

PROPOSAL PLAN - OVERALL

NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

DCDB © State of Queensland (Department of Natural Resources and Mines) 2019.
Lidar Data © State of Queensland (Department of Natural Resources and Mines) 2016.

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

PROJECTION: GDA2020 MGA56
SUBJECT BOUNDARIES: DCDB
CONTOURS: ELVIS - LIDAR (2017)

LEGEND

- Site Boundary
- Contours (1.0m interval)
- Stage Boundary
- 1 Stage No.
- Bushfire Buffer
- BAL 12.5
- BAL 19
- BAL 29
- BAL 40

DEVELOPMENT STATISTICS			
RESIDENTIAL ALLOTMENTS	No. Lots	%	Net Area
Terrace	7	5.5%	0.182 ha
10.0m - 12.49m Frontage	18	14.2%	0.594 ha
12.5m - 13.9m Frontage	60	47.2%	2.352 ha
14.0m - 15.9m Frontage	29	22.8%	1.221 ha
16m + Irregular Frontage	13	10.2%	0.655 ha
Total Residential Allotments	127	100.0%	5.004 ha

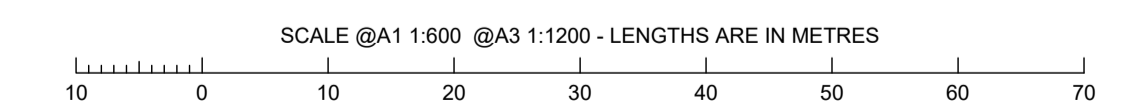
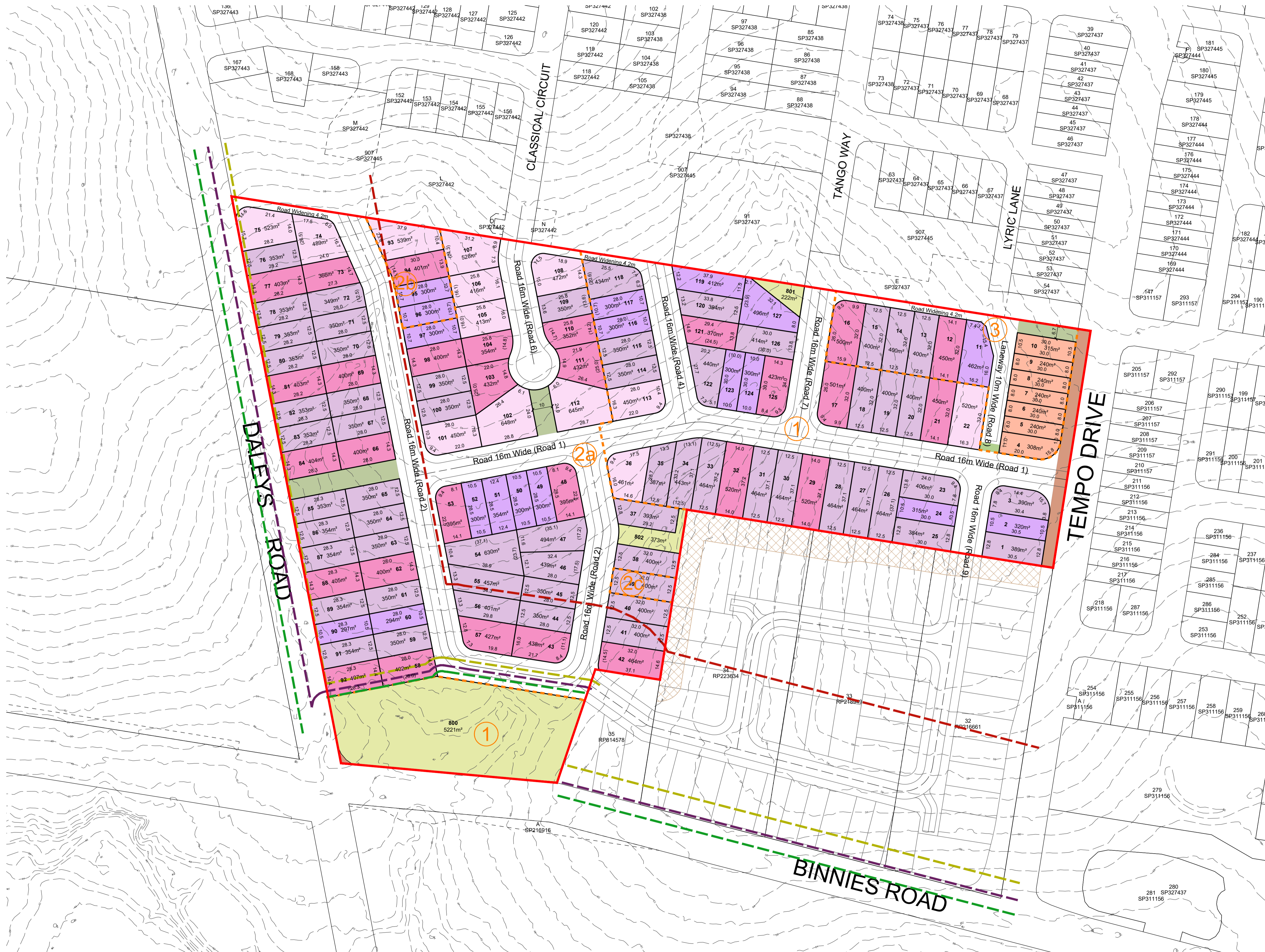
Land Budget		
Area of Subject Site / Stage	Area (Ha)	%
Net Residential Area (no roads)	5.004 ha	66.5%
Detention / Drainage	0.581 ha	7.7%
Pedestrian Links	0.100 ha	1.3%
Road Widening	0.077 ha	1.0%
Road Areas	1.765 ha	23.4%
Total	7.527 ha	100.0%

Pursuant to the *Economic Development Act 2012*, this plan forms part of the MEDQ Delegate's approval for

Approval No.: 4815/2024/PDA

Date: 13 October 2025

RP DESCRIPTION: Lot 335 on RP814578



HB LAND PTY LTD

PROPOSAL PLAN - STAGE 1

NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

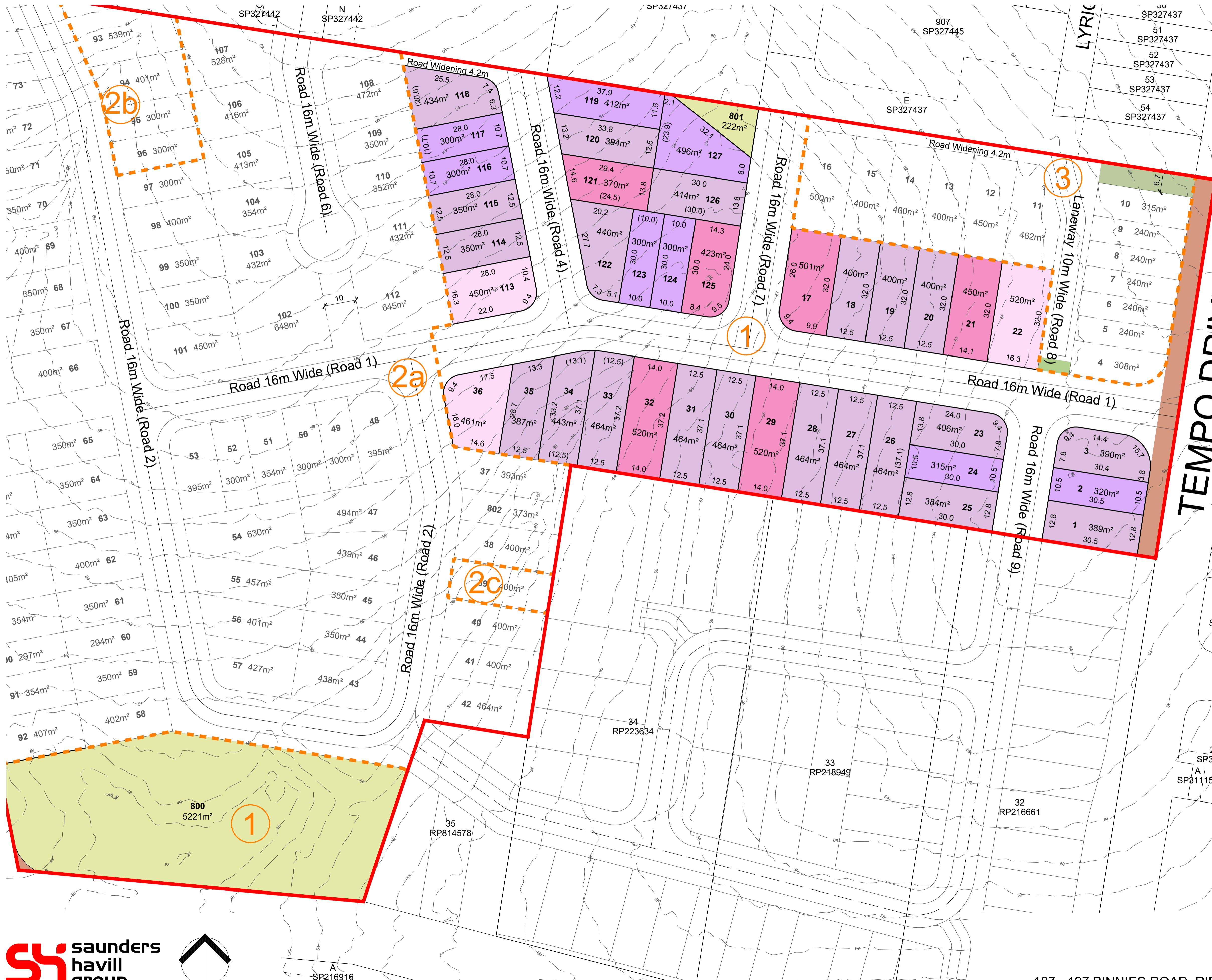
DCDB © State of Queensland (Department of Natural Resources and Mines) 2019.
Lidar Data © State of Queensland (Department of Natural Resources and Mines) 2016.

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

PROJECTION: GDA2020 MGA56
SUBJECT BOUNDARIES: DCDB
CONTOURS: ELVIS - LIDAR (2017)

LEGEND

- Site Boundary
- Contours (1.0m interval)
- Stage Boundary
- 1 Stage No.



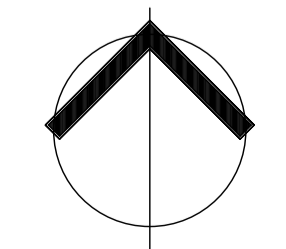
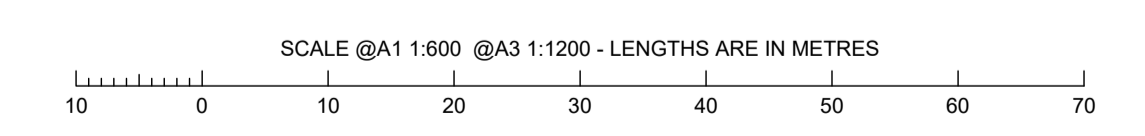
DEVELOPMENT STATISTICS - Stage 1			
RESIDENTIAL ALLOTMENTS			
RESIDENTIAL ALLOTMENTS	No. Lots	%	Net Area
10.0m - 12.49m Frontage	8	21.1%	0.274 ha
12.5m - 13.9m Frontage	21	55.3%	0.877 ha
14.0m - 15.9m Frontage	6	15.8%	0.278 ha
16m + Irregular Frontage	3	7.9%	0.143 ha
Total Residential Allotments	38	100.0%	1.572 ha
Land Budget			
Land Budget	Area (Ha)	%	
Area of Subject Site / Stage	2.875 ha	—	
Net Residential Area (no roads)	1.572 ha	54.7%	
Detention / Drainage	0.544 ha	18.9%	
Road Widening	0.077 ha	2.7%	
Road Areas	0.682 ha	23.7%	
Total	2.875 ha	100.0%	

Pursuant to the **Economic Development Act 2012**, this plan forms part of the **MEDQ Delegate's approval** for

Approval No.: 4815/2024/PDA

Date: 13 October 2025

RP DESCRIPTION: Lot 335 on RP814578



HB LAND PTY LTD

PROPOSAL PLAN - STAGE 2

NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

DCDB © State of Queensland (Department of Natural Resources and Mines) 2019.
Lidar Data © State of Queensland (Department of Natural Resources and Mines) 2016.

