silo bags or the storage shed NOT in the open air. This also is accepted Agricultural Practise.

WOOLCOTT SURVEYS

Ph: (03) 6332 3760 F: (03) 6332 3764 10 Goodman Court, Invermay, TAS, 7248 PO Box 593, Mowbray Heights, TAS, 7248 Email: admin@woolcottsurveys.com.au **EAST COAST SURVEYING**

Ph: (03) 6376 1972 Avery House Level 1 48 Cecilia Street, St Helens, TAS, 7216 PO Box 430, St Helens, TAS, 7216 Email: admin@ecosurv.com.au





Dust and Noise

In the height of harvest season the maximum amount of vehicles attending the site each day will be 30. Considering the hours of operation in summer this will be slightly over two per hour.

A single 60 Horse Power tractor and grain auger during harvest will be used onsite. The Machinery will be stored inside the shed. Noise would be the equivalent to the normal Agricultural Activities which would occur onsite should the land be used for a no permit required Agricultural Use such as cropping.

A gravel hardstand is proposed and the use will not generate large amounts of dust, any more than a no permit required use such as cropping which takes place on the Neighbouring paddocks.

Please contact us if you have any queries.

Yours faithfully Woolcott Surveys

Colin Smith

Director

Registered Land Surveyor

Enc.

Ph: (03) 6332 3760 F: (03) 6332 3764 10 Goodman Court, Invermay, TAS, 7248 PO Box 593, Mowbray Heights, TAS, 7248 Email: admin@woolcottsurveys.com.au **EAST COAST SURVEYING**

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XLD Grain Site Management Protocol

Updated January 2015



1 Background

XLD Grain operates a temporary (6 months of the year) grain storage facility at the Carrick grain site. XLD Grain receives grain from Tasmanian farmers during the harvest period and out-turns grain from the site thereafter.

This protocol aims to minimise damage to the silo bags at the XLD Grain Carrick Site, in order to protect the grain stored within them. Appropriate control of bird life and rodents in the area is also an important environmental and safety consideration.

Birds and rodents are capable of perforating the bags and obtaining grain for feed as a result and whilst not the main enemy of the feedmill or the farming community, they are the primary pest for grain storage.

2 Spillage

The nature of grain handling means that grain will spill to the ground from time-to-time during the normal operations of the business. When spillages occur, grain that can be cleanly shovelled and stored will be at the next available opportunity, grain that is contaminated with rock and not fit for resale will be shovelled and either; bagged in 40kg bags, transferred to skip waste on-site or buried. Any remaining surface grain will be covered by fine road gravel, keeping exposed grain on the site to a bare minimum.

3 Monitoring

In accordance with the site management protocols, weekly inspections of the site will be conducted. During these inspections all bags will be inspected for damage, including minor damage that may lead to the leakage of grain from the bag to the ground. Such damage will be immediately repaired and documented in the weekly inspection report. During weekly inspections, a bird and rodent count will also be conducted, documenting the number and types of species on site at that time. This will allow better assessment of behavioural habits and assist in ongoing control.



4 3rd Party Pest Control

XLD Grain will, from time-to-time, seek 3rd party assistance in the execution of the bird and rodent control protocols. This may include; Morris Pest Control (already under contract) and ornithologists.

DATE:	

XLD GRAIN SILO BAG WEEKLY INSPECTION FORM

ODENT AND BIRDS UNDER CONTROL
□ COMMENTS
□ BIRD COUNT
SPECIES COUNT

□ BAGS INSPECTED

(SILO BAG #	DAMAGE	PERFORATIONS	SEALS	MOISTURE INGRESS
	2 3	ema como de la como de			
	4 5		port time to a contract of the		
	6				
(6 7				
	8				
	10				to an each

X			
NAME:		 	

☐ FORM EMAILED TO <u>lachie@xldgrain.com.au</u>

REFERRAL OF DEVELOPMENT APPLICATION P15-157 to Works & Infrastructure Department

Property no: 400200.01 Date:

05-Jun-2015

Applicant:

Woolcott Surveys (obo XLD Grain)

Proposal: Location:

Resource processing (grain processing & distribution facility) 'Williamwood' (accessed from Auburn Road), 109 Auburn Road,

ROSS

Please inspect the property and advise regarding stormwater/drainage, traffic/access, and any other engineering concerns.

Stormwater:

Stormwater.	Total state of the
Is the property connected to Council's stormwater	N/A
services?	
If so, where is the current connection/s?	N/A
Can all lots access stormwater services?	N/A
If so, are any works required?	No
Stormwater works required:	
To the satisfaction of Council's plumbing inspector	
Is there kerb and gutter at the front of the property?	No
Are any kerb-and-gutter works required?	No

Road Access:

Road Access.	,
Does the property have access to a made road?	Yes
If so, is the existing access suitable?	Yes
Does the new lot/s have access to a made road?	Yes
If so, are any works required?	No
Is off-street parking available/provided?	Yes
Road / access works required:	
Works to be in accordance with Standard Drawing	TSD-R05, a hotmix sealed
access from the edge of the road to the property bot	undary
Is a sealed internal driveway required?	Planning issue
Is a vehicular crossing application form required?	Yes
Extra information required regarding driveway	No
approach and departure angles	14
Are any road works required:	No
Additional Comments:	An Engineer's design is not required.

Engineer's comment:

Council services for this subdivision can be addressed by standard conditions.

Works & Infrastructure Department conditions – access & stormwater

W.1 Stormwater

All stormwater run-off shall be contained within the site. The applicant shall provide detailed stormwater design plans for approval by Council's Plumbing inspector.

An indented truck access shall be constructed to the property in accordance with Council standard drawing TSD-R05.

The access shall be sealed for a minimum distance of 14m in accordance with Standard Drawing TSD-R05

Prior to the commencement of any access works, a vehicular crossing application form shall be completed and approved by Council prior to commencement of any works.

W.5 Works in road reserve

No works shall be undertaken within the public road reserve, including crossovers, driveways or kerb and guttering, without prior approval for the works by the Works & Infrastructure Manager. Twenty-four hours (24) notice shall to be given to the Works & Infrastructure Department to inspect works within road reserve and before placement of concrete or seal. Failure to do so may result in rejection of the vehicular access or other works and its reconstruction.

W.8 Pollutants

a) The developer/property owner shall be responsible for ensuring pollutants such as mud, silt or chemicals are not released from the site.

b) Prior to the commencement of the development works the developer/property owner must install all necessary silt fences and cut-off drains to prevent soil, gravel and other debris from escaping the site. No material or debris is to be transported onto the road reserve (including the naturestrip footpath and road pavement). Any material that is deposited on the road reserve shall be removed by the applicant. Should Council be required to clean or carry out works on any of their infrastructure as a result of pollutants being released from the site the cost of these works may be charged to the developer/property owner.

Jonathon Galbraith (Works & Infrastructure Officer)

Date: 10/6/15

June 22 2015

The General Manager

Northern Midlands Council

PO Box 156

Longford Tas 7301

By email: planning@nmc.tas.gov.au

Dear Sir

RE: Development Application P15-157 Williamwood Resource processing

As an adjoining property owner I wish to lodge our objection to this proposed change of use as detailed in the above planning application.

Settled in 1823, Somercotes is a family owned and operated business, having been in the family continuously for 6 generations. The business historically was a mixed enterprise farm with cropping, wool and livestock. 2013 marked the 190th anniversary of the settling of Somercotes.

In 2000 the business diversified into stone fruit and established 5 hectares of cherries. This decision was based on extensive research and to capitalise on not just Tasmania's but the specific region's (Ross) growing conditions with respect to rain and nuisance factors. Cherries have been picked and sold at Somercotes since 2004. As a stand-alone orchard in a non-traditional growing area there is not a need to net the orchard because of the lack of rain in the growing season and the minimal bird pressure.

Subsequent to the orchard development was a significant expenditure on land preparation, overhead frost protection, construction of a new 55mL dam, the sinking of bores, vermin and deer proof fencing, full fertigation and irrigation and the erection of wind curtains.

P.O. Box 5

Ross, Tasmania 7209 phone: 61 3 6381 5231

facsimile: 61 3 6381 5356

email: somercotes@bigpond.com

Somercotes Holdings Pry Ltd abn 44 009 481 887



Tourism has also been an integral part of farm life for the last twenty years, with converted cottage accommodation, meeting rooms and conference options a draw card for the tourism and business markets, along with a farm shop selling fresh cherries and some value added products made with cherries from our orchard.

In early 2012 Somercotes recognised the need to take control of the value chain and remove the reliance on large scale packing sheds and manage directly our already established brand, and to take control of all the sales and distribution channels across the entire 3 month fruiting period.

As a result Somercotes established a processing and pack shed on the farm. This significant investment of over \$300,000 has enabled the business to achieve the quality and guaranteed supply of its own fruit.

Somercotes had continued to invest in capital to expand the orchard with an additional 3400 trees planted in 2010. In 2013 as a result of the Tasmanian Economic Development Plan identifying horticulture as a priority sector Somercotes was recognised as a successful recipient of the resultant Vineyard and Orchard Expansion Programme to plant an additional 20,000 trees over 12 hectares. This programme will be fully completed by December 2015 at a cost of \$400,000.

Somercotes has also invested capital in the Midlands Irrigation Scheme to secure water rights as a drought and risk mitigation policy of the business.

Over the last 15 years Somercotes had developed a solid and sound reputation from its diversification into cherries which has taken considerable capital outlay. We have fully audited Quality Assurance programmes in the orchard and the Pack shed and are export certified.

We currently pick and pack approximately 100 tonnes of cherries, employ over 50 casual seasonal staff which equates to 6 full time equivalent jobs in addition to the 2 permanent full time positions. This is expected to reach 300 tonnes when current plantings are in production. We currently supply fresh fruit to local, national and international markets including China, Hong Kong, Singapore, Thailand, Indonesia and Taiwan.

In the context of the proposed planning application, Council must assess the application against various performance tests of its planning scheme. As the application is for a discretionary, non-primary industry use in the Rural Resource Zone, it must be appraised against performance criteria P1.1 of Clause 26.3.1. The visual impact of the site which would be that it would contain 5 hectares of white plastic storage bags which would unequivocally have a detrimental effect to the rural landscape of the surrounding. It is considered that the proposal would therefore contravene the local area objective provided at Clause 26.1.2-b. Recognising the closeness of the facility to the village of Ross and the importance of the Heritage Highway as a tourist route, it is obvious that the proposal would have an unreasonably adverse visual impact upon non-primary industry uses in the area such as tourism.

