

BUSHFIRE RISK ASSESSMENT
PROPOSED NEW DWELLING
86 PULLENS ROAD, WOODBRIDGE
FOR
P J BULTITUDE & A S KELLY



PREPARED BY
N M CREESE (B.Surv.)
9th January 2014

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Disclaimer:

AS 3959-2009 cannot guarantee that a dwelling will survive a bushfire attack, however the implementation of the measures contained within AS 3959-2009, this report and accompanying plan will improve the likelihood of survival of the structure. This report and accompanying plan are based on the conditions prevailing at the time of assessment. No responsibility can be accepted to actions by the land owner, governmental or other agencies or other persons that compromise the effectiveness of this plan. The contents of this plan are based on the requirements of the legislation prevailing at the time of report.

1. SUMMARY:

This Bushfire Risk Assessment has been prepared to support the design and construction of a new dwelling at 86 Pullens Road, Woodbridge. The site has been deemed to be bushfire prone due to its proximity to the areas of bushfire prone vegetation surrounding the site.

This report identifies the protective features and controls that must be incorporated into the design and construction works to ensure compliance with the standards. Fire management solutions are as defined in AS 3959-2009 *Construction of Buildings in Bushfire-Prone Areas*, *Kingborough Planning Scheme 2000*, *National Construction Code (Volume 2)* and the Tasmania Fire Service publication *Guidelines for Development in Bushfire Prone Areas 2005*.

Provided construction standards for BAL 12.5 of AS 3959-2009 are incorporated into the design and new building works and the provision of the minimum hazard management areas specified in Table 1 being provided, the new building works are capable of compliance with the provisions of AS 3959-2009 and as a result, the bushfire risk is reduced.

In addition, vehicular access and a dedicated water supply for firefighting purposes shall be provided in accordance with the requirements of National Construction Code (Volume 2).

The effectiveness of the measures and recommendations detailed in this report and AS 3959-2009 are dependent on their implementation and maintenance for the life of the development or until the site characteristics that this assessment has been measured from alter from those identified. No liability can be accepted for actions by lot owners, Council or governmental agencies which compromise the effectiveness of this report.

This report has been prepared by Nick Creese, principal of Lark & Creese surveyors. Nick is a registered surveyor in Tasmania and is accredited by the Tasmania Fire Service to prepare bushfire hazard management plans.

Site survey was carried out on 6th January 2014.

