

**PLANS and DOCUMENTS referred to in the
GENERALLY IN ACCORDANCE
DETERMINATION**

Application No: COM/2023/16

Dated : 1 December 2023

Development shall comply with the conditions
of approval detailed in the Decision Notice and
Council's Planning Scheme, Local Laws and
Planning Policies.



**BUSHFIRE MITIGATION REPORT
FM 5781-B
for
COOMERA GA PTY LTD
AS TRUSTEE FOR
THE COOMERA GA UNIT TRUST
at
54 GEORGE ALEXANDER WAY
COOMERA**

**PREPARED BY
ELDON BOTTCHER ARCHITECT PTY LTD
145 VARSITY PARADE
VARSITY LAKES
PH 07 55920082
EMAIL bushfires@eb-a.com.au
18/07/2023**



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DISCLAIMER

Experienced fire fighters with extensive knowledge of building have prepared this Report. Their practical knowledge of fire fighting has been backed up by academic study.

However, fire is an element of nature. Small natural occurrences can disastrously affect the outcome of the best planning. Human actions similarly can have disastrous results.

Whilst every care has been taken in the formulation of this management report, there can be no guarantee that even the strictest adherence to its recommendations can guarantee safety of life and property.

The authors of this report accept no responsibility for any damage to life or property caused by fire or any other cause to persons using land or structures, which could in any way be construed to be the subject of this report.

The report has been commissioned as the land falls within an area deemed a fire risk by the local authority.

As such, it must be recognized that structures upon this land and those using the structures could be deemed at risk.

Logo by LogoInstant

Very Important Note:

This report is valid for the following periods;

- a) A maximum time of 5 years from date of preparation.
- b) The currency of the legislation referred to in Section 1 Report Brief
- c) Changes to any legislation generally that may impact on the report outcomes.
- d) Changes to vegetation, both on and off site, which may impact on the results of this report
- e) Any other changes that may impact on the report in any manner.

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THIS REPORT RELIES ON THE AS 3959 FOR THE CALCULATION OF CONSTRUCTION LEVELS.

ANY POSSIBLE ERRORS IN THE STANDARD ARE NOT THE RESPONSIBILITY OF THE AUTHOR.

THIS REPORT IS ONLY TO BE USED AND DISTRIBUTED AS A COMPLETE REPORT CONTAINING AS A MINIMUM SECTIONS 1,2,3,4 AND 5 (SECTIONS 5.1 & 5.2)

THIS REPORT IS NOT TO BE AMENDED IN ANY WAY BY ANY PERSONS OTHER THAN THE ORIGINAL AUTHOR.

THIS REPORT IS ONLY TO BE USED FOR PROJECTS IDENTIFIED IN THE REPORT AND REPRESENTED ON THE SITE PLAN ACCOMPANYING THE REPORT.

INTRODUCTION

This Fire Management Report has been written for the benefit of future occupants of this proposed site and developed in accordance with the requirements of;

- The Gold Coast City Council Town Plan,
- SPP 07/2017.
- Queensland Planning Act 2016
- “Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest” Natural Hazards , Risk and Resilience-Bushfire” published by QFES and Queensland Government.
- Natural hazards, risk and resilience-Bushfire State Planning Policy-state interest guidance material published by Queensland Government
- Bushfire Resilient Building Guidance for Queensland Homes published by CSIRO and Queensland Government
- The National Construction Code
- Queensland Bushfire Plan published by Queensland Government prepared by QFES.
- Australian Standard AS3959,
- International Fire Safety Engineering Guidelines

The report has been prepared as supporting documentation for a Material Change of Use (Building) /Reconfiguration of Lot Application.

- 1.1. Address:**
54 George Alexander Way
Coomera
- 1.2. Local Authority**
Gold Coast City Council
- 1.3. R.P.D.**
Lot 96 on RP187418
- 1.4. Site area**
30100m²
- 1.5. Responsible Fire Authority**
Rural Fire Service Queensland via the QFES for Structural fires.
- 1.6. Potential Bushfire Hazard Rating.**
The hazard rating maps prepared for the Council show the ratings on this property ranging from Medium to being in a bushfire hazard buffer area.
The draft risk rating maps prepared for the State Government show the ratings on this property ranging from Medium to being in a bushfire hazard buffer area.
- 1.7. Land tenure**
Freehold
- 1.8. Adjoining owners are:**
Freehold
- 1.9. Current Land Use:**
Rural Residential
- 1.10. Fire danger Index**
FDI 40 (nominated by AS 3959)
- 1.11. Topography**
Rolling Hills
- 1.12. Predominant Wind Direction**
The predominate wind direction is from the South East. In times of severe fire weather the wind direction will be from the North West. The Topography will create microclimates, which will cause swirling, which will modify the apparent wind direction according to primary direction and velocity
- 1.13. Slope**
7⁰ to South East
4⁰ to North and West

- 1.14. Aspect**
 South East
 North
 West

- 1.15. Fuel Type**
Predominate vegetation

REGIONAL ECOSYSTEM	VHC	VHC DESCRIPTION	SURFACE FUEL LOAD	TOTAL FUEL LOAD	COMMENTS
12.11.24 (12.11.5a)	9.2	Moist to dry eucalypt woodland on coastal lowlands and ranges	11.4	17.2	
12.11.5	10.1	Spotted gum dominated open forests	16.3	20.8	
12.11.2	8.1	Wet eucalypt tall open forest	28	35	Site inspection does not support this classification but would support a classification RE 12.11.5a

- 1.16. Threat Vegetation Location**
 RE 12.11.5a is located to the North and South East of the subject site
 RE 12.11.5 is located on the western portions of the subject site
- 1.17. Fire History**
 There is no evidence of a recent fire event
- 1.18. Location of Access Tracks**
 The site is served by a sealed road system
- 1.19. Location of Fire Breaks**
 There are no formal firebreaks. Managed and Low threat vegetation forms effective fire breaks to the south west and developed land forms effective fire breaks to the eastern section to the North.
- 1.20. Location of existing firefighting Infrastructure**
 The site is served by reticulated water
- 1.21. Historical and Cultural Sites**
 There is no evidence of Historical and Cultural sites on the property.
- 1.22. Koala Habitat**
 The site is in a Koala Habitat Area

2. SITE AND HAZARD ASSESSMENT

2.1. Discussion with Responsible Fire Authority

The fire management report has not been discussed with the Fire Brigade.

2.2. Vegetation Types

The vegetation type predominate to this site are as scheduled in section 1.15

2.3. Potential Bushfire Hazard Rating.

Desktop study, site inspection and assessment against the State Planning Policy Mapping Methodology generally confirms the intent of both Local Government and State Mapping in that the area is in a Potential Bushfire Hazard Area, and the relevant aspects required for Town Planning and Building are to be addressed

2.4. Building Construction

All buildings situated within the site are in a Designated Risk Area. There is a requirement that certain Buildings within this area be constructed in accordance with the National Construction Code/Building Code of Australia, which refers to either the Australian Standard for Construction in Bushfire Prone Areas (AS 3959) or NASH Standard-Steel Framed Construction in Bushfire Areas as Deemed to Satisfy Solutions.

The levels determined effect the types and usage of materials in relation to the type of Bushfire Attack, which may occur as assessed under the Standard. The Level of Bushfire Attack is assessed taking the vegetation types, slope, and distance from vegetation into account. The most common elements affected are Windows and flyscreening, with some restrictions on cladding and timber types. A comprehensive breakdown is available in either the National Construction Code, the Australian Standard for Construction in Bushfire Prone Areas or NASH Standard-Steel Framed Construction in Bushfire Areas.

Extracts of these documents are not provided due to copyright reasons. Full details can be obtained from your building designer or certifier.

Note that the Building Code of Australia only requires Classes 1,2 and 3 buildings and Class 10a building associated with those buildings to comply with the bushfire provisions of the NCC /BCA.

Building Class requirements AS 3959

2.4.1. FDI 40

Transect 3 to South East

2.4.2. Vegetation Classification RE 12.11.5a

2.4.3. Land slope Downslope
7 degrees

Distance of building from Predominate vegetation class (m) (Vegetation Management Zone)	Primary Bushfire Attack Level
0-<6.6	BAL -FZ
6.6-<8.9	BAL-40
8.9-<13.3	BAL-29
13.3-<19.2	BAL-19
19.2-<100	BAL-12.5
100-	BAL-LOW

Note:

The levels shown above have been produced using Method 2 as outlined in the AS 3959. Printouts of these calculations are included as Appendix 5.3.1. Site specific fuel loads provided by the State Government are utilised as a Performance Solution to provide more accurate site-specific loads than those provided in AS 3959.

The Vegetation management zone is described as all areas managed to a Low Threat condition encompassed by the distance between the building and threat vegetation from which construction levels are taken.

The distances shown above are horizontal distances, not measured along the slope.

Construction levels for elevations of a building that are subject to shielding from the fire sources can be reduced in accordance with 3.5 of AS 3959 by one level but not below BAL-12.5 All fire sources on adjoining sites and across roads must be considered when utilising this reduction.

Construction Levels are shown as part of a comprehensive Bushfire Management Plan.

They are provided for the end user of the land and its eventual occupants.

They are not provided for assessment by Local Authority, in accordance with the Planning Act 2016, The State Planning Policy, and The Building Act 1975.

Compliance with the Performance Requirements of the Building Code of Australia, P2.3.4 Bushfire areas states;

A Class 1 building or a Class 10a building or deck associated with a Class 1 building constructed in a designated bushfire prone area is to provide resistance to Bushfire in order to reduce the danger to life and reduce the risk of the loss of the building.

Section 3.7.4.0 of A. Acceptable Construction Manual (Queensland Variation) states that

- a) *Subject to (b), Performance Requirement P2.3.4 is satisfied for-*
 - i) *a Class 1 building; or*
 - ii) *a Class 10a A building or deck associated with a Class 1 building, located in a designated bushfire prone area if it is constructed in accordance with AS 3959.*
- b) *The requirements of (a) do not apply when the classified vegetation is Group F rainforest (excluding wet sclerophyll forest types), mangrove communities and grasslands under 300mm high."*

Therefore it must be considered that compliance with any Construction Level of AS 3959 satisfies the Performance Requirements of Building Code of Australia, and all construction levels therefore are to be considered as mitigating risk in an equal manner.

The Planning Act 2016 Section 8 What are Planning Instruments (5) and (6) state;

- (5) A local planning instrument must not include provisions about building work, to the extent the building work is regulated under the building assessment provisions, unless permitted under the Building Act.
- (6) To the extent a local planning instrument does not comply with subsection (5), the local planning instrument has no effect.

The Building Act 1975, Section 31 states;

- "(4) A local law, local planning instrument or local government resolution must not include provisions about building work, to the extent the building work is regulated under a code under subsection (3).*
- (5) To the extent a local law, local planning instrument or local government resolution does not comply with subsection (4), the local law; local planning instrument or local government resolution is of no effect.*
- (6) Subsections (3) to (5) are subject to sections 32 and 33."*

2.5. Ecological Requirements

The site is in a Koala Habitat Area and there is specific restriction in relation to vegetation management.

Note;

The Category of Bushfire Attack referred to in the Australian Standard is different to the Hazard/Risk area referred to above.

Extensive modification of the existing vegetation types including that on adjoining sites could result in a change of Category of Bushfire Attack and therefore variation in the Level of construction required.

It is the responsibility of the owner of each individual site to ensure that plantings subsequent to their occupation of the site do not reduce the safety of their buildings in a manner, which could require a higher level of Construction than that originally utilised

3. RISK MANAGEMENT PLAN

3.1. Agencies / Persons Responsible

The responsible Fire Authority is the Queensland Fire and Emergency Service being responsible for Structural Fires

It is the responsibility of the Developers and Owners of the properties to ensure that the relevant measures required by this Management Report are in place prior to inspection by the Council and the Building Certifier and to ensure that those measures are in place prior to the occupation of any buildings, which are the subject of this report. It is the responsibility of Council and Building Certifiers to ensure that relevant measures within their responsibility are in place prior to the issuance of any certification.

