

## BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT

**Lot 1 DP 1181666 No.259 West Wilchard Road,  
CASTLEREAGH NSW 2749**

**Report prepared for: - City Scape Planning and Projects**

### Report Documentation Control

<i>Title</i>	Lot 1 DP 1181666 No.259 West Wilchard Road, CASTLEREAGH NSW 2749
<i>Date</i>	Date of Issue 8 May 2016
<i>Author(s)</i>	Bushfire Management Consultants
<i>The Client</i>	City Scape Planning and Projects
<i>Expiry</i>	8 May 2017 (The information in this report is valid for 12 months from the date of issue.)
<i>Job No.</i>	2016400
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**Date: - 8 May 2016**

**Development Application Number: - N/A**

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*In association with Red Road Engineers Pty Ltd*

## BUSHFIRE ATTACK LEVEL (BAL)

<b>OUR REFERENCE</b>	<b>2016400</b>
<b>DATE OF THIS CERTIFICATE</b>	<b>8 May 2016</b>
<b>APPLICATION TYPE</b>	<input checked="" type="checkbox"/> <b>Development Application S79BA</b>
<b>SUBJECT SITE</b>	<b>Lot 1 DP 1181666 No.259 West Wilchard Road, CASTLEREAGH NSW 2749</b>
<b>PROPOSED DEVELOPMENT</b>	<b>Single Storey Dwelling</b>
<b>PLAN REFERENCE</b>	<b>SITE PLAN Prepared by Metricon JOB No. 671572 DATE: 13.11.15, SHEET : 1 OF 9 Rev C Dated 14.03.16</b>

A site assessment and investigation has been undertaken with reference to the above mentioned plans and Australian Standard AS3959 – 2009 (Amendment No 3). Based on the proposed plans and building setbacks indicated on the plans, it is recommended that the proposed residential building should be:-

**BAL – LOW**

There are no construction requirements in AS3959-2009 for BAL-LOW however we recommend that Gutter and Valley Guards should be installed in accordance with *Planning for Bushfire Protection (2006) – A Guide for Councils, Planners, Fire Authorities and Developers*.

This BAL assessment is limited to the development and setbacks as indicated on the above plan. Should any amendments be made to the plans or setbacks, a further Bushfire Attack Level assessment will be required. This report does not authorise the commencement of any site works or clearing of vegetation of any kind and is not a BAL Certificate for the purposes of a Complying Development, as such the BAL is a recommendation only.

This BAL Assessment and the information contained in this BAL Assessment is valid for 12 months from the date of this assessment as vegetation and influencing factors change over time. Other recommendations are contained further in this report.

Yours faithfully

**Bushfire Management Consultants**

## 1.0 PROJECT BRIEF

Bushfire Management Consultants have been engaged by City Scape Planning and Projects to assess the potential threat to the proposed development in the event of a bushfire and prepare a Bushfire Attack Level Assessment to determine the level of Bushfire Attack to the proposed development and compliance with Planning for Bushfire Protection (PBP).

Maps prepared by Penrith City Council in accordance with Section 146 of the Environmental Planning and Assessment Act 1979 (EP&A Act) indicate that the subject property is bushfire prone land. The aim of this report is to determine the relevant Bushfire Attack Level (BAL) for the proposed building and the construction requirements in accordance with AS3959 – 2009 *Construction of Buildings in Bushfire Prone Areas* and to determine if any further requirements are needed for the proposal with regard to bushfire protection. This assessment included a site assessment to determine the actual site characteristics.

An assessment has been conducted in accordance with the methodology set out in AS3959-2009 (Amendment 3).

The proposal is to seek approval for the construction of a new Single Storey Dwelling on an existing vacant parcel of land being Lot 1 West Wilchard Road, Castlereagh.

The following information has been used to assess the potential bushfire threat to the property:-

- (a) *SITE PLAN Prepared by Metricon JOB No. 671572 DATE: 13.11.15, SHEET : 1 OF 9 Rev C Dated 14.03.16* (Refer Attachment A)
- (b) Inspections of the site and surrounding development
- (c) Advice from the City Scape Planning and Projects

## 2.0 EXECUTIVE SUMMARY

This report provides an assessment of the subject property and proposed development as required by Section 79BA of the Environmental Planning and Assessment Act and The NSW Rural Fire Service Guide; *Planning for Bushfire Protection (2006) – A Guide for Councils, Planners, Fire Authorities and Developers*, to determine the BAL for the site. Subsequently the subject site has been identified as Bushfire Prone Land and has been identified on the bushfire prone land maps adopted by Penrith City Council. (Refer Attachment B)

The subject site is known as Lot 1 DP 1181666 No.259 West Wilchard Road, Castlereagh and is currently vacant rural land. The lot is a rural allotment similar to other rural allotments within the Castlereagh area. The subject site is vacant land with some existing vegetation on the lot.