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

PROJECTION: GDA2020 MGA56
SUBJECT BOUNDARIES: DCDB
CONTOURS: ELVIS - LIDAR (2017)

LEGEND

- Site Boundary
- Contours (1.0m interval)
- - - Stage Boundary
- 1 Stage No.
- - - BAL 12.5
- - - BAL 19
- - - BAL 29
- - - BAL 40

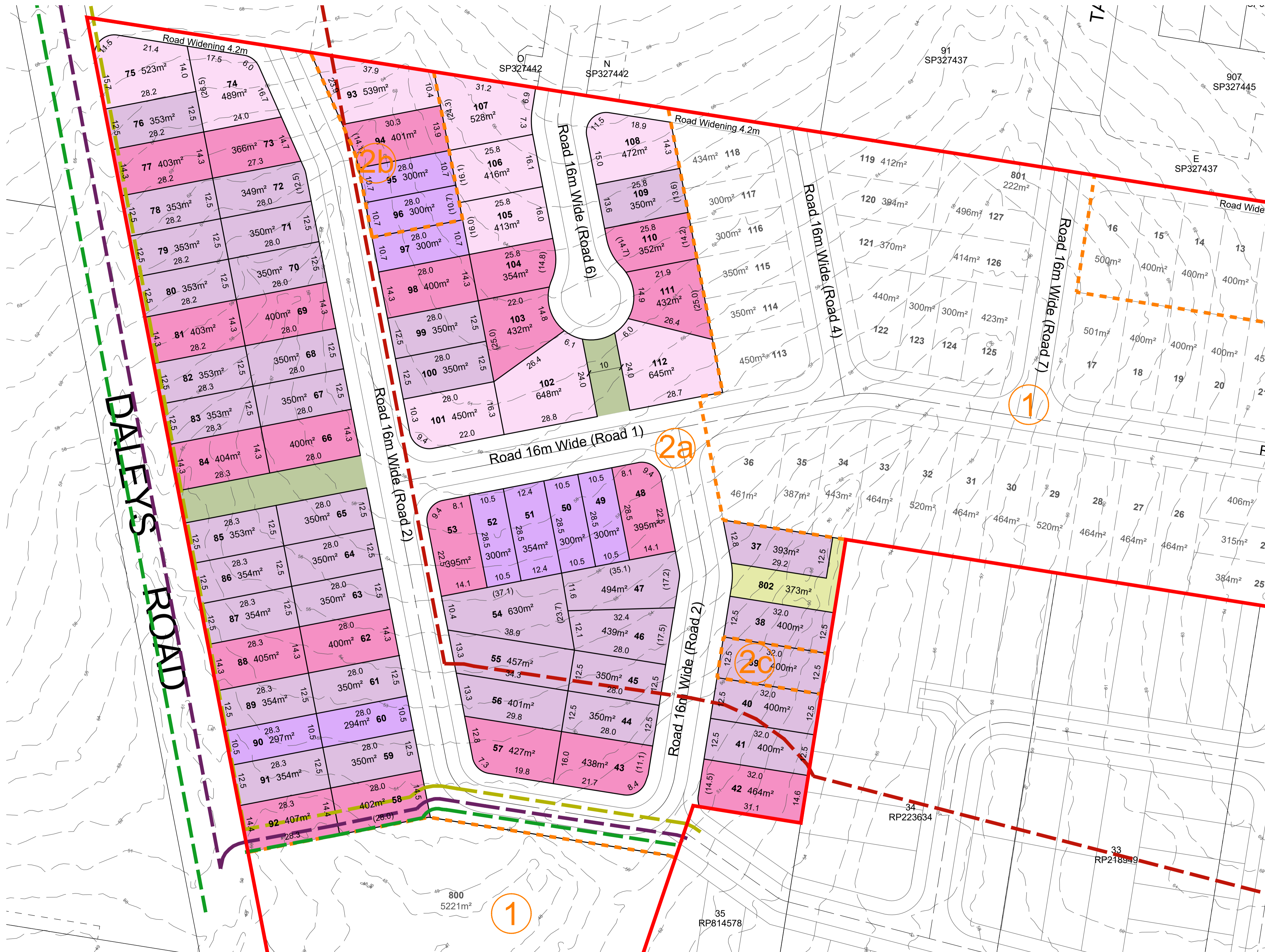
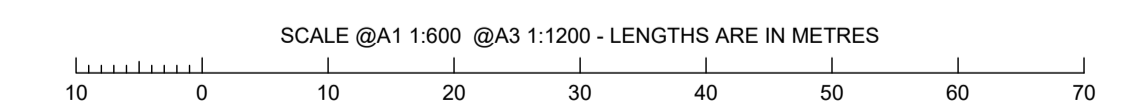
DEVELOPMENT STATISTICS - Stage 2			
RESIDENTIAL ALLOTMENTS	No. Lots	%	Net Area
10.0m - 12.49m Frontage	9	11.8%	0.274 ha
12.5m - 13.9m Frontage	36	47.4%	1.355 ha
14.0m - 15.9m Frontage	21	27.6%	0.848 ha
16m + Irregular Frontage	10	13.2%	0.512 ha
Total Residential Allotments	76	100.0%	2.989 ha
Land Budget			
Area of Subject Site / Stage	4.080 ha	0.0%	
Net Residential Area (no roads)	2.989 ha	73.3%	
Detention / Drainage	0.037 ha	0.9%	
Pedestrian Links	0.080 ha	2.0%	
Road Areas	0.974 ha	23.9%	
Total	4.080 ha	100.0%	

Pursuant to the **Economic Development Act 2012**, this plan forms part of the MEDQ Delegate's approval for

Approval No.: 4815/2024/PDA

Date: 13 October 2025

RP DESCRIPTION: Lot 335 on RP814578



HB LAND PTY LTD

PROPOSAL PLAN - STAGE 3

NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

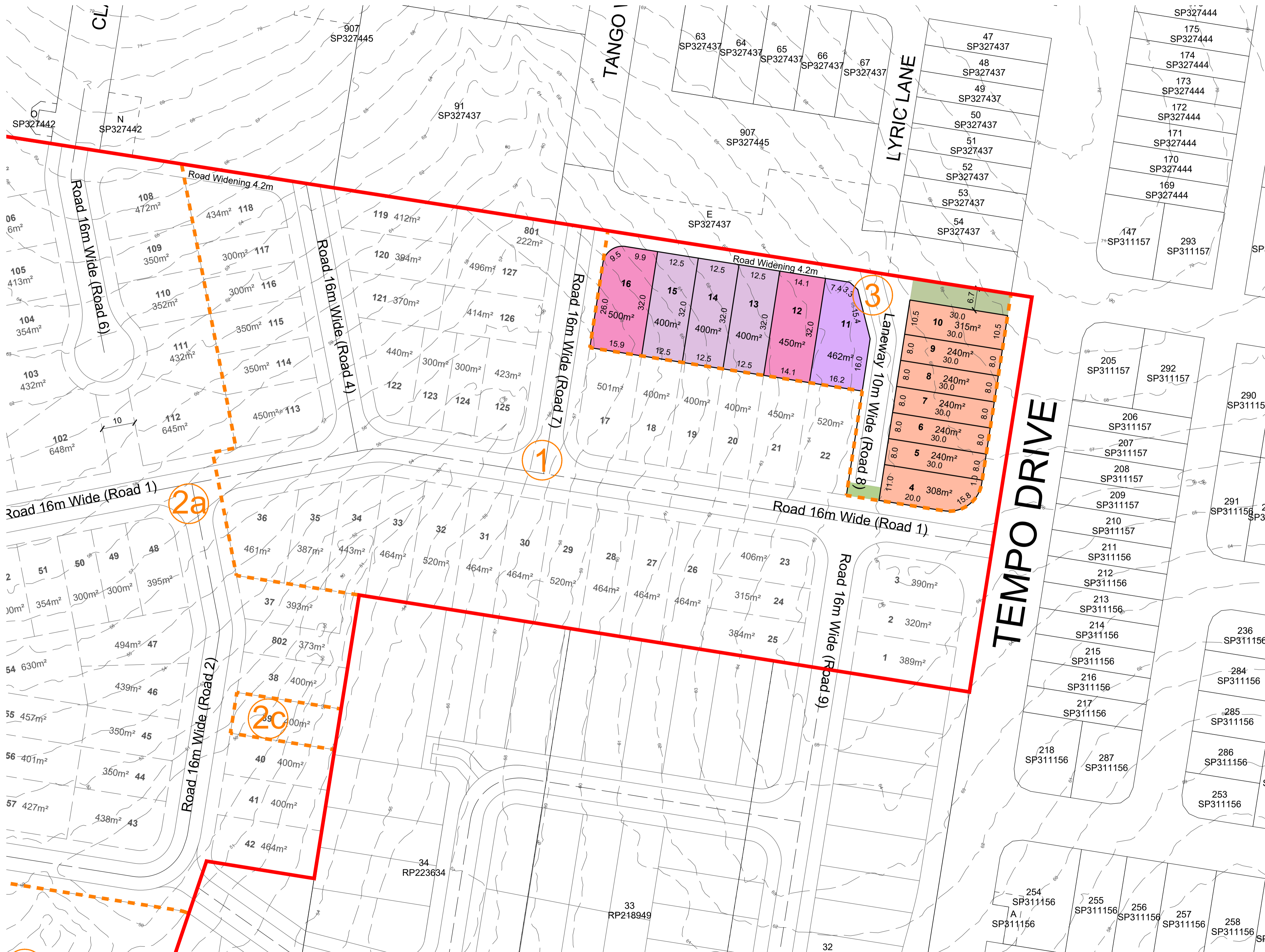
DCDB © State of Queensland (Department of Natural Resources and Mines) 2019.
Lidar Data © State of Queensland (Department of Natural Resources and Mines) 2016.

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

PROJECTION: GDA2020 MGA56
SUBJECT BOUNDARIES: DCDB
CONTOURS: ELVIS - LIDAR (2017)

LEGEND

- Site Boundary
- Contours (1.0m interval)
- - - - Stage Boundary
- 1 Stage No.



DEVELOPMENT STATISTICS - Stage 3			
RESIDENTIAL ALLOTMENTS	No. Lots	%	Net Area
Terrace	7	53.8%	0.182 ha
10.0m - 12.49m Frontage	1	7.7%	0.046 ha
12.5m - 13.9m Frontage	3	23.1%	0.120 ha
14.0m - 15.9m Frontage	2	15.4%	0.095 ha
Total Residential Allotments	13	100.0%	0.443 ha

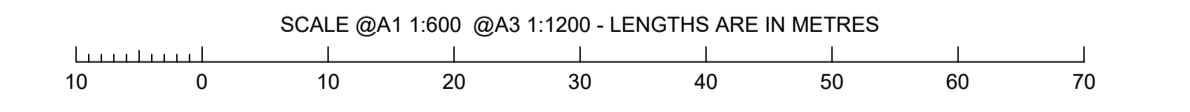
Land Budget	Area (Ha)	%
Area of Subject Site / Stage	0.572 ha	—
Net Residential Area (no roads)	0.443 ha	77.4%
Pedestrian Links	0.020 ha	3.5%
Road Areas	0.109 ha	19.1%
Total	0.572 ha	100.0%

Pursuant to the *Economic Development Act 2012*, this plan forms part of the MEDQ Delegate's approval for

Approval No.: 4815/2024/PDA

Date: 13 October 2025

RP DESCRIPTION: Lot 335 on RP814578



HB LAND PTY LTD



Binnies Road, Ripley

Plan of Development

Prepared for HB QLD Pty Ltd

Pursuant to the *Economic
Development Act 2012*, this plan
forms part of the MEDQ
Delegate's approval for

Approval No.: 4815/2024/PDA

Date: 13 October 2025

Document Control

Document Issue

Issue	Date	Prepared By	Checked By
Revision A	03/05/2024	RC	-
Revision B	24/10/2024	JG	RC
Revision C	07/04/2025	RC	-

© Saunders Havill Group Pty Ltd 2025.
ABN 24 144 972 949
www.saundershavill.com

Accepted Uses

1.1. Uses exempt in accordance with this Plan of Development

Where within the Plan of Development Area¹, uses listed below in Table 1 are approved exempt development where complying with this Plan of Development.