The application must also be appraised against performance criteria provided at P4 b), in that it must demonstrate that primary industry uses will not be unreasonably confined or restrained from conducting normal operations. In the context of the proposal there is substantial documented evidence stating that grain facilities offer extreme bird pressure. (Refer to Annexure A: CSIRO Bird Management in grain storage facilities 2003). The fundamental problem with large scale grain storage facilities such as that proposed is the concentration of a huge quantity of produce in a single location. As a consequence both a range of pest species and large pest bird populations are likely to be attracted to site. This would be further compounded by regular spillage of grain, which with these factors combined, can lead to the establishment of a resident pest population. This can in turn have adverse impacts upon endemic bird species in the area through virtue of competition for resources, territory, etc.

Pest birds of concern to orchards of particular focus within our Integrated Pest Management plan include, but are not limited to, sparrows, starlings, and mynahs. The above mentioned report cites pigeons, starlings, mynahs and sparrows as dominant pest species in grain storage facilities.

The storage of grains in the proposed low cost, short term, white coloured bags also means the bags can be easily attacked by vermin and pest birds. Annexure B: Grain Research and Development Corporation (GRDC) publication titled Grain Storage Facilities lists in Table 1 that the disadvantage of bags are that they are "_prone to attack by mice, birds, foxes etc_".

Annexure C is a GRDC publication that refers to areas in Queensland where bags have stopped being used as birds quickly learn to puncture the bags to gain access to the grain. The article further states that silo bags have a short term (less than three months) effectiveness.

The proposed development application is completely devoid of any detail relating to the high risk, short term usage of bags and does not cite any issues consistent with what appears to be a common problem within this industry of bird pests in grain storage.

Further to this point I would also refer council to Annexure D: Northern Midlands Council Planning application P12-199 from 2012. This planning application is from XLD Grain (from their previous business site). This application does make reference to a bird control programme however it notes extensive concerns and evidence from the Launceston Airport about XLD Grains capacity to follow protocols and the lack of durability of the storage system and resulting implications that bird management has in air traffic control and the resulting relocation of the applicants business.

This proposed resource processing site at Williamwood is not free from conflict with the orchard at Somercotes and on historical evidence of previous trading of the applicant there is no doubt the proposed resource processing facility would add to increased bird pest population and result in adverse environmental and economic impacts.

Somercotes currently spends annually an estimated \$5000 on activities in our buildings and orchard to minimise or eliminate pest bird activity in line with our current bird pressure. Any increased activity will lead to these costs rising significantly in a bid to contain the extreme bird pressure that is highly likely to be attracted to such a storage facility and only located 2 kms from our orchard. (Refer to Annexure E: Locale Map)

Furthermore any increased bird pressure would need to be mitigated through netting. Adequate netting for such purpose typically costs an estimated \$100,000 per hectare. Costs to net the current productive orchard area would amount to approximately \$800,000 and would jeopardise the viability of the planned expansion of the additional 12 hectares of orchard, which could result in a further \$1.2m having to be spent to bird proof the entire orchard proposed to be 20 hectares in total area.

Our normal operations are such that we do not require netting and the financial impost would unreasonably confine our business if we were required to net for birds and would further restrain any further expansion. With such an impact how can the application possibly demonstrate compliance with performance criteria P4(b)?

The application must also be appraised the performance criteria provided at P5, in that it must demonstrate that the visual appearance of the use is consistent with the local area having regard to various criterion including (i) visibility from public roads, (ii) visual impacts of storage of materials or equipment, and (iii) the desired future character statements of the Rural Resource Zone. The proposed plan shows 58 storage bags on a five hectare site that are each 3m wide, 75m long and 1.8m high, all set back 226 metres from the Midland Highway. The storage bags are white, will be highly visible from the public roads and the visual impact would surely be considered significant given it is on 5 hectares and also inconsistent with the character on the local area. The visual impact of the proposed change of use will clearly not integrate with the surrounding rural landscape and is at odds with the desired future character statement as found in clause 26.1.3 of the planning scheme which states "visual impacts are to be minimised such that the effect is not obtrusive".

The long term sustainability of the existing primary industry operations of the orchard at Somercotes will be severely compromised if the development of the proposed grain storage facility proposed at Williamwood is approved, particularly in consideration of the abovementioned matters.

Consideration must be given to the current land use within the local context and local area objectives that have been developed by the council to protect this resource. It is considered that the development fails to demonstrate compliance with performance criteria in the use standards of the Rural Resource Zone, and should therefore be refused by the Council.

Yours Sincerely

Julie Bingley

Somercotes PO Box 5 Ross TAS 7209

23/6/15

From: E.J. Wright, M.C. Webb and E. Highley, ed., Stored grain in Australia 2003. Proceedings of the Australian Postharvest Technical Conference, Canberra, 25–27 June 2003. CSIRO Stored Grain Research Laboratory, Canberra.

Bird management in grain storage facilities

Peter McCarthy
Globe Australia Pty Ltd, 87 Allingham Street, Condell Park, NSW 2200

Abstract. Throughout history, grain storers have struggled with the impact of unwanted organisms on grain, storage facilities and finished food products. Bird pests — native and exotic — are one such group of organisms. Pest birds can affect grain and food and grain facilities and processing in several ways. These include physical damage, grain contamination, occupational health and safety risks such as spread of disease, respiratory problems and other illnesses, and finally damage to buildings, machinery and vehicles.

There are a number of simple concepts that must be recognised in order to manage bird populations. These relate to the behavioural characteristics of individual and flocking pest birds. 'Bird pressure' is a methodology by which the behaviour and commitment of birds to a site can be understood. The level of pressure on a site is classified and appropriate mitigation techniques are applied. Techniques that can be used to manage populations include physical exclusion devices and deterrents to minimise or eliminate bird—grain interaction.

Introduction

Increasingly, exotic and native pest birds are inflicting high levels of pressure on the supply chain of the grain industry. The increasing demands for, and implementation of, food safety requirements under the guidelines of hazard analysis and critical control points (HACCP) and other auditing programs will see the need for increased awareness and management programs to control pest bird populations throughout Australia. Pest bird species also have a significant impact on the occupational health and safety (OH&S) of staff and visitors at sites where they are present. Instances where disease and illnesses have been transmitted directly or indirectly to humans are well documented.

Bird species that affect grain-storage facilities are predominately the same pest species that have been found to cause problems in domestic and commercial structures in urban areas. The dominant bird pest species include pigeons, starlings, mynahs and sparrows. There are, however, significant differences between rural and urban situations. One major variation is the nature of the physical structures involved, and it is these that determine the most appropriate mitigation methods. In the urban setting, bird control is focused around domestic homes, retail centres, major buildings, factories and food processing and manufacturing facilities. In the grain storage area, structures requiring attention include manufacturing facilities, silos, trucks, machinery and open fields. An additional problem with grain facilities is the huge quantity of produce in a single location and the great variety of food stored there. In consequence, both a range

of species and large pest bird populations are likely to be attracted to a site, resulting in huge problems.

As well as pigeons, starlings, mynahs and sparrows, native cockatoo species present one of the greatest challenges to stored grain protection. In the natural environment, cockatoos spend much of their time foraging. In grain areas, however, cockatoos are able to consume their daily requirement of food very quickly. Consequently, not only do they eat and spoil the grain, but also they have free time during which to inflict physical damage to structures with their strong hooked beak and generally engage in nuisance behaviour.

The differences in structures, species and problems that are encountered between and within rural and urban areas mean that there is a great need for a structured methodology to deal with the problem of pest bird control. Without such a methodology, there is a risk that mistakes and flawed approaches will be repeated, that valuable commodities will be lost, and that adequate control of potential disease will not occur.

Bird pressure methodology

Bird pressure' is an extensively applied and proven methodology for controlling pest birds in an urban setting. In most cases, the approach has been successful in both problem identification and the presentation of mitigation options. The basis of bird pressure relies firstly on the observation of bird behaviour. The best approach to mitigating pest bird problems that is then determined is based heavily upon the level of commitment that the individual, small group or flock has to the site. The level of commit-

Bird management in grain storage facilities

ment to a site is very important, because it is largely this factor that will determine the birds' ability and desire to reclaim their former territory once a management system has been put in place. Bird pressure is a classification of the site and, in most cases, a grain storage facility offers extreme bird pressure. Classic situations of extreme bird pressure in grain-storage facilities include:

- · buildings that offer overnight shelter
- buildings that offer relatively easy access to birds during some or all of the day and night
- beam type structures with platforms, struts and channels on which birds can nest and roost
- abundant food and water sources that are difficult to eliminate, clean or control
- machinery and other structures that offer warmth during cold evenings
- building roof tops and silos where birds can congregate to gain warmth from the sun in early morning and late afternoon, when emerging or heading to roosting sites, respectively
- elevated and protected areas to congregate waiting for food opportunities to occur.

When a facility offers a population of birds all the basic needs required, such as food, water and shelter, the flock size can grow rapidly. If left unchecked in a suitable climate, a pair of birds of a highly fecund species such as sparrows can give rise to a population of 2000 within 12–18 months.

Once the bird pressure has been determined, there is a host of control methods that can be applied. These include one or other, or combinations of, exclusion, physical deterrents, and acoustic, ultrasonic and scare devices. Other approaches include population reduction methods such as trapping, shooting, poisoning (avicides), irritants and taste deterrents. No single method is able to offer a suitable result. When used in combination, however, a series of methods may form a highly successful management program. Such a program is likely to incorporate requirements for facility operators to increase housekeeping regimes, make alterations so that there is reduced bird access to food, make regular observation of bird population size and behaviour, and remain constantly vigilant.

Additional information on pest bird mitigation devices can be found at <www.globeaustralia.com.au>.