The assessment recommends that the proposed dwelling be BAL LOW as the vegetation surrounding the proposed dwelling is either managed land or can be managed as part of this application.

Additional recommendations regarding water supply, services and maintenance are contained further in this report.

The assessment also determined that the proposal can comply with *Planning for Bushfire Protection (2006) – A Guide for Councils, Planners, Fire Authorities and Developers*, for the proposed development type.

## 3.0 PROPOSED DEVELOPMENT

The applicant proposes a Single Storey Dwelling on Lot 1 DP 1181666 No.259 West Wilchard Road, CASTLEREAGH. The applicant proposes to construct and maintain landscape gardens and lawns.

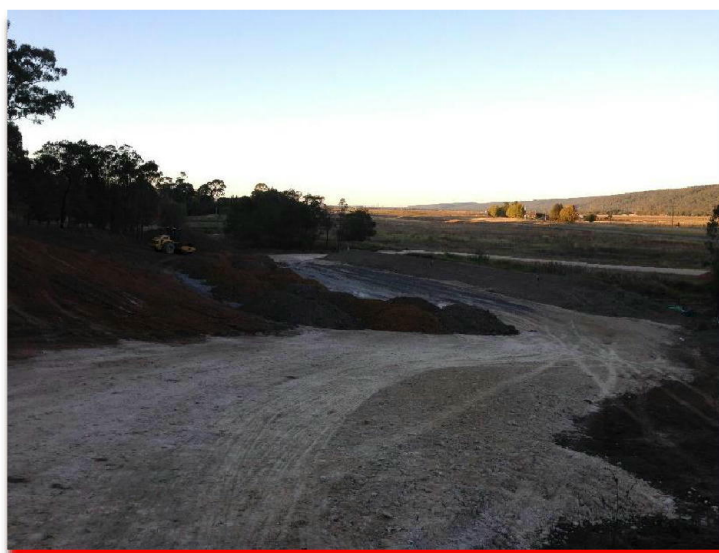


Figure 1 – Subject Site

## 4.0 SITE ASSESSMENT AND CHARACTERISTICS

### 4.1 Site Description

The site is located in the Local Government Area of PENRITH, in the suburb of Castlereagh and a street frontage to West Wilchard Road which is a local road providing a bitumen sealed access road to the property and surrounding developments. The site also has a frontage to Castlereagh Road. The site generally slopes from front to rear (north to south).

The existing allotment is a large rural lot with an approximate area of 57,910m<sup>2</sup>.



\*Aerial photo not representative of current developed land or clearing. Not to Scale

Figure 2 – Aerial Photo 1

## 4.2 Asset Protection Zones

There are no formal Asset Protection Zones currently on the title of the property. It is proposed to manage the subject property as an Inner Protection Area to ensure separation distances are achieved for bushfire protection. In addition properties to the north and east are currently considered managed lands.

**TABLE 1, PBP INFILL OBJECTIVES FOR ASSET PROTECTION ZONES**

OBJECTIVE	PBP COMPLIANCE
A defensible space is provided on site	<input checked="" type="checkbox"/> Complies
An Asset Protection Zone is provided and maintained for the life of the development	<input checked="" type="checkbox"/> Complies

## 4.3 Surrounding Development

The subject site is adjoined by existing rural development. A description of the development adjoining the subject dwelling is indicated below.