2. LOCATION:

Property Address: 86 Pullens Road, Woodbridge

Title Owner: P J Bultitude & A S Kelly

Title Reference: C.T. 28958-1

Title Area: 2.521 ha

PID No. 7315689

Municipal Area: Kingborough

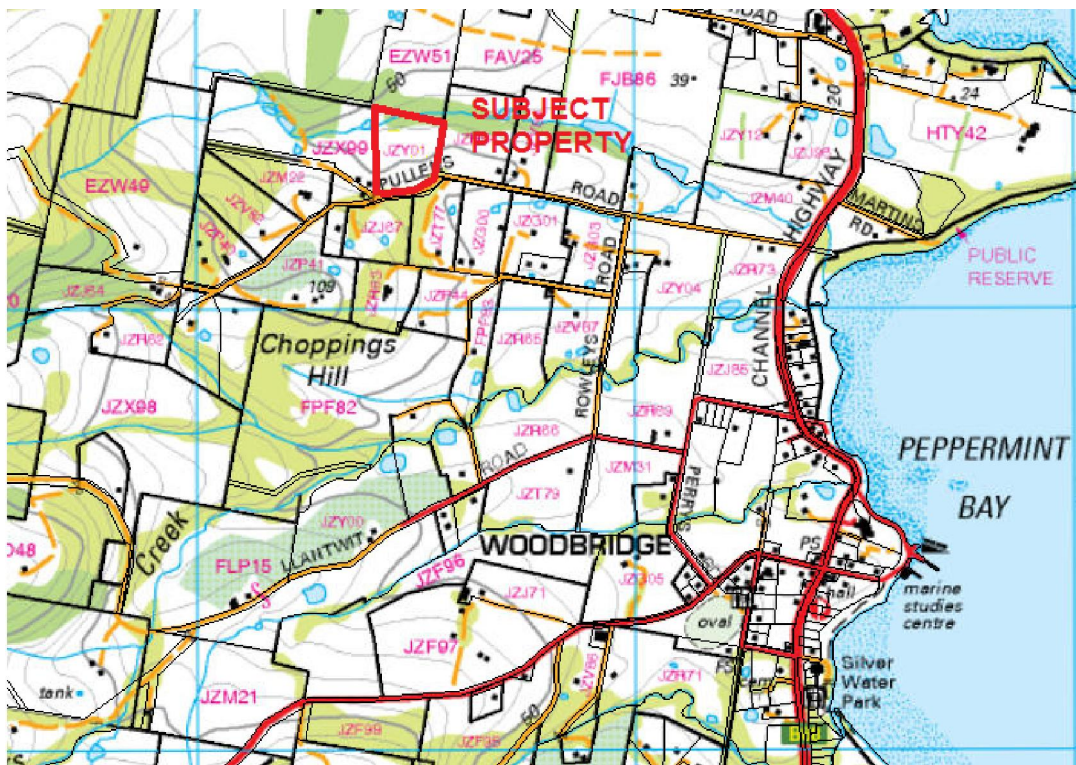


FIGURE 1: Site Location (Source *The LIST*)

3. SITE DESCRIPTION:

The property is located on Pullens Road, approximately 850 metres west of its intersection with Channel Highway, Woodbridge. The land is situated on a north facing slope at an elevation of approximately 50 m AHD. Grades fall to the north in the order of less than 1:15 (4°). Access is via a gravel driveway access from Pullens Road, a Council maintained gravel road.

The property contains several corrugated iron and timber sheds close to the Pullens Road frontage with mown lawn, garden beds and hardstand areas.

The land to the east and west development site consists of predominately pasture areas with rural residential style development. The land to the north, some 100 metres distant contains areas of eucalypt forest extending eastwards and westwards, covering an area of approximately 6 ha. To the south, on the opposite side of Pullens Road, a significant area of eucalypt forest extends southwards with connectivity to larger forest areas to the west.

Reticulated water supply is unavailable to the site with all water supply requirements reliant on on-site water storage.

Planning controls are administered by the Kingborough Council under the *Kingborough Planning Scheme 2000*. The site is zoned Primary Industry with a small area of Environmental Management near the northern boundary of the property.



FIGURE 2: Looking west towards development site.



FIGURE 3: Looking south towards development site.

4. PROPOSED DEVELOPMENT:

The existing shed on the site is to be upgraded to a temporary residence with a new dwelling to be constructed to the north west. The shed is steel framed construction with corrugated iron cladding and roofing, with timber framed windows.