Table 1 – Approved Exempt Development in accordance with the Plan of Development

Display Home
Home Based Business
House
Sales Office (<150 square metres)

1. In accordance with the provisions of the Ripley Valley PDA Development Scheme, building work and operational work are exempt development where in accordance with this Plan of Development.
2. To the extent there is any conflict between this Plan of Development and the Ripley Valley PDA Development Scheme, this Plan of Development prevails.
3. Where development is not in accordance with this Plan of Development, a new development application will be required.

1.2. Uses subject to Compliance Assessment

Where within the Plan of Development Area, uses listed below in Table 2 will be subject to Compliance Assessment, where complying with this Plan of Development.

Table 2 – Uses subject to Compliance Assessment in accordance with the Plan of Development

Advertising Device
Sales Office (>150 square metres)

References

This Plan of Development has been prepared in accordance with the following Economic Development Queensland Guidelines and Practice Notes:

¹ The Plan of Development Area is shown in **Appendix A – Master Plan**

- Guideline 1 - Residential 30 (May 2015)
- Guideline 5 – Neighbourhood Planning and Design (May 2015)
- Guideline 6 – Street and Movement Network (February 2019)
- Guideline 7 – Low Rise Buildings (May 2015)
- Guideline 12 – Park Planning and Design (May 2015)
- Guideline 13 – Engineering Standards (September 2017)
- Guideline 18 – Development Interfaces (May 2015)
- Practice Note 07 – Designing for Small Lots (March 2014)
- Practice Note 10 – Plans of Development (March 2014)

Defined Uses and Terms

1.3. Administrative Terms/Definitions

Administrative definitions are as per the Ripley Valley Development Scheme (Schedule 6)

1.4. Use Definitions

Advertising Device - *Means a permanent sign, structure or other device used, or intended to be used, for advertising; and includes a structure, or part of a building, the primary purpose of which is to support the sign, structure or device.*

Display Home – *Means the temporary use of premises for the promotion and/or sale of land and/or houses within an estate, where such premises are located within the estate which is proposed to be promoted or sold.*

Home Based Business – *Means the use of a House or Multiple residential for an occupation or business activity as a secondary use where:*

- *The floor area used specifically for the home business does not exceed 50m²;*
- *Any visitor accommodation does not exceed 4 visitors;*
- *There is no hiring out of materials, goods, appliances or vehicles;*
- *There is only one sign related to the Home business, located within the premises or on a fence facing the road;*
- *There is no repairing or servicing of vehicles not normally associated with a residential use;*
- *There is no industrial use of premises;*
- *The maximum height of a new building, structure or object does not exceed the height of the House or Multiple residential and the setback is the same as or greater than, building on adjoining properties;*
- *Car parking is in accordance with the planning scheme;*
- *There is no display of goods;*
- *Number of employees does not exceed 4.*

House – *Means a residential use of premises containing one primary single dwelling on a lot. The use includes out-buildings and works normally associated with a dwelling and may include a secondary dwelling. The*

secondary dwelling is subordinate to the primary dwelling, capable of being used as a self-contained residence and may be constructed under the primary dwelling, attached to it or free standing.

Sales Office –*Means the use of premises for the temporary promotion and/or sale of land and/or buildings within an estate, where such premises are located within the estate which is proposed to be promoted or sold.*

The definitions above are in accordance with the Ripley Valley PDA Development Scheme. The defined terms above and the definitions contained within the Ripley Valley PDA Development Scheme prevail over all other planning instruments to the extent of any inconsistency.

2. Design Criteria

2.1. Advertising Devices

Advertising devices are in accordance with the Ripley Valley Development Scheme and the standards set out in the current planning scheme (Ipswich Planning Scheme 2006), unless otherwise specified within this Plan of Development.

Advertising Devices must:

- comply with the relevant requirements of Part 12, Division 14 of the Ipswich Planning Scheme (2006) except to the extent of any conflict with provisions outlined in this Plan of Development;
- cater for the needs of display homes and businesses to clearly identify the location, the goods or services which are supplied to the public;
- are consistent with the scale and design of existing buildings and other works on the site and in the locality, and complement the local streetscape;
- where appropriate, reflect the character of the area; and
- are sited and provided on premises having regard to safety and amenity.

2.1.1 Types of Advertising Devices

- **New Estate Sales Sign (Free Standing Sign)** - A new estate sales sign is an advertisement to direct attention to the sale of residential properties or dwellings, where the streets are not shown in recent street directories.
- **Sales Office Sign** – A sign located on the premises of a sales office approved in accordance with this Plan of Development.
- **Directional Sign** – A sign providing information in respect to an activity occurring on the premises or directions to the location of an activity (i.e. an entry sign or statement, parking sign, park sign).

2.1.2 Standards for Advertising Devices

New Estate Sales Signs (Free Standing Sign)

- Must have a maximum height of 5 metres;
- Must have a maximum area of 6 square metres;
- Must contain information only about the estate subject to this Plan of Development;
- Must not be located within 10 metres of a side or rear boundary; and
- Must be located only at such limited number of places on major roads leading to the estate as are sufficient to identify the development and give direction to it.

Sales Office Signs

- Must be located on the premises of a Sales Office approved in accordance with this Plan of Development;
- Can remain in place until such time as the Sales Office use ceases;

- Must be limited to one sign per road frontage; and
- Must have a maximum sign face (area) of 5 square metres.

Directional Signs

- Must have a maximum height of 2.4 metres above ground level; and
- Must have a maximum sign face (area) of 1 square metre.

2.2. House/Display Home

Refer to **Appendix B**.

Additional criteria where for a Display Home

- Display Homes comply with the relevant Probable Solutions (or where no Probable Solutions are outlined, the Specific Outcomes) of Section 12.6.5(4) of the Ipswich Planning Scheme (2006); and
- Display Homes comply with car parking requirements outlined in Table 12.9.1 of the Ipswich Planning Scheme (2006).

2.3. Sales Office

Where for a Sales Office <150m² gross floor area:

- The Sales Office complies with the relevant Probable Solutions (or where no Probable Solutions are outlined, the Specific Outcomes) of Section 12.6.5(4) of the Ipswich Planning Scheme;
- The Sales Office complies with the car parking requirements of Table 12.9.1 of the Ipswich Planning Scheme (2006);
- The balance of the site comprising the Sales Office use is landscaped and turfed to present attractively to the street;
- The Sales Office must cease use after the final lot within the Plan of Development area is sold by the developer; and
- Only one Sales Office is permitted within the Plan of Development area.

Where for a Sales Office >150m² gross floor area:

- The Sales Office complies with the relevant Specific Outcomes of Section 12.6.5(4) of the Ipswich Planning Scheme;
- The Sales Office complies with the car parking requirements of Table 12.9.1 of the Ipswich Planning Scheme (2006);
- The maximum gross floor area of the sales office does not exceed 500 square metres;
- The balance of the site comprising the Sales Office use is landscaped and turfed to present attractively to the street;
- The Sales Office must cease use after the final lot within the Plan of Development area is sold by the developer; and
- Only one Sales Office is permitted within the Plan of Development area.

Appendix A

Master Plan

PROPOSAL PLAN - OVERALL

NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

DCDB © State of Queensland (Department of Natural Resources and Mines) 2019.
Lidar Data © State of Queensland (Department of Natural Resources and Mines) 2016.

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

PROJECTION: GDA2020 MGA56
SUBJECT BOUNDARIES: DCDB
CONTOURS: ELVIS - LIDAR (2017)

LEGEND

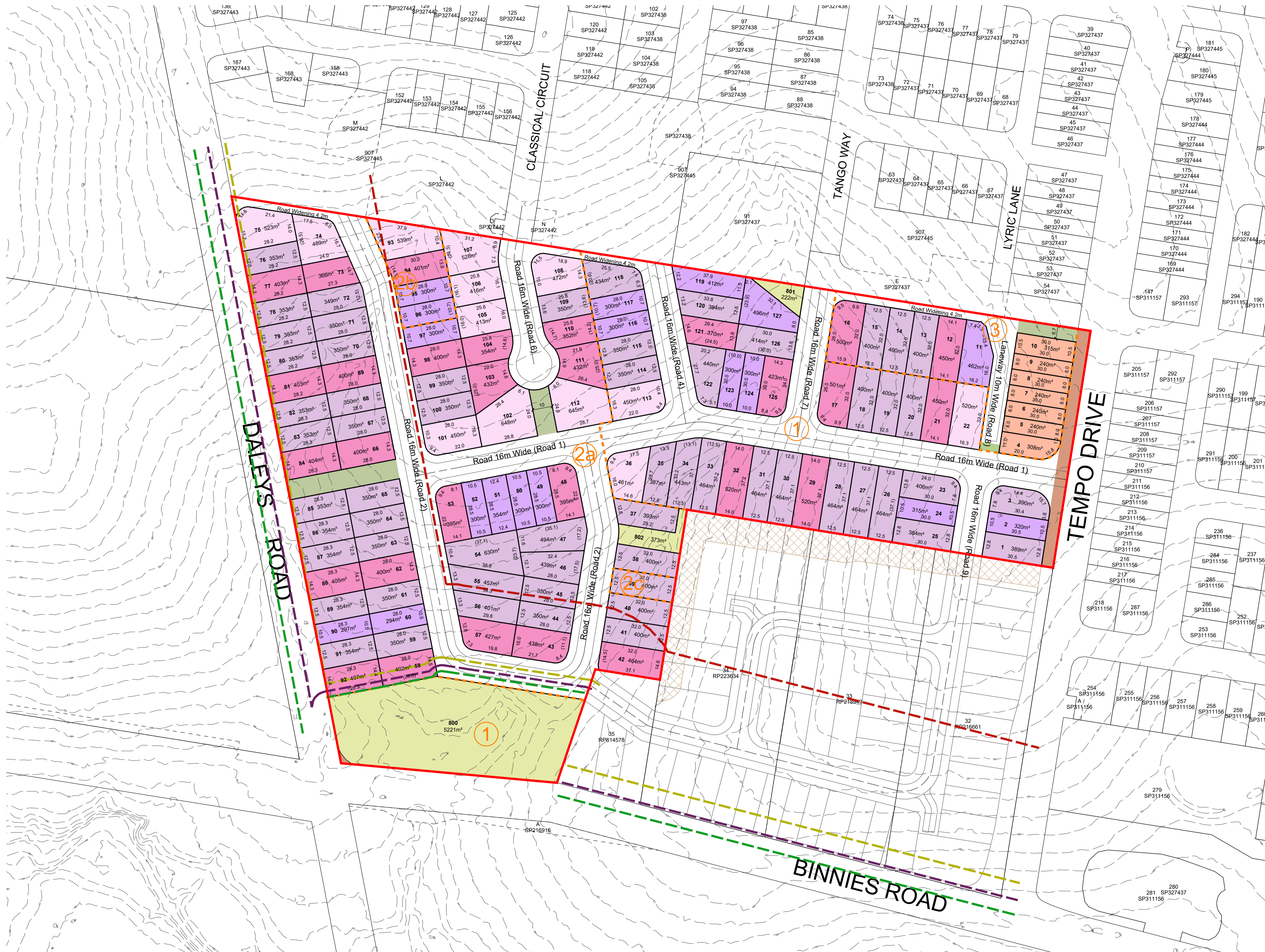
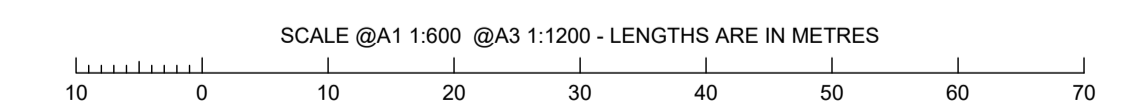
- Site Boundary
- Contours (1.0m interval)
- Stage Boundary
- 1 Stage No.
- Bushfire Buffer
- BAL 12.5
- BAL 19
- BAL 29
- BAL 40