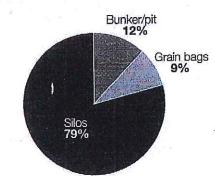
GRAINISTORAGE FACILITIES:

PLANNING FOR EFFICIENCY AND QUALITY

A Grains Industry Guide

wayayu, aqaye etgiratay etgirayi

On-farm grain storage by type



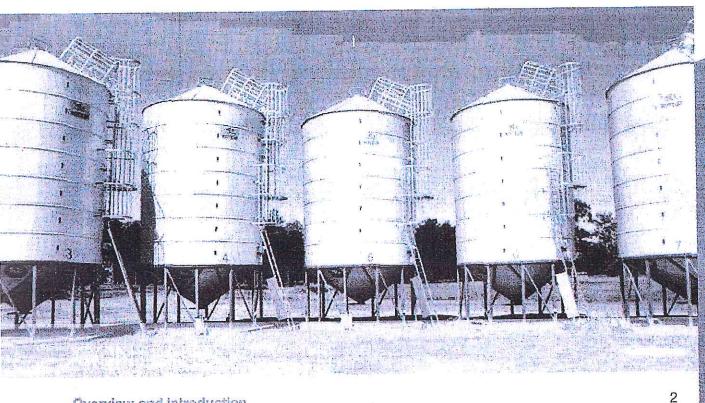
SOURCE: KONDININ GROUP NAS 2011

Typical grain bulk densities per cubic metre

GEAIN BULK	DEVSINATIVALE.
Wheat	0.80
Canola	0.67
Barley	0.68
Triticale	0.62
Sorghum	0.73
Maize	0.72
Lupins	0.80
Mung beans	0.75
Sunflower seed	0.42
Cotton seed	0.40

^{*} NOTE: Vary according to moisture content and variety. SOURCE: KONDININ GROUP

See pages 2 and 4 for more information.



Overview	and	introduction	
66			

Benefits and pitfalls of various storage types

Silos

4

Grain storage bags

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Sheds and bunkers

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Facility and site considerations

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Case study examples of storage layouts

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Stored Grain Project

COMMINISTORACE PACILITIES & GRAINS INCUSTOR CHURCH TO

OVERVIEW AND INTRODUCTION

Grain storage systems come in a range of shapes and sizes to meet farm requirements and careful planning is needed to optimise an on-farm grain storage facility investment.

According to the option selected, on-farm grain storage systems can provide a short-term or long-term storage facility. Depending on the goal of on-farm storage, whether it be access to improved markets or simply to maximise harvest efficiency, there are a number of options available.

Harvest is the ideal time to plan future grain storage system requirements, as it can help identify issues and opportunities for future harvest operations that may otherwise be forgotten once next year's crop cycle gets underway.

STORAGE OPTIONS APLENT

Costs and storage flexibility can vary between grain storage options as can longevity of the investment. Table 1 identifies the major on-farm grain storage options, their advantages and disadvantages.

Silos are the most common method of storing grain in Australia, constituting 79% of all on-farm grain storage facilities nationally (see Figure 1).

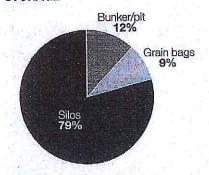
Silos come in a variety of configurations, including flat-bottom or cone base, and both are available as gas-tight sealable or non-sealed, aerated and non-aerated.

The balance of on-farm grain storage facilities can be split between grain storage bags (9 per cent) and bunkers or sheds (12 per cent).

Grain-storage bags are increasing in popularity as a short-term storage solution to assist harvest logistics. With careful management growers can also use silo bags to provide short-term marketing opportunities.

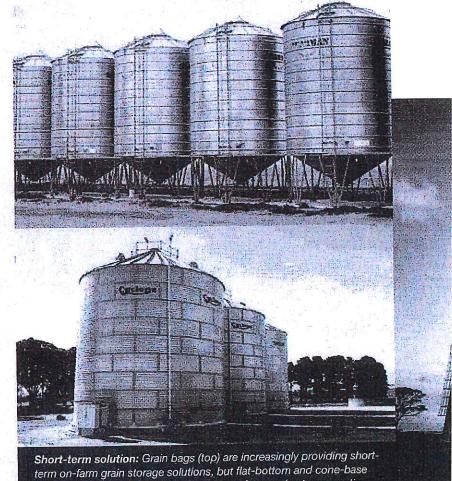
For similar storage time-frames to grain storage bags, and where options are limited, growers can also use sheds to temporarily store grain during harvest — provided they have been well prepared.

FIGURE 1 ON-FARM GRAIN STORAGE



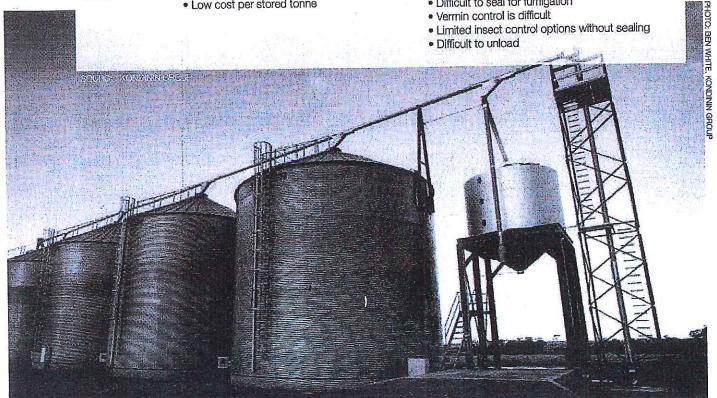
SOURCE: KONDININ GROUP NAS 2011





silos (centre) are still the most common on-farm grain storage option.

STORMED TYPE	ADVANTAGES	DISADVANTACES
Gas-tight sealable silo	 Gas-tight sealable status allows phosphine and controlled atmosphere options to control insects Easily aerated with fans Fabricated on-site or off-site and transported Capacity from 15 tonnes up to 3000 tonnes Up to 25 year plus service life Simple in-loading and out-loading Easily administered hygiene (cone base particularly) Can be used multiple times in-season 	 Requires foundation to be constructed Relatively high initial investment required Seals must be regularly maintained Access requires safety equipment and infrastructure Requires an annual test to check gas-tight sealingw
Non-sealed silo	 Easily aerated with fans 7–10% cheaper than sealed silos Capacity from 15 tonnes up to 3000 tonnes Up to 25 year plus service life Can be used multiple times in-season 	 Requires foundation to be constructed Silo cannot be used for fumigation — see phosphine label Insect control options limited to protectants in eastern states and dryacide in WA. Access requires safety equipment and infrastructure
Grain storage bags	 Low initial cost Can be laid on a prepared pad in the paddock Provide harvest logistics support Can provide segregation options Are all ground operated Can accommodate high-yielding seasons 	 Requires purchase or lease of loader and unloade Increased risk of damage beyond short-term storage (typically three months) Limited insect control options, fumigation only possible under specific protocols Requires regular inspection and maintenance which needs to be budgeted for Aeration of grain in bags currently limited to research trials only Must be fenced off Prone to attack by mice, birds, foxes etc. Limited wet weather access if stored in paddock Need to dispose of bag after use Single-use only
Grain storage sheds	 Can be used for dual purposes 30 year plus service life Low cost per stored tonne 	 Aeration systems require specific design Risk of contamination from dual purpose use Difficult to seal for furnigation Vermin control is difficult Limited insect control options without sealing Difficult to unload



CEMINSTO SAST MOUNTS

BENEFITS AND PITFALLS OF VARIOUS STORAGE TYPES

Silos

Silos: fumigation options

A gas-tight sealable silo will ensure phosphine, or other furnigants and controlled atmospheres, are maintained at a sufficient concentration to kill insects through their complete life cycle of eggs, larvae, pupae and adult.

Be aware of cunning marketing terminology such as 'fumigatable silos'. Although such a silo might be capable of sealing with modifications, a gas-tight sealable silo needs to be tested onsite to meet Australian Standard (AS 2628-2010) after installation.

Gas-tight sealable silos also can be used for alternative methods of insect control including controlled atmospheres of inert gasses, such as carbon dioxide or nitrogen.

Current costs of using these gases (between \$5 and \$12/ tonne to treat stored grain compared with \$0.30 per tonne using phosphine) carbon dioxide and nitrogen atmospheres will arguably be used solely by niche growers, such as organic growers, until gas is less expensive.

There is significant work being carried out in lower-cost nitrogen gas generation and if buying a silo, ensure it is gas-tight for future proofing of the investment.

Silos: sizes and construction

Silos can be transported fully constructed and ready to stand, or can be built onsite. While intra-state variations apply, transportable silos are typically limited to 140 tonnes Cone-bottom silos are easier to clean than flat-bottom silos due to their self-emptying design, but are limited to capacities less than 300t. Some growers require gas-tight storage facilities of greater capacity and increasing silo capacity requires quality materials and design.

Silos can be built onsite and are available in sizes up to 3000t. The increased surface area of a larger silo requires more sheet metal joins, providing more opportunity for gas

The only way to ensure larger silos are gas-tight is to buy a reputable brand, designed and constructed to be gas-tight under Australian conditions

Typically, increased construction quality comes at a higher price, but the longevity of the structure should pay for itself over time and provide the assurance of total insect control allowing growers access to any market.

Capacity is commonly quoted in tonnes, in most cases referring to wheat. But capacity can also be quoted as cubic metres (m³). To determine tonnage capacity, multiply the cubic capacity by the volumetric density of the grain (see Table 2 for typical grain bulk densities).

TABLE 2 TYPICAL GRAIN BULK DENSITIES PER **CUBIC METRE**

GEVANIN

Wheat

Canola

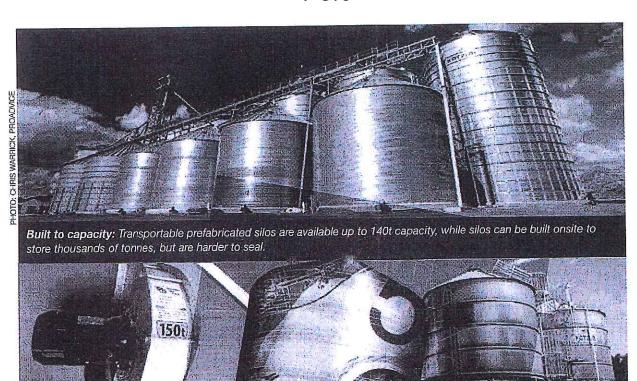
BULK DEASTLY TAKET

0.80

0.67

0.00

capacity due to road transport regulation limitations. Most	Barley	0.68	May 1
smaller, 50–70t, cone-bottom silos are prefabricated and	Triticale	0.62	and the same
transported.	Sorghum	0.73	
18 Share Colored to the Share	Malze	0.72	(college control
	Lupins	0.80	
	Mung beans	0.75	
	Sunflower seed	0.42	
	Cotton seed	0.40	
	* Note: Vary according to moisture conte SOURCE: KONDININ GROUP	nt and variety.	
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		<u> </u>	
Superior silo: The dominant on-farm grain storage option is t	he silo in either a flat-bottom or coi	ne-base configuration.	