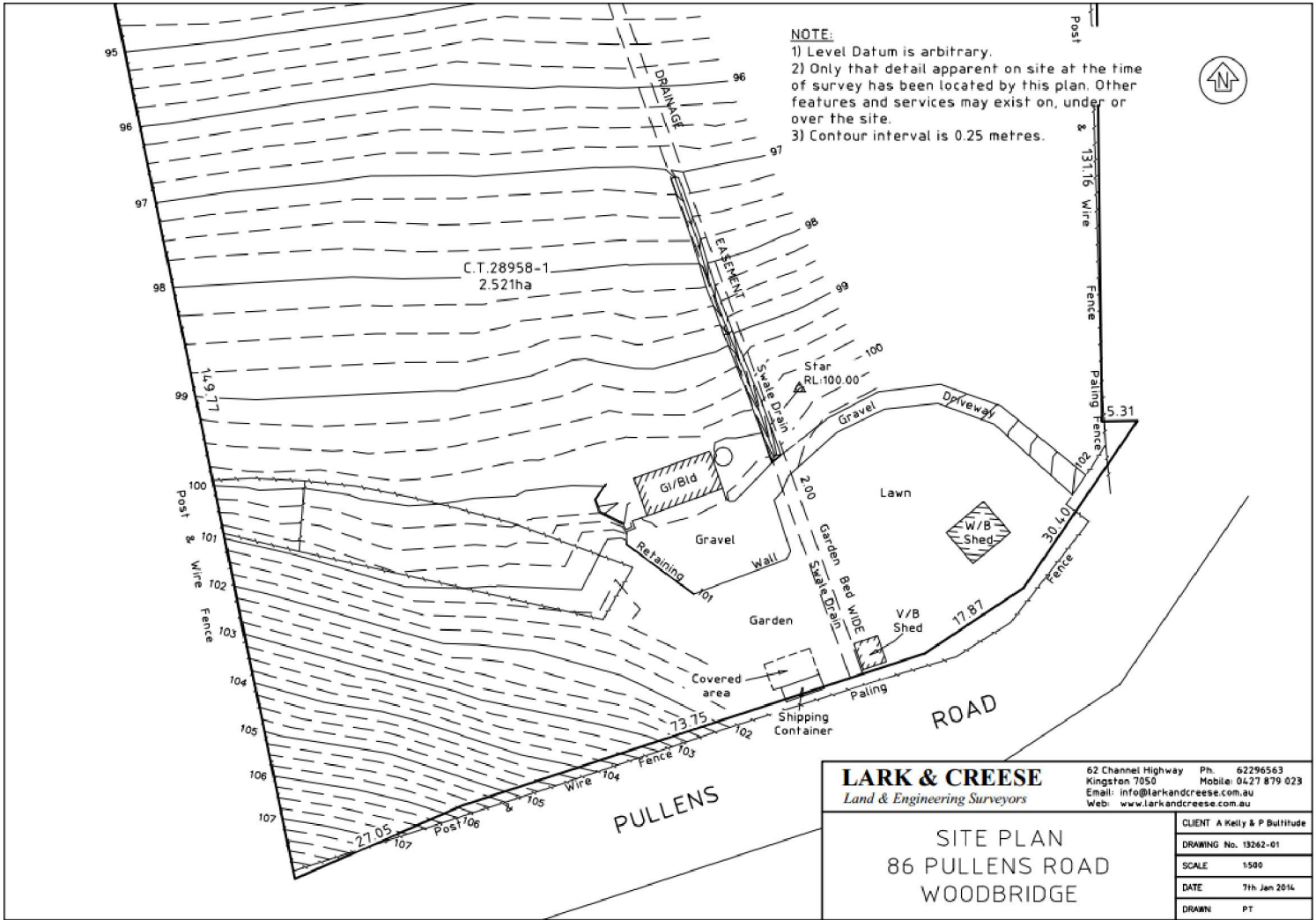


FIGURE 4: Site Plan

5. BUSHFIRE ASSESSMENT:

Fire Danger Index (FDI): The Fire Index Rating for Tasmania is adopted as 50.

Vegetation Classification:

The predominant vegetation has been determined as follows:

North of development site:	Classification G(i): Grassland
East of development site:	Classification A:Forest
South of development site:	Classification A:Forest
West of development site:	Classification G(i): Grassland

Gradient under predominant vegetation:

North :	1:15 (4°)
East:	Level
South:	<5° upslope
West:	Level

Distance to predominant vegetation: (at time of assessment)

North:	10 metres
East:	40 metres
South:	35 metres
West:	10 metres

NOTES: The grassland immediately surrounding the main shed is mown on a regular basis and is maintained in a minimal fuel condition. Beyond this, areas of grassland extend 90 metres northwards, 40 metres eastwards, in excess of 100 metres westwards, and 35 metres southwards. The strip of eucalypts along the eastern boundary and Pullens Road within the property boundary are within 20 metres of the eucalypts on the southern side of the road and are therefore included in this assessment.