3.2. Bushfire Safety Objective

The objective of this report is to minimise potential risk to life and property by protecting the buildings from the effects of bushfire.

3.3. Aims

The aims to achieve this objective are to mitigate the effect of the bushfire attack mechanisms of: -

- 3.3.1. Radiant Heat
- 3.3.2. Direct Flame Contact
- 3.3.3. Wind
- 3.3.4. Ember Attack
- 3.3.5. Smoke

3.4. Functional Requirements

The functional requirements to achieve this objective are: -

- 3.4.1. The provision of safe conditions for fire fighters
- 3.4.2. The provision of safe conditions for residents
- 3.4.3. Ensure adequate and safe access to and from the property
- 3.4.4. Ensure adequate and safe water supply to the property and the establishment of firefighting water reserves
- 3.4.5. Provide a system of fire breaks and trails to protect the building component
- 3.4.6. Remove vegetation that is considered dangerous and a hazard in Fire Conditions
- 3.4.7. To ascertain the required standard of construction of the buildings in accordance with the requirements of the National Construction Code and the Australian Standard for Construction in Bushfire Prone Areas or the provision of a satisfactory alternative solution
- 3.4.8. Facilitate the return to "normalcy "

3.5. Proposed Fire Fighting Infrastructure

- 3.5.1. The proposed buildings are to be served by a reliable reticulated water supply.

3.6. Circulation Road Layout

The site is situated in a Medium PBHR. The circulation road layout combined with the fire trails shown conforms to the general requirements for such a hazard rating.

3.7. Construct a Fire Trail/Emergency Access track

- 3.7.1. New pedestrian fire trails are to be established as shown on the Emergency management Plan. These trails are to comply fully with the standards as set out in this Report
- 3.7.2. The road access and all boundary crossings through fences to these trails can be either a gate or a fence cutting point consisting of strainer posts 3.6m apart with fencing wire between
- 3.7.3. Fire trails are to be protected by an easement in favour of the Council and QFES/RFSQ.
- 3.7.4. The location shown is indicative only and can be modified to suit terrain and vegetation.

3.8. Fire Trail Identification

- 3.8.1. Install and maintain permanent signage at each end and at intersections advising the purpose and location of the trail, generally as indicated on the plan that forms part of this report. Fire trails are required to be numbered and signposted. If the site has or is required to have fire trails, a 50mm diameter (nominal) capped CHS galvanised steel signpost 1.8m in length, concreted to a depth of 600mm is to be installed at every entrance to a fire trail from a roadway or property boundary. Should there be an intersection of fire trails then each branch of a trail is to have a signpost installed. Where the trail connects with a road or boundary the signpost is to be within 2m of the boundary. At an intersection the signpost is to be within 5m of the intersection.
- 3.8.2. The developer will allocate trail numbers and install the numbering on the post.
- 3.8.3. Fire trail related signage is to be installed complete.
- 3.8.4. Signage is to comply with Section 3.8 Sign Types - Fire Trail Signage of the GCCC Natural Areas Management Unit Signage Guidelines (Page 16) a copy of which is attached as an appendix at the rear of this report. (Note that the reference to the Gold Coast Guidelines is due to the intention by QFES/RFSQ to have this as the standard for the whole of Queensland)
- 3.8.5. Trail Number and Key Point signage is to be as specified. The symbols on other signs are to comply with the Queensland Fire and Rescue Service Field Incident Guide Page 191 'Mapping Symbols' a copy of which is attached as an appendix at the rear of this report.

- 3.8.6. Master identification signs showing a plan of the whole of the site and identifying buildings, trails, identification signs and hydrant locations are to be located as indicated on the Fire Management Plan. The master sign should be a minimum of 1200mm high and 1500mm wide, with the lower edge 1000mm above ground.

3.9. Minimum Pedestrian Fire Trail Standards

The Fire/Maintenance trail has: -

- 3.9.1. A minimum width of 4m cleared of midstorey vegetation.
- 3.9.2. A minimum trafficable width of 1.5m
- 3.9.3. A maximum gradient of 25% (or stairs complying with BCA exits stair requirements) with adequate drainage to prevent soil erosion and minimise ongoing trail maintenance

3.10. Vegetation Management

- 3.10.1. Any grass and existing mid storey vegetation within Proposed Management Lots 1 & 2 shall be always kept to a maximum of 100mm or be of less flammable or rain forest species.
- 3.10.2. Existing non rainforest trees within this area are to be reduced to give a noncontinuous canopy cover between trees with a total cover of less than 30% of the area.
- 3.10.3. No trees that are of protected size are required to be removed to comply with the above requirements
- 3.10.4. The above vegetation management scenario will produce a Low Threat scenario like “maintained public reserves and parklands” as cited in section 2.2.3.2(f) of AS 3959.
- 3.10.5. Requirements noted above may be subject to State and Local Authority approval. Those approvals must be obtained prior to implementation of any of these measures.
- 3.10.6. Refer to Sections 14 and 19 of the Planning Act 2016 in relation to Local Authority Approval.
- 3.10.7. The management referred to above is regarded as “Essential Management “(necessary to remove or reduce the imminent risk that the vegetation poses of serious personal injury or damage to infrastructure” under the Sustainable Planning Regulation Schedule 24. It is recommended that the owner register any clearing work with www.dnrm.qld.gov.au, “Vegetation management notification form for self-assessable codes”.
- 3.10.8. This legislation is currently under review. It is the owner’s responsibility to make any necessary enquiries to ensure compliance with the current legislation with important amendments made in December 2019., as noted below:
Under changes to **Planning Regulation 2017 effective December 13, 2019**, permitted operational work includes the following:

Schedule 6, Part 3, Section 20A - Operational work for necessary firebreaks or fire management lines

Operational work that is clearing native vegetation if—

(a) the clearing is necessary for—

- (i) establishing or maintaining a necessary firebreak to protect infrastructure, other than a fence, road or vehicular track, and the maximum width of the firebreak is equal to 1.5 times the height of the tallest vegetation next to the infrastructure, or 20m, whichever is the wider; or*
- (ii) establishing a necessary fire management line, and the maximum width of the clearing for the fire management line is 10m; and*

(b) the clearing—

- (i) is on freehold land; or*
- (ii) is on indigenous land; or*
- (iii) is on land leased under the Land Act 1994 for agriculture or grazing purposes; or*
- (iv) is on land leased under the Land Act 1994, other than for agriculture or grazing purposes, and is consistent with the purpose of the lease; or*
- (v) is on trust land under the Land Act 1994, other than indigenous land, is carried out, or allowed to be carried out, by the trustee and is consistent with achieving the purpose of the trust; or*
- (vi) is on unallocated State land and is carried out, or allowed to be carried out, by the chief executive of the department in which the Land Act 1994 is administered; or*
- (vii) is on land that is subject to a licence or permit under the Land Act 1994 and is carried out by the licensee or permittee.*

As an example, with a height of the tallest vegetation being between 30 – 35m, the width of clearing would be calculated as between 45 – 52.5m.

Under Planning (Spit Master Plan and Other Matters) Amendment Regulation 2019 (Subordinate Legislation 2019 No.243) amends Schedule 6 Part 3 stating that “Development local categorising instrument is prohibited from stating if the above operational work is assessable development”.

Under Schedule 7 Part 3 this is placed in context, stating that *the above operational work is accepted development.*

The management is a component of the Construction Level. Therefore, the Building Certifier must ensure that the management has occurred in accordance with this report before issuing final certification

Recent research (Project Vesta) indicates that tree canopy without mid storey and surface fuels forms an important filter for control of ember attack, which is responsible for more than 90% all bushfire related house fires.

3.11. Fencing

- Any boundary fencing located adjoining bushland, or a fire access trail is to be
- 3.11.1. A maximum of 1000mm high
 - 3.11.2. At least 75 % transparency
 - 3.11.3. Contain at least 1 personal gate to each adjoining lot
and
Fencing between houses should be of materials matching the requirements for external walls for the relevant level of construction of the subject house where within 6m of the house.

3.12. Fire Trail and Fire Break Maintenance

- 3.12.1. Proposed driveways are to be always kept in a condition suitable for 2wd Heavy Vehicles.
- 3.12.2. The fire trails are to be kept mowed to a maximum of 50mm at all times and to be kept in a manner to the satisfaction of the Fire Brigade.

3.13. Building Construction

All construction is to be in accordance with National Construction Code/Building Code of Australia, which refers to either the Australian Standard for Construction in Bushfire Prone Areas (AS 3959) or NASH Standard-Steel Framed Construction in Bushfire Areas as Deemed to Satisfy Solutions. and the Level of construction assessed under "Site and Hazard Assessment."

Note that it is our opinion that timber should not be used externally for BAL-29 plus construction even though under the Australian Standard situations could arise where it could be deemed acceptable.

The plans lodged for Building Certification are to be assessed on this basis by the Building Certifier. A final stage completion certificate (Form 21) issued by the Building Certifier is to be received prior to occupation of the building.

Buildings are not to be occupied until certification is received

Buildings are to be maintained in a manner that protects the integrity of the construction and building elements as outlined in this report

3.14. Street Numbering

Numbering is to be installed in accordance with the current Street Numbering System at time of completion of building.

3.15. Less Flammable Landscaping

Any new landscaping within the sites is to be Less Flammable, in accordance with the list enclosed as an Appendix at the rear of this Report, rainforest species, or cultivated gardens, and comply with the requirements of "Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest" Natural Hazards , Risk and Resilience-Bushfire" published by QFES and Queensland Government, and "Natural hazards, risk and resilience-Bushfire-Assessment Benchmark 5" which cite a maximum Fuel Load of 8t/ha for revegetation or rehabilitation within bushfire prone areas. "Bushfire Resilient Building Guidance for Queensland Homes" published by Qld State Government provides a schedule of species in Appendix E.

<https://www.qra.qld.gov.au/bushfireguideline>

3.16. Insurance

Failure to comply with this management report may have a detrimental effect upon the Insurance of the subject Buildings.

3.17. Emergency Response Procedures

In the event of Fire Emergency, assistance is to be obtained by dialling 000

- 3.17.1. The owner should read thoroughly the brochures contained and those recommended at the rear of this report. They contain valuable information that could assist in the saving of lives and property in a fire event!

3.18. Community Awareness Strategies

- 3.18.1. Each subsequent owner is to be provided with a copy of this Fire Management report with an alert placed on either Title or Council Rate searches that the Report is in existence and is to be made available to ensuing owners.

3.19. Administering Staff

It is the responsibility of the developers and owners to ensure compliance with this Report and the Town Plan, and to ensure that each of the new owners is provided with a copy of this report.

It is the responsibility of the Council and the Building Certifier to ensure that the relevant measures required by this management report are in place prior to the final completion stage inspection of any buildings on any sites which are the subject of this report as noted in Clause 3.1 of this report.

It is the responsibility of the ensuing owners of the properties to maintain the properties in the conditions outlined in this report.

4. FIRE MANAGEMENT ACTION SUMMARY AND SCHEDULE

DEVELOPMENT REQUIREMENTS	BUILDING REQUIREMENTS	MAINTENANCE
Provision of fire access trails Signs placed at the trail entry indicating emergency access	Buildings to comply with the National Construction Code/Building Code of Australia. No occupation until compliance with Standard and Management Report	Regular mowing and maintenance of the sites. Fire trail access to be kept clear and accessible to satisfaction of the Fire Brigade. Building materials are to be maintained in "as new" condition to preserve the integrity of the relevant materials.