DEVELOPMENT STATISTICS

RESIDENTIAL ALLOTMENTS	No. Lots	%	Net Area
Terrace	7	5.5%	0.182 ha
10.0m - 12.49m Frontage	18	14.2%	0.594 ha
12.5m - 13.9m Frontage	60	47.2%	2.352 ha
14.0m - 15.9m Frontage	29	22.8%	1.221 ha
16m + Irregular Frontage	13	10.2%	0.655 ha
Total Residential Allotments	127	100.0%	5.004 ha

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	7.527 ha	—
Net Residential Area (no roads)	5.004 ha	66.5%
Detention / Drainage	0.581 ha	7.7%
Pedestrian Links	0.100 ha	1.3%
Road Widening	0.077 ha	1.0%
Road Areas	1.765 ha	23.4%
Total	7.527 ha	100.0%

RP DESCRIPTION: Lot 335 on RP814578



HB LAND PTY LTD

Appendix B

Design Criteria for House/Display Home

PLAN OF DEVELOPMENT - STAGE 1

NOTES:

General

- All development is to be undertaken in accordance with the Development Approval.
 - The maximum height of buildings shall not exceed two (2) storeys.
 - Building height is measured from natural ground level (to avoid any doubt, natural ground level is taken to be the level of the land when the survey plan creating the subject lot was registered).
 - Maximum building location envelopes may be subject to future proposed easements and/or other underground services. A lot can have only one primary frontage. Primary frontages are nominated on this Plan of Development, being the indicative driveway location.
 - For corner lots, no building or structure over 2 metres high is to be built within a 4m x 4m truncation at the corner of two road frontages.
- Setbacks**
- Boundary setbacks are measured to the wall of the structure.
 - Setbacks are as per the Plan of Development Table unless otherwise specified.
 - The location of the built to boundary walls are indicated on the Plan of Development. Where built to boundary walls are not adopted, side setbacks shall be in accordance with the Plan of Development Table unless otherwise specified in these notes.
 - If a built to boundary wall is constructed, it must be constructed on the boundary nominated in this Plan of Development.
 - Maximum length of a built-to-boundary wall is 15 metres long or 50% of the depth of the lot (whichever is lesser).
 - First floor setbacks must not encroach the minimum ground floor setbacks.
 - Garages must not project forward of the front building setback.
 - Eaves should not encroach (other than where buildings are built to boundary) closer than 450mm to the lot boundary, exceptions include:
 - Primary Street frontage, where eaves should not be closer than 2400mm.
 - Houses must be wholly located within the subject lot unless appropriate encroachment rights are secured.
 - For corner lots, a secondary frontage may be applicable, however a pedestrian pathway or road reserve that does not contain a road carriageway is not a secondary frontage.
- On-Site parking and Driveways**
- Off street car park is to be provided in accordance with the following minimum requirements:
 - One room or one bedroom or two bedroom house/dwelling unit - 1 covered space per dwelling.
 - Three or more bedroom house/dwelling unit - 2 spaces per dwelling, one of which must be capable of being covered (may be provided in tandem).
 - The maximum width of a driveway at the lot boundary shall be 4.8 metres for a lot with a double garage and 3 metres for a lot with a single garage.
 - All double garages must be setback behind the main face of the dwelling, with doors articulated, comprising a mix of materials and colours, or staggered.
 - Garages are to be located along the Built to Boundary wall. Where no Built to Boundary wall is proposed, garages are to be located on the low side of the lot. Where the lot has no low side, garages are to be located on the western or southern side of the lot.
 - Maximum of one driveway per dwelling unless it is a corner lot where the minimum distance required in note 22 can be

achieved and no retaining walls are present.

- Where more than one driveway is proposed, confirmation from a suitably qualified engineer is required to confirm that there is no further impact on the safety of the adjacent roadway/intersection.
- An access driveway is located as far as possible from an intersection, and other driveways, except if in a restricted area where it can be demonstrated that safety and operational performance of the transport system are not compromised. The minimum distance of a driveway from an intersection is 6.0m from the kerb tangent point.

Private Open Space

- Private open space is to be provided in accordance with the following requirements:
 - Two bedroom house/dwelling unit – minimum 9m² with a minimum dimension of 2.4m;
 - Three or more bedroom house/dwelling – minimum 12m² with a minimum dimension 2.4m
- Private open space must be in accordance with the following requirements:
 - Accessible from a living room; and
 - Adequate space to accommodate a table, chair, planting, barbeque and shade; and
 - Maximum gradient not exceeding 1:10.

Street Address

- Letterboxes must be clearly visible and identifiable from street.
- Buildings must address each street, pathway or park frontage through the inclusion of window openings / glazing in doors and one or more of the following design elements in the related facade:
 - Verandahs; and/or
 - Porches; and/or
 - Awning and shade structures; and/or
 - Variation to roof and building lines; and/or
 - Use of varying building materials.
- All buildings with a width of more than 10 metres that are visible from a street or a park must be articulated to reduce the mass of the building by one or more of the following:
 - Windows recessed into the facade; and/or
 - Balconies, porches or verandah; and/or
 - Window Hoods/Screens; and/or
 - Shadow lines are created on the building through minor changes in the facade (100 millimetres minimum).
- Carports and garages are to be compatible with the main building design in terms of height, roof form, detailing, materials and colours.

Fencing

- Fencing, screening or level changes to provide privacy but still allow for overlooking of the street and park to promote casual surveillance.
- Fencing on all primary frontages has a maximum height of 1.2 metres where solid or has a maximum height of 1.8 metres where containing openings that make the fence at least 50% transparent. Fencing on all secondary frontages has a maximum height of 1.8 where containing openings that make the fence at least 25% transparent.
- Notwithstanding the above, solid front fences and walls may be 1.8 metres in height if the dwelling has a frontage to a street with traffic volumes in excess of, or projected to exceed, 10,000 vehicles per day.
- Fences on pedestrian linkages are to have a maximum height of 1.2m where solid or have a maximum height of 1.8m where containing openings that make the fence more than 50% transparent.

Bushfire Management

- Lots 58, 92 and the drainage reserve Lot (800) may be subject to bushfire hazard requiring compliance with a relevant Australian Standard – Please refer to the Bushfire Management Plan; Ref 001.04.24, version Rev 1, dated 1 May 2024, prepared by Bushfire Risk Reducers accompanying this Plan of Development.
- The Plan of Development includes BAL ratings for Lots 58 & 92 (Bushfire Management Plan; Ref 001.04.24, version Rev 1, dated 1 May 2024, prepared by Bushfire Risk Reducers). Notwithstanding the BAL ratings shown on this plan, it is recommended that lot specific advice be sought prior to the commencement of design.

Additional Criteria for Secondary Dwellings

- Design criteria for Secondary Dwellings is as per Schedule 3 of the Ripley Valley Development Scheme.

Additional Criteria for Lots Fronting Tempo Drive

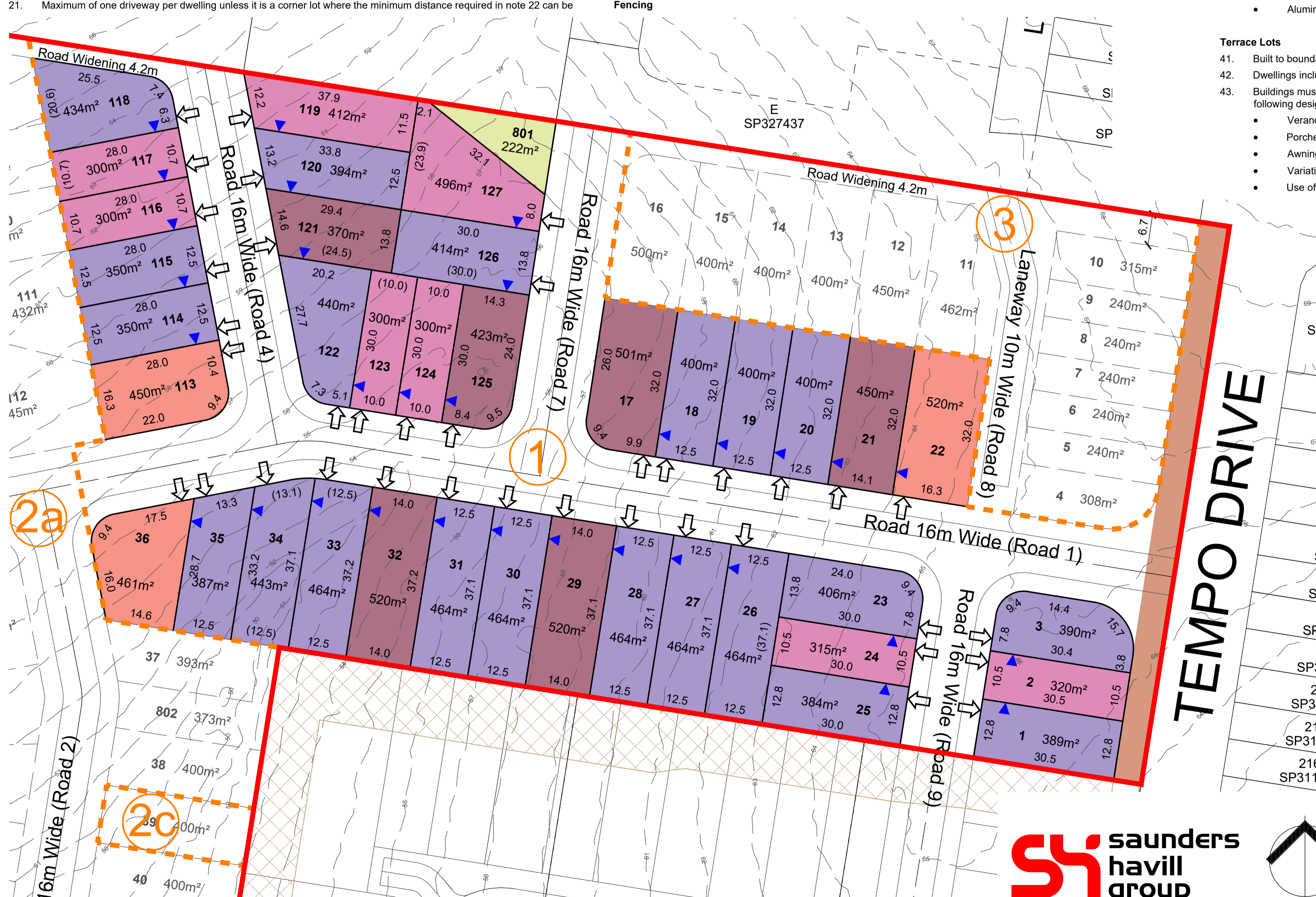
- Requirements for 'street address' as outlined in item 26 of this Plan of Development apply to the Tempo Drive frontage.
- Frontage treatments are to extend for a minimum of 50% of the width of the facade and windows/glazing must occupy at least 25% of the facade area.
- Dwellings include provision for pedestrian access to Tempo Drive by way of a gate to the Tempo Drive frontage.
- Unless an alternate solution is approved by the assessment manager, a maximum 1.5 metre high surveillance fence with a minimum of 50% transparency along the common boundary is to be provided along Tempo Drive. Retaining walls associated with any fencing is to be located entirely within the residential lots.