### 4.3.1 North

To the north of the proposed dwelling is adjoining rural lands being on West Wilchard Road. This direction is considered managed Lands. The risk from a bushfire in this direction is LOW

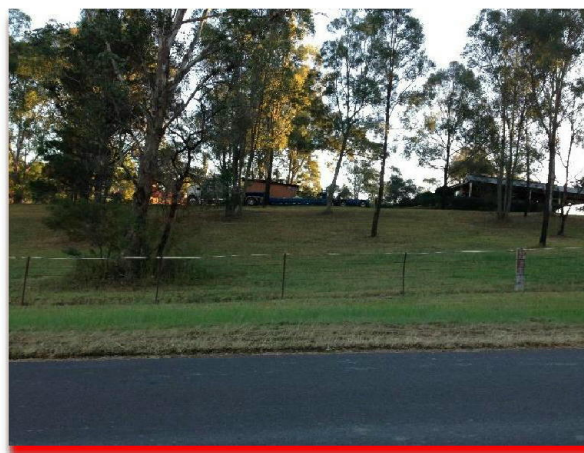


Figure 3 – North

## 4.3.2 South

To the south of the proposed dwelling is the subject site. The site in this direction is generally Grasslands. As such it is proposed to maintain the Grasslands and subject site in this direction to a distance of not less than 50m. The risk from a bushfire in this direction is LOW



Figure 4 – South

## 4.3.3 East

To the east of the proposed dwelling is a small pocket of Woodland type vegetation on the subject site. It is proposed to maintain this area as an Inner Protection Area. Further east is managed lands on adjoining properties. The risk from a bushfire in this direction is LOW

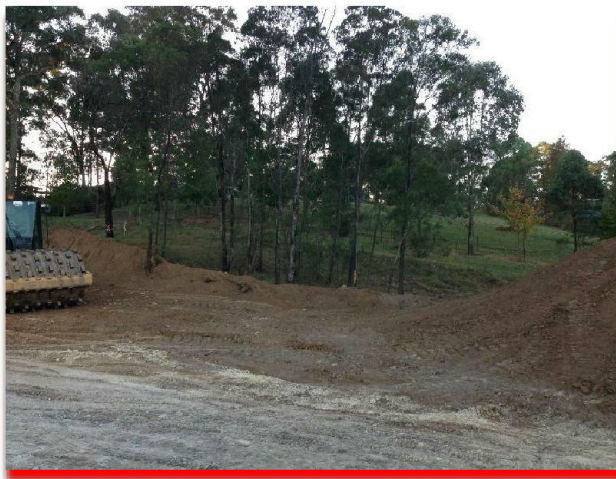


Figure 5 – East

## 4.3.4 West

To the west of the proposed dwelling is a portion of the subject site. It is proposed to maintain this area as an Inner protection Area. Further to the west is Castlereagh Road and further west in Grasslands on adjoining properties. The risk from a bushfire in this direction is LOW

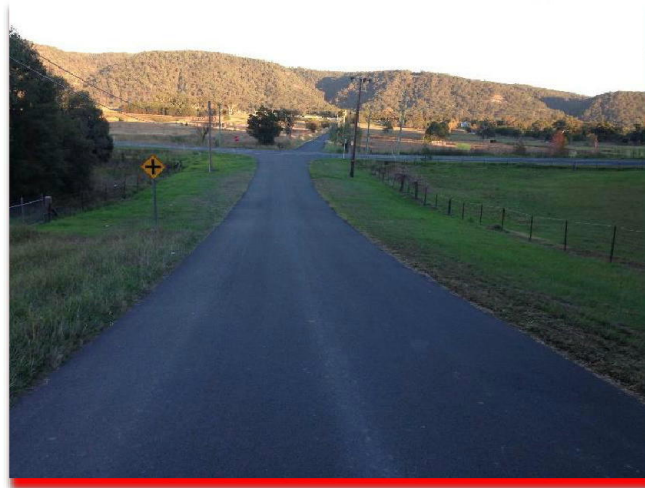


Figure 6 – West

## 5.0 DETERMINING THE BUSHFIRE ATTACK LEVEL – BAL

### 5.1 Methodology

AS3959-2009 sets the methodology for assessment and determination of the applicable Bushfire Attack Level (BAL) for development. The method required the determination of the following:-

1. The relevant Fire Danger Index (FDI)
2. The classified vegetation types
3. The distance of the site from the classified vegetation
4. The effective slope under the classified vegetation
5. The BAL level from the appropriate table

The following addresses the method for determining the BAL for the subject site.

### 5.2 FDI

FDI is determined by Table 2.1 AS3959-2009. In this case the subject site is within NSW and the Greater Sydney Region.

NSW Greater Sydney FDI 100
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## 5.3 Vegetation Type

Predominantly the vegetation surrounding the subject site is 'Grasslands' type vegetation as described in AS3959-2009. Despite there being a few scattered trees to the ease on the subject property this is an isolated pocket of trees that create a minimal impact to the proposed development in the event of a bushfire.