5. APPENDICES

- 5.1. Form 15
- 5.2. Site Plans
- 5.3. Completed Bushfire Overlay Code
- 5.4. Supporting Information:
 - 5.4.1. Method 2 Calculation printouts
 - 5.4.2. Fuel Load Calculation

Note. These items below are referenced for information purposes only and are not to be construed as being part of the management report

This information is generic and not provided for approval purposes.

It is only provided for end user knowledge

- 5.4.3. Planning Regulation Fact Sheet December 2019
- 5.4.4. Prepare. Act. Survive
- 5.4.5. Rural property Fire Management Guide 2010
- 5.4.6. Notes for Landholders
- 5.4.7. Bushfire Action Guide
- 5.4.8. Bushfire Safety in Urban Fringe Areas
- 5.4.9. Water + Power -Vital for Fire fighting
- 5.4.10. Less Flammable Vegetation
- 5.4.11. Fire Retardant Native Plants
- 5.4.12. Tree selection for Fire-Prone Areas
- 5.4.13. Bushfire Resilient Building Guidance for Queensland Homes Appendix E
- 5.4.14. First Draft (specifying timber in bush fire zones)
- 5.4.15. External water spray system
- 5.4.16. Fire Retardant Coating Solutions
- 5.4.17. Archicentre Bushfire Design Guide
- 5.4.18. Section 3.8 Sign Types - Fire Trail Signage of the GCCC Natural Areas Management Unit Signage Guidelines
(Page 16)
- 5.4.19. Trail Number and Key Point signage
- 5.4.20. Bushfire Hydrant detail
- 5.4.21. Tank detail
- 5.4.22. Recycled Water for Firefighting
- 5.4.23. Sample Easement Document
- 5.4.24. Bushfire Windows and Shutters
- 5.4.25. A guide to retrofit your home for better protection from a bushfire.
- 5.4.26. FireFly BAL-FZ System
- 5.4.27. Bushfire Planning and Design Certification Scheme Update
- 5.4.28. Eaves Water System
- 5.4.29. Aussi Ember Guard
- 5.4.30. The Australian "False Alarm: the great rainforest fire that wasn't"
- 5.4.31. Hijacking Australian 2019 Bushfire Tragedies to Fearmonger Climate Change
- 5.4.32. Bushfires have been in Australia for over 60 million years

We also recommend that the landholder obtains and reads the following;

- 5.4.33. Bushfire Hazard Planning in Queensland
 - 5.4.34. Protecting your home against Bushfire
- Both available from the Dept. of Local Government and Planning, and

- 5.4.35. Fire in Bushland Conservation
- Available from Queensland Heritage Trust.

- 5.4.36. Bushfire Resilient Building Guidance for Queensland Homes

<https://www.qra.qld.gov.au/bushfireguideline>

Signed

.....
Eldon Bottcher
Grad. Dip. DBPA (UWS) Dip. Arch. (QIT), Cert. R.F.M. (USQ), F.R.A.I.A., M.A.I.E.S. AIFireE
Architect
BPAD L3 Practitioner



APPENDIX 5.1
FORM 15



Form 15

Compliance certificate for building design or specification

This form is to be used by an appointed competent person for the purposes of section 10 of the *Building Act 1975* and sections 73 and 77 of the *Building Regulation 2021* (Design-specification certificate) stating that an aspect of building work or specification will, if installed or carried out as stated in this form, comply with the building assessment provisions.

Additional explanatory information is included in the Appendix at the end of this form.

1. Property description This section need only be completed if details of street address and property description are applicable. E.g. in the case of (standard/generic) pool design/shell manufacture and/or patio and carport systems this section may not be applicable. The description must identify all land the subject of the application. The lot and plan details (e.g. SP/RP) are shown on title documents or a rates notice. If the plan is not registered by title, provide previous lot and plan details.	Street address (include no., street, suburb/locality, and postcode) 54 George Alexander Way Coomera State QLD Postcode Lot and plan details (attach list if necessary) Lot 96 on RP187418 Local government area the land is situated in Gold Coast City Council
2. Description of aspect/s certified Clearly describe the extent of work covered by this certificate, e.g. all structural aspects of the steel roof beams.	Work as required for bushfire mitigation purposes as set out in the Bushfire Management Report FM 5781-B prepared by Eldon Bottcher Architect Pty Ltd including assessment of Construction Levels assessed under AS 3959 and nominated in Section 2.4 of the report .
3. Basis of certification Detail the basis for giving the certificate and the extent to which tests, specifications, rules, standards, codes of practice and other publications were relied upon.	Compliance with the Bushfire Management Report FM 5781-B prepared by Eldon Bottcher Architect Pty Ltd No certification of components covered by The Building Act 1975, The building Code of Australia or AS 3959. Gold Coast City Council Town Plan Bushfire Management Constraint code.
4. Reference documentation Clearly identify any relevant documentation, e.g. numbered structural engineering plans.	Bushfire Management Report FM 5781-B

5. Building certifier reference number and building development application number

Building certifier reference number

Building development application number (*if available*)

Not Available

6. Appointed Competent person details

Under Part 6 of the Building Regulation a person must be assessed as a competent for the type of work (design -specification) by the relevant building certifier.

Name (*in full*)

Eldon John Bottcher

Company name (*if applicable*)**Eldon Bottcher Architect Pty Ltd**

Contact person

Eldon Bottcher

Business phone number

07 55920082

Mobile number

0412434134

Email address

bushfires@eb-a.com.au

Postal address

P.O. Box 3606

Robina Town Centre

Postcode 4230Licence Class or registration type (*if applicable*)

.....

 Licence or registration number (*if applicable*)

Reg Architect Qld 1325

FPA Australia BPAD Level 3 practitioner 16935

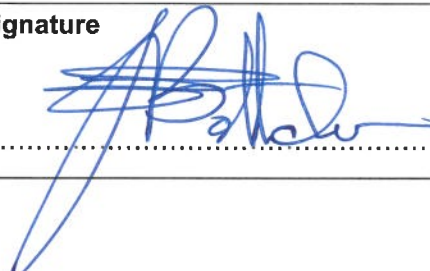
7. Signature of appointed competent person

This certificate must be signed by the individual assessed and appointed by the building certifier as competent to give design-specification help.

Signature

Date

18 July 23



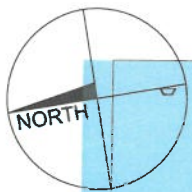
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LOCAL GOVERNMENT USE ONLY

Date received

Reference Number/s

**APPENDIX 5.2
SITE PLANS**



MANAGEMENT
LOT 1

PIONEER STREET

17

18

19

20

21

22

1

2

3

4

5

6

7

8

801
PARK
MANAGEMENT
LOT 2

MERCY STREET

10

9

180,000

STAGE 3

800

LEGEND:	
BAL FZ	BAL FZ - 0m to 6.6m
BAL 40	BAL 40 - 6.6m to 8.9m
BAL 29	BAL 29 - 8.9m to 13.3m
BAL 19	BAL 19 - 13.3m to 19.2m
BAL 12.5	BAL 12.5 - 19.2m to 100m
100-	BAL-LOW

TRANSCT 3

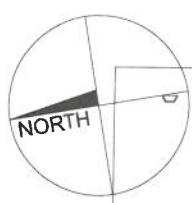
- NOTES
- These designs and plans are subject to the copyright for these drawings & any other intellectual property rights of the copyright owner (Eldon Battcher Architect Pty Ltd).
 - Do not scale from drawings.
 - Do not use drawings for construction without the written consent of the Architect.
 - Check any discrepancies with Architect.

CONSTRUCTION LEVELS
PLAN

PROJECT TITLE
54 GEORGE ALEXANDER WAY,
COOMERA, QLD.

FOR REVIEW

DATE	15/06
DRAWN	MG
CHECKED	MG
PROJECT NUMBER	145 Wendy Parade, North Ryde, NSW 1585 P.O. Box 3008 QLD 4220 E: am@eldonbattcher.com.au P: (07) 55 905 000 F: (07) 55 905 011
DRAWING NUMBER	FM 5781-A SK-1.0



MANAGEMENT
LOT 1

PIONEER STREET

MERCY STREET

801
PARK
MANAGEMENT
LOT 2

17

18

19

20

21

22

1

2

3

4

5

6

7

STAGE 3
8

800

LEGEND:

PEDESTRIAN FIRE TRAIL

S SIGN

H HYDRANT

THREAT VEGETATION

NOTES
1. These drawings and plans are subject to the Copyright Act 1969 (Cth) and the Copyright Act 1969 (Qld).
2. Do not scale from drawings.
3. All dimensions are to be taken from the centre of the lot.
4. Check any discrepancies with Architect.

DRAWING TITLE
EMERGENCY
MANAGEMENT PLAN

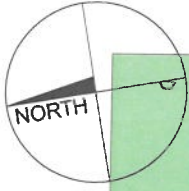
PROJECT TITLE
54 GEORGE ALEXANDER WAY,
COOMERA, QLD.

REVISIONS
A SITE AMENDED
B FIRE TRAIL AMENDED

MG 57/2023
MG 12/7/2023

FOR REVIEW
DATE 12/7/2023
SCALE 1:500
DRAWN MG
CHECKED
PROJECT NUMBER FM 5781-A SK-2.0
PROJECT NAME 54 George Alexander Way
PROJECT ADDRESS 54 George Alexander Way
PROJECT CITY COOMERA QLD 4220
PROJECT PHONE P (07) 55 920 962
PROJECT FAX F (07) 55 960 574
PROJECT EMAIL E. mitchell@bottcher.com.au
PROJECT WEBSITE W. www.bottcher.com.au
PROJECT SOCIAL MEDIA S. www.bottcher.com.au

Eldon Bottcher Architect Pty. Ltd
Eldon Bottcher Architect Pty. Ltd
145 Twenty Fourth
Village Road, Level 12/27
A/N 1010254024
QLD 4220
P.O. Box 3806
Coomera, QLD 4220
E. mitchell@bottcher.com.au
P (07) 55 920 962
F (07) 55 960 574



MANAGEMENT
LOT 1

1

2

3

4

5

6

7

STAGE 3

PIONEER STREET

16

15

14

13

12

11

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18

19

20

21

22

800

MERCY STREET

801
PARK
MANAGEMENT
LOT 2

LEGEND:



LOW THREAT VEGETATION

THREAT VEGETATION

NOTES
1. These designs and plans are subject to:
a. The copyright of the drawings & any construction produced from these drawings being retained by the Architect.
b. The designs and plans being subject to the Copyright Act 1969 (Australia) and the Copyright Act 1969 (New Zealand).
c. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
d. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
e. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
f. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
g. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
h. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
i. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
j. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
k. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
l. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
m. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
n. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
o. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
p. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
q. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
r. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
s. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
t. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
u. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
v. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
w. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
x. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
y. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).
z. The designs and plans being subject to the Copyright Act 1969 (New Zealand) and the Copyright Act 1969 (Australia).

PROJECT TITLE
54 GEORGE ALEXANDER WAY,
COOMERA, QLD.

VEGETATION
MANAGEMENT PLAN

FOR REVIEW
DATE 12/12/2023
SCALE 1:500
DRAWN BY
CHECKED BY
PROJECT NUMBER
PROJECT NAME
PROJECT ADDRESS
PROJECT PHONE
PROJECT FAX
PROJECT EMAIL
PROJECT WEBSITE
PROJECT SOCIAL MEDIA

801
PARK
MANAGEMENT
LOT 2

800

STAGE 3

PIONEER STREET

MERCY STREET

801
PARK
MANAGEMENT
LOT 2

**APPENDIX 5.3
COMPLETED BUSHFIRE OVERLAY CODE**

City Plan code template

This code template supports the preparation of a development application against either the acceptable outcome(s) or performance outcome(s) contained in the code. Development assessment rules are outlined in **Section 5.3.3** of the City Plan.

Please note: For assessment against the overall outcomes, refer to the appropriate code.