Silos: lifespan

benefits.

Silo lifespan is another advantage delivered through investment in gas-tight sealable silo storage infrastructure.

Cool it: Aeration cooling is relatively

cheap and can offer substantial

A well-built, aerated, quality gas-tight sealable silo constructed to meet the Australian standard (AS 2628-2010) with a thorough maintenance regime could be expected to provide around 25 years of serviceable life before major repairs may be required.

Silos: aeration

While some preliminary research has been carried out using other grain-storage methods, silos permit simple administration of aeration after harvest to cool grain.

Aeration cooling of grain in-storage creates uniform moisture conditions and slows or stops insect pest life cycles.

Depending on the temperature reductions achieved; this can deliver significantly-reduced insect numbers.

For older, unsealed silos, consider retro-fitting aeration as the first option.

Aeration cooling requires airflows of at least 2-3 litres of air, per second, per tonne. For example, a 100t silo will require 200-300 litres per second (I/s) of air to cool the grain effectively.

Aeration fans also require well-designed perforated ducts or a plenum to assist in dispersing airflow evenly throughout the silo. Selecting the coolest air for the grain is best done using an aeration controller, but aeration fans should be run continuously for at least three days for smaller silos (less than 100t) and up to a week for large silos (over 100t) as soon

Keeping dry: Specific drying silos are designed to maximise drying efficacy

and have minimum air-flow rates of

between 15-20l/s/t of storage.

as grain covers the aeration ducting. This initial process removes the harvest heat and equalises grain moisture.

After initial harvest heat has been removed, the controller can be switched on to continue the cooling process.

Silos: aeration drying

Specific drying silos are designed to maximise drying efficacy and have minimum air-flow rates of between 15–20 litres per second per tonne (I/s/t) of storage.

Specially-designed drying silos often have a truncated, or secondary, base cone to assist in the efficiency and efficacy of drying stored grain.

Drying with ambient air requires a relative humidity well below that of the equilibrium relative humidity of the grain. Drying silos often allow the addition of heat at the air intake to improve the moisture removal capacity of the air flowing through the grain.

Silos: capital investment

As a permanent infrastructure fixture on a farm, silos are initially one of the most expensive options of grain storage at around \$100 to \$140/tonne for transportable sealed silos. To this can be added foundation requirements, which can vary between \$2500 for a 70t transportable silo to considerably more for a flat-bottom silo with aeration ducting incorporated into the floor.



Larger silos built onsite typically have an outlay cost of about \$80 per tonne of stored grain. But looking at this investment over the life of the storage can see this figure drop significantly to being one of the cheapest forms of on-farm grain storage.

Silos: safety

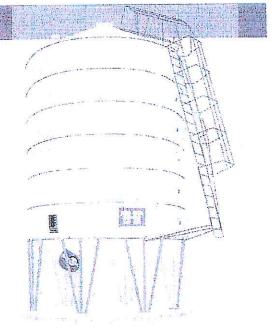
Working at heights can be dangerous without the appropriate safety precautions. In the case of silos, this can mean working up to 16m off the ground.

A climb to the top is required for regular inspection through the top hatch if grain is stored for more than a month.

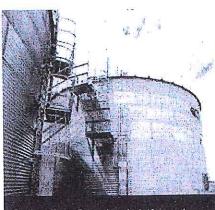
Silo designs now incorporate ground-operated lids, caged ladders, platforms and top rails to minimise the risk of operators falling.

Facilities for harness attachments, which should be worn by all operators climbing silos, are also fitted.

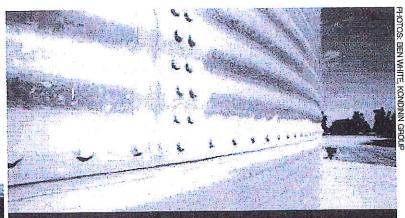
- Aerated, gas-tight sealable silos should always be the preferred option.
- Ask the manufacturer to provide a guaranteed pressure test in accordance with AS2628-2010 on-site after construction or delivery. Pressure testing a storage when full of grain is also important.
- Ensure a pressure relief valve capable of handling the maximum air-flow in and out of the silo due to ambient temperature variations is fitted.
- A silo aeration fan can be used with care to pressurise a sealable silo to carry out the annual pressure test for leaks. A tyre valve or a larger fitting may also be installed to determine the volume of air required for the test.
- Seal mechanisms on inlets and outlets should be simple to operate and provide even seal pressure.
- Seal rubbers should be quality high-density EPDM (ethylene-propylene-diene-monomer) rubber, maintain a strong memory and be UV resistant.
- Look for ground-operated lids that provide an even seal on the silo inlet. High-quality ground-opening lids will provide a gas-tight seal, but some will still require a climb to the top of the silo to lock down the lid for fumigation.
- Aeration cooling fans are a must-have accessory for a new silo and provide significant benefits for stored grain. Buy these with the silo or as an aftermarket accessory and specify airflow rates of at least 2-3l/s for every tonne of grain storage capacity of the silo.
- Aeration drying silos are an option, but are typically shaped to maximise drying efficiency. Drying fans need to deliver between 15 and 201/s for every tonne of grain storage capacity of the silo and additional sealable venting in the roof should be fitted.
- Outlet access for unloading should be simple to operate and permit ample auger access.
- Look for a sturdy base and frame on elevated cone base silos with quality weldments. Galvanised tubing has a heavier coating than galvanised rolled hollow section (RHS) but is more difficult to shape and weld joins.



- Ensure wall sections incorporate a positive seal between sheets and sealed riveting where rivets are exposed.
- Always consider access and safety features, including roof rails, ladder lockouts, platforms and ladder cages. It can be argued that a ladder should always be fitted, as inspection of the grain in the top of the silo should be carried out regularly.
- A quality outside finish will provide a superior life. White paint reduces heating of grain in storage. It comes at a cost premium but is superior to zincalume finishes over time.
- A chalk-board patch painted on the silo base can be useful for recording grain and treatment details, including variety, protein and moisture content, fill date and fumigation details.
- Check silo design inside and outside for ease of cleaning. Check walls and aeration ducting including the floor for grain trap points.
- ✓ Consider grain segregation requirements when determining silo size. Smaller silos allow better segregation.
- Ensure adequate venting is fitted to the roof of silos with aeration fans to permit adequate air-flow without restriction. These vents should be easy to clean. Check seals and lock down if it is a sealable silo.



Safety first: Caged and platformed access ladders improve safety when climbing the silo to inspect stored grain.



Sealing afterthought: Retro-sealing silos is often less than the cost of a new silo but ongoing maintenance costs also need to be considered.

Silos: retro-sealing

To meet the requirements of fumigation and utilising existing silo infrastructure, some growers have invested in retro-sealing older silos.

In most instances these silos are high capacity (> 500t), flat-bottomed silos.

Retro-sealing specialists use an array of rubber, specialised rubberised cements and silicon compounds to seal sheet joins, bolts, rivets, lids and openings on older silos.

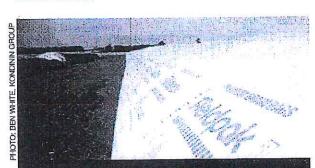
These are typically sprayed on with an air-operated gun with coarse flows to handle the heavy product viscosity.

The interface between the pad and the bottom sheet of the silo and the top sheet meeting the roof should be given special attention as they are commonly points of limited seal integrity.

Customised sealing plates can also be fabricated for doors, vents and openings. Oil-filled pressure-relief valves will also be fitted.

The cost of retro-sealing an older style silo can be significant, often totalling as much as 50 per cent of the cost of a new sealed unit. Ensure the retro-seal contractor includes a guarantee that when completed the silo will meet the Australian Standard for sealed silos AS2628.

After sealing, consider ongoing maintenance costs. Check coating integrity annualy and patch as required to maintain an effective seal. Particular vigilance is needed around the storage base, and where the walls meet the lid, as expansion and contraction of the metal can damage the retro-seal finish.



Be prepared: Grain storage bags can provide a useful tool to improve harvest logistics but must be placed on a carefully prepared pad and be fenced off from livestock and wildlife.

Grain-storage bags

As a relatively new on-farm grain storage option, silo bags have been widely used in Australia since the early 2000s, although they have been used overseas for much longer. As with most things new, numerous disasters, mostly due to operator error and lack of inspection vigilance, have earned grain bags a bad name.

They can provide useful short-term storage (less than three months) and a logistics management tool during harvest. They must be installed on a well-prepared site away from bird habitats, including trees and water sources.

Grain-storage bags: capacity

Typical storage capacity is around 240 tonnes, but other sizes including 200t and 150t bags are also available.

Take care when buying bags. Quality of bag materials varies and using bags for grain storage that have been designed for silage storage is not recommended.

Grain-storage bags: using them successfully

Successful use of grain bags as an on-farm grain storage option requires a carefully-prepared pad.

Anecdotally, an elevated, well-drained pad provides optimal results where no stubble (which can harbour vermin) or rocks can tear the grain storage bags as they are being filled and unloaded.

Fill rates are typically 3–4 tonnes per minute. Always fill bags up-the-slope and ensure brake settings on the filler are set to ensure the appropriate stretch of the bag is achieved.

While typically a 10 per cent stretch, this can be adjusted down for hot weather conditions or up for cool ambient weather.

When full, regularly and vigilantly check the bags for cuts, nicks and holes and patch these with silicon or bag sticky tape available from the bag supplier.

Grain-storage bags: costs

The two pieces of equipment required for loading and unloading grain storage bags can cost around \$27,000 each. This equipment can be hired, although having your own can reduce the pressure of having to get grain in and out of the bags within a specified timeframe as demand for this hire equipment is high at the peak of harvest.

The bags themselves are single-use and cost around \$5 per tonne stored, or \$1000 plus for a 240t bag.

Consider site-preparation, including any earthworks and fencing requirements, time and labour costs for maintenance when calculating the comparative costs of using grain bags.

Grain-storage bags: useable lifespan

Grain-storage bags are best used for short-term storage only. While longer-term storages are possible, three months is regarded as a maximum storage period. Beyond this, there is considerable risk of grain losses and spoilage in many of Australia's grain production regions.

Grain-storage bags: pest and insect control

Furnigation with phosphine in bags has been recently proven in Australia as an option if the correct method of application and venting is followed.