As such the Classification of vegetation in Table 2.3 AS3959 is:-

**TABLE 2, CLASSIFICATION OF VEGETATION**

Direction	Vegetation Type
All directions	<b>Grasslands</b>

## 5.4 Slope

The slope of the land within 100m of a proposed dwelling together with other factors reflects the intensity and rate of spread of an approaching bushfire. Fires spread quicker when burning upslope than they generally do when burning downslope.

Table 3 below identifies the general slope of the land surrounding the proposed dwelling.

**TABLE 3, SLOPE IDENTIFICATION**

Direction	Slope	Degrees (°)
North	Upslope	All Upslopes 0°
South	Flat	All Upslopes/Flat 0°
East	Upslope	All Upslopes 0°
West	Downslope	0-5°

Figure 7 – Slope Assessment and fire run



## 6.0 CATEGORY OF BUSHFIRE ATTACK

To determine the appropriate BAL for the subject site Table 2.4.2 AS3959-2009 is used. The results of this assessment are summarised below in Table 4.

**TABLE 4, TABLE OF COMPLIANCE**

	North	South	East	West
Vegetation Structure	Managed Lands	Grasslands	Managed Lands	Grasslands
Vegetation Width	<100m	>100m	<100m	>100m
Slope	Upslope	Flat/Upslope	Upslope	Downslope 0-5 <sup>0</sup>
Asset Protection Zone	Maintain existing property as IPA to Boundary	Maintain existing property as IPA for not less than 50m	Maintain existing property as IPA to Boundary	Maintain existing property as IPA to Boundary
Distance to vegetation	>100m	>50m	>100m	>50m
Bushfire Attack Level	BAL LOW	BAL LOW	BAL LOW	BAL LOW
Proposed Level of Construction	BAL LOW	BAL LOW	BAL LOW	BAL LOW

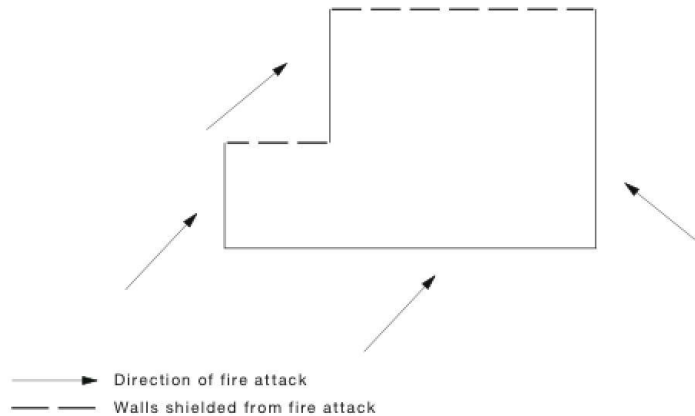
## 7.0 REDUCTION IN CONSTRUCTION REQUIREMENTS DUE TO SHIELDING

AS 3959 – 2009 Section 3.5 allows the lowering of one BAL level only where an elevation is deemed to be not exposed to the source of the bushfire attack. However the construction requirements for a shielded elevation shall not be less than that required for BAL-12.5.

However all elevations in this development are recommended at BAL-LOW.

(Examples of walls subject to shielding) in AS3959-2009

Figure 8



**TABLE 5, PBP OBJECTIVES SITING AND DESIGN**

OBJECTIVE – Siting and Design	PBP COMPLIANCE
Buildings are sited and designed to minimise the risk of bushfire attack	<input checked="" type="checkbox"/> Complies

## 8.0 WATER SUPPLY AND FACILITIES

### 8.1 Water Supply

Reticulated water supply is available to the subject site and surrounding allotments. The proposed dwelling will provide a water tank for BASIX. Given the proposed development is recommended as BAL-LOW a bushfire fighting water supply is not required however we recommend a 65mm storz fitting and ball or gate valve be installed in the tank.

The following requirements should be provided to assist in supplementing the reticulated water supply in the event of a bushfire:-

- Above ground tanks are to be manufactured of concrete or metal.
- All above ground water supply pipes including taps are to be metal.
- Obtain and fix a static water supply marker at the front of the property in a highly visible location.
- Water supply is to comply with Section 4.1.3 of Planning for Bushfire Protection 2006.