Additional Criteria for Lots Adjoining Public Open Space

- Lots with a common boundary with public open space (being park, drainage or reserve) provide for passive surveillance/overlooking of the open space by inclusion of two of the following design elements:
 - Habitable room windows facing the open space; or
 - For double storey dwellings, balconies overlooking the open space; or
 - For single storey dwellings, 1.2 metre high fencing with a minimum of 50% transparency along the common boundary with the open space; or
 - Aluminium pool fencing to the common boundary with the open space.

Terrace Lots

- Built to boundary wall for terrace lots shall be a maximum of 75% of boundary length.
- Dwellings include provision of a door and pedestrian access gate to Tempo Drive.
- Buildings must address each street, through the inclusion of window openings/glazing in doors and one or more of the following design elements in the related facade(s):
 - Verandahs; and/or
 - Porches; and/or
 - Awning and shade structures; and/or
 - Variation in roof and building lines; and/or
 - Use of varying building materials.



PLAN OF DEVELOPMENT TABLE #	Terrace < 10.0m Frontage		Villa 10.0m - 12.49m Frontage		Premium Villa 12.5m - < 14.0m Frontage		Courtyard 14.0m - < 16.0m Frontage		Premium Courtyard > 16.0m Frontage & Irregular Lots	
	Ground Floor	First Floor	Ground Floor	First Floor	Ground Floor	First Floor	Ground Floor	First Floor	Ground Floor	First Floor
Front / Primary Frontage *	2.4m	2.4m	3.0m	3.0m	3.0m*	3.0m*	3.0m*	3.0m*	3.0m*	3.0m*
Garage	4.5m	4.5m	5.0m	n/a	5.0m	n/a	5.0m	n/a	5.0m	n/a
Rear	0.9m	1.0m	0.9	1.0m	0.9m	1.0m	0.9m	1.0m	0.9m	1.0m
Side - Setbacks										
Built to Boundary	0.0m Mandatory	1.0m	0.0m Mandatory	1.0m	0.0m Mandatory	1.0m	0.0m Optional	1.0m	0.0m Optional	1.0m
Non Built to Boundary	0.9m	0.9m	0.9m	0.9m	1.0m	1.0m	1.0m	1.0m	1.0m	1.0m
Corner Lots - Secondary frontage	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m
Park / Drainage Reserve **	n/a	n/a	n/a	n/a	1.0m	1.0m	1.0m	1.0m	1.0m	1.0m
Site Coverage (Maximum)	75%		70%		65%		65%		65%	

Except where overridden by the Bushfire Management Plan (refer to notes) or as otherwise specified
 * 2.4m setback permitted to enclosed entry features such as porches, porticos, verandahs and balconies
 ** 0m setback permitted to enclosed verandahs and balconies.

NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

DCDB © State of Queensland (Department of Natural Resources and Mines) 2019.
 Lidar Data © State of Queensland (Department of Natural Resources and Mines) 2016.

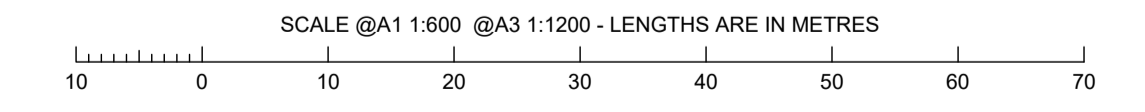
* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

PROJECTION: GDA2020 MGA56
 SUBJECT BOUNDARIES: DCDB
 CONTOURS: ELVIS - LIDAR (2017)

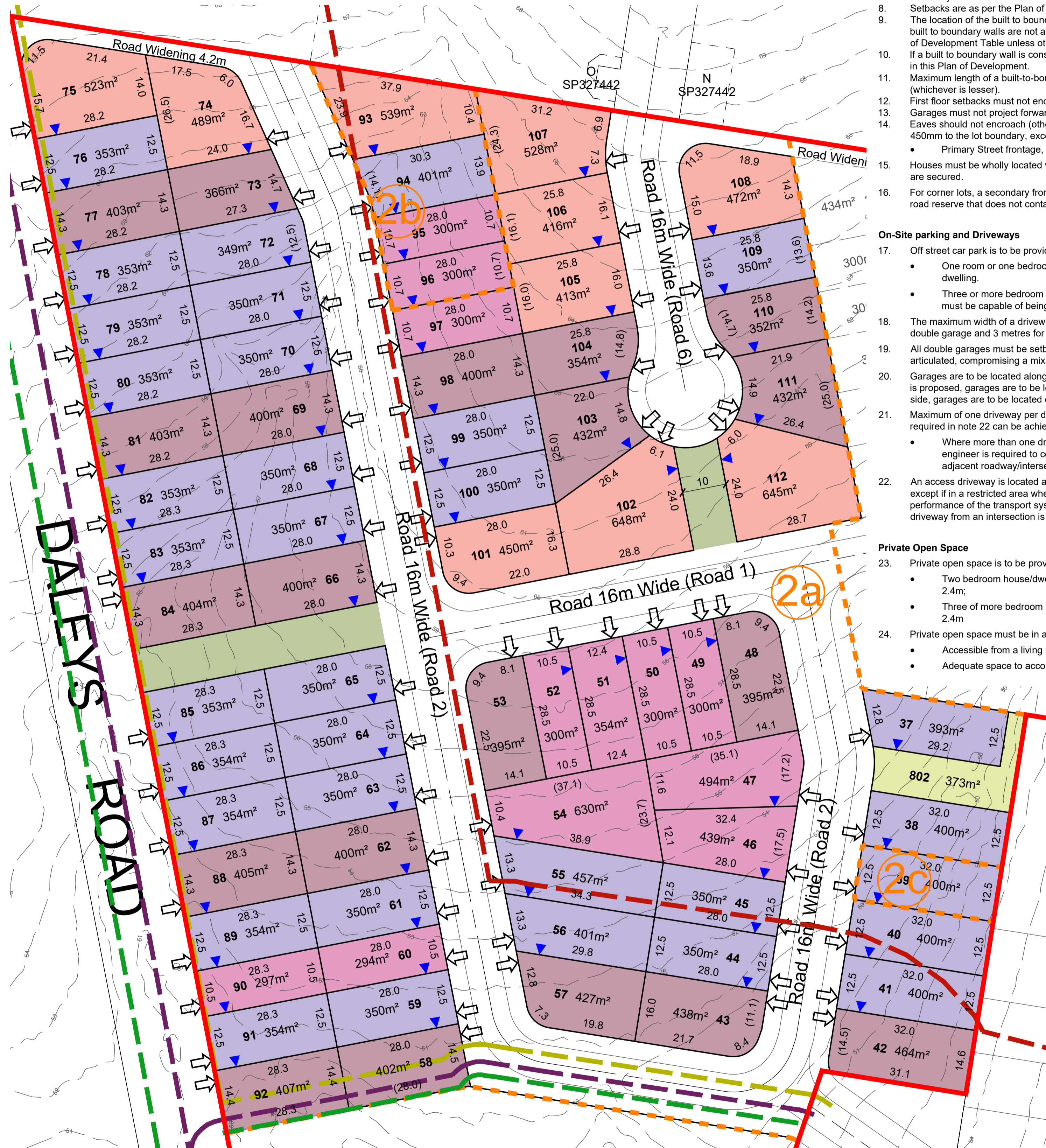
LEGEND

- Site Boundary
- Contours (1.0m interval)
- Stage Boundary
- 1 Stage No.

RP DESCRIPTION: Lot 335 on RP814578



PLAN OF DEVELOPMENT - STAGE 2



NOTES:

General

- All development is to be undertaken in accordance with the Development Approval.
- The maximum height of buildings shall not exceed two (2) storeys.
- Building height is measured from natural ground level (to avoid any doubt, natural ground level is taken to be the level of the land when the survey plan creating the subject lot was registered).
- Maximum building location envelopes may be subject to future proposed easements and/or other underground services.
- A lot can have only one primary frontage. Primary frontages are nominated on this Plan of Development, being the indicative driveway location.
- For corner lots, no building or structure over 2 metres high is to be built within a 4m x 4m truncation at the corner of two road frontages.

Setbacks

- Boundary setbacks are measured to the wall of the structure.
- Setbacks are as per the Plan of Development Table unless otherwise specified.
- The location of the built to boundary walls are indicated on the Plan of Development. Where built to boundary walls are not adopted, side setbacks shall be in accordance with the Plan of Development Table unless otherwise specified in these notes.
- If a built to boundary wall is constructed, it must be constructed on the boundary nominated in this Plan of Development.
- Maximum length of a built-to-boundary wall is 15 meters long or 50% of the depth of the lot (whichever is lesser).
- First floor setbacks must not encroach the minimum ground floor setbacks.
- Garages must not project forward of the front building setback.
- Eaves should not encroach (other than where buildings are built to boundary) closer than 450mm to the lot boundary, exceptions include:
 - Primary Street frontage, where eaves should not be closer than 2400mm.
- Houses must be wholly located within the subject lot unless appropriate encroachment rights are secured.
- For corner lots, a secondary frontage may be applicable, however a pedestrian pathway or road reserve that does not contain a road carriageway is not a secondary frontage.

On-Site parking and Driveways

- Off street car park is to be provided in accordance with the following minimum requirements:
 - One room or one bedroom or two bedroom house/dwelling unit - 1 covered space per dwelling.
 - Three or more bedroom house/dwelling unit - 2 spaces per dwelling, one of which must be capable of being covered (may be provided in tandem).
- The maximum width of a driveway at the lot boundary shall be 4.8 metres for a lot with a double garage and 3 metres for a lot with a single garage.
- All double garages must be setback behind the main face of the dwelling, with doors articulated, compromising a mix of materials and colours, or staggered.
- Garages are to be located along the Built to Boundary wall. Where no Built to Boundary wall is proposed, garages are to be located on the low side of the lot. Where the lot has no low side, garages are to be located on the western or southern side of the lot.
- Maximum of one driveway per dwelling unless it is a corner lot where the minimum distance required in note 22 can be achieved and no retaining walls are present.
 - Where more than one driveway is proposed, confirmation from a suitably qualified engineer is required to confirm that there is no further impact on the safety of the adjacent roadway/intersection.
- An access driveway is located as far as possible from an intersection, and other driveways, except if in a restricted area where it can be demonstrated that safety and operational performance of the transport system are not compromised. The minimum distance of a driveway from an intersection is 6.0m from the kerb tangent point.

Private Open Space

- Private open space is to be provided in accordance with the following requirements:
 - Two bedroom house/dwelling unit - minimum 9m² with a minimum dimension of 2.4m;
 - Three or more bedroom house/dwelling - minimum 12m² with a minimum dimension 2.4m
- Private open space must be in accordance with the following requirements:
 - Accessible from a living room; and
 - Adequate space to accommodate a table, chair, planting, barbeque and shade; and

- Maximum gradient not exceeding 1:10.

Street Address

- Letterboxes must be clearly visible and identifiable from street.
- Buildings must address each street, pathway or park frontage through the inclusion of window openings / glazing in doors and one or more of the following design elements in the related facade:
 - Verandahs; and/or
 - Porches; and/or
 - Awning and shade structures; and/or
 - Variation to roof and building lines; and/or
 - Use of varying building materials.

- All buildings with a width of more than 10 metres that are visible from a street or a park must be articulated to reduce the mass of the building by one or more of the following:
 - Windows recessed into the facade; and/or
 - Balconies, porches or verandah; and/or
 - Window Hoods/Screens; and/or
 - Shadow lines are created on the building through minor changes in the facade (100 millimetres minimum).