Alternatively, fumigation of grain-storage bags can also be performed using gases like ProFume. But this is only available for use by licensed fumigators and the cost is generally considerably higher than phosphine.

In addition to insects, vermin including mice and birds can attack grain bags.

Outside baiting, reducing habitat provision and food sources (including regular checking and patching of bags where required) is the best way to reduce vermin risk.

Grain storage bags: access

One often-overlooked aspect of using grain-storage bags in the paddock is their accessibility after harvest.

Unless the bags are placed on, or near, an all-weather access road, they can be difficult to unload if wet weather conditions prevail post-harvest.

The pad site needs to be large enough for trucks and machinery for bag unloading and allow access in wet conditions.

Sheds and bunkers

Bunkers are commonly used by bulk handling companies, but require careful site preparation, labour for handling large tarp covers and machinery to move grain on and off the grain stack.

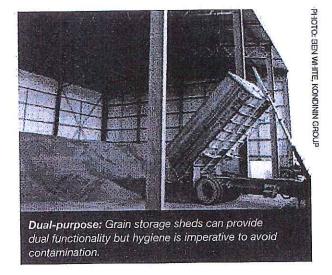
Effective treatment of insect infestation is difficult in sheds and bunkers. For on-farm storage, grain bags may be a more suitable short-term alternative.

Sheds can provide dual-purpose functionality for storage of other products including fertiliser and machinery. But the risk of grain contamination requires a focus on impeccable hygiene practices.

As a permanent infrastructure investment, sheds can be continually used and have a retained value on-farm with a service life expected to exceed 30 years.

Specialist grain-storage sheds can be constructed to make filling and unloading simpler. Aeration and sealing methods for fumigations are best considered in the early shed design phase.

Sheds are most useful as a short-term storage solution to assist harvest logistics. They can be a useful component



of an on-farm grain storage system that incorporates other gas-tight sealable grain storage facilities

Sheds: costs

Cost of grain storage in sheds varies widely depending on footing and slab requirements as determined by soil type. Method of construction and alternative uses can also vary the cost of construction.

Sheds: aeration

Aerating grain stored in a shed is difficult due to the open design of most shed structures. But customised ducting and air manifolds can be designed by grain aeration specialists to aerate grain stacked in a shed.

Sheds: pest and insect control

Given the open nature of most sheds on-farm, pest and insect control presents some challenges. Fumigation with gas-proof sheeting placed over the stack is difficult.

Bulk handlers, including CBH in Western Australia, have invested heavily in sealing gas-tight bulk storage sheds to permit fumigation.

On-farm, sheds are also prone to spoilage by mice and birds

Sheds: loading and unloading

One of the biggest drawbacks of sheds used for grain storage is the ease of getting grain in and out.

Using an auger or belt conveyor to fill the shed from the truck is common practice.

For out-loading, some operators opt for bulk-handling buckets on front-end-loaders or tele-handlers to fill direct into trucks.

Some grain trade operators use this approach to minimised grain damage when handling grains prone to splitting, such as lentils.

Sump load points are occasionally used, with a lowered section of the floor utilising gravity to assist in sweeping grain into a loading point.

Grain vacuums can also be used to out-load grain from sheds.

Regardless of the out-loading options, inevitably, a final clean is performed with a broom and grain shovel, which can take time if hygiene is to be maintained.

ON-FARM GRAIN STORAGE FACILIT ONSIDERATIONS

Depending on budget and expectations, investing in and planning a grain-storage facility requires a range of considerations, regardless of the storage type.

Access for in-loading and out-loading

Continuous loop roads around the grain-storage facility requiring minimal, or no, reversing are ideal and can dramatically improve loading and out-loading rates as well as minimising damage to equipment through accidental collision.

Dedicate an ample-sized pad to permit auger or grain conveyor access and ease of shifting grain loads.

Where steeper slopes exist, some growers have terraced the slope with a retaining wall, to allow them to reduce the lift height (and auger size) for loading the silo.

Where retaining walls exceed 1m in height, consider guard rails and access steps.

Proximity to resources (power sources - electricity and fuell

Whether the facility is to be powered for aeration, i.e. using petrol or electricity, consider the proximity to these resources, particularly if the facility will be built in stages as

maximum efficiency.

require three-phase power which requires a specific pole transformer.

With augers, machinery and tipping trucks in use around the facility, placing power underground is expensive, but can significantly improve safety.

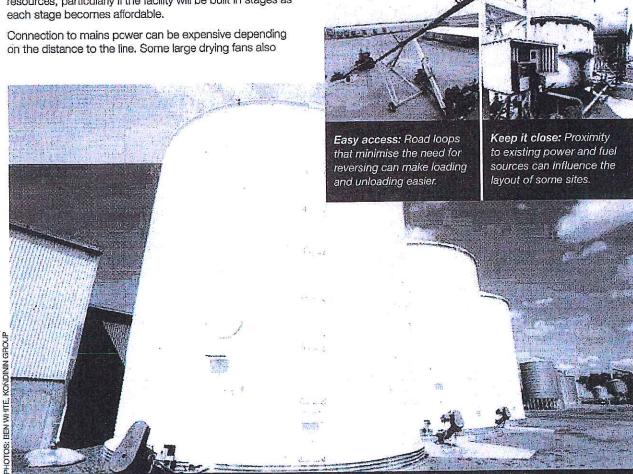
It is worth considering fuel sources and fuel lines for dryer installations, or future dryer installations, when planning the facility layout and constructing the pad.

Health and safety considerations

Operational safety considerations should be key to the facility design.

Allow plenty of space for auger transport and movement around the facility.

Ensure overhead power-lines are located nowhere near the pad where augers, conveyors or trucks might be operating ideally locate power underground.



Planning improves performance: Careful planning can ensure your on-farm grain storage facility operates at

Pads should be flat, hard-packed stands that allow tipping trucks to elevate without risk of toppling over sideways.

Minimise any slopes and ensure they are of a constant grade.

Position drainage lines and holes away from high-traffic areas to reduce the risk of equipment falling through while maximising drainage effectiveness.

Electrical switch boards should incorporate residual current devices (RCDs) to prevent electrical shock if, for example, an electrical cable was accidentally cut.

A qualified technician is required to carry out any 240-volt electrical work. They will ensure the components are safe to use in areas where combustible dusts are present.

Road access

The ability to get trucks in and around the grain-storage facility is paramount to its success.

Sealed or hard, all-weather roads to the site from a main road are essential for

ÿear-round out-loading, which will ensure grain sale contracts are met in a timely manner and can deliver marketing advantages.

Proximity to trees and insect or bird havens

Avoid locating storage facilities near trees, haystacks and haysheds.

All are havens for insects and birds, making migration from nature to the grain stored in the facility easier.

Similarly, water sources are attractions for vermin and birds. Avoid water sources when selecting a site for a grain storage facility.

Proximity to harvest locations

One of the most important considerations of facility placement and layout is harvest logistics. While placing silos close to a house or existing infrastructure is most common, it may not be the most efficient placement from a logistics perspective.

More often than not, storage facilities are located according to proximity to power and facilities, so a balance between ease of accessing services and optimising harvest logistics has to be struck.

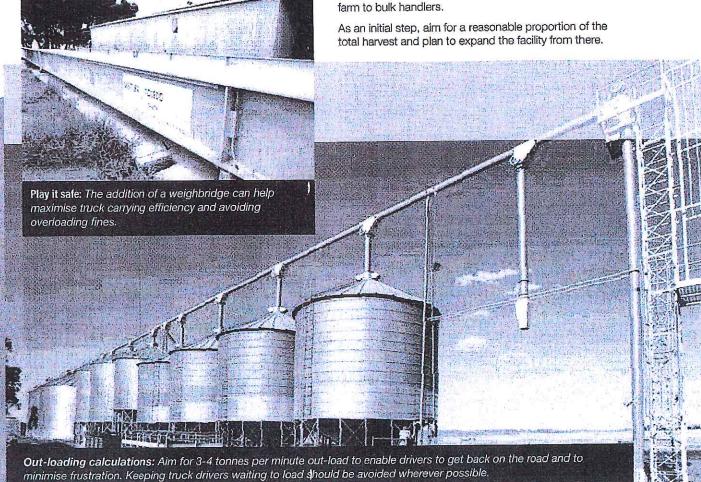
Determining storage capacity requirements

Calculating 'adequate storage capacity' can involve an enormous range of variables.

Consider what would be the 'ultimate' in on-farm storage capacity for the farm and then plan a series of stages to achieve this ultimate goal.

For some growers, ultimate storage capacity is 100 per cent of their harvest, while others will always use an external bulk handling system to some extent.

This is likely to vary between State bulk handling operators, dominant crop types, target markets and distance from the farm to bulk handlers.



Determining out-loading throughput rates

A standard out-loading rate is around 3-4 tonnes per minute and anything exceeding that will enable the driver to get back on the road to their delivery port quicker.

Weighbridges

With fines for overloading increasing in severity and occurrence in most States, using a weighbridge could pay for itself quickly.

Weighbridges can be incorporated into the silo load-andunload loop with effective installations providing readouts for the driver when approaching from both sides.

A weighbridge, fully installed will add a cost of about \$130,000 to the facility.

Blending abilities

The ability to blend grains and optimise specifications is one of the primary benefits of an on-farm storage facility.

The ease of out-loading for blending is greatly improved by adding a belt or drag-chain grain conveyor and elevator system to the facility. Grain can be simultaneously outloaded from multiple silos and loaded into another.

The alternative is to blend into a truck and then auger back, which can be fiddly but effective if small batches are blended occasionally.

Sampling abilities

Keeping a record and sample of grain stored on-farm can be useful for subsequent testing and quality assurance.

Owners of larger on-farm, grain-storage facilities commonly add a sampling shed where grain-quality specifications are collected and stored.

Taking the sample from silos can be easier if sealed silo ports for sample collection can be easily accessed to obtain a cross section of the stored product.

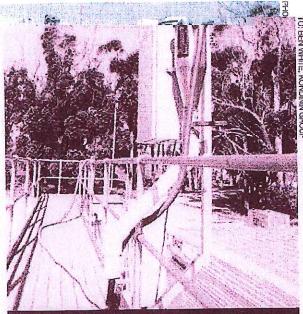
Truck sampling options include push spears and vacuum spears, which are designed to take a profile section of the load. They are used by many growers and are easier to operate from an elevated platform.

If adding an elevated platform to the facility, remember to add handrails to minimise the risk of falling.

Cleaning and facility maintenance

Maintaining good site hygiene is easier with a quality hard surface.