Note: The whole of the planning scheme is identified as the assessment benchmark for impact assessable development. This specifically includes assessment of impact assessable development against this strategic framework. The strategic framework may contain intentions and requirements that are additional to and not necessarily repeated in zone, overlay or other codes. In particular, the performance outcomes in zone codes address only a limited number of aspects, predominantly related to built form. Development that is impact assessable must also be assessed against the overall outcomes of the code as well as the strategic framework.

8.2.3 Bushfire hazard overlay code

8.2.3.1 Application

This code applies to assessing material change of use and reconfiguring a lot for development subject to the Bushfire hazard overlay and identified in **Part 5.10 Categories of development and assessment – Overlays**.

When using this code, reference should be made to **Section 5.3.2** and, where applicable, **Section 5.3.3**, in **Part 5**.

8.2.3.2**Purpose**

- (1) The Bushfire hazard overlay constrains areas of land identified as very high, high or medium bushfire hazard and potential impact buffers. It applies, at a minimum, to development that:
- (a) increases the number of people living and working in the bushfire hazard area, except where the premises are occupied on a short term or intermittent basis; or
 - (b) involves uses where evacuating people may be difficult; or
 - (c) involves the manufacture or storage of hazardous materials in bulk.

Note: Land shown on the bushfire hazard overlay map is designated as the bushfire hazard area (bushfire prone area) for the purposes of section 12 of the Building Regulation 2006. The Building Act 1975 adopts the requirements of the Building Code of Australia and AS 3959 and thus regulates construction standards of all premises identified in bushfire prone areas subsequent to development approval.

- (2) The purpose of the Bushfire hazard overlay is to ensure that risk to life, property and the environment as a result of bushfire is mitigated to an acceptable or tolerable level.
- (3) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Land use and development is located, designed and managed to mitigate the risk to life and property, but does not occur at the expense of other identified environmental values.
 - (b) Development is designed to have adequate bushfire radiation zones and road layouts which do not restrict the operational requirements of fire fighters and provides safe entry and exit for residents during bushfire events.
 - (c) Development is provided with water-supply facilities, fire-fighting vehicle fittings and appropriate access arrangements for fire fighters and ongoing fire management.
 - (d) Development supports the ecological role of fire in the landscape and ensures that hazard reduction and conservation burns can be conducted in the city's natural areas.
 - (e) Development in bushfire hazard areas is avoided where conservation and landscape protection constraints preclude necessary risk-reduction measures, including clearing and provision of adequate access. Bushfire hazard and risk mitigation treatments associated with new development does not have a significant negative impact on the biodiversity and health of the city's ecosystems.

8.2.3.3**Specific benchmarks for assessment**

Part A applies to accepted development subject to requirements.

Part B applies to assessable development.

PART A – ACCEPTED DEVELOPMENT SUBJECT TO REQUIREMENTS

Table 8.2.3-1: Bushfire hazard overlay code – for accepted development subject to requirements

Required outcomes	
Bushfire hazard	RO1 A written assessment by a suitably qualified and experienced bushfire management consultant confirms that the site is not in a Bushfire Hazard Area for the purpose of accepted development. OR The development complies with an existing approved Bushfire management plan as referenced within the approved reconfiguration of a lot. OR Development is for a dwelling house that occurs on a lot smaller than 1,000m² and is serviced by reticulated water. Editor's note – Development will be required to comply with the <i>Building Code of Australia</i> and the standards of AS 3959-2009 <i>Construction of buildings in bushfire-prone areas</i>.
	WHERE DEVELOPMENT IS NOT IN ACCORDANCE WITH RO1, RO2-RO6 APPLY.
Bushfire radiation zones	RO2 Development is located such that bushfire radiation zones are located entirely within the boundaries of the private property of the development site. Editor's note – Development should be located away from the most likely direction of a fire front (refer Figure 8.2.3-1: Preferred house site location in Bushfire hazard areas) and so that the elements of the development least susceptible to fire are sited closest to the bushfire hazard. See Vegetation management code for bushfire radiation zone dimensions.
Access requirements	RO3 The access driveway for development in areas with reticulated water must have: (a) a minimum cleared width of 6m and a height of 4.8m; (b) a minimum formed width of 4m; (c) a maximum gradient of 12.5% constructed to an all-weather standard; and (d) a length of no greater than 70m from the street to the dwelling; and (e) culverts and/or bridges with a minimum load bearing of 15 tonnes (if applicable). OR The access driveway for development in areas without reticulated water must have: (f) a minimum cleared width of 6m and a height of 4.8m (g) a minimum formed width of 4m; (h) a maximum gradient of 12.5% with adequate drainage to prevent soil erosion and minimise ongoing maintenance; (i) a length of no greater than 200m from the street to the dwelling; and (j) culverts and/or bridges with a minimum load bearing of 8 tonnes (if applicable).
Emergency Access	RO4

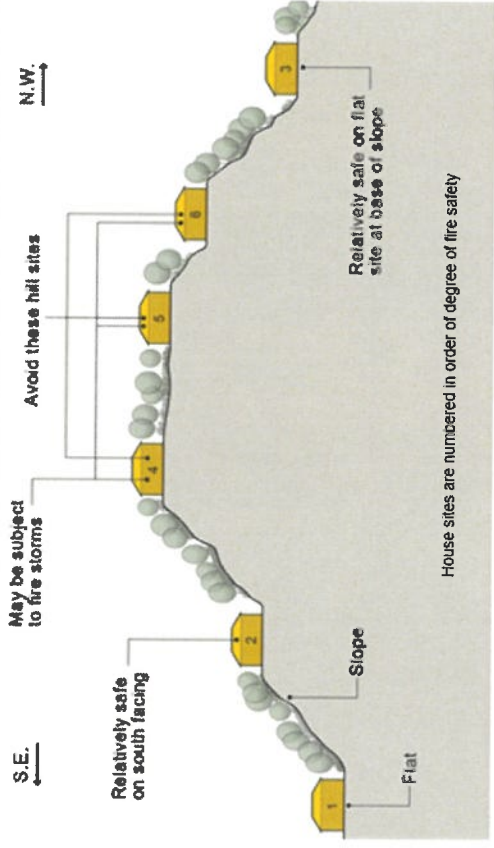
	Where located on a property more than 25,000m² in area, development must have: (a) An existing public road that provides emergency access by separating the development site from the hazardous vegetation and meets the minimum requirements of a fire trail. (b) A public road network, or alternate emergency access on the development site that separates the development from the hazardous vegetation and meets the minimum requirements of a fire trail. OR Where (a) and (b) have not been met: (c) The development includes a fire trail which is contained wholly on the subject site and: (i) separates the development from the hazardous vegetation (ii) has a minimum formed width of 4m (as shall any gate across the trail), a minimum of 6m clear of standing flammable vegetation, and minimum of 4.8m vertical clearance above the trail. (iii) has passing bays (20m long x 3m extra trail width) or turning facilities every 200m with adequate drainage and erosion control devices, (iv) a gradient no greater than 12.5%, a cross fall of no greater than 10 degrees and with access at each end of the fire trail from a public road; (v) has gates that are easily accessed by Queensland Fire and Emergency Services (QFES); and (vi) has suitable arrangements in place to ensure maintenance in perpetuity.
Water supply requirements	RO5 All development involving a new or existing building with a gross floor area of 50m² or more must have: (a) a reliable reticulated water supply that has sufficient flow and pressure characteristics for fire-fighting purposes at all times (minimum pressure and flow is 10 litres per second at 200 kPa); OR (b) a dedicated fire-fighting water storage of not less than 10 000 litres for each individual building. The outlet pipe must be 50mm in diameter, fitted with a 50mm male camlock (standard rural fire brigade fitting) and an isolating valve; and (c) is provided within 10 metres of each building and is either below ground or of non-flammable construction; and (d) the water supply outlet located at least 9 m from any potential fire hazards, such as venting gas bottles and combustible structures; and (e) a safe and accessible hard stand area capable of accommodating a fire fighting vehicle is provided not more than 3m from the water supply outlet; and (f) the fire-fighting water storage is clearly identified by directional signage provided at the street frontage. Editor's note – dedicated fire-fighting water storage is in addition to water supply for household use and does not include swimming pools, creeks and dams.
Utility protection and hazardous materials	RO6 The development must ensure: (a) mains gas supplies are installed in accordance with AS1596, the requirements of relevant authorities and metal piping is exclusively used; (b) electricity supplies within the property are protected and are not vulnerable to falling trees or bushfire threatening the viability of

	transmission poles; AND (c) uses, involving bulk storage or manufacture of hazardous materials as defined in the <i>Work Health and Safety Act 2011</i> do not occur in areas identified as medium, high or very high bushfire hazard or potential impact buffers.
Editor's note – Buildings in a designated Bushfire hazard area must meet the requirements of the <i>Building Code of Australia</i> and the standards of AS 3959 - 2009 <i>Construction of buildings in bushfire-prone areas</i>. Advisory note Accepted development identified in the assessment tables as subject to requirements must comply with all the nominated requirements in this and other applicable codes.	

PART B – ASSESSABLE DEVELOPMENT BENCHMARKS

Table 8.2.3-2: Bushfire hazard overlay code – for assessable development

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets either the performance outcome or overall outcome	Internal use
Bushfire hazard			
PO1 In a bushfire hazard area, the fire mitigation methods used at the site are adequate for the bushfire hazard of the individual site, having regard to: (a) vegetation type; (b) slope; (c) aspect; (d) bushfire history; (e) conservation values of the site; (f) ecological restoration, including forest succession; (g) ongoing maintenance; (h) climate change; and (i) on site and off-site fire hazard implications. *Note: This includes potential hazard from land up to 10kms away from the site. For example,	AO1 A written assessment by a suitably qualified and experienced bushfire management consultant confirms that the site is not in a bushfire hazard area. OR The development complies with an approved Bushfire management plan prepared in accordance with SC6.3 City Plan policy – Bushfire management plans . OR The development complies with an existing approved Bushfire management plan as referenced within the approved reconfiguration of a lot. Note: Prior to: (a) plan sealing for a Reconfiguration of a lot; or (b) the issue of a Building final or Certificate	A Mitigation Report has been prepared by a BPAD Level 3 Bushfire Practitioner	

how might large tracts of forest away from the site impact on the bushland that surrounds the site.	(c) of classification for Building work; or the commencement of use where building work is not proposed. Whichever comes first, the applicant must submit to Council, certification from an appropriately qualified and experienced person that the development has been completed in accordance with, and complies with the approved Bushfire management plan and that all risk treatments are functioning in accordance with the approved plan.		
 Figure 8.2.3-1 Bushfire hazard overlay – Preferred house site location in bushfire hazard areas. Image adapted from QDHLGP (1993) Bushfire Hazard Planning in Queensland.			
Land use PO2 In a bushfire hazard area, development: (a) does not result in a high concentration of people living, working or congregating in a bushfire hazard area;	AO2 The following land uses are not located in a bushfire hazard area: (a) Child care centre; (b) Community care centre;	Complies None of the listed uses are proposed on the subject site	

(b) does not result in the bulk manufacture or storage of hazardous materials; and (c) 'essential' community infrastructure is able to function effectively during and immediately after a bushfire event.	(c) Community use; (d) Development involving the manufacture or storage of hazardous material in bulk; (e) Educational establishment; (f) Hospital; (g) Residential care facility; (h) Retirement facility; (i) Rooming accommodation; (j) Sport and recreation uses; (k) Tourist attraction; (l) Tourist park; and (m) Utility installation (waste management facilities). AND In a bushfire hazard area permitted essential community infrastructure is designed to function effectively during and immediately after bushfire events, as demonstrated in a Bushfire management plan. Note: A Bushfire management plan prepared by a suitably qualified person and in accordance with SC6.3 City Plan policy – Bushfire management plans is Council's preferred method for addressing this acceptable outcome.	
Development design and lot layout PO3 In a bushfire hazard area, developments, including lot layout are designed to avoid bushfire hazard and provide safe sites for people, property and buildings. Editor's note – The development should be located: (a) away from the most likely direction of a fire front (refer Figure 8.2.3-1: Preferred house site location in bushfire hazard areas); and	AO3 Development, Lots and/or building envelopes are not located within bushfire hazard areas. OR The development is located in accordance with the approved Bushfire management plan as referenced within the approved reconfiguration of a lot. OR The development is designed to adequately demonstrate that the risk to life and property is minimised to achieve acceptable levels and	Complies A Mitigation Report has been prepared that demonstrates the measures proposed.