**TABLE 6, PBP OBJECTIVES FOR WATER SUPPLY AND UTILITIES**

OBJECTIVE	PBP COMPLIANCE
Adequate water and electrical services are provided for firefighting operations	<input checked="" type="checkbox"/> Complies
Gas and electricity services are located so as not to contribute to the risk of fire to a building	<input checked="" type="checkbox"/> Complies

## 8.2 Gas Services

If gas is provided to the proposed buildings the following shall be adhered to for gas connections:-

- All external gas lines shall be made of metal.
- Reticulated and bottled gas shall be installed and maintained in accordance with AS1596 – 2008.
- Gas Services are to comply with Section 4.1.3 of Planning for Bushfire Protection 2006.

## 8.3 Electrical Services

Origin Energy provides electrical services to the subject lot and proposed dwellings and as such the service provider has systems in place in the event of a bushfire. In addition electricity supply is to comply with Section 4.1.3 of Planning for Bushfire Protection 2006. New lines to the building will be provided underground.

## 9.0 ACCESS

### 9.1 Public Roads

Access to the site is via West Wilchard Road. West Wilchard Road is a bitumen sealed road with a width of approximately 5.5m. West Wilchard Road is a sealed public road which allows free access for fire fighting vehicles.

### 9.2 Property Access

A hard stand driveway is provided to connect the proposed development to West Wilchard Road. Pedestrian access is provided along the side boundaries for access to the rear.

**TABLE 7, PBP OBJECTIVES FOR ACCESS**

OBJECTIVE	PBP COMPLIANCE
Safe operational access is provided (and maintained) for emergency service personnel in suppressing a bushfire while residents are seeking to relocate, in advance of a bushfire.	<input checked="" type="checkbox"/> Complies

### 9.3 Fire Trails

The provision of fire trails are not required for this type of development.

## 10.0 RECOMMENDATION

The proposed building has been assessed as being required to comply with the construction methods outlined in AS3959- 2009 for BAL-LOW

This assessment recommends that:-

The proposed development been assessed as being BAL-LOW. There are no construction requirements in AS3959-2009 for BAL-LOW however we recommend that Gutter and Valley Guards should be installed in accordance with *Planning for Bushfire Protection (2006) – A Guide for Councils, Planners, Fire Authorities and Developers*.

- 65mm storz fitting and ball or gate valve be installed in the tank.
- Above ground tanks are to be manufactured of concrete or metal.
- All above ground water supply pipes including taps are to be metal.
- Obtain and fix a static water supply marker at the front of the property in a highly visible location.
- Water supply is to comply with Section 4.1.3 of Planning for Bushfire Protection 2006.
- At the commencement of building works and in perpetuity the property within 50m of the proposed dwelling or to the boundary whichever is lesser shall be managed as an Inner Protection Area (IPA) as outlined within section 4.1.3 and appendix 5 of 'Planning for Bushfire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.

The Inner Protection Area (IPA) shall comprise the following:

- Minimal fine fuel at ground level;
- Vegetation that does not provide a continuous path to the building for the transfer of fire;
- Shrubs and trees that do not form a continuous canopy;
- Vegetation that is cleared into clumps rather than continuous rows;
- Species that retain dead material or deposit excessive quantities of ground fuel are to be avoided;
- Shrubs and trees are pruned and removed so they do not touch or overhang the building (minimum 2.0m);
- Vegetation is located far enough away from the building so that the plants will not ignite the building by direct flame contact or radiant heat emission.

## 11.0 CONCLUSION

This assessment determined that the proposal for construction of a new dwelling at Lot 1 DP 1181666 No.259 West Wilchard Road, Castlereagh can comply with the requirements of *Planning for Bushfire Protection (2006) – A Guide for Councils, Planners, Fire Authorities and Developers*. It is recommended that the proposal be approved with conditions.

### **Planning for Bushfire Protection**

*“no development in a bush fire prone area can be guaranteed to be entirely safe from bush fires*

### **Australian Standard A.S 3959**

*“it should be borne in mind that the measures contained in this Standard cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire, and extreme weather conditions”*