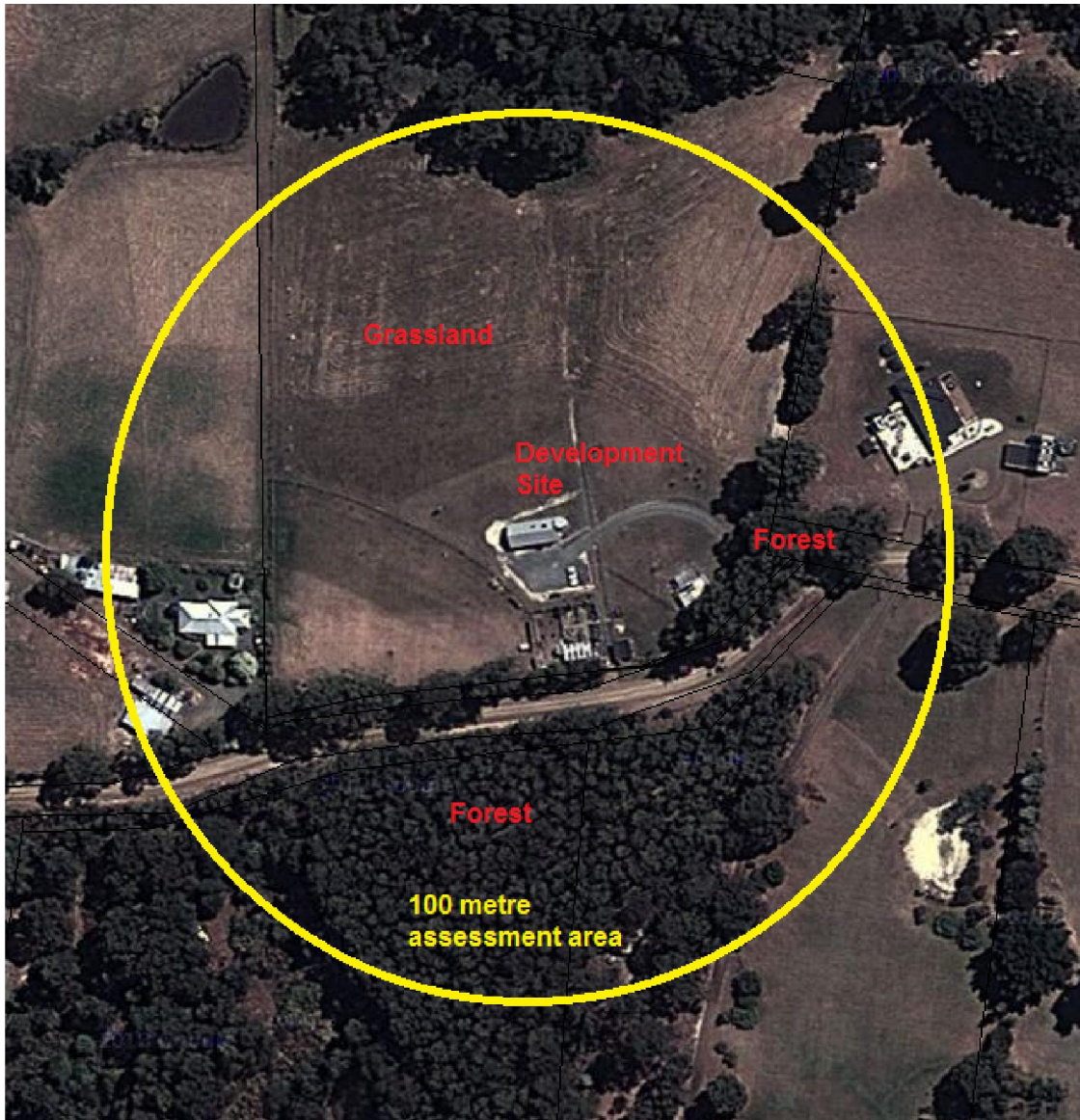


FIGURE 5: Aerial Image of predominant vegetation (Development site shown in red) – Source *The LIST*



