



Reference number 2397

Member of the Fire Protection Association of Australia

Lot 12, DP 610186, 44a Mayfair Road, Mulgoa, NSW 2745.

Tuesday, 2 July 2019

Prepared and certified by:	Matthew Willis BPAD – Level3 Certified Practitioner Certification No: BPD-PA 09337	Mathink:	02/07/2019 7/12/2018
Can this proposal comply with AS3959-2009 (inc PBP addendum 3)?		Yes	
What is the recommended AS 3959-2009 level of compliance?		BAL-FZ and BAL-40	
Is referral to the RFS required?		Yes	
Can this development comply with the requirements of PBP?		Yes	
Plans supplied by	"Wayne Ryan" (Appendix 1).	Attach	ned

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Bushfire Planning Services

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Bushfire Risk Assessment

Tuesday, 2 July 2019

Contact

Mr Anthony and Victoria Delipetar

44 Mayfair Rd Mulgoa

NSW 2753

0417 281 001

Subject Property

Lot 12, DP 610186 44a Mayfair Road Mulgoa NSW 2745





BUSHFIRE RISK ASSESSMENT CERTIFICATE

THIS FORM IS TO BE COMPLETED BY A RECOGNISED CONSULTANT IN BUSHFIRE RISK ASSESSMENT IN ACCORDANCE WITH SECTION 79BA 1(b) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 NO 203

Property Address	Lot 12, DP 610186, number 44a Mayfair Road Mulgoa	
Description of the Proposal	Construction of a new dwelling	
Plan Reference	Attached	
BAL Rating	BAL-FZ and BAL-40	
Does the Proposal Rely on Alternate Solutions?	No	

I, Matthew Willis of Bushfire Planning Services Pty Ltd have carried out a bushfire risk assessment on the above-mentioned proposal and property. A detailed Bushfire Assessment Report is attached which includes the submission requirements set out in Appendix 4 of Planning for Bushfire Protection 2006 together with recommendations as to how the relevant Specifications and requirements are to be achieved.

I hereby certify, in accordance with Section 79BA of the Environmental Planning and Assessment Act 1979 No 203:

1. That I am a person recognised by the NSW Rural Fire Service as a qualified consultant in bushfire risk assessment; and

2. That subject to the recommendations contained in the attached Bushfire Risk Assessment Report the proposed development conforms to the relevant specifications and requirements*

*The relevant specifications and requirements being specifications and requirements of the document entitled Planning for Bush Fire Protection prepared by the NSW Rural Fire Service in co-operation with the Department of Planning and any other document as prescribed by Section 79 BA(1)(a) of the Environmental Planning and Assessment Act 1979 No 203.

I am aware that the Bushfire Assessment Report, prepared for the above-mentioned site is to be submitted in support of a development application for this site and will be relied upon by Penrith Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with Planning for Bushfire Protection 2006.

REPORT REFERENCE	Tuesday, 2 July 2019	
REPORT DATE	Tuesday, 2 July 2019	
CERTIFICATION NO/ACCREDITED SCHEME	FPAA BPAD A BPD-PA 09337	

Attachments:

- **Bushfire Risk Assessment Report**
- Recommendations

SIGNATURE: --- Value July 2019





Contents

1	Executive Summary	5
2	General	6
3	Block Description	6
4	Vegetation	8
5	Known constraints on subject block	10
6	Slope	10
7	Utilities	11
7.1	Water	11
7.2	Electricity	11
7.3	Gas	11
8	Access/Egress	11
9	Compliance with AS 3959-2009	12
10	Siting	12
11	Construction and design.	13
12	Utilities	14
12.1	Water	14
12.2	Electricity and Gas	14
13	Asset Protection Zone (APZ)	15
14	Landscaping	15
15	Constraints on the subject block	16
16	Access/Egress	16
17	Compliance or non compliance with the specifications and requirement bushfire protection measures	its for 17
18	Conclusions	18
19	References	19
20	Appendix 1 - Plans	20
21	Appendix 2 (extract)	21





1 Executive Summary

Bushfire Planning Services has been requested to supply a bushfire compliance report on lot 12, DP 610186, 44a Mayfair Road, Mulgoa.