- Carports and garages are to be compatible with the main building design in terms of height, roof form, detailing, materials and colours.

Fencing

- Fencing, screening or level changes to provide privacy but still allow for overlooking of the street and park to promote casual surveillance.
- Fencing on all primary frontages has a maximum height of 1.2 metres where solid or has a maximum height of 1.8 metres where containing openings that make the fence at least 50% transparent. Fencing on all secondary frontages has a maximum height of 1.8 metres where containing openings that make the fence at least 25% transparent.
- Notwithstanding the above, solid front fences and walls may be 1.8 metres in height if the dwelling has a frontage to a street with traffic volumes in excess of, or projected to exceed, 10,000 vehicles per day.
- Fences on pedestrian linkages are to have a maximum height of 1.2m where solid or have a maximum height of 1.8m where containing openings that make the fence more than 50% transparent.

Bushfire Management

- Lots 58, 92 and the drainage reserve Lot (800) may be subject to bushfire hazard requiring compliance with a relevant Australian Standard - Please refer to the Bushfire Management Plan; Ref 001.04.24, version Rev 1, dated 1 May 2024, prepared by Bushfire Risk Reducers accompanying this Plan of Development.
- The Plan of Development includes BAL ratings for Lots 58 & 92 (Bushfire Management Plan; Ref 001.04.24, version Rev 1, dated 1 May 2024, prepared by Bushfire Risk Reducers). Notwithstanding the BAL ratings shown on this plan, it is recommended that lot specific advice be sought prior to the commencement of design.

Additional Criteria for Secondary Dwellings

- Design criteria for Secondary Dwellings is as per Schedule 3 of the Ripley Valley Development Scheme.

Additional Criteria for Lots Fronting Tempo Drive

- Requirements for 'street address' as outlined in item 26 of this Plan of Development apply to the Tempo Drive frontage.
- Frontage treatments are to extend for a minimum of 50% of the width of the facade and windows/glazing must occupy at least 25% of the facade area.
- Dwellings include provision for pedestrian access to Tempo Drive by way of a gate to the Tempo Drive frontage.
- Unless an alternate solution is approved by the assessment manager, a maximum 1.5 metre high surveillance fence with a minimum of 50% transparency along the common boundary is to be provided along Tempo Drive. Retaining walls associated with any fencing is to be located entirely within the residential lots.

Additional Criteria for Lots Adjoining Public Open Space

- Lots with a common boundary with public open space (being park, drainage or reserve) provide for passive surveillance/overlooking of the open space by inclusion of two of the following design elements:
 - Habitable room windows facing the open space; or
 - For double storey dwellings, balconies overlooking the open space; or
 - For single storey dwellings, 1.2 metre high fencing with a minimum of 50% transparency along the common boundary with the open space; or
 - Aluminium pool fencing to the common boundary with the open space.

Terrace Lots

- Built to boundary wall for terrace lots shall be a maximum of 75% of boundary length.
- Dwellings include provision of a door and pedestrian access gate to Tempo Drive.
- Buildings must address each street, through the inclusion of window openings/glazing in doors and one or more of the following design elements in the related facade(s):
 - Verandahs; and/or
 - Porches; and/or
 - Awning and shade structures; and/or
 - Variation in roof and building lines; and/or
 - Use of varying building materials.

NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

DCDB © State of Queensland (Department of Natural Resources and Mines) 2019.

Lidar Data © State of Queensland (Department of Natural Resources and Mines) 2016.

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

PROJECTION: GDA2020 MGA56

SUBJECT BOUNDARIES: DCDB

CONTOURS: ELVIS - LIDAR (2017)

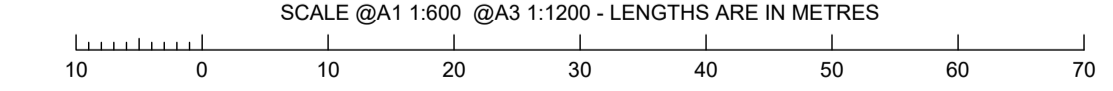
LEGEND

- Site Boundary
- Contours (1.0m interval)
- Stage Boundary
- Stage No.
- BAL 12.5
- BAL 19
- BAL 29
- BAL 40

PLAN OF DEVELOPMENT TABLE #	Terrace < 10.0m Frontage		Villa 10.0m - 12.49m Frontage		Premium Villa 12.5m - < 14.0m Frontage		Courtyard 14.0m - < 16.0m Frontage		Premium Courtyard > 16.0m Frontage & Irregular Lots	
	Ground Floor	First Floor	Ground Floor	First Floor	Ground Floor	First Floor	Ground Floor	First Floor	Ground Floor	First Floor
Front / Primary Frontage *	2.4m	2.4m	3.0m	3.0m	3.0m*	3.0m*	3.0m*	3.0m*	3.0m*	3.0m*
Garage	4.5m	4.5m	5.0m	n/a	5.0m	n/a	5.0m	n/a	5.0m	n/a
Rear	0.9m	1.0m	0.9	1.0m	0.9m	1.0m	0.9m	1.0m	0.9m	1.0m
Side - Setbacks										
Built to Boundary	0.0m	1.0m	0.0m	1.0m	0.0m	1.0m	0.0m	1.0m	0.0m	1.0m
	Mandatory		Mandatory		Mandatory		Optional			
Non Built to Bounday	0.9m	0.9m	0.9m	0.9m	1.0m	1.0m	1.0m	1.0m	1.0m	1.0m
Corner Lots - Secondary frontage	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m
Park / Drainage Reserve **	n/a	n/a	n/a	n/a	1.0m	1.0m	1.0m	1.0m	1.0m	1.0m
Site Coverage (Maximum)	75%		70%		65%		65%		65%	

Except where overridden by the Bushfire Management Plan (refer to notes) or as otherwise specified
 * 2.4m setback permitted to enclosed entry features such as porches, porticos, verandahs and balconies
 ** 0m setback permitted to enclosed verandahs and balconies.

RP DESCRIPTION: Lot 335 on RP814578



HB LAND PTY LTD

PLAN OF DEVELOPMENT - STAGE 3

NOTES:

General

- All development is to be undertaken in accordance with the Development Approval.
- The maximum height of buildings shall not exceed two (2) storeys.
- Building height is measured from natural ground level (to avoid any doubt, natural ground level is taken to be the level of the land when the survey plan creating the subject lot was registered).
- Maximum building location envelopes may be subject to future proposed easements and/or other underground services.
- A lot can have only one primary frontage. Primary frontages are nominated on this Plan of Development, being the indicative driveway location.
- For corner lots, no building or structure over 2 metres high is to be built within a 4m x 4m truncation at the corner of two road frontages.

Setbacks

- Boundary setbacks are measured to the wall of the structure.
- Setbacks are as per the Plan of Development Table unless otherwise specified.
- The location of the built to boundary walls are indicated on the Plan of Development. Where built to boundary walls are not adopted, side setbacks shall be in accordance with the Plan of Development Table unless otherwise specified in these notes.
- If a built to boundary wall is constructed, it must be constructed on the boundary nominated in this Plan of Development.
- Maximum length of a built-to-boundary wall is 15 meters long or 50% of the depth of the lot (whichever is lesser).
- First floor setbacks must not encroach the minimum ground floor setbacks.
- Garages must not project forward of the front building setback.
- Eaves should not encroach (other than where buildings are built to boundary) closer than 450mm to the lot boundary, exceptions include:
 - Primary Street frontage, where eaves should not be closer than 2400mm.
- Houses must be wholly located within the subject lot unless appropriate encroachment rights are secured.
- For corner lots, a secondary frontage may be applicable, however a pedestrian pathway or road reserve that does not contain a road carriageway is not a secondary frontage.

On-Site parking and Driveways

- Off street car park is to be provided in accordance with the following minimum requirements:
 - One room or one bedroom or two bedroom house/dwelling unit - 1 covered space per dwelling.
 - Three or more bedroom house/dwelling unit - 2 spaces per dwelling, one of which must be capable of being covered (may be provided in tandem).
- The maximum width of a driveway at the lot boundary shall be 4.8 metres for a lot with a double garage and 3 metres for a lot with a single garage.
- All double garages must be setback behind the main face of the dwelling, with doors articulated, compromising a mix of materials and colours, or staggered.
- Garages are to be located along the Built to Boundary wall. Where no Built to Boundary wall is proposed, garages are to be located on the low side of the lot. Where the lot has no low side, garages are to be located on the western or southern side of the lot.
- Maximum of one driveway per dwelling unless it is a corner lot where the minimum distance required in note 22 can be achieved and no retaining walls are present.
 - Where more than one driveway is proposed, confirmation from a suitably qualified engineer is required to confirm that there is no further impact on the safety of the adjacent roadway/intersection.
- An access driveway is located as far as possible from an intersection, and other driveways, except if in a restricted area where it can be demonstrated that safety and operational performance of the transport system are not compromised. The minimum distance of a driveway from an intersection is 6.0m from the kerb tangent point.

Private Open Space

- Private open space is to be provided in accordance with the following requirements:
 - Two bedroom house/dwelling unit - minimum 9m² with a minimum dimension of 2.4m;
 - Three or more bedroom house/dwelling - minimum 12m² with a minimum dimension 2.4m
- Private open space must be in accordance with the following requirements:
 - Accessible from a living room; and

- Adequate space to accommodate a table, chair, planting, barbeque and shade; and
- Maximum gradient not exceeding 1:10.

Street Address

- Letterboxes must be clearly visible and identifiable from street.
- Buildings must address each street, pathway or park frontage through the inclusion of window openings / glazing in doors and one or more of the following design elements in the related facade:
 - Verandahs; and/or
 - Porches; and/or
 - Awning and shade structures; and/or
 - Variation to roof and building lines; and/or
 - Use of varying building materials.
- All buildings with a width of more than 10 metres that are visible from a street or a park must be articulated to reduce the mass of the building by one or more of the following:
 - Windows recessed into the façade; and/or
 - Balconies, porches or verandah; and/or
 - Window Hoods/Screens; and/or
 - Shadow lines are created on the building through minor changes in the façade (100 millimetres minimum).
- Carports and garages are to be compatible with the main building design in terms of height, roof form, detailing, materials and colours.

Fencing

- Fencing, screening or level changes to provide privacy but still allow for overlooking of the street and park to promote casual surveillance.
- Fencing on all primary frontages has a maximum height of 1.2 metres where solid or has a maximum height of 1.8 metres where containing openings that make the fence at least 50% transparent. Fencing on all secondary frontages has a maximum height of 1.8 where containing openings that make the fence at least 25% transparent.
- Notwithstanding the above, solid front fences and walls may be 1.8 metres in height if the dwelling has a frontage to a street with traffic volumes in excess of, or projected to exceed, 10,000 vehicles per day.
- Fences on pedestrian linkages are to have a maximum height of 1.2m where solid or have a maximum height of 1.8m where containing openings that make the fence more than 50% transparent.

Bushfire Management

- Lots 58, 92 and the drainage reserve Lot (800) may be subject to bushfire hazard requiring compliance with a relevant Australian Standard - Please refer to the Bushfire Management Plan; Ref 001.04.24, version Rev 1, dated 1 May 2024, prepared by Bushfire Risk Reducers accompanying this Plan of Development.
- The Plan of Development includes BAL ratings for Lots 58 & 92 (Bushfire Management Plan; Ref 001.04.24, version Rev 1, dated 1 May 2024, prepared by Bushfire Risk Reducers). Notwithstanding the BAL ratings shown on this plan, it is recommended that lot specific advice be sought prior to the commencement of design.

Additional Criteria for Secondary Dwellings

- Design criteria for Secondary Dwellings is as per Schedule 3 of the Ripley Valley Development Scheme.