## REFERENCES

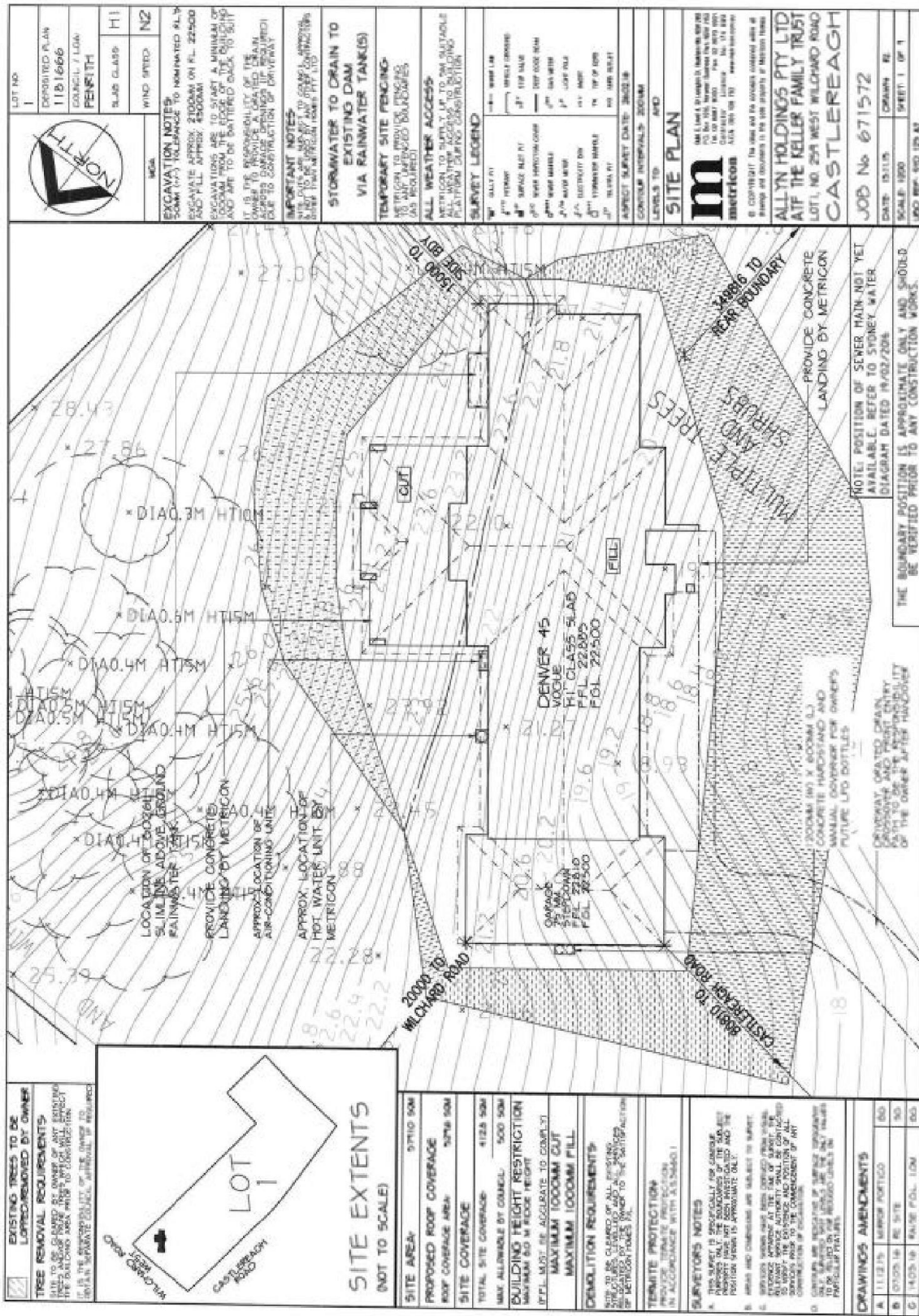
1. *Australian Standard AS 3959-2009 (Incorporating Amendment Nos 1,2 and 3)*
2. *Planning for Bushfire Protection (2006)*
3. *Penrith City Council Website*
4. *Ocean Shores to Desert Dunes – David Keith*
5. *Google Maps*
6. *RFS Website*
7. *NSW Environment and Heritage website*



**BUSHFIRE  
MANAGEMENT  
CONSULTANTS**

**BUSHFIRE MANAGEMENT CONSULTANTS**

**Attachment 'A' Proposed Building Plans**



LOT NO: 1  
DEPOSITED PLAN: 1181666  
COUNCIL / L.O.A: PENRITH  
SLAB CLASS: H1  
WIND SPEED: N2

**EXCAVATION NOTES:**  
CONFORM TO LIAISON TO NOMINATED ALLY  
AND FILL APPROX 4500MM  
EXCAVATIONS ARE TO START A MINIMUM OF  
LOCAL FROM THE EDGE OF THE EXISTING  
AND ARE TO BE GRADED TO 2011  
LEVELS TO BE DETERMINED BY THE SURVEYOR