The works proposed for the subject lot are for the construction of a new dwelling, see attached plans for details.

This allotment has an approved building envelope already within the lot, the proponents want to build their house in a different location within the lot for various reasons, see section 10 of this assessment.

The subject lot is on the southern side of Mayfair Road and at its closest point to the hazard the proposed new work has a separation distance to the south of approximately 3m (by survey plan).

The vegetation that is considered to be the hazard to this proposal is situated on land that slopes down slope away from the property at an angle of approximately 14.14° deg.

For the purposes of this assessment this vegetation is considered to be Forest.

The remaining vegetation within the study area is contained within the boundaries of established residential allotments and is managed land and of low threat to this proposal.

The calculations and assumptions outlined in this report show that the development will be required to comply with the construction requirements of AS 3959-2009 BAL-FZ on its exposed western, southern and eastern aspects, BAL-40 on the northern aspects and the Rural Fire Services requirements contained within the addendum to appendix 3 of Planning for Bushfire Protection on all aspects.

It is my considered opinion that this development can comply with the requirements of AS 3959-2009 and Planning for Bushfire Protection 2009.

Aspect	North	East	South	West
Vegetation type	Managed land	Managed land	Managed land/forest	Managed land
Slope	N/A	N/A 10-15 degrees downslope		N/A
Setback within lot 12	N/A	N/A	3m ¹	N/A
Setback outside lot 12	N/A	N/A	0m	N/A

Table 1 is a summary of the relevant findings of this assessment.

¹ By survey plan attached.





Aspect	North	East	South	West
Total setback	N/A	N/A	3m	N/A
Bal level	N/A	N/A	FZ	N/A

Table 1 - Any aspect marked with "N/A" in the table above indicates that it is considered there is no hazard in that direction. Only the details for the aspect that is considered to be at the greatest risk from bushfire is shown in the table above. <u>THIS TABLE IS NOT CONSTRUCTION ADVICE</u>.

2 General

This proposal relates to the construction of a new dwelling on the subject lot and its ability to comply with the rules and regulations for building in a bushfire prone area.

The methodology used on this report is based on Planning for Bushfire Protection 2006 (PBP) as published by the New South Wales Rural Fire Service.

Any wording that appears in *blue italics* is quotes from Planning for Bushfire Protection 2006. Some of the measurements used in this report have been taken from aerial photographs and as such are approximate only.

3 Block Description

The subject block is situated on the southern side of Mayfair Road in an established area of Mulgoa.

The lot is a long, thin and irregularly shaped lot with approximately 600m frontage onto Mayfair road. The lot depth varies from about 127m at its widest section to 44m at its narrowest.

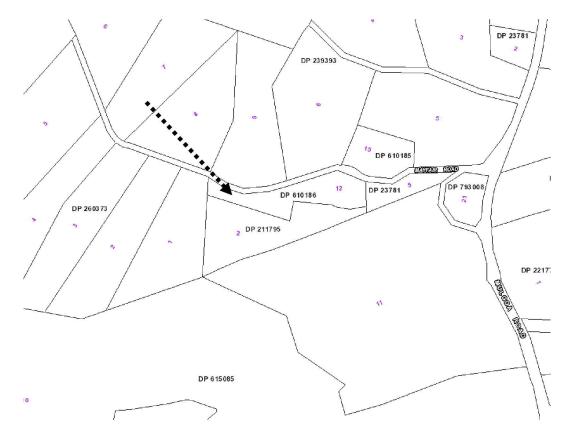
The lot is currently undeveloped.

- Lot; 12
- DP; 610186.
- LGA; Penrith.
- Area; 49992m2.
- Address; 44a Mayfair Road, Mulgoa.