(b) so that elements of the development least susceptible to fire are sited closest to the bushfire hazard.	ensure ongoing site management. AO3.2 The development design incorporates bushfire radiation zone/s that: (a) use existing or natural fire breaks & minimise the need to clear native vegetation; (b) do not impact matters of environmental significance; (c) are located entirely within the boundaries of the private property of the development site; and (d) incorporates landscaping species that are less likely to exacerbate a bushfire event.		
PO4 In a bushfire hazard area, when designing for bushfire hazard mitigation the lot layout must avoid impacts on matters of environmental significance.	AO4 Development design, Lot size, and layout avoids impact on matters of environmental significance and minimises impacts such as fragmentation, habitat loss and edge effects for any matters of environmental significance.	Complies	
PO5 Development uses fencing that: (a) does not contribute to the spread of bushfire; (b) facilitates the safe movement of fauna; and (c) provides access for fire-fighting purposes.	AO5 Fences are constructed: (a) using non-combustible or fire retardant materials within 20m of any building used for accommodation; (b) that do not impede the safe movement of fauna (where applicable); and (c) has gates that can be freely accessed for fire-fighting purposes (if applicable).	Complies. These measures are outlined in the mitigation report.	
Vehicular access			
PO6 In a bushfire hazard area, vehicular access (including internal roads) is designed to mitigate against bushfire hazard by ensuring adequate access for: (a) fire-fighting and other emergency vehicles, and	AO6.1 The development design incorporates a perimeter road that: (a) is located between the boundary of the lots and/or buildings and the adjacent natural area and/or bushfire hazard area;	Complies in principle. The development has a pedestrian fire trail located between the threat vegetation and the proposed buildings which allows access for firefighters.	

(b) the evacuation of residents and emergency personnel, during a bushfire event.	(b) has a minimum cleared width of 20m; (c) has a constructed minimum road width of 6m; (d) has a maximum gradient of 12.5%; (e) is constructed to an all-weather standard; and (f) is constructed to ensure all culverts and bridges have a minimum load bearing of 15 tonnes (if applicable). (refer Figure 8.2.3-2b). AO6.2 The road design is capable of providing access for fire-fighting and other emergency vehicles, in accordance with SC6.11 City Plan policy – Land development guidelines, Section 2 – Transport network standards. AO6.3 The road design does not include dead end roads (refer Figure 8.2.3-2a).	The road design is in accordance with “Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots” published by QFES and Qld Government. The road design is in accordance with “Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots” published by QFES and Qld Government.	
Figures 8.2.3-2a and 8.2.3-2b: Examples of acceptable and unacceptable road layout designs in bushfire hazard areas			

 Figure 8.2.3-2a Unacceptable design – along a ridge top in a bushfire hazard area – the ridge top development has no fire control lines and obstructs fire fighters.	 Figure 8.2.3-2b Acceptable design – Ring road system provides a fire control line and access for fire fighters with all lots located on the inside of the ring-road.		
Clearing PO7 In a bushfire hazard area, the development layout is designed to avoid the requirement to clear vegetation to achieve risk reduction.	AO7 The Bushfire management plan details the required extent of vegetation clearing and landscaping and where required modify development design and/or lot layout to minimise clearing of vegetation. Note: For guidance on how to prepare a Bushfire management plan refer to SC6.3 City Plan Policy – Bushfire management plans.	Complies The mitigation report included a Vegetation Management Plan and details vegetation management measures to be carried out including requirements for rehabilitation and revegetation.	
Open space management plan PO8 For areas to be dedicated to Council as open space, management strategies to mitigate bushfire risk must be identified.	AO8 The Bushfire management plan contains a separate section detailing management strategies for areas to be dedicated to Council that can be included within the Open space management plan. Note: For guidance on how to prepare a Bushfire management plan refer to SC6.3 City	Not Applicable	

	Plan Policy – Bushfire management plans.	
Fire trails		
PO9 In a bushfire hazard area, fire trails must be provided to: (a) enable access for fire fighters, residents and equipment; (b) contribute to (where required) bushfire radiation zone(s); (c) mitigate against bushfire hazard; and (d) allow access for hazard reduction management programs. Note: fire trails should be located, constructed and maintained with due regard for landscape and ecological values and should not result in soil disturbance or erosion.	Plan Policy – Bushfire management plans. AO9.1 Fire trails are located on public land (including public open space areas) to facilitate access for fire brigades. OR Fire trails located on private property are located as close as possible to the property boundaries and the adjoining bushfire hazard area, and an access easement is granted in favour of City of Gold Coast and Queensland Fire and Emergency Services. Note: Design and construction of all fire trails located on land to be dedicated to the City as Conservation Estate are in accordance with LinkSC6.3 City Plan policy – Bushfire management plans, Section 3.5(f). For other fire trails, AO9.2 – AO9.6 apply. AO9.2 The fire trail has: (a) a minimum cleared width of 6m; (b) a minimum of 4.8m vertical clearance; (c) a cross fall of no greater than 10 degrees; (d) a minimum formed width of 4m; (e) a maximum gradient of 12.5%, with adequate drainage to prevent soil erosion and minimise ongoing trail maintenance; and (f) culverts and/or bridges with a minimum load bearing of 8 tonnes (if applicable). AO9.3 Vehicular links are provided along the fire trail either to existing fire trails or roads, and these links are designed having regard to the topography of the site, fire fighter safety and the need to regularly access water supplies.	Complies. An Emergency Management Plan shows the location of proposed pedestrian fire trails. Pedestrian fire trails are proposed rt=rather than Vehicular as outlined in this section. Scale of proposed development does not require this. The road design is in accordance with “Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots” published by QFES and Qld Government.

Areas with no water reticulation (private water supply)			
PO11 In a bushfire hazard area, the development maintains the safety of people and property by ensuring that an adequate water supply for fire-fighting purposes is provided.	AO11.1 For development with a combined GFA less than 500m² where one or more buildings are proposed, dedicated fire-fighting water storage is provided to protect each individual building. Each dedicated fire-fighting water storage must have a volume of water not less than 10,000 litres for each building, be provided within 10m of each building and be: (a) a separate tank that is either below ground level or of non-flammable construction; or (b) a reserve section in the bottom part of the main water supply tank that is either below ground level or of non-flammable construction. Note: dedicated fire-fighting water storage is in addition to water supply for household use and does not include swimming pools, creeks and dams. AO11.2 For development that proposes one or more buildings with a combined GFA greater than 500m² there is no acceptable outcome provided.	N/A	Reticulated water is available
PO12 In a bushfire hazard area, all fire-fighting water storage tanks, including domestic water supply tanks, are fitted with the standard rural fire brigade fittings.	AO12 The outlet pipe is 50mm in diameter, fitted with a 50mm male camlock (standard rural fire brigade fitting) and an isolating valve.		
PO13 In a bushfire hazard area, water storage provided for fire-fighting purposes is safely located and accessible at all times.	AO13.1 The water supply outlet is located at least 9m from any potential fire hazards, such as venting gas bottles and combustible structures. AO13.2		

PO14 Development in a bushfire hazard area must provide adequate fire-fighting water storage. This infrastructure must be provided on public land so as to be readily accessible to fire brigades for hazard reduction and fire-fighting purposes.	A safe and accessible hard stand area capable of accommodating a fire fighting vehicle is provided not more than 3m from the water supply outlet.		
PO14.1 Where public water supplies (e.g. fire hydrants or public water storage) do not exist, water supply tanks are provided for fire-fighting purposes on public land within the development. The water tanks must: (a) Be installed on land dedicated to Council; (b) hold a volume of at least 22,500 litres per every 20 dwellings; (c) be of concrete construction; and (d) have an outlet pipe of 50mm in diameter, fitted with a 50mm male camlock (standard rural fire brigade fitting) and an isolating valve. PO14.2 Development on public land provides a safe and accessible hardstand area capable of accommodating a fire fighting vehicle not more than 3m from the water supply outlet.			
Storage of Hazardous Materials			
PO15 Development does not cause: (a) an unacceptable risk to people, property and the environment due to the impact of bushfire on hazardous chemicals; (b) excess danger or difficulty to emergency services for emergency response or evacuation.	AO15 Development involving the storage, handling or manufacture of hazardous chemicals is not located within a Bushfire hazard area.	N/A The development is a residential development and it is envisaged that any storage would be restricted to normal residential use.	
Advice to new residents			
PO16	AO16		

In a bushfire hazard area, new residents/occupants of a development in a bushfire hazard area are informed about: (a) the potential bushfire hazard on their site; (b) their responsibility for fire management; (c) the measures required for ongoing fire hazard mitigation; and (d) emergency procedures during a bushfire or on bad fire weather days. Editor's note - Further information on bushfire preparation can be found at www.ruralfire.qld.gov.au	A copy of the Bushfire management plan, complete with the Queensland Fire and Emergency Services cover sheet and any other addendums is provided to each resident/occupant for their information. Note: the QFES cover sheet is attached to the approved Bushfire management plan and a notification will be placed on the property's rates notice.	Complies This is a requirement of the Mitigation Report	
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8.2.3.4

Other relevant requirements

SC6.3 City Plan policy – Bushfire management plans is directly relevant to the development of land within bushfire hazard areas.

APPENDIX 5.4 SUPPORTING INFORMATION

(NOTE: SOME OF THIS INFORMATION IS GENERIC AND NOT PROVIDED FOR APPROVAL PURPOSES. IT IS ONLY PROVIDED FOR END USER KNOWLEDGE)

6.PROFILES

BUSHFIRE CONSTRUCTION STANDARD (BAL) ASSESSMENT



ELDON BOTTCHER ARCHITECT PTY LTD
145 VARSITY PARADE
VARSITY LAKES
QLD. 4327
PH 0755920082
E architects@eb-a.com.au



THIS ASSESSMENT USES AS 3959 METHOD 2

PROJECT **PROPOSED RESIDENTIAL DEVELOPMENT**

SITE ADDRESS **54 GEORGE ALEXANDER WAY
COOMERA**

TRANSECT 3

INPUTS

FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		7 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		1 degrees

FLAME WIDTH	100 m
-------------	------------------------------------

ELEVATION OF RECEIVER	3 m
-----------------------	----------------------------------

DISTANCE BETWEEN VEGETATION AND BUILDING	6.6 m
--	------------------------------------

RESULTS

RADIANT HEAT	39.62 kw/m ²
--------------	--

FLAME LENGTH	7.83 m
--------------	-------------------------------------

RATE OF SPREAD	0.89 km/hr
----------------	---

ATMOSPHERIC TRANSMISSIVITY	89%
----------------------------	----------------------------------

PEAK ELEVATION OF RECEIVER	3 m
----------------------------	----------------------------------

FLAME ANGLE	54 degrees
-------------	---

CONSTRUCTION LEVEL REQUIRED	BAL-40 BAL
-----------------------------	---

BUSHFIRE CONSTRUCTION STANDARD (BAL) ASSESSMENT



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SITE ADDRESS **54 GEORGE ALEXANDER WAY
COOMERA**

TRANSECT 3

INPUTS

FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		7 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		1 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		3.4 m
DISTANCE BETWEEN VEGETATION AND BUILDING		8.9 m