FIGURE 6: Predominant vegetation to north of site – Classification G(i): Grassland



FIGURE 7: Predominant vegetation to south east of site – Classification A:Forest



FIGURE 8: Predominant vegetation to south of site – Classification A:Forest



FIGURE 9: Predominant vegetation to west of site – Classification G(i): Grassland

Bushfire Attack Level (BAL):

Based on the predominant vegetation detailed above, and the separation distance available between the predominant vegetation and the development site, I have determined the BAL for each elevation of the proposed dwelling as follows:

North east Elevation: BAL-12.5
 South east Elevation: BAL-12.5
 South west Elevation: BAL-12.5
 North west Elevation: BAL-12.5

Table 1 details the hazard management area required to comply with that BAL, and the area available for compliance.

	NORTH	EAST	SOUTH	WEST
BAL	BAL-12.5	BAL-12.5	BAL-12.5	BAL-12.5
VEGETATION TYPE	Classification G(i): Grassland	Classification A:Forest	Classification A:Forest	Classification G(i): Grassland
SLOPE	4°	Level	Less than 5° upslope	Level
HAZARD MANAGEMENT AREA REQUIRED	16-<50 metres	32-<100 metres	32-<100 metres	14-<50 metres
HAZARD MANAGEMENT AREA AVAILABLE	90 metres of grassland to edge of forest	40 metres of grassland to edge of forest	35 metres of grassland to edge of forest	60 metres to boundary

TABLE 1: BAL assessment and Hazard management area requirements

6. COMPLIANCE:

All building works to the north, east and west shall comply with the specifications for BAL-12.5 under Section 5 of AS 3959-2009.

This includes the general provisions contained within AS 3959-2009 and the following sub-sections:

- 5.1 General provisions
- 5.4 External Walls
- 5.5 External Glazed Elements and Assemblies and External Doors
- 5.6 Roofs
- 5.7 Verandas, Decks, Steps, Ramps and Landings
- 5.8 Water and Gas Supply Pipes.

Schedule 7 – Bushfire Prone Areas Schedule, Kingborough Planning Scheme:

Compliance with the provisions of Schedule 7 are achieved through the implementation of the following:

- 7.2.1.1 Provision of bushfire protection zones: This report and accompanying Bushfire Hazard Management Plan detail the location and extent of the hazard management areas to be provided and maintained in accordance with the requirements of AS 3959-2009.
- 7.2.2.1 Road Layout: Not applicable
- 7.2.2.2 Access Construction: The access road to the site from Pullens Road is to comply with the requirements of Table s7.3 to the following standards:
 - All weather construction.
 - Minimum load rating 20 tonnes.
 - Minimum trafficable width of 6 metres, or 4 metres with passing bays at 90 metre intervals.
 - Minimum clearance 4 metres each side and 4 metres above centreline of formation.
 - Maximum gradient 1:8 (12.5%).
 - Minimum inner radius of curves to be 10 metres.
 - Dips not to be more than 1:8 (12.5%) entry and exit angles.
 - Maximum crossfall to be 1:33 (3%).
 - Turning circle of minimum radius 10 metres or T or Y turning areas of minimum width 4 metres and minimum length 16 metres.

- 7.2.2.3 Staged Development: Not applicable
- 7.2.3.1 Reticulated Water: Not available to the site – See 7.2.3.2
- 7.2.3.2 Minimum requirements for water: Where reticulated water is not available to the site, the requirements of Part 3.7.4.2 of the National Construction Code (Volume 2) shall apply to the following standards:
 - Stored water supply in a water tank, swimming pool, dam or lake available for fire fighting at all times which has a capacity of at least 10,000 L for each separate building.
 - A water tank and above ground pipes and fittings used for a stored water supply must be made of non-rusting, non-combustible, non-heat-deforming materials and must be situated more than 6 m from a building.
 - The water tank must have an opening in the top of not less than 250 mm diameter or be fitted with a male 64 mm 5v thread coupling capable of delivering 270 L per minute.
- 7.2.3.3 Location of Building Envelope (reticulated water available): Not applicable.
- 7.2.3.4 Location of Building Envelope (no reticulated water available): The water supply provided in compliance with 7.2.3.2 shall be accessible by emergency vehicles from the lot it is intended to serve at all times.
- 7.2.3.5 Access to water for fire fighting: Provision is to be made for emergency vehicles to access storages for fire fighting by installing couplings, hardstand areas and delivery points in accordance with Part 3.7.4.2 National Construction Code (Volume 2) and the TFS Guidelines.