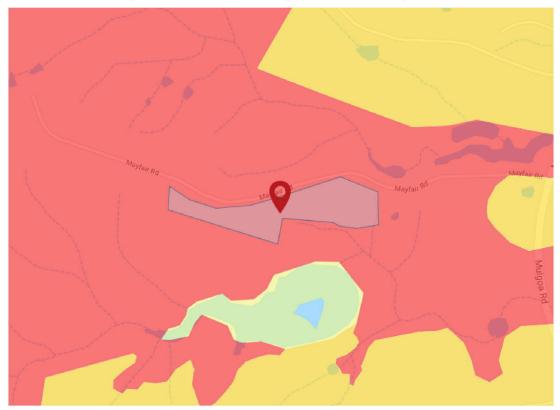
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Map 1 shows the cadastral layout around the subject lot.



Map 2 is an extract from the councils' bushfire prone land map. The map shows lot 12 to contain category 1 bushfire vegetation.





4 Vegetation

The study area for the vegetation is 140m surrounding the subject block.

The vegetation within the study area for this development is considered to be a mix of managed rural residential land and forest vegetation.

The major potential hazard to this development is the vegetation within an area of undeveloped land to the south.

For the purpose of this assessment and compliance with AS3959 this area of undeveloped land is considered to be Forest and is the hazard to this proposal.



Photo 1 - An overview of the vegetation within the general area.

This area has been left intentionally blank.







Photo 2 is a closer view of the vegetation in the area. The yellow rectangle represents the proposed building envelope.

Table 2 outlines the vegetation orientation and distance from the development area.

Aspect	North	East	South	West
Vegetation type	Managed land	Managed land	Managed land/forest	Managed land
Setback within lot 12	N/A	N/A 3m		N/A
Off-site setback	N/A	N/A	0m	N/A
Total setback	N/A	N/A 3m		N/A

Table 2 - Any aspect marked with "N/A" in the table above indicates that it is considered there is none or only a secondary hazard in that direction.

This area has been left intentionally blank.





5 Known constraints on subject block

There are areas of vegetation within the subject and neighbouring allotments that form part of a Bio Banking scheme.

6 Slope

The slope of the land beneath the hazard that is most likely to influence bushfire behaviour has been calculated by topographical map analysis to a distance of 100m from the subject lot.

An extract of the topographical map for the area is shown below and the relevant slope analysis is shown in Table 3.

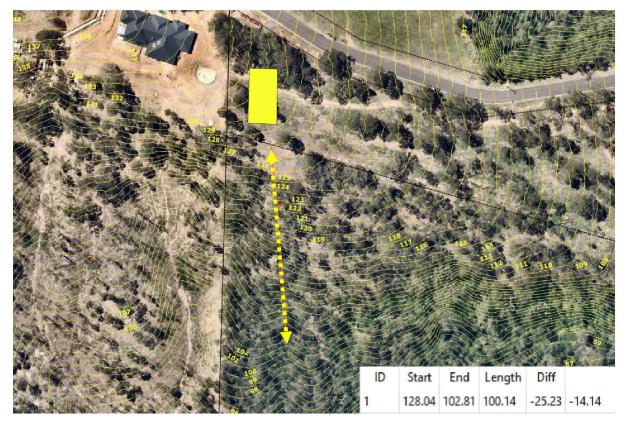


Table 3 shows the slope beneath the hazard.

Aspect	North	East South We		West
Slope	N/A	N/A	10-15 degrees downslope	N/A

Table 3 - Any aspect marked with "N/A" in the table above indicates that it is considered there is none or only a secondary hazard in that direction.



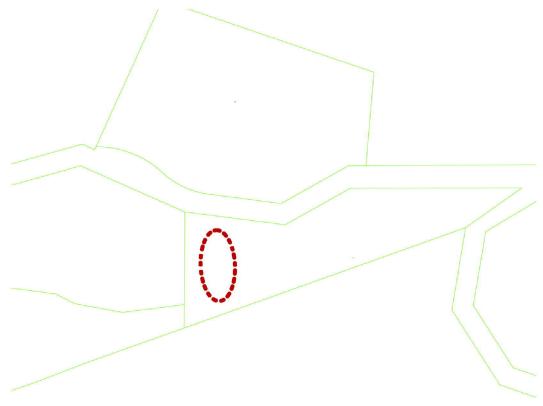


7 Utilities

7.1 Water

The subject block will be serviced by a reticulated water supply.