RESULTS

RADIANT HEAT	29.00 kw/m ²
FLAME LENGTH	7.83 m
RATE OF SPREAD	0.89 km/hr
ATMOSPHERIC TRANSMISSIVITY	87%
PEAK ELEVATION OF RECEIVER	3.4 m
FLAME ANGLE	65 degrees
CONSTRUCTION LEVEL REQUIRED	BAL-29 BAL

BUSHFIRE CONSTRUCTION STANDARD (BAL) ASSESSMENT



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E architects@eb-a.com.au



THIS ASSESSMENT USES AS 3959 METHOD 2

PROJECT **PROPOSED RESIDENTIAL DEVELOPMENT**

SITE ADDRESS **54 GEORGE ALEXANDER WAY
COOMERA**

TRANSECT 3

INPUTS

FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		7 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		1 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		3.5 m
DISTANCE BETWEEN VEGETATION AND BUILDING		13.3 m

RESULTS

RADIANT HEAT	18.95 kw/m ²
FLAME LENGTH	7.83 m
RATE OF SPREAD	0.89 km/hr
ATMOSPHERIC TRANSMISSIVITY	86%
PEAK ELEVATION OF RECEIVER	3.5 m
FLAME ANGLE	74 degrees
CONSTRUCTION LEVEL REQUIRED	BAL-19 BAL

BUSHFIRE CONSTRUCTION STANDARD (BAL) ASSESSMENT



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VARSITY LAKES
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PH 0755920082
E architects@eb-a.com.au



THIS ASSESSMENT USES AS 3959 METHOD 2

PROJECT **PROPOSED RESIDENTIAL DEVELOPMENT**

SITE ADDRESS **54 GEORGE ALEXANDER WAY
COOMERA**

TRANSECT 3

INPUTS

FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		7 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		1 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		3.5 m
DISTANCE BETWEEN VEGETATION AND BUILDING		19.5 m

RESULTS

RADIANT HEAT	12.46 kw/m ²
FLAME LENGTH	7.83 m
RATE OF SPREAD	0.89 km/hr
ATMOSPHERIC TRANSMISSIVITY	84%
PEAK ELEVATION OF RECEIVER	3.5 m
FLAME ANGLE	79 degrees
CONSTRUCTION LEVEL REQUIRED	BAL-12.5 BAL

State-wide Bushfire Prone Area Mapping

Vegetation Hazard Class Descriptions and Fuel Characteristics – Jan 2017

Vegetation Hazard Class	Potential Fuel Load (t/ha)						Prone Type ¹		Fuel Continuity ²	
	Surface	Near Surface	Elevated	Bark	Total (Remnant)	Total (Non-Remnant)	Remnant	Non-Remnant	Remnant	Non-Remnant
1.1 <i>Complex mesophyll to notophyll vine forests</i>	2.6	0.0	0.0	0.0	2.6	12.0	3	1	2	1
2.1 <i>Complex to simple, semi-deciduous mesophyll to notophyll vine forest</i>	3.5	0.0	0.0	0.0	3.5	12.0	3	1	2	1
3.1 <i>Notophyll vine forest</i>	4.5	0.0	0.0	0.0	4.5	12.0	3	1	2	1
3.3 <i>Notophyll vine thicket</i>	4.4	0.0	0.0	0.0	4.4	12.0	3	1	2	1
4.1 <i>Notophyll and notophyll palm or vine forest</i>	4.5	0.0	0.0	0.0	4.5	12.0	3	1	2	1
5.1 <i>Notophyll to microphyll vine forests</i>	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
5.2 <i>Notophyll to microphyll vine forest with sparse overstorey</i>	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
5.5 <i>Sedgeland within Notophyll to microphyll vine forests</i>	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
6.1 <i>Montane Notophyll vine forest and microphyll fern forest</i>	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
6.3 <i>Montane Notophyll vine thicket and microphyll fern thicket</i>	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
7.1 <i>Semi-evergreen to deciduous microphyll vine forest</i>	6.0	0.0	0.0	0.0	6.0	12.0	3	1	2	1
7.2 <i>Sparse semi-evergreen to deciduous microphyll vine forest</i>	6.0	0.0	0.0	0.0	6.0	12.0	3	1	2	1
8.1 <i>Wet eucalypt tall open forest</i>	28.0	3.0	2.0	2.0	35.0	35.0	1	1	1	1
8.2 <i>Wet eucalypt tall woodland</i>	18.0	3.1	1.7	1.0	23.8	23.8	1	1	1	1
9.1 <i>Moist to dry eucalypt open forests on coastal lowlands and ranges</i>	17.5	3.5	2.2	1.0	24.2	24.2	1	1	1	1
9.2 <i>Moist to dry eucalypt woodland on coastal lowlands and ranges</i>	11.4	3.5	1.3	1.0	17.2	17.2	1	1	1	
9.3 <i>Shrubland within moist to dry eucalypt on coastal lowlands and ranges</i>	7.8	3.0	1.9	0.0	12.7	12.7	1	1	1	1
10.1 <i>Spotted gum dominated open forests</i>	16.3	3.0	1.5	0.0	20.8	20.8	1	1	1	1
10.2 <i>Spotted gum dominated woodlands</i>	14.0	3.0	1.0	0.0	18.0	18.0	1	1	1	1
11.2 <i>Moist to dry eucalypt woodlands on basalt areas</i>	7.5	4.0	0.5	1.0	13.0	13.0	1	1	1	1
12.1 <i>Dry eucalypt open forest on sandstone and shallow soils</i>	15.0	3.5	1.5	1.0	21.0	21.0	1	1	1	1

¹ Prone Type: 1 = Bushfire Prone, 2 = Grass Fire Prone, 3 = Low Hazard

² Fuel Continuity: 1 = Continuous, 2 = Discontinuous

REB	REB_Label	VHC	VHC_DESC
12.1.1	Casuarina glauca woodland on margins of marine clay plains	28.2	28.2 Woodlands in coastal locations with species such as she-oak or swamp box
12.1.2	Saltpan vegetation including grassland, hermland and sedgeland on marine clay plains	35.4	35.4 Tidal saltmarshes
12.1.3	Mangrove shrubland to low closed forest on marine clay plains and estuaries	35.3	35.3 Shrubland associated with mangroves and tidal saltmarshes
12.11.1	Simple notophyll vine forest often with abundant Archontophoenix cunninghamiana (gully vine forest) on metamorphics ± interbedded volcanics	4.1	4.1 Notophyll and notophyll palm or vine forest
12.11.10	Notophyll vine forest ± Araucaria cunninghamii on metamorphics ± interbedded volcanics	2.1	2.1 Complex to simple, semi-deciduous mesophyll to notophyll vine forest
12.11.11	Araucarian microphyll vine forest on metamorphics ± interbedded volcanics; usually southern half of bioregion	5.1	5.1 Notophyll to microphyll vine forests
12.11.12	Araucarian complex microphyll vine forest on metamorphics ± interbedded volcanics; usually northern half of bioregion	5.1	5.1 Notophyll to microphyll vine forests
12.11.13	Semi-evergreen vine thicket on metamorphics ± interbedded volcanics; usually northern half of bioregion	7.1	7.1 Semi-evergreen to deciduous microphyll vine forest
12.11.14	Eucalyptus crebra, E. tereticornis, Corymbia intermedia woodland on metamorphics ± interbedded volcanics	13.2	13.2 Dry to moist eucalypt woodlands on undulating metamorphics and granite
12.11.15	Eucalyptus tereticornis, Corymbia intermedia open woodland with Xanthorrhoea johnsonii understorey on serpentinite	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.16	Eucalyptus cloeziana open forest on metamorphics ± interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.11.16x1	Eucalyptus cloeziana ± E. propinqua, E. acmenoides, E. microcorys and E. grandis tall open forest on sedimentary rocks	8.1	8.1 Wet eucalypt tall open forest
12.11.17	Eucalyptus acmenoides or E. portuensis open forest on metamorphics ± interbedded volcanics	9.1	9.1 Moist to dry eucalypt open forests on coastal lowlands and ranges
12.11.18	Eucalyptus moluccana woodland on metamorphics ± interbedded volcanics	13.2	13.2 Dry to moist eucalypt woodlands on undulating metamorphics and granite
12.11.18a	Eucalyptus moluccana, E. tereticornis and Lophostemon confertus open forest in gullies on metamorphics ± interbedded volcanics	13.1	13.1 Dry to moist eucalypt open forests on undulating metamorphics and granite
12.11.19	Eucalyptus fibrosa subsp. fibrosa woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.2	Eucalyptus saligna or E. grandis, E. microcorys, Lophostemon confertus tall open forest on metamorphics ± interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.11.20	Corymbia intermedia, Lophostemon suaveolens woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.21	Allocasuarina luehmannii, Melaleuca nervosa woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.22	Angophora leiocarpa, Eucalyptus crebra woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.23	Eucalyptus pilularis open forest on coastal metamorphics and interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.11.3	Eucalyptus siderophloia, E. propinqua ± E. microcorys, Lophostemon confertus, Corymbia intermedia, E. acmenoides open forest on metamorphics ± interbedded volcanics	9.1	9.1 Moist to dry eucalypt open forests on coastal lowlands and ranges
12.11.3a	Lophostemon confertus ± Eucalyptus microcorys, E. carnea, E. propinqua, E. major, E. siderophloia woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.3b	Eucalyptus pilularis tall open forest on subcoastal hills and ranges of metamorphics ± interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.11.4	Semi-evergreen vine thicket on metamorphics ± interbedded volcanics	7.1	7.1 Semi-evergreen to deciduous microphyll vine forest
12.11.5	Corymbia citriodora subsp. variegata, Eucalyptus siderophloia, E. major open forest on metamorphics ± interbedded volcanics	10.1	10.1 Spotted gum dominated open forests
12.11.5a	Eucalyptus tindaliae, E. carnea, Corymbia intermedia ± E. siderophloia or E. crebra, Corymbia citriodora subsp. variegata woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.5e	Corymbia citriodora subsp. variegata woodland ± Eucalyptus siderophloia or crebra, E. carnea, E. acmenoides, E. propinqua on metamorphics ± interbedded volcanics	10.2	10.2 Spotted gum dominated woodlands
12.11.5h	Eucalyptus planchoniana woodland to open forest on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.5j	Eucalyptus racemosa subsp. racemosa and/or E. seeana and Corymbia intermedia woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.5k	Corymbia henryi ± Eucalyptus crebra, E. carnea, E. tindaliae, E. fibrosa subsp. fibrosa woodland on metamorphics ± interbedded volcanics	10.2	10.2 Spotted gum dominated woodlands
12.11.6	Corymbia citriodora subsp. variegata, Eucalyptus crebra woodland on metamorphics ± interbedded volcanics	10.2	10.2 Spotted gum dominated woodlands
12.11.7	Eucalyptus crebra woodland on metamorphics ± interbedded volcanics	13.2	13.2 Dry to moist eucalypt woodlands on undulating metamorphics and granite
12.11.8	Eucalyptus melanophloia, E. crebra woodland on metamorphics ± interbedded volcanics	17.2	17.2 Dry woodlands dominated by poplar box, silver-leaved ironbark or White's ironbark on sand or depositional plains
12.11.9	Eucalyptus tereticornis open forest on metamorphics ± interbedded volcanics. Usually higher altitudes	9.1	9.1 Moist to dry eucalypt open forests on coastal lowlands and ranges
12.11.9x1	Eucalyptus montivaga open forest on metamorphics ± interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.12.1	Simple notophyll vine forest usually with abundant Archontophoenix cunninghamiana (gully vine forest) on Mesozoic to Proterozoic igneous rocks	4.1	4.1 Notophyll and notophyll palm or vine forest
12.12.10	Shrubland of rocky peaks on Mesozoic to Proterozoic igneous rocks	29.3	29.3 Heathlands and associated scrubs and shrublands
12.12.11	Eucalyptus portuensis or E. acmenoides, Corymbia trachyphloia subsp. trachyphloia woodland on Mesozoic to Proterozoic igneous rocks	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.12.12	Eucalyptus tereticornis, Corymbia intermedia, E. crebra ± Lophostemon suaveolens woodland on Mesozoic to Proterozoic igneous rocks	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.12.13	Araucarian Complex microphyll to notophyll vine forest on Mesozoic to Proterozoic igneous rocks	2.1	2.1 Complex to simple, semi-deciduous mesophyll to notophyll vine forest
12.12.14	Eucalyptus racemosa subsp. racemosa ± Lophostemon confertus, Syncarpia glomulifera, Eucalyptus acmenoides woodland usually on rocky near coastal areas on Mesozoic to Proterozoic igneous rocks	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges



Queensland Government home > For Queenslanders > Environment, land and water > Plants and animals > Plants > Regional ecosystems > Regional ecosystem descriptions > Regional ecosystem details for 12.11.24

Regional ecosystem details for 12.11.24

Regional ecosystem	12.11.24
Vegetation Management Act class	Least concern
Wetlands	Not a Wetland
Biodiversity status	No concern at present
Subregion	3, 1, (2), (4)
Estimated extent ¹	Pre-clearing 28000 ha; Remnant 2019 14000 ha
Extent in reserves	Medium
Short description	Eucalyptus carnea or E. tindaliae, Corymbia intermedia +/- E. siderophloia or E. crebra woodland on metamorphics +/- Interbedded volcanics
Structure category	Sparse
Description	Eucalyptus carnea or E. tindaliae, Corymbia intermedia woodland +/- E. crebra or E. siderophloia, Eucalyptus resinifera, Eucalyptus major, E. helidonica, Angophora woodsiana, C. trachyphloia, E. microcorys, Corymbia citriodora subsp. Variegata, C. henryi. Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics usually at altitudes < 300 metres. (BVG1M: 9g)
Supplementary description	Ryan, T.S. (ed.) (2012); Bean et al. (1998), H39a
Protected areas	Nerang NP, Springbrook NP, Tamborine NP, D'Aguilar NP, Plunkett CP, Venman Bushland NP, Nerang CP, Buccan CP, Wickham NP, Daisy Hill CP, Springbrook CP, Tooley Forest CP, Pimpama CP
Special values	Potential habitat for NCA listed species: Corchorus cunninghamii, Endiandra floydii and Eucalyptus curtisii. This ecosystem is known to provide suitable habitat for koalas (Phascogale carolinensis).
Fire management guidelines	SEASON: Summer to winter. INTENSITY: Low to moderate. INTERVAL: 4-25 years. STRATEGY: Aim for 40-60% mosaic burn. Burn with soil moisture and with a spot ignition strategy so that a patchwork of burnt/unburnt country is achieved. ISSUES: The fire regime should maintain a mosaic of grassy and shrubby understoreys. Control of weeds is a major focus of planned burning in most areas. Careful thought should be given to maintaining ground litter and fallen timber habitats by burning only with sufficient soil moisture. Burning should aim to produce fine scale mosaics of unburnt areas. Variability in season and fire intensity is important, as well as spot ignition in cooler or moister periods to encourage mosaics.
Comments	Previously mapped as 12.11.5a. Frequently grades upslope into 12.11.5 (Corymbia citriodora subsp. variegata) or 12.11.25 (C. henryi, E. fibrosa subsp. fibrosa) and downslope into 12.11.27 (E. racemosa/ E. seeana). Lower altitude occurrences are being extensively cleared and fragmented. Caboolture south to the New South Wales border.

¹ Estimated extent is from version 12.1 pre-clearing and 2019 remnant regional ecosystem mapping. Figures are rounded for simplicity. For more precise estimates, including breakdowns by tenure and other themes see [remnant vegetation in Queensland](https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/remnant-vegetation/) (<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/remnant-vegetation/>).

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Last updated 8 December 2021

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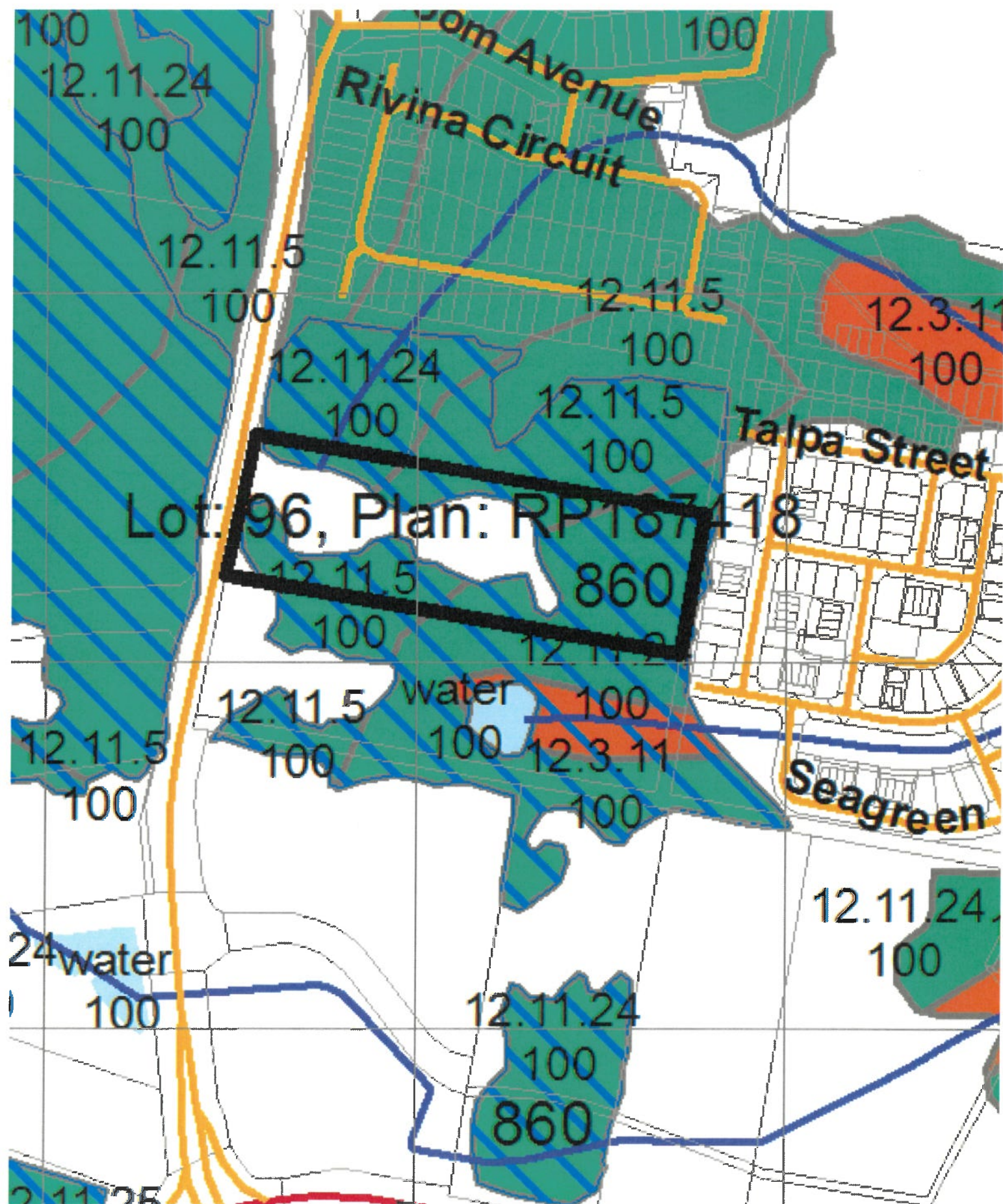
Disclaimer (<https://www.qld.gov.au/legal/disclaimer/>)

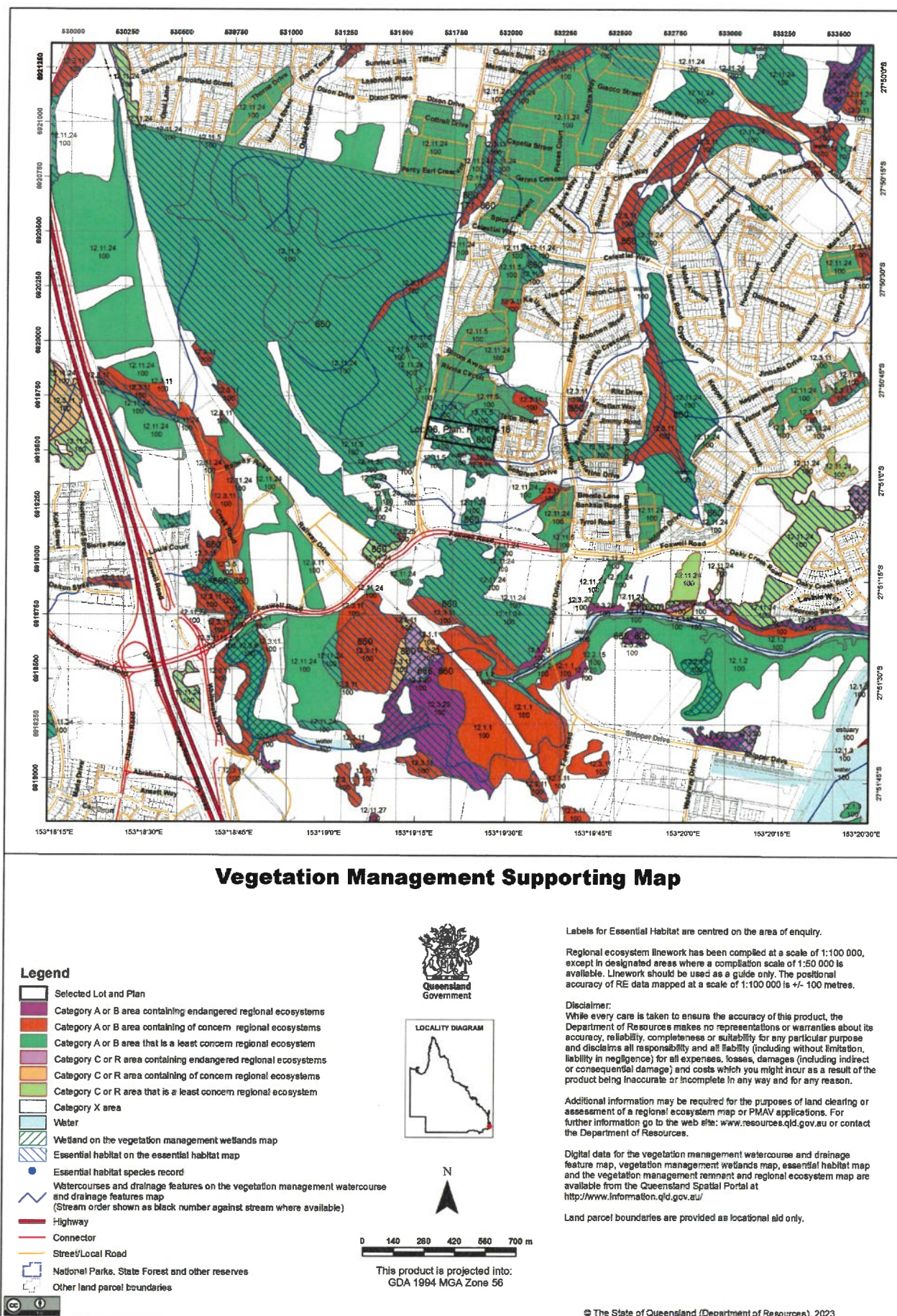
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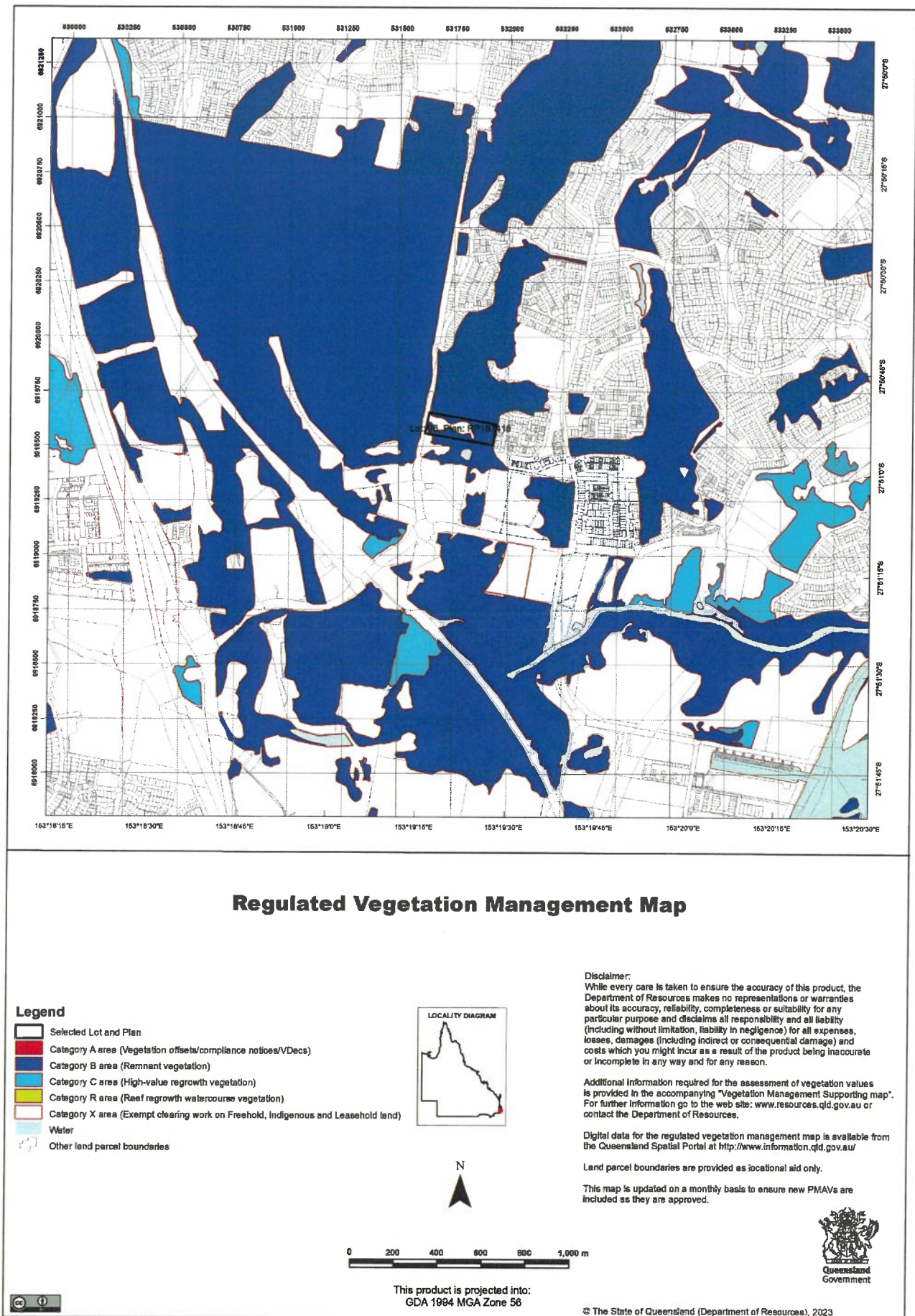
Rivina Circuit