**IMPORTANT NOTES:**  
1. ALL TO BE AS PER CITY OF PENRITH  
COUNCIL REQUIREMENTS  
2. STORAGE TO DRAIN TO  
EXISTING DAM  
VIA RAINWATER TANKS  
3. TEMPORARY SITE FENCING  
TO BE USED TO PROTECT  
BUNDLES TO BE STORED  
4. ALL WEATHER ACCESS  
METRIC TO SUPPLY TO THE OUTSIDE  
PLANTING DURING CONSTRUCTION  
(AS REQUIRED)

**SURVEY LEGEND**  
36" WALL FT  
36" HEIGHT FT  
10" WALL FT  
2" WALL FT  
1" WALL FT  
0.5" WALL FT  
1/2" WALL FT  
1/4" WALL FT  
1/8" WALL FT

**LEVELS TO:** AND  
**SITE PLAN**  
M  
NO OTHER PLANTING TO BE  
PLANTED ON THIS SITE  
UNLESS APPROVED BY THE  
CITY OF PENRITH  
ALL Y/N HOLDINGS PTY LTD  
ATF THE KELLER FAMILY TRUST  
LOT 1, 40 WEST WILLOW ROAD  
CASTLEREAGH  
JOB No 671572  
DATE: 05/10 DRAWN: RL  
SCALE: 1:500 SHEET: 1 OF 1  
JOB REF: 370 120 47

**EXISTING TREES TO BE PRESERVED BY OWNER**  
TREE REMOVAL REQUIREMENTS  
AS PER PENRITH COUNCIL LOCAL GOVERNMENT  
THE BALCONY AREA WITH TO BE CONSIDERED  
AS AN EXISTING TREE

**LOT 1**  
CASTLEREAGH

**SITE EXTENTS (NOT TO SCALE)**

SITE AREA:	9710 SQM
PROPOSED ROOF COVERAGE:	9710 SQM
ROOF COVERAGE AREA:	5076 SQM
SITE COVERAGE:	5076 SQM
TOTAL SITE COVERAGE:	9710 SQM
MAX ALLOWABLE BY COUNCIL:	5000 SQM
BUILDING HEIGHT RESTRICTION	12.5M TO 14.5M
SETBACK RESTRICTION:	4M TO 5M
MAXIMUM HEIGHT:	12.5M
MAXIMUM TOWERMOUNT CUT:	12.5M
MAXIMUM TOWERMOUNT FILL:	12.5M

**DEMOLITION REQUIREMENTS:**  
ALL EXISTING BUILDINGS TO BE DEMOLISHED  
AND THE SITES TO BE GRADED TO 2011  
LEVELS TO BE DETERMINED BY THE SURVEYOR

**TERMINATE PROTECTION:**  
PROVIDE TERMINATE PROTECTION  
IN ACCORDANCE WITH AS 1540.1

**SURVEYOR'S NOTES:**  
1. THIS PLAN IS FOR THE PURPOSES OF THE  
PERMIT ONLY AND DOES NOT CONSTITUTE A  
PROFESSIONAL SERVICE.  
2. ALL DIMENSIONS ARE SUBJECT TO SURVEY.  
3. THE SURVEYOR'S LIABILITY IS LIMITED TO THE  
ACCURACY OF THE DATA AND THE SURVEYOR  
DOES NOT ACCEPT LIABILITY FOR ANY  
CONSTRUCTION DEFECTS OR OTHER  
CONSEQUENCES OF THE CONSTRUCTION OF ANY  
BUILDING OR OTHER WORK.  
4. ALL DIMENSIONS ARE TO FACE UNLESS  
OTHERWISE STATED.  
5. THE SURVEYOR'S LIABILITY IS LIMITED TO THE  
ACCURACY OF THE DATA AND THE SURVEYOR  
DOES NOT ACCEPT LIABILITY FOR ANY  
CONSTRUCTION DEFECTS OR OTHER  
CONSEQUENCES OF THE CONSTRUCTION OF ANY  
BUILDING OR OTHER WORK.

DRAWING AMENDMENTS	
A 11/12/15	ISSUE FOR TENDERS
B 07/05/16	RE SITE
C 14/05/16	ISSUE FOR TENDERS





## Attachment 'B' Bushfire Prone Land Map Penrith City Council



Subject Site

## Attachment C *Photographic Record*