Additional Criteria for Lots Fronting Tempo Drive

- Requirements for 'street address' as outlined in item 26 of this Plan of Development apply to the Tempo Drive frontage.
- Frontage treatments are to extend for a minimum of 50% of the width of the facade and windows/glazing must occupy at least 25% of the facade area.
- Dwellings include provision for pedestrian access to Tempo Drive by way of a gate to the Tempo Drive frontage.
- Unless an alternate solution is approved by the assessment manager, a maximum 1.5 metre high surveillance fence with a minimum of 50% transparency along the common boundary is to be provided along Tempo Drive. Retaining walls associated with any fencing is to be located entirely within the residential lots.

Additional Criteria for Lots Adjoining Public Open Space

- Lots with a common boundary with public open space (being park, drainage or reserve) provide for passive surveillance/overlooking of the open space by inclusion of two of the following design elements:
 - Habitable room windows facing the open space; or
 - For double storey dwellings, balconies overlooking the open space; or
 - For single storey dwellings, 1.2 metre high fencing with a minimum of 50% transparency along the common boundary with the open space; or
 - Aluminium pool fencing to the common boundary with the open space.

Terrace Lots

- Built to boundary wall for terrace lots shall be a maximum of 75% of boundary length.
- Dwellings include provision of a door and pedestrian access gate to Tempo Drive.
- Buildings must address each street, through the inclusion of window openings/glazing in doors and one or more of the following design elements in the related facade(s):
 - Verandahs; and/or
 - Porches; and/or
 - Awning and shade structures; and/or
 - Variation in roof and building lines; and/or
 - Use of varying building materials.

NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

DCDB © State of Queensland (Department of Natural Resources and Mines) 2019.
Lidar Data © State of Queensland (Department of Natural Resources and Mines) 2016.

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

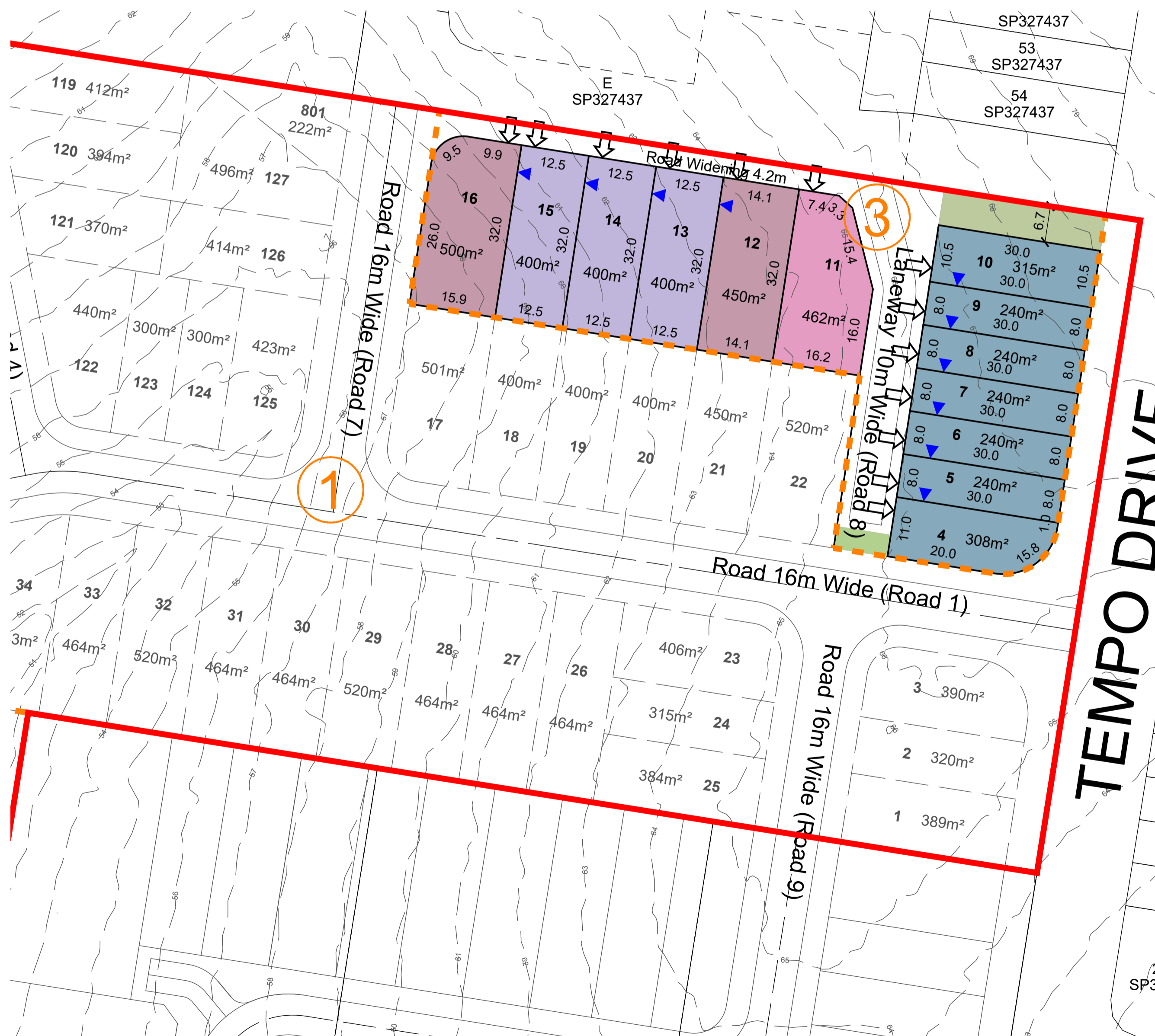
PROJECTION: GDA2020 MGA56

SUBJECT BOUNDARIES: DCDB

CONTOURS: ELVIS - LIDAR (2017)

LEGEND

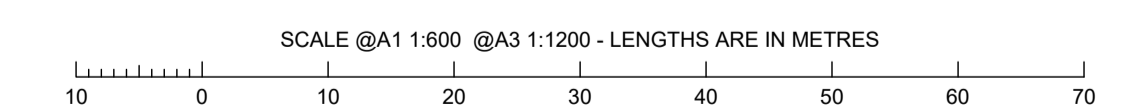
- Site Boundary
- Contours (1.0m interval)
- Stage Boundary
- 1 Stage No.



PLAN OF DEVELOPMENT TABLE #	Terrace < 10.0m Frontage		Villa 10.0m - 12.49m Frontage		Premium Villa 12.5m - < 14.0m Frontage		Courtyard 14.0m - < 16.0m Frontage		Premium Courtyard > 16.0m Frontage & Irregular Lots	
	Ground Floor	First Floor	Ground Floor	First Floor	Ground Floor	First Floor	Ground Floor	First Floor	Ground Floor	First Floor
Front / Primary Frontage *	2.4m	2.4m	3.0m	3.0m	3.0m*	3.0m*	3.0m*	3.0m*	3.0m*	3.0m*
Garage	4.5m	4.5m	5.0m	n/a	5.0m	n/a	5.0m	n/a	5.0m	n/a
Rear	0.9m	1.0m	0.9	1.0m	0.9m	1.0m	0.9m	1.0m	0.9m	1.0m
Side - Setbacks										
Built to Boundary	0.0m	1.0m	0.0m	1.0m	0.0m	1.0m	0.0m	1.0m	0.0m	1.0m
	Mandatory		Mandatory		Mandatory		Optional		Optional	
Non Built to Bounday	0.9m	0.9m	0.9m	0.9m	1.0m	1.0m	1.0m	1.0m	1.0m	1.0m
Corner Lots - Secondary frontage	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m
Park / Drainage Reserve **	n/a	n/a	n/a	n/a	1.0m	1.0m	1.0m	1.0m	1.0m	1.0m
Site Coverage (Maximum)	75%		70%		65%		65%		65%	

- # Except where overridden by the Bushfire Management Plan (refer to notes) or as otherwise specified
- * 2.4m setback permitted to enclosed entry features such as porches, porticos, verandahs and balconies
- ** 0m setback permitted to enclosed verandahs and balconies.

RP DESCRIPTION: Lot 335 on RP814578



HB LAND PTY LTD

Appendix C

Landscape Masterplan



BINNIES ROAD | RIPLEY
LANDSCAPE CONCEPT PLAN · OCTOBER 2024 · 11826 ISSUE B

BINNIES ROAD RIPLEY

BINNIES ROAD

RIPLEY



Prepared by:

Saunders Havill Group
9 Thompson Street,
Bowen Hills QLD 4006
T. 1300 123 744
ABN 24 144 972 949

Prepared for:

HB Property Group
Level 1, 119 Robertson Street
Fortitude Valley
QLD 4006
T. 0401 539 928

CONTENTS

Cover Page	01
Contents	02
Site Context	03
Site Analysis	04
Site Master Plan	05
Connectivity Plan	06
Street Tree Intent Plan	07
Concept Plan - Sheet 1	08
Concept Plan - Sheet 2	09
Indicative Plant Palette	10
Design Standards & Landscape Finishes	11

Information within this document is the property of Saunders Havill Group and is not authorised for reproduction or use in whole or part without written permission. All concept designs and artwork within this document is copyright of and remains the property of Saunders Havill Group. All rights reserved. Any unauthorised or redistribution of part or all of in any form without prior consent from Saunders Havill Group is strictly prohibited.

Reproduction or redistributing design or artwork concept provided by Saunders Havill Group regardless of format, shall adhere to the following guideline:
- the design/artwork concept should not be edited or changed aesthetically, however it can be cropped or framed to suit respective mediums;
- any necessary changes to the design/artwork concept if approved shall be instructed by Saunders Havill Group's client only and not by other third parties unless agreed to between Saunders Havill Group and the client.

These plans have been prepared for the exclusive use of the client. Saunders Havill Group do not accept responsibility for any use of or reliance upon the contents of these drawings by any third party.



LEGEND

- SITE BOUNDARY
- FUTURE URBAN
- SUB URBAN
- REGIONAL BUSINESS AND INDUSTRY LOW IMPACT
- RURAL
- BUSINESS PARK
- SPECIAL USE
- RECREATION AND SPORTS PARK
- TOWN CENTRE
- LOCAL RETAIL AND COMMERCIAL
- REGIONAL BUSINESS AND INDUSTRY BUFFER
- 🌲 PARKS
- 🏫 SCHOOLS
- ★ SHOPPING CENTRE
- 🚂 TRAIN STATION










LEGEND

-  SITE BOUNDARY
-  WATER BODY



LEGEND

-  VERGE AREA
-  INDICATIVE LOT LAYOUT
-  INDICATIVE STREET NETWORK
Subject to review of civil kerb extents at OPW phase
-  INDICATIVE STREET TREE LOCATIONS
-  SITE BOUNDARY
-  INDICATIVE FOOTPATH
-  INDICATIVE LOTS
-  PEDESTRIAN LINK
-  STORMWATER BASIN / CORRIDOR
(SEE PAGE 07 FOR MORE DETAILS)
-  POSSIBLE ENTRY STATEMENT WITHIN PRIVATE LOTS 3 & 4. TO BE CONFIRMED WITH CLIENT AT DETAILED DESIGN STAGE



LEGEND

- 16M WIDE URBAN ACCESS ROAD
- 10M SHARED DRIVEWAY ACCESS
- INDICATIVE 1.5M FOOTPATH
- PEDESTRIAN LINK
- ROAD WIDENING
- ROAD UPGRADE



LEGEND

- CUPANIOPSIS ANACARDIODES (TUCKEROO)
- WATERHOUSEA FLORIBUNDA (WEEPING LILLYPILLY)
- FLINDERSIA AUSTRALIS (CROWS ASH)
Trees to match existing street trees
- ELAEOCARPUS EUMUNDI (SMOOTH LEAVED QUANDONG)
- SYZYGIUM LEUHAMII (RIBERRY)
ELAEOCARPUS RETICULATUS (BLUEBERRY ASH)
To Laneways, Pedestrian Links & Stormwater
Overland flows
- ARAUCARIA HETEROPHYLLA (NORFOLK ISLAND PINE)
Trees to match existing street trees on Tempo Drive