Talpa Street

Seagreen







ELDON BOTTCHER

EDUCATION AND QUALIFICATIONS

Graduate Diploma in Design in Bushfire Prone Areas
University of Western Sydney

Diploma in Architecture

Queensland Institute of Technology

Certificate of Rural Fire Management

University of Southern Queensland

Registered Architect

Queensland

A+ Architect

Australian Institute of Architects

FPA Australia Certified Practitioner (BPAD-Level 3-16935)

Bushfire Planning and Design (BPAD-LEVEL 3),
Alternate Solutions & DTS

PROFESSIONAL MEMBERSHIPS

Fellow

Australian Institute of Architects

Member

Australian Institute of Emergency Services

Member

Australian Institute of Engineers Society of Fire Safety

Member

Queensland Environmental Law Association.

Member Board of Experts

Bushfire Building Council of Australia

Associate Member

Institution of Fire Engineers

Corporate Member

Fire Protection Association of Australia

PROFESSIONAL EXPERIENCE

Director

Eldon Bottcher Architect Pty Ltd since 1978

Bushfire Assessment and Planning Consultant since 1998

Group Officer

Albert Rural Fire Brigades Group

Queensland Fire and Rescue Service

Group Officer

Gold Coast Rural Fire Brigades Group

Queensland Fire and Rescue Service

Group Officer

South East Regional Support Group

Queensland Fire and Rescue Service

Planning Officer

Gold Coast Rural Fire Brigades Group

Queensland Fire and Rescue Service

Member Practice Committee AIA Qld Chapter

AIA delegate to Building Industry and Research

Consultation Panel on Bushfire Hazard advising

Queensland State Bushfire Committee

BBCA representation to Australian Standards

Committee FP20 (AS 3959 & AS 5414)

Life Member

Guanaba Rural Fire Brigade

Member

Clagiraba Rural Fire Brigade

OTHER BUSHFIRE RELATED COURSES AND TRAINING

I.C.S./AIIIMS (40 hr. course) in Incident Command Systems

Certificate 4 (Workplace Training and Assessment)

RFSQ Level 1

RFSQ Level 2 (Officer)

RFSQ Fire Management 1

RFSQ Crew Leader

Certificate II in Public Safety (Firefighting Operations)

Fire Weather 1

QELA Expert Witness Workshop 2020

BUSHFIRE RELATED AWARDS

National Planning Award

State Planning Award

Planning Institute of Australia

Gold Coast Bushfire Management Strategy

(Co-Initiator and Member of Preparation Committee)

Australian Government

National Medal

Long and Distinguished Service to Fire fighting

Queensland Fire and Rescue Service

Diligent and Ethical Service Medal + Clasp

Service to Fire fighting

Queensland Government

Australia Day Medallion

Services to Rural Fire Fighting

Queensland Government

Year of the Volunteer Medallion

Services to Fire fighting

UDIA

Best Consultancy Team Award in 2007.

SERVICES OFFERED

Bushfire management Reports

Bushfire Safety Engineering

Bushfire Planning and Design

Bushfire Hazard Assessment

Alternative Solutions

Expert Witnessing

(See Planning and Environment Court of Queensland Determination

File No. BD 624 of 2005 sections 28 to 35)

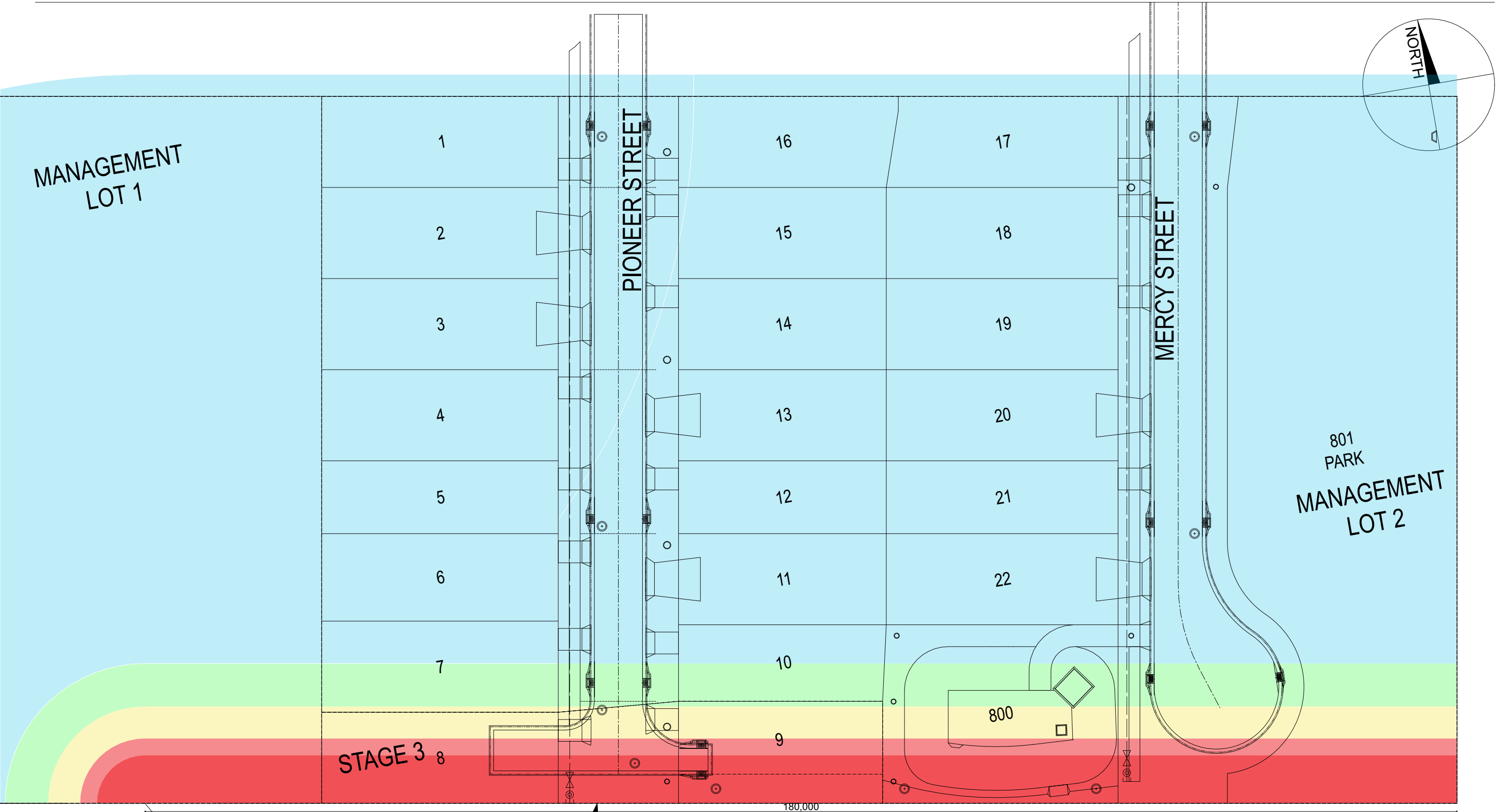
Continuing Professional Development Lectures

Tertiary Education Lectures and Tutorials

Town Planning Bushfire Codes for Local Authorities

Bushfire Burn Planning

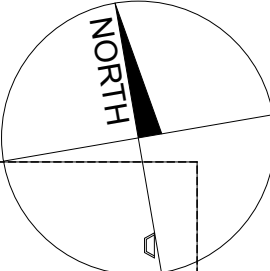
General consultancy relating to all aspects of Bushfire



LEGEND:		TRANSECT 3
	BAL FZ	BAL FZ - 0m to 6.6m
	BAL 40	BAL 40 - 6.6m to 8.9m
	BAL 29	BAL 29 - 8.9m to 13.3m
	BAL 19	BAL 19 - 13.3m to 19.2m
	BAL 12.5	BAL 12.5 - 19.2m to 100m
		100- - BAL-LOW

MANAGEMENT
LOT 1

801
PARK
MANAGEMENT
LOT 2



LEGEND:

--- PEDESTRIAN FIRE TRAIL

S SIGN

H HYDRANT