The following map is an extract from Sydney waters hydrant map. Hydrants are indicated by a blue dot on a blue line. As can be seen there are no hydrant points indicated within close proximity of the property.



7.2 Electricity

Mains electricity is available to the block.

7.3 Gas

It is unknown if gas is to be installed in this proposal.

8 Access/Egress

Access to the development site will be via a short private driveway from Mayfair Road.

All roads in the vicinity are considered to be capable of carrying emergency services vehicles and pedestrian access onto the lot is also considered to be adequate.





Analysis of development and recommendation.

9 Compliance with AS 3959-2009

Based on the development design, vegetation classification, effective slope estimates and setback distance already outlined in this report the subject development will be required to comply with the deemed to satisfy construction requirements of AS 3959-2009 BAL-FZ and the RFS requirements on all fire prone aspects.

The following table is an extract from table 2.4.2 of AS3959-2009. This table is used to calculate the BAL for a proposal in an area with an FDI of 100.

The variables that have already been outlined in this assessment are highlighted in red with the highest BAL highlighted in yellow.

		Bushfire Attack Levels (BALs)			
Vegetation	BAL-FZ	BAL-40	BA L-29	BAL-19	BAL-12.5
classification	Distance (m) of the site from the predominant vegetation class				n class
		Downs	lope >10 to 15 deg	grees	
A. Forest	<39	39-<49	49-<64	64-<82	82-<100
B. Woodland	<25	25-<33	33-<45	45-<60	60-<100
C. Shrubland	<9	9-<13	13-<19	19-<28	28-<100
D. Scrub	<14	14-<19	19-<28	28-<39	39-<100
E. Mallee/Mulga	<8	8-<11	11-<18	18-<26	26-<100
F. Rainforest	<17	17-<23	23-<33	33-<45	45-<100
G. Grassland	<9	9-<13	13-<20	20-<28	28-<50

TABLE 2.4.2

DETERMINATION OF BUSHFIRE ATTACK LEVEL (BAL)-FDI 100 (1090 K)

For the purpose of this assessment the southern aspect has been chosen as the most potentially hazardous aspect due to the effective slope, potential run of fire and the prevailing fire weather of the area.

10 Siting

The proposed building site has been chosen for several reasons;

- Firstly, the land is under a Bio Banking scheme. The letter from SIA Ecological & Environmental Planning (attached as appendix 2) supports the proposed location to minimise Environmental impact.
- ✓ Secondly, the area chosen is next to an already established APZ on the neighbouring property to the west. Section 4.1.1(b) of Planning for Bushfire Protection states "*Ruralresidential developments include blocks often associated with lifestyle choices rather than focusing on some form of primary production. Where agricultural pursuits are*





undertaken they are considered secondary to the residential component of the use of the land.

Consideration should be given, where practical, to grouping of rural-residential buildings into clusters which allow for the establishment of APZs around a group of dwellings rather than having to ensure individual protection for a large number of scattered dwellings. The clustering of dwellings provides for better protection with reduced vegetation clearance and hence less environmental impact."

Recommendation;

Nil

11 Construction and design.

All new work is to be undertaken in accordance with the relevant requirements of the BCA and AS3959 2009. The following recommendations are a minimum level of construction. Constructing the proposal to a higher level than that recommended is allowable under AS3959.

Recommendation; all new work to the western, southern and eastern aspects.

- 1. New construction on the western, southern and eastern aspects shall comply with the requirements of section 3 of Australian Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" and,
- 2. New construction on the western, southern and eastern aspects shall also comply with the requirements of BAL-FZ Australian Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" and section A3.7 Addendum Appendix 3 of "Planning for Bush fire Protection".

Recommendation; all new work to the northern aspect.