Hazard Management Areas:

Hazard Management Areas are to be established and maintained in a minimal fuel condition for the distances quoted under “Hazard Management Area Required” (Table 1). This can be achieved through the implementation of the following measures:

- Establishing non-flammable areas around the dwelling such as paths, patios, driveways, lawns etc.
- Locating dams, orchards, vegetable gardens, effluent disposal areas etc on the bushfire prone side of the building.
- Providing heat shields and ember traps on the bushfire prone side of the dwelling such as non-flammable fencing, hedges, separated garden shrubs and small trees. Avoid the use of highly flammable plants.
- Ensure flammable materials such as wood piles, fuels and rubbish heaps are stored away from the dwelling.
- Replace highly flammable plants with low flammability species.
- Provide horizontal separation between tree crowns and vertical separation between ground fuels and overhead branches.
- Provide separation between significant trees such that groups are no greater than 20 metres in width, and more than 20 metres of other groups of significant trees. Note that retention of some trees can screen a dwelling from windborne embers.
- Regular slashing or mowing of grass to a height of less than 100mm.
- Removal of ground fuels such as leaves, bark, fallen braches etc on a regular basis.
- Ensuring no trees overhang the dwelling so that vegetation falls onto the roof

7. CONCLUSIONS & RECOMMENDATIONS:

This Bushfire Risk Assessment and Bushfire Hazard Management Plan have been prepared to support design and construction of a new dwelling at 86 Pullens Road, Woodbridge. The report has reviewed the bushfire risks associated with the site, and determined the fire management strategies that must be carried out to ensure the development on the site is at reduced risk from bushfire attack. Provided the elements detailed in this report are implemented, the development on the site is capable of compliance with AS-3959-2009 and the Tasmania Fire Service Guidelines and any potential bushfire risk to the site is reduced.

The new building works must comply with the requirements for BAL-12.5 of AS-3959-2009 as specified in Table 1 and Part 6 of this report. The Council approval issued for the building works should contain conditions requiring that the protective elements defined in this report and AS-3959-2009 be implemented during the construction phase and maintained by the lot owners for the life of the structure.

Vehicular access to the site must comply with the requirements of Schedule 7, Kingborough Planning Scheme 2000 and National Construction Code (Volume 2) for a Modified 4C access road.

A minimum supply of 10,000 litres of water must be provided on site for a dedicated fire fighting supply in accordance with the requirements of Schedule 7, Kingborough Planning Scheme 2000 and National Construction Code (Volume 2).

Although not mandatory, any increase in the construction standards above the assessed Bushfire Attack Level will afford improved protection from bushfire and this should be considered by the owner, designer and/or builder prior to construction commencing.

Hazard Management Areas must be established and maintained in a minimal fuel condition in accordance with this plan the TFS guidelines. It is the owner's responsibility to ensure the long term maintenance of the hazard management areas in accordance with the requirements of this report.

This report does not recommend or endorse the removal of any vegetation within, or adjoining the site for the purpose of bushfire protection without the explicit approval of the local authority.



N M Creese
Registered Surveyor

8. REFERENCES:

- *AS-3959-2009 - Construction of Buildings in Bushfire Prone Areas.*
- *National Construction Code Volume 2.*
- *Guidelines for Development in Bushfire Prone Areas - Tasmania Fire Service.*
- *Kingborough Planning Scheme 2000.*
- *The LIST - Department of Primary Industry Parks Water & Environment.*