Concrete pads are essential for silos to sit on but extended aprons can also assist cleaning spilt grain from loading and unloading.



Sample first: Sampling spears are designed to take a representative sample of the load and are best mounted on an elevated platform.

Common grain trap points include dump-pits, drainage or aeration channels and around silo bases.

Clean all grain off the site on a regular basis to avoid harbouring insects, which may infest stored grain.

Ensure a water point is accessible for washing out silos after they are emptied.

Grain vacuums are popular with owners of flat-bottomed silos to remove residual grain where sweep augers have not been able to reach.

Facility earthworks

When determining the requirement for earthworks, always allow a buffer around the pad for construction-vehicle movement.

Raised pads are most common as they minimise the potential for water damage to the facility and stored grain.

The height of the pad will typically vary according to the overall topography of the site relative to the landscape but 500mm above average topographic level is not uncommon.

Soil type impacts

Soil type can have a huge bearing on silo foundation thickness and requirements for facility earthworks.

Foundations are normally engineered with depth of footing and reinforcing is determined according to the physical properties of the soil.

Highly-reactive soils shrink and swell according to their level of moisture and typically require additional foundation engineering and reinforcing, which comes at a greater cost.

As a rule of thumb, experienced silo-pad concreters assume soil type according to region for quoting purposes with slight variations dependent upon on-site requirements.

PHOTOS: BEN WHITE,

Drainage

In addition to maintaining a raised, firm pad for the storage facility, plan for drainage to handle and direct run-off away from the pad.

In some cases the natural topography of the site may assist free drainage while on flat sites, drainage channels may have to be formed to carry water away from the site.

A well-designed pad for transportable cone-bottom silos will ensure water does not pool near the base structure, which can quickly rust out.

Lighting

Loading and out-loading is often carried out at night during harvest and effective lighting not only makes the job easier for drivers but also improves safety at the site.

Efficient and robust forms of lighting, including LED, are suitable choices for short-throw requirements.

If laying electrical cables underground, for aeration or auger drives, consider laying electrical cables for lighting at the same time.

Communications

With numerous market opportunities and volumes of information and data detailing specifications of stored grain increasing, facilities for data transfer and communication add value to any site plan, particularly if the site is to be equipped with a sampling and testing shed.

Planning to expand

It is rare any grower would set out to build a complete onfarm grain storage system from scratch.

The capital requirement would be enormous and in most cases grain storage facilities grow with increasing farm productivity.

The careful planning of a facility to be built in stages can ensure design aspects of the larger site are not overlooked when constructing these stages. It can also lead to savings through coordinated placement of pipes, electricals and concrete pads.

Expansion is most commonly, and simplistically, an extension of a single line of silos, although variations include circles with a central receival and out-loading point.

Single lines of silos offer the ability to run a single outloading belt, which can feed grain into an elevator for outloading or transfer to other silos.

When planning to expand, consider drying options including the ability to undertake batch drying or dedicated drying silos with ample airflow rates.

Also plan for aeration controller placement and associated electricals.

Staking out the facility

Everything can look good on plans, but it is important to physically stake out the site of grain facilities to ensure proportions have not been underestimated or overlooked.

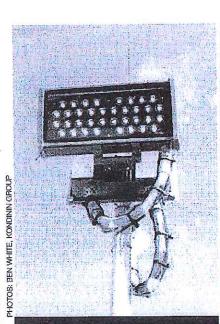
Driving pegs onto the site to indicate silo placement, pad borders and the positioning of roads and weighbridges can help visualise the suitability of the plan for the site.

Adapting existing facilities

In many cases, existing facilities are worked into the design to use existing infrastructure. Upgrading, including retrosealing silos and sheds, can be an option to reduce the overall cost of storage per tonne, but remember to include ongoing maintenance costs for retro-sealed facilities.

Offset placement of silos in lines parallel to lines of existing silos can be an option and can offer out-loading efficiencies

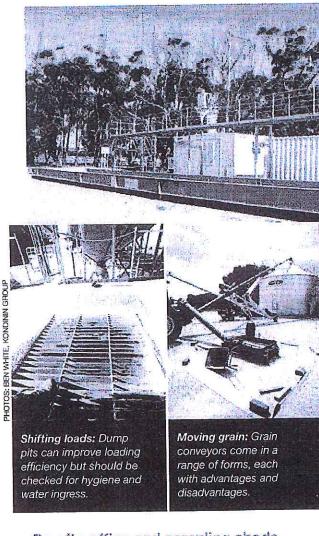
Apart from fitting in around older storages, the first modification to older silos should be the installation of an appropriately sized aeration fan and ducting.



Night vision: Site lighting can improve the useability and safety of the facility for night operation.



Clear communications: With increasing requirements for communications and data off site, consider communication requirements, including data transfer.



On-site office and sampling sheds

An on-site office is ideal for keeping records and samples of stored grain. It can house expensive, sensitive testing equipment and be used as a crib-room for drivers and employees.

Portable site offices are a common choice as they can be fitted with air-conditioning and are often pre-wired for electrical outlets.

Used site offices regularly come up for sale on mining sites and can be bought at a fraction of the new price.

As a minimal alternative, an on-site cabinet for load documentation and records will ensure hard copies of silo contents and load specification details are kept on site.

Dump pits

Dump pits can be installed in combination with paddle or drag conveyors to quickly and easily take and elevate grain to load silos.

Carefully cover dump pits when not in use to keep water out and keep pits and surrounding areas clean to minimise contamination and spoilt grain.

Conveyor types

Numerous options for shifting grain around the site are available and each has benefits and disadvantages.

Maximum angles of elevation vary between conveyors according to grain but figures are usually quoted for wheat.

On-site office: An on-site sample shed can provide a home for sensitive test equipment, grain samples and records. Air

conditioning is recommended.

Augers are most common due to their portability and are one of the cheapest methods of elevating grain into a number of silos.

Elevation angle and flight turn speed have a bearing on flow rates with higher elevation angles reducing throughput and impacting on hygiene. Hygiene can be compromised with lower throughput, as grain tends to sit between the auger flights. It is best removed by reversing the auger until all grain has been cleared.

Augers can occasionally damage split-prone grain — particularly old augers with worn flighting.

Belted conveyors are the second most-commonly-used grain transfer method and are preferred by operators transferring damage-prone grain.

Being a transportable unit, elevation angle is limited to the angle of repose of the grain.

The angle of repose is a physical stacking property of a grain and varies between grain types. The repose angle is a measure of the angle of the sides of a conical grain pile from horizontal. For example, the angle of repose for wheat is 27 degrees while canola is 22 degrees. Flow rates reduce as the angle of elevation increases to approach the repose angle. Belts are often cupped along the conveyor length to accommodate grain and hygiene is excellent with the design of a belted conveyor being self-cleaning.

Bucket elevators are predominantly used to elevate grain vertically and are commonly used together with belted conveyors transferring grain horizontally, or splitters diverting grain down chutes through a gated manifold.

Bucket elevators are self-cleaning by design and are typically fixed position equipment

Drag-chain conveyors or paddle conveyors use a series of paddles fixed to a loop of chain moving inside a conduit. Drag chains can elevate at any angle, including horizontal, and are largely self-cleaning, although corners of the chain-loop will normally require attention.

Drag-chain conveyors are a permanent installation but are extendable for facility expansion.

SLICK STORAGE SET-UPS

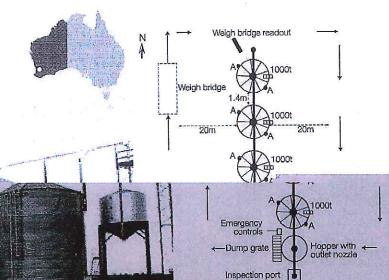
ELLIOT HARRIS

Location

Cunderdin, Western Australia

Grain storage facility description

4000 tonnes comprising four 1000 tonne aerated silos. Chain-loop conveyor system with an end dump pit and charged out-load hopper. Clock-wise loop road with double-axle weighbridge.



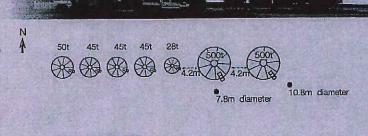
HARRY HYDE

Location

Dalwallinu, Western Australia

Grain storage facility description

A combination of old and new; two 500t Westeel, flat-bottom, controlled ducted-aeration cooling silos, with five smaller unsealed transportable silos ranging from 28t to 50t providing a total additional 213t storage. Plans and footings for an additional 300t sealed will bring the total storage capacity to more than 1500t.





GLEN MILLSTEED

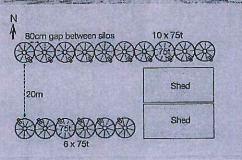
Location

Wongan Hills, Western Australia

Grain storage facility description

Sixteen, sealed 75t Moylan silos in two parallel lines separated by a gap of around 20m for loading and unloading which sits in line with a shed annex for truck and trailer storage. Total storage capacity is around 1200t.





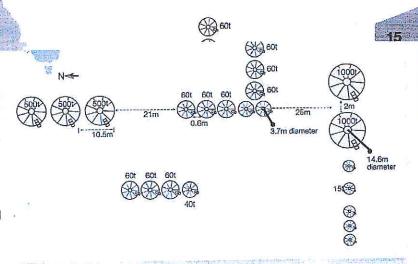
MARK HYDE

Location

Western Australia

Grain storage facility description

More than 4500t in storage capacity comprising 2500t in retro-sealed, aerated flat-bottom silos. The balance is made up of sealed 75t Moylan sealed silos and older Jetstream and Sherwell transportable silos. Silos are built around existing shed facilities and a fuel bunker permitting ample loop and turning space.





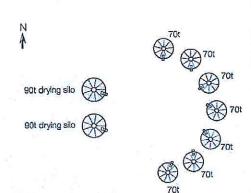
ANDREW SIMPSON

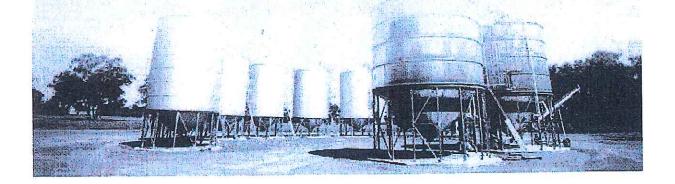
Location

Oaklands, New South Wales

Grain storage facility description

Two large 90t Kotzur sealed drying silos facing a semi-circle of seven 70t, sealed, aerated silos to give a total storage capacity of 670t. Secondary stages of investment include connection to mains power (currently running on a hired generator) and pivot-auger for in-loading are planned.