- 3. New construction on the northern aspect shall comply with the requirements of section 3 of Australian Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" and,
- 4. New construction on the northern aspect shall also comply with the requirements of BAL-40 Australian Standard AS3959-2009 "Construction of buildings in bush fireprone areas" and section A3.7 Addendum Appendix 3 of "Planning for Bush fire Protection".

Recommendation; entire building.

- 5. Any new fencing to be property should be in accordance with Rural Fire Service "Fast Fact 2/06".
- 6. New roofing valleys and guttering should be fitted with a non-combustible leaf protection to stop the accumulation of debris.





12 Utilities

12.1 Water

The proposed development will not have access to a reticulated water supply resulting in the need for a Static Water Supply (SWS) to be established on site for firefighting purposes.

The water supply is to be established in accordance with the following;

Recommendation;

7. A 20,000 L water supply is to be made available for firefighting purposes and be constructed in accordance with the following features.

- Above ground tanks are manufactured of concrete or metal and raised tanks are to have their stands protected. Plastic tanks shall not be used.
- A 65mm metal Storz outlet with a gate or ball valve shall be provided.
- A hardened ground surface for truck access is to be supplied up to and within 4 metres of the water source.
- The water source shall be made available or located within the inner protection area (IPA) and away from the structure.
- The gate or ball valve, pipes and tank penetration are adequate for full 50mm inner diameter water flow through the Storz fitting and are metal.
- A minimum 5hp or 3kW petrol or diesel-powered pump shall be made available to the water supply. The pump should be attached to a suitable firefighting hose.
- An 'SWS' marker shall be obtained from the local NSW Rural Fire Service and positioned for ease of identification by brigade personnel and other users of the SWS. In this regard:
 - o a) Markers must be fixed in a suitable location so as to be highly visible; and
 - b) Markers should be positioned adjacent to the most appropriate access for the static water supply.

12.2 Electricity and Gas

Recommendation;

8. Any new electricity or gas connections are to comply with the requirements of section 4.1.3 of Planning for Bushfire Protection.





13 Asset Protection Zone (APZ)

The Asset Protection Zone is "An area surrounding a development managed to reduce the bushfire hazard to an acceptable level. The width of an APZ will vary with slope, vegetation and construction level".

Recommendation;

- 9. At the commencement of building works and in perpetuity the property around the building shall be managed as follows as outlined within section 4.1.3 and appendix 5 of planning for bushfire protection 2006 and the New South Wales Rural Fire Service document standards for Asset Protection Zones:
 - North as an Inner Protection Area to the property boundary.
 - East as an Inner Protection Area for at least 10m to provide defendable space.
 - West as an Inner Protection Area to the property boundary.
 - South as an Inner Protection Area to the property boundary.

14 Landscaping

No specific landscaping plan has been provided as part of this assessment.

Recommendation;

- 10. Any new landscaping to the site is to comply with the principles of Appendix 5 of Planning for Bush Fire Protection 2006. In this regard the following landscaping principles are, where applicable, to be incorporated into the development:
 - Suitable impervious areas being provided immediately surrounding the building such as courtyards, paths and driveways;
 - Grassed areas/mowed lawns/ or ground cover plantings being provided in close proximity to the building;
 - Restrict planting in the immediate vicinity of the building which may over time and if not properly maintained come in contact with the building;
 - Maximum tree cover should be less than 30%, and maximum shrub cover less than 20%;
 - Planting should not provide a continuous canopy to the building (i.e. trees or shrubs should be isolated or located in small clusters);
 - When considering landscape species consideration needs to be given to estimated size of the plant at maturity;
 - Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies;
 - Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown;
 - Avoid planting of deciduous species that may increase fuel at surface/ ground level (i.e. leaf litter);





- Avoid climbing species to walls and pergolas;
- Locate combustible materials such as woodchips/mulch, flammable fuel stores away from the building;
- Locate combustible structures such as garden sheds, pergolas and materials such timber garden furniture way from the building; and
- Use of low flammability vegetation species.