LEGEND

- SITE BOUNDARY
- BOLLARDS TO ROAD FRONTAGE. REMOVABLE BOLLARD OR LOCKING RAIL ACCESS POINT TO BE PROVIDED. Confirm at detailed design stage.
- SEMI PERMEABLE FENCING TO LOT BOUNDARIES FRONTING STORMWATER BASINS AND PEDESTRIAN LINKS
- FIRE RETARDANT FENCING (COLORBOND OR SIMILAR) TO LOT 100 & 249 SIDE BOUNDARIES FRONTING STORMWATER LOT
- 1** DETENTION BASIN
- 2** BIO-RETENTION BASIN
- 3** 3M TURF FIRE BREAK ADJACENT TO LOTS 100 & 249 TO MEET BUSHFIRE REQUIREMENTS
- 4** WHERE EMBANKMENTS ARE SUITABLE FOR TURF OUTCOME (1:6 MAX), TURF PROPOSED IN LIEU OF PLANTING
- 5** STORM WATER ACCESS DRIVEWAYS, LOCK RAILS AND FOREBAYS - REFER CIVIL FOR DETAILS
- 6** BATTER PLANTING
Native plant species mix. Organic coir and jute matting to be installed to areas subject to inundation
- 7** PEDESTRIAN LINK
Combination of fully mulched and turfed areas to maintain CPTED sightlines, provide shade tree coverage to paths and low maintenance landscape outcomes.
- 8** INDICATIVE 1.5M PATHWAY NETWORK
- 9** LOT 802 STORMWATER RESERVE
- 10** DENSE PLANTING TO EMBANKMENTS AND ADVANCED TREES TO ACT AS VEHICLE BARRIER (NO BOLLARDS PROPOSED) ALONG DALEYS ROAD AND BINNIES ROAD FRONTAGE
- 11** EXISTING FENCE RETAINED TO PRIVATE LOT
- 12** PLANTED SWALE WITH NATIVE GRASSES AND SEDGES TO STABILISE SWALE IN CONJUNCTION WITH CIVIL ROCKWORK ETC.
- 13** ROAD DEDICATION / TRUNCATION



LEGEND

- SITE BOUNDARY
- BOLLARDS TO ROAD FRONTAGE. REMOVABLE BOLLARD OR LOCKING RAIL ACCESS POINT TO BE PROVIDED. Confirm at detailed design stage.
- SEMI PERMEABLE FENCING TO LOT BOUNDARIES FRONTING STORMWATER BASINS AND PEDESTRIAN LINKS
- 1 BATTER PLANTING
Native plant species mix. Organic coir and jute matting to be installed to areas subject to inundation
- 2 PEDESTRIAN LINK
Combination of fully mulched and turfed areas to maintain CPTED sightlines, provide shade tree coverage to paths and low maintenance landscape outcomes.
- 3 INDICATIVE 1.5M PATHWAY NETWORK
- 4 LOT 801 STORMWATER RESERVE
- 5 FUTURE ROAD NETWORK BY OTHERS TO FRONTAGE OF LOTS 326-331
- 6 PLANTED SWALE WITH NATIVE GRASSES AND SEDGES TO STABILISE SWALE IN CONJUNCTION WITH CIVIL ROCKWORK ETC.

GROUNDCOVERS



CAREX appressa



LOMANDRA longifolia



THEMEDA australis



IMPERATA cylindrica



FICINIA nodosa



GAHNIA sieberana



POA poiformis



ENCHYLAENA tomentosa



MYOPORUM ellipticum

FEATURE & SHRUBS



ZAMIA furfuracea



DORYANTHES excelsa



FICUS microcarpa 'Green Island'



MELALEUCA thymifolia



WESTRINGIA fruticosa



SYZYGIUM resilience

TREES & SHRUBS



SYZYGIUM leuhamii



FLINDERSIA australis



ELAEOCARPUS reticulatus



ELAEOCARPUS eumundi



LOPHOSTEMON confertus



CUPANIOPSIS anacardioides



WATERHOUSEA floribunda



ARAUCARIA heterophyll

FIRE RESISTANT SPECIES



LOMANDRA hystrix



LOMANDRA longifolia



HARDENBERGIA violacea



ACACIA myrtifolia



DIANELLA revoluta



PHILYDRUM lanuginosum



BANKSIA robur

Design Standards - Refer to:

Water Sensitive Urban Design Technical Design Guidelines (WSUD TDG) for South East Queensland (Healthy Waterways - Version 1 June 2006

Bioretention Technical Design Guidelines (Water by Design - Version 1 2012 or currently adopted version).

Ipswich Streetscape Design Guide

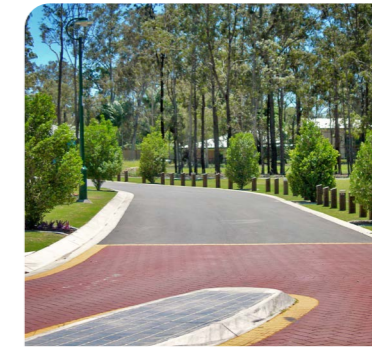
- 4.3 Design Standards
- 4.32 Street Planting Standards
- 4.35 Understorey Planting
- 4.37 Pedestrian Links
- 4.39 Typical Road Reserve Planting



1.



2.



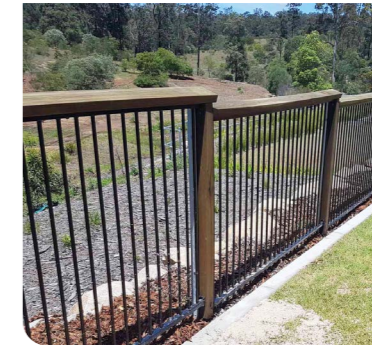
2.



3.



4.



5.



6.

- 1. PEDESTRIAN LINK
- 2. TYPICAL STREETSCAPE
- 3. DETENTION BASIN
- 4. BOLLARDS TO ROAD FRONTAGES
- 5. SEMI PERMEABLE FENCING
- 6. STREET TREES THROUGHOUT

Appendix D

Bushfire Management Plan

BUSHFIRE MANAGEMENT PLAN



Lot 335 on RP814578

187 – 197 Binnies Road, Ripley

Client Reference: 001.04.24



Bushfire Risk Reducers
ABN28 355 366 321

PO Box 4645 Toowoomba East 4350
T] 07 46366367 F] 07 46366383 M] 0438 994465



BPAD
Bushfire
Planning & Design
Accredited Practitioner
Level 3

DISCLAIMER

The following report is made on the basis of the assessment undertaken at this location by Bushfire Risk Reducers in April 2024.

Whilst Bushfire Risk Reducers uses its best endeavors to ensure that the information contained in this report is valid and comprehensive, the company makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which might be incurred as a result of the data being inaccurate or incomplete in any way and for any reason.

Should the Client have any concerns arising from this report or its content, they are requested to contact Bushfire Risk Reducers directly.

REPORT AUTHOR

Alistair Hill

Director - Bushfire Risk Reducers

FPAA BPAD - Level 3 Certified Practitioner

Certification Number: BPD-PA-19034

M] 0438 994465

T] 07 46366367

F] 07 46366383

W] www.bushfire.biz

COPYRIGHT

© Bushfire Risk Reducers

All rights are reserved.



®



DOCUMENT CONTROL**Bushfire Management Plan****Client:** HB Land Pty Ltd**Client Reference:** 001.04.24**Project:** RoL and MCU**Site Location:** 187 – 197 Binnies Road, Ripley

Version	Date	Status	Changes	Author	Approver
Rev 0	3.04.2024	First Draft		AH	AH
Rev 1	1.05.2024	Final Report		AH	AH
Rev 2	24.10.2024	Final Report	Changed Lot Numbers. Layout and staging changes.	AH	AH

Contents

1.0 Introduction	5
2.0 Site and Development Description	5
2.1 Property Description	5
2.2 Proposed Development	6
2.3 Site Location and Layout	6
3.0 Bushfire Hazard Assessment	8
3.1 Bushfire Hazard Classification	8
3.2 Vegetation Assessment, Slope and Separation Distances from Proposed Development	10
3.3 Fuel Accumulation Assessment	11
4.0 Site Constraints and Environmental Values which may limit mitigation options	14
4.1 Fire History and Frequency	15
5.0 Specific Risk Factors Associated with the Development Proposal	15
5.1 Nature of activities anticipated on site	15
5.2 Numbers of people likely to be present	15
6.0 Nature and Severity of Potential Attack	16
6.1 Bushfire Season and Weather	16
6.2 Anticipated Direction of Bushfire Attack	17
6.3 Anticipated Severity of Attack	18
7.0 Bushfire Protection Measures in Combination	20
7.1 Building Construction and Design	20
7.2 Asset Protection Zones and Landscaping	22
7.3 Access and Egress Management	22
7.4 Water Supplies and Utilities	23
7.5 Fire Fighting and Emergency Management Arrangements	23
8.0 Assessment of Proposal Against Ipswich Planning Scheme 2006 Part 11 Division 4	24
9.0 Assessment of Proposal Against State Planning Policy – natural hazards, risk & resilience - Bushfire 2019	27
10.0 Recommendations	28
11.0 Summary	28
12.0 References	29
Appendix 1 – Native species of lower combustibility	29
Appendix 2 – Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots	40
Appendix 3 – Template for Residents Bushfire Emergency Management Plans	47

1.0 Introduction

This report has been commissioned by HB Land Pty Ltd in order to support a Development Application for the subdivision of Lot 335 on RP814578 (the “Subject Lot”) into 127 Residential Lots and 3 drainage reserves; and also in compliance with the Building Code of Australia (BCA), in respect of future buildings on each of the residential Lots.

Ipswich City Council (ICC) bushfire hazard overlay mapping (2006) classifies the site as “bushfire prone area” (BPA). The hazard mapping is created from data that is collected remotely to combine vegetation data with slope and aspect data, and arrive at a hazard rating based on a model specified in State Planning Policy (SPP) 01/03 (*Mitigating the adverse impacts of flood, bushfire and landslide*).

SPP 01/03 was replaced by State Planning Policy– Natural Hazards, Risk & Resilience - Bushfire (October 2019) accompanied by the *Bushfire Resilient Communities Technical Reference Guide* (BRC)(October 2019) with bushfire hazard mapping which designates the entire Subject Lot as BPA.

The designation by Council of land being BPA has the following implications for the proposed development:

1. It requires the production of a Bushfire Management Plan which complies with the Planning Scheme, in this case the Ipswich Planning Scheme (2006).
2. The BMP must demonstrate compliance against the development assessment benchmarks of *State Planning Policy – Natural hazards, risk and resilience – Bushfire* (October 2019); and must be consistent with the *Bushfire Resilient Communities Technical Reference Guide* (BRC)(October 2019).
3. It invokes the Building Code of Australia (BCA), requiring compliance with its bushfire related function performance objectives and with AS3959-2018 *Construction of buildings in bushfire prone areas* for future Class 1, 2 and 3 buildings and associated Class 10A structures.

This Bushfire Management Plan demonstrates compliance with all the above codes and planning instruments. It objectively determines the nature and severity of potential worst case wildfire in the area, and develops risk mitigation measures to be used in combination with established construction needs in accordance with AS3959. It is the implementation of all these protection measures in combination, that demonstrates the viability and conformance of the proposed development in the development application process.

2.0 Site and Development Description

2.1 Property Description

Site ID:	Lot 335 on RP814578 Parish of Ipswich, County of Stanley.
Current address of property:	187 – 197 Binnies Road, Ripley, QLD 4306.
Local Government Area:	Ipswich City Council.
Total Area:	7.534ha
Zoning:	Future Urban

2.2 Proposed Development

The proposed development is planned to create into 127 Residential Lots and 3 Drainage Reserves.

2.3 Site Location and Layout