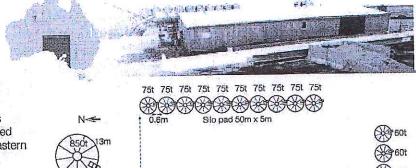
LYNDON PRICE

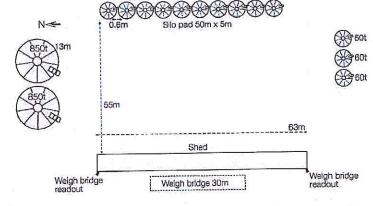
Location

Narridy, South Australia

Oranristorage tacility description

A large well-prepared square pad is outlined by a line of 10, sealed aerated transportable silos in a line on the eastern side, two 75t fertiliser silos on the southern side and two large 850t flat-bottom sealed MFS sealed silos on the northern side. Layout is impressive with a two-way readout weighbridge allowing drivers to approach from both directions around a loop to load or out-load from any of the silos with minimal backing. All aeration fans are controlled with an Agridry controller.





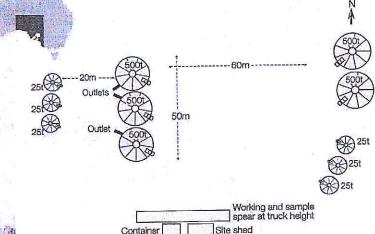
DAVID MAITLAND

Location

Hart, South Australia

Grain storage facility description

A large pad flanked by three 1000t flat-bottomed, aerated retro-sealed silos on the western side, with another two on the eastern side. A first-class sample shed, storage container sits below a raised vacuum spear sample stand and walkway beside a weighbridge. All out-load augers are electric drive and all aeration fans are auto-controlled.





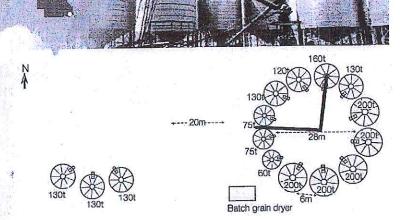
ROD PETERSEN

Location

Killarney, Queensland

Grain storage facility description

Constantly expanding, and currently at one and a half circles of silos, with a central loading point is conveyed to a central in-loading auger. All of the initial circle of dryers can be transferred to a batch dryer on one side of the circle. Total storage capacity of close to 2500t.



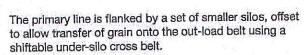
COLIN BELL

Location

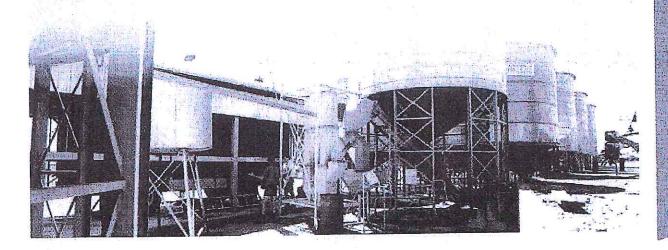
Allora, Queensland

Grain storage facility description

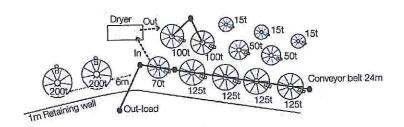
Using a slope to reduce auger in-load height, a primary line of 75t sealed, aerated silos sitting on top of an outload auger belt.



The out-load belt feeds a raised conveyor for loading trucks or a bucket elevator which can be diverted to a batch dryer before reloading to the complex or out to a truck. Two larger 200t Denny silos sit at the end of the facility.



N



FURTHER READING

Aeration cooling for pest control (GRDC Fact Sheet) Print

1800 11 00 44

ground-cover-direct@canprint.com.au www.storedgrain.com.au www.grdc.com.au/GRDC-FS-Aerationcooling-for-pest-control

Keeping aeration under control (Kondinin Group Research Report) Aeration in on-farm storage what's possible (GRDC Update) How aeration works (GRDC Update)

www.storedgrain.com.au

CHAIN STORAGE SPECIALISTS

QLD and northern NSW, Philip Burrill

0427 696 500

Email philip.burill@daff.qld.gov.au

Southern NSW, VIC, SA and TAS, Peter Botta

0417 501 890 Email pbotta@bigpond.com

WA, Ben White

WA, Ben White 08 6189 2457 Email ben@storedgrain.com.au

USEFULTEESOURCES

GRDC Grain storage extension project

www.storedgrain.com.au

Grain Trade Australia 02 9235 2155

www.graintrade.org.au

GRAIN BIOSECURITY CONTACTS

Plant Health Australia

02 6215 7700

Email biosecurity@phau.com.au www.planthealthaustralia.com.au

GRIDG

Grains Research & Development Corporation

Stored Grain Project

PO Box 5367, Kingstor, ACT 2614 | T +61 2 6166 4500 | F +61 2 6166 4509 | E grac@grac.com; au | W www.grac.com; au

www.storedgrain.com.au

ANNEXURE C

Date: 17.10.2011

Silo bags handy, but limit to short-term use



- By Nicole Baxter GRDC

An authority on grain storage is encouraging growers to recognise the limitations of silo bags and only use them as a short-term option for stockpiling grain.

Victorian grain storage specialist Peter Botta, of PCB Consulting, says storing grain in silo bags for more than three months after harvest will increase the risk of losing grain quality and value.

He says although silo bags offer a useful means of managing harvest pressure, using them to store grain for longer than three months increases the chance of damage to the polymer membrane.

For those who plan to use silo bags this harvest, Mr Botta also encourages weekly monitoring to ensure the membrane is free of holes that would allow water to infiltrate and cause spoilage.

Queensland grain storage specialist Philip Burrill of the Queensland Department of Employment, Economic Development and Innovation (DEEDI) agrees, adding that holes are usually caused by rodents and birds trying to get at the grain, and by foxes and other animals walking on top of the bags.

"Birds in the local area where silo bags are used can quickly learn to puncture the bags to gain access to grain," Mr Burrill says.

"In some areas in central Queensland growers have stopped using silo bags because the bird damage has become too serious. Of course, cleaning up grain spills promptly and sealing damaged bags reduces the time birds spend around bags and developing a habit for feeding on the grain."

Mr Burrill and Mr Botta also encourage the use of secure fencing and synthetic bird netting to help minimise damage. If the membrane is pierced, silicone-based sealants can be used for repairs.

Another important consideration for growers planning to use silo bags is where they will be positioned. Mr Botta says they are best placed on a hard, smooth, elevated and graded site with a gentle slope that allows water drainage.

He says the heavy rain that fell during late 2010 and early 2011 created a headache for many eastern Australian growers who could not get to their silo bags because of boggy conditions.

"Putting silo bags, for example, on a stubble paddock without grading the site can be a recipe for disaster. Sharp stubble, sticks and rocks can perforate the bag and allow water ingress," he says.

Another recommendation is to locate silo bags well away from trees (to reduce the risk posed by falling branches) and surrounding bush or grass verges that might harbour rodents and other wildlife.

One of the weak points of the membrane-based storage system is the ability to achieve an effective seal at the end of the bag. Mr Burrill suggests folding the plastic back onto itself and then burying the folded section with soil.

A GRDC-supported CSIRO report on silo bags notes another reason for limiting the use of silo bags to a three-month period only. Researchers James Darby and Len Caddick say condensation on the inside of the membrane can cause localised moulding and spoilage, especially during cooler times of the year and in cool

5110 bags namely, but mint to short-term use - Oranis research & Development Corpor... 1 460 2 or 2

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locations. The researchers suggest orienting the silo bags in a north-south direction.

Mr Botta cautions against using silo bags for handling over-moisture grain because self-heating will quickly occur, increasing the development of mould and the likelihood of quality losses.

After grain out-turn, Mr Botta and Mr Burrill encourage the immediate removal of any grain spills and correct disposal of the used membrane to prevent the site from becoming a future breeding ground for stored grain insect pests.

GRDC Research Code DAQ00158

More information:

Peter Botta, 03 5762 4649, 0417 501 890, pbotta@bigpond.com; Philip Burrill, 07 4660 3620, 0427 696 500, philip.burrill@deedi.qld.gov.au; www.grdc.com.au/DAQ00158

GRDC Project Code DAQ00158

Region National

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-238-

PLAN 1

PLANNING APPLICATION P12-199 59 RAEBURN ROAD, BREADALBANE

ATTACHMENTS

- A Application & plans
- B Responses from referral agencies
 - Launceston Airport
- C Clause 2.12 of the Scheme

-255-

ATTACHMENT P

x with (! of

Paul Godier

From:

Stephen Douglas [Stephen.Douglas@lst.com.au]

Sent:

Wednesday, 28 November 2012 10:23 AM

To:

Paul Godier

Subject: Attachments: (DWS Doc No 572133) FW: Planning Application P12-199 - referral to Launceston Airport

Grain Storage issues

Hi Paul,

As discussed, I requested comment from our wildlife consultant on the proposal from XLD Grain. Please find his response below.

He has been monitoring the site during his regular visits Launceston Airport as has concerns around their capacity to follow their proposed protocols and the lack of durability of the storage system.

I believe given his concerns Launceston Airport cannot support the proposal.

Please give me a call if you would like to discuss further.

Regards,

Stephen Douglas

Manager Planning & Environment

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f: +61 3 6391 8580

m: +61 0404 850 135

w: www.launcestonairport.com.au

PO Box 1220, Launceston, Tasmania 7250



Growing Responsibly



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From: William Jamieson [mailto:WJamieson@avisure.com.au]

Sent: Wednesday, 28 November 2012 9:59 AM

To: Stephen Douglas

Cc: Andrew Tuma; William Jamieson

Subject: RE: Planning Application P12-199 - referral to Launceston Airport

Hi Stephen,

As discussed on the phone last week I think the storage of grain using the grain bags is not suitable in the close proximity of the airfield. The grain bags are not very durable and can split or the birds are able to easily perforate the bags and feed on the contents.

XLD have produced a document which outlines their intentions, however it isn't evident that they are complying with it. They state in the Bird Control Protocol document that they will inspect the bags weekly and any damage will be immediately repaired. However during my last visit to the site (September) there was quite a lot of grain on the ground and a large number of birds attracted to the site, some of the grain had been there a while because it had germinated. Andrew sent an email (see attached) and I believe the issue was rectified however I'm not sure anything would have happened without prompting.