15 Constraints on the subject block

The subject and its neighbouring allotment to the south contain areas that are subject to a "Bio Banking" arrangement. The constraints caused by this proposal are addressed in the letter from SIA Ecological & Environmental Planning, an extract is attached as appendix 2 of this assessment.

Recommendation;

11. The recommendations of SIA Ecological & Environmental Planning should be considered.

16 Access/Egress

All roads in the area are considered to be capable of handling emergency service vehicles. Access from the roadway onto the property is also considered to be adequate for firefighting purposes.

Recommendation

Nil

This area has been left intentionally blank.





17 Compliance or non compliance with the specifications and requirements for bushfire protection measures

APZA defendable space is provided onsite.An APZ is provided and maintained for the life of the development.	Achievable with the implementation of the recommendations in section 13
SITING AND DESIGN: Buildings are sited and designed to minimise the risk of bush fire attack.	Achievable with the implementation of the recommendations in section 10
CONSTRUCTION STANDARDS: It is demonstrated that the proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact.	Achievable with the implementation of the recommendations in section 11
ACCESS Safe, operational access is provided (and maintained) for emergency services personnel in suppressing a bush fire while residents are seeking to relocate, in advance of a bush fire, (satisfying the intent and performance criteria for access roads in sections 4.1.3 and 4.2.7).	Achievable with the implementation of the recommendations in section 16
 WATER AND UTILITY SERVICES: • adequate water and electricity services are provided for firefighting operations • Gas and electricity services are located so as not to contribute to the risk of fire to a building. 	Achievable with the implementation of the recommendations in section 12
LANDSCAPING: • it is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause Ignitions.	Achievable with the implementation of the recommendations in section 14





18 Conclusions

Based on the above report and with the implementation of the recommendation contained within this report the consent authority should determine that this development can comply with the requirements of AS 3959-2009 and 'Planning for Bushfire Protection' guidelines.

The recommendations contained within this report are to be implemented in their entirety. Changing one aspect may have an adverse effect on the rest of the recommendations.

Bushfires are affected by many external influences such as climactic conditions, vegetation type, moisture content of the fuel, slope of the land and human intervention to name a few and are difficult to predict.

This report does not intend to provide a guarantee that the subject property will survive if a bushfire should impact the surrounding area. The purpose of this report is to show the developments level of compliance or in some cases non-compliance with the New South Wales legislation regarding building in bushfire prone areas.

Where non-compliance is found measures will be suggested that should make the building less susceptible to the various attack mechanisms of a bushfire and comply with the performance requirements of the Building Code of Australia.

The opinions expressed in this report are based on the writers' experience and interpretation of the relevant guidelines and standards. Notwithstanding the above, these guidelines and standards are open to interpretation. All care has been taken to ensure that the opinions expressed in this report are consistent with past successful outcomes.

Some of the information used in the compilation of this assessment has been provided by the proponent or the proponent's representatives. While we believe this information to be true and have accepted the information in good faith however this company or its representatives will not accept any responsibility if the provided information is determined to be incorrect.

This document is to assist the consenting authorities with their assessment of this proposal. The recommendations contained in this assessment reflect the normal conditions that are typically applied by the consent authority for a proposal such as this however the conditions of consent for the proposal will be supplied by the certifying authority on approval of the development and may not necessarily be the same as the recommendations of this assessment.

The recommendations in this assessment are for planning guidance only, construction details and compliance with all building requirements are the responsibility of the Architect/Designer, Builder and Certifier.

To avoid confusion, unless specifically referenced by the consenting authority, it is strongly recommended that once this proposal has been approved that this document is no longer referenced and that only the official conditions of consent as reflected in documentation by the certifying body are used for construction guidance.





If any further clarification is required for this report, please do not hesitate to contact me using the details above.

Yours Sincerely

Mathin-

Matthew Willis Grad Dip Planning for Bushfire Prone Areas Bushfire Planning Services Pty Limited

19 References

Australian Building Codes Board National Construction Code Volumes 1&2 Canprint

NSW Government Environmental Planning and Assessment Act [1979]

Part 79BA – Consultation and development Consent – Certain Bushfire Prone Land NSW Government Printer

Planning NSW [2006]

Planning for Bushfire Protection A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners

Ramsay C & Rudolph L [2003] Landscape and Building Design for Bushfire Prone Areas CSIRO Publishing

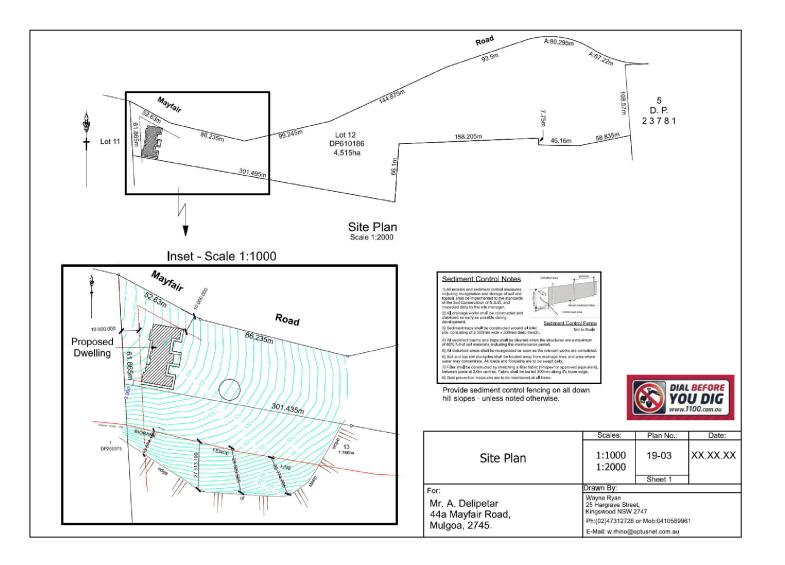
Standards Australia [2009]

Australian Standards 3959 (amendments 1, 2 and 3) Standards Australia





20 Appendix 1 - Plans





21 Appendix 2 (extract)

SIA Ecological & Environmental Planning Suite 56, 8-24 Kippax St Surry Hills NSW 2010 ABN: 12 152 072 977 Mob: 0403 233 676 Email: mjames@siaeep.com.au Http://www.siaeep.com.au

Sienna Waters Pty Ltd 44A Mayfair Rd Mulgoa NSW 2745

6th December 2018

Dear Margot

Re: Proposed New Location for Building Envelope at Lot 12, 44A Mayfair Rd Mulgoa

The proposed new location for a Building Envelope (BE) at the above property in the north-western corner of the lot is a better location than the existing, approved BE location from an ecological perspective for the following reasons:

The existing BE location is within an area where the native vegetation is vigorously regenerating. There is a good density of young trees and a healthy and diverse cover of shrubs, and groundcover vegetation. Furthermore, the existing BE location is within a wedge of land that has the Biobank Site on both sides. For these reasons, this area should not be cleared if that can be avoided as it provides connection of habitat to the two areas of biobank site on either side and is regenerating well.

At the proposed new BE location, there are relatively few trees and no shrub layer. Also, in this area the Biobank site is only on one side so the area does not have any connectivity value.

The differences in the condition of the vegetation at these two locations was recorded by GHD (July 2015) in their "Ecological Assessment of Mayfair Road for Angas Securities" in which the vegetation at the existing BE Location was mapped as "Moderate/Good Condition" while at the proposed new BE location it is mapped as "Moderate/Good to Poor Condition".

Furthermore, the OEH Biodiversity Values Map identifies the existing BE location as having Biodiversity Value whereas the proposed new BE location is not mapped as such (see map below).

I have provided below two photos, one of the existing, approved BE location and one of the proposed new BE location, that illustrates the difference in vegetation between these two areas.

Page 1/1



Should you have any questions or wish to discuss any aspects of the above please contact me.

Yours truly

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Martin James OEH Accredited Assessor SIA Ecological & Environmental Planning

Page 2/1