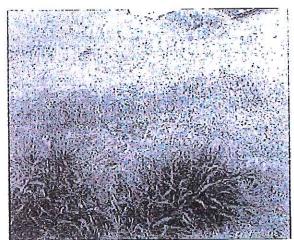


Figure 1. Spilt grain at XLD grain storage site.

Also the regional cockatoo population seems to be growing, during June this year I recorded a large population (300+) roosting in some trees west of the Midland Highway. These birds are likely to cross the approach to Rwy 14R travelling to the grain storage area from this roost. So while the cockatoos aren't regularly seen on the airport their presence in the region has air safety implications.

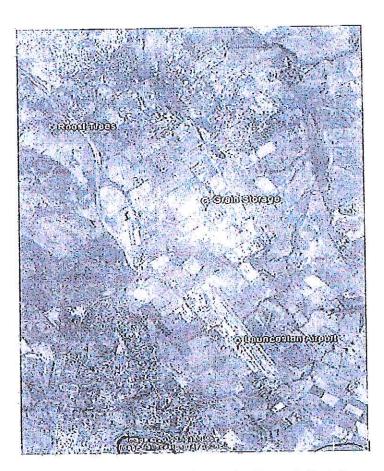


Figure 2. Roost site and XLD grain storage site proximity to Launceston Airport.

Due to these issues I don't think it is a good idea that they are allowed to continue to operate the temporary facility in the current format at this location (or any other location within the vicinity of the airfield).

If it is possible for them to construct a net over the bags or heavy duty tarps to prevent the birds accessing the grain, then it may be possible to come up with an agreeable situation.

Also are they able to provide any copies of their weekly monitoring sheets, it would be interesting to see their results.

Let me know if you have any question or require any additional information.

Regards Will

William Jamleson Principal Biologist



PO Box 880, Surry Hills, NSW 2010, AUSTRALIA T +61 (0)2 9437 6919 | F +61 (0)7 55082544 | W avisure.com.au | ABN 26 131 545 054

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From: Stephen Douglas [mailto:Stephen.Douglas@lst.com.au]

Sent: Wednesday, 21 November 2012 11:28 AM

To: William Jamieson

Subject: FW: Planning Application P12-199 - referral to Launceston Airport

Hi Will,

As discussed Planning referral Attached

Regards,

Stephen Douglas

Manager Planning & Environment

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f: +61 3 6391 8580

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w: www.launcestonairport.com.au

PO Box 1220, Launceston, Tasmania 7250

EXTREDIGITUDE ENTRE

Growing Responsibly



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From: Jan Cunningham [mailto:Jan.Cunningham@nmc.tas.gov.au]

Sent: Friday, 2 November 2012 9:24 AM

To: Stephen Douglas

Subject: Planning Application P12-199 - referral to Launceston Airport

See attached referral

Regards, Jan Cunningham, Planning Administration Officer Northern Midlands Council Ph: (03) 6397 7303 - Fax: (03) 6397 7331

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Paul Godier

From: Sent: Andrew Tuma [Andrew.Tuma@lst.com.au] Thursday, 20 September 2012 10:02 AM

To:

Lachie Stevens William Jamieson

Cc: Subject:

Grain Storage issues

Follow Up Flag: Flag Status:

Follow up Flagged

Hi Lachie,

We may have a bit of a problem developing at the grain storage site that we feel we need to make you aware of. Will Jamieson undertook our quarterly wildlife audit/review earlier in the week and found a potential issue at your Breadalbane storage site.

There was a substantial amount of waste grain left on the ground from the recent decanting of the silo bags. This has attracted a large number of birds, specifically white cockatoos, (estimated between 50 to 70). This situation is obviously one of the major issues that we spoke about during our meetings where we are very concerned about activities or environments that increase the number of birds in the immediate area of the airport.

Can I ask that you please look at removing the availability of the spilt grain for these birds as soon as you are able. Please give me a call to discuss if you need additional information.

cheers

Andrew Tuma

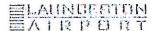
Manager Operations and Compliance

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e: andrew.tuma@lst.com.au

w: www.launcestonairport.com.au

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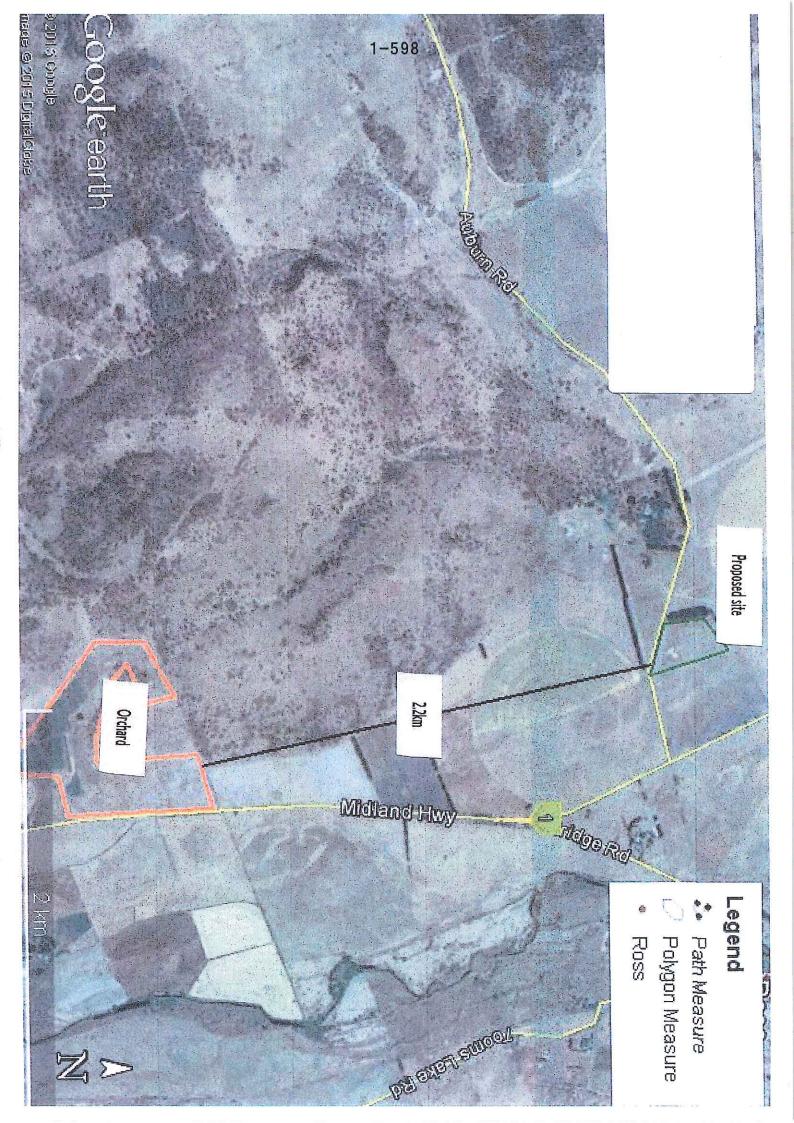


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June 25, 2015

Paul Godier, Senior Planner Northern Midlands Council Longford

Dear Paul,

'WILLIAMWOOD' (ACCESSED FROM AUBURN ROAD), 109 AUBURN ROAD, ROSS
Representation received to Planning Application P15-157 – Resource processing (grain processing & distribution facility)

Please find below our response to Representations received against the proposed development.

We respect the rights of people to make comments on planning matters. That is the intention of public advertising of proposals. *Impact of birds is raised as a concern.*

COMMENT - We enclose a separate document which describes XLD Grains Site Management Protocols which cover these items. The site will be fenced so livestock from surrounding paddocks and wildlife do not interfere with the Silo bags or gain access to the site. It is not in XLD Grains interest to have wildlife or livestock entering the Grain Facility Site and interfering with the Grain Silo Bags and should this take place appropriate measures and actions will be taken in line with general Rural Agricultural Practices and state regulations. The comments made by the Launceston Airport relate to an old site and old practices. Their concern related to POSSIBLE bird strike caused by the grain operation. There is no evidence to suggest that XLD Grain operations did attract birds. Indeed since the closure of the Breadalbane site bird activity in the vicinity of the airport has increased.

In regard to this point XLD will give a commitment to enforce the provisions of its spill policy through employee induction; regular site inspections by management and random inspection by third party persons.

The proposal is contrary to Clause 26.3.1 P1.1

COMMENT - The relevant clause states:

WOOLCOTT SURVEYS

Ph: (03) 6332 3760 F: (03) 6332 3764 10 Goodman Court, Invermay, TAS, 7248 PO Box 593, Mowbray Heights, TAS, 7248 Email: admin@woolcottsurveys.com.au **EAST COAST SURVEYING**

Ph: (03) 6376 1972 Avery House Level 1 48 Cecilia Street, St Helens, TAS, 7216 PO Box 430, St Helens, TAS, 7216 Email: admin@ecosurv.com.au





P1.1 It must be demonstrated that the use is consistent with local area objectives for the provision of nonprimary industry uses in the zone, if applicable

Local Area Objectives for the provision of non primary industry uses in the zone are:

a) Primary Industries:

Resources for primary industries make a significant contribution to the rural economy and primary industry uses are to be protected for long-term sustainability. The prime and non-prime agricultural land resource provides for variable and diverse agricultural and primary industry production which will be protected through individual consideration of the local context. Processing and services can augment the productivity of primary industries in a locality and are supported where they are related to primary industry uses and the long-term sustainability of the resource is not unduly compromised.

COMMENT – the proposal accords well with this part of the Local Area Objectives – the proposal processes primary product and will present a better value product to the end users (again primary producers) by reducing transportation costs.

b) Tourism

Tourism is an important contributor to the rural economy and can make a significant contribution to the value adding of primary industries through visitor facilities and the downstream processing of produce. The continued enhancement of tourism facilities with a relationship to primary production is supported where the long-term sustainability of the resource is not unduly compromised. The rural zone provides for important regional and local tourist routes and destinations such as through the promotion of environmental features and values, cultural heritage and landscape. The continued enhancement of tourism facilities that capitalise on these attributes is supported where the long-term sustainability of primary industry resources is not unduly compromised.

COMMENT – This clause is about tourism developments within the rural zone. The proposed development is not a tourism development. The matter of tourist corridors and their protection is covered in great detail within the Scenic Protection Code.

WOOLCOTT SURVEYS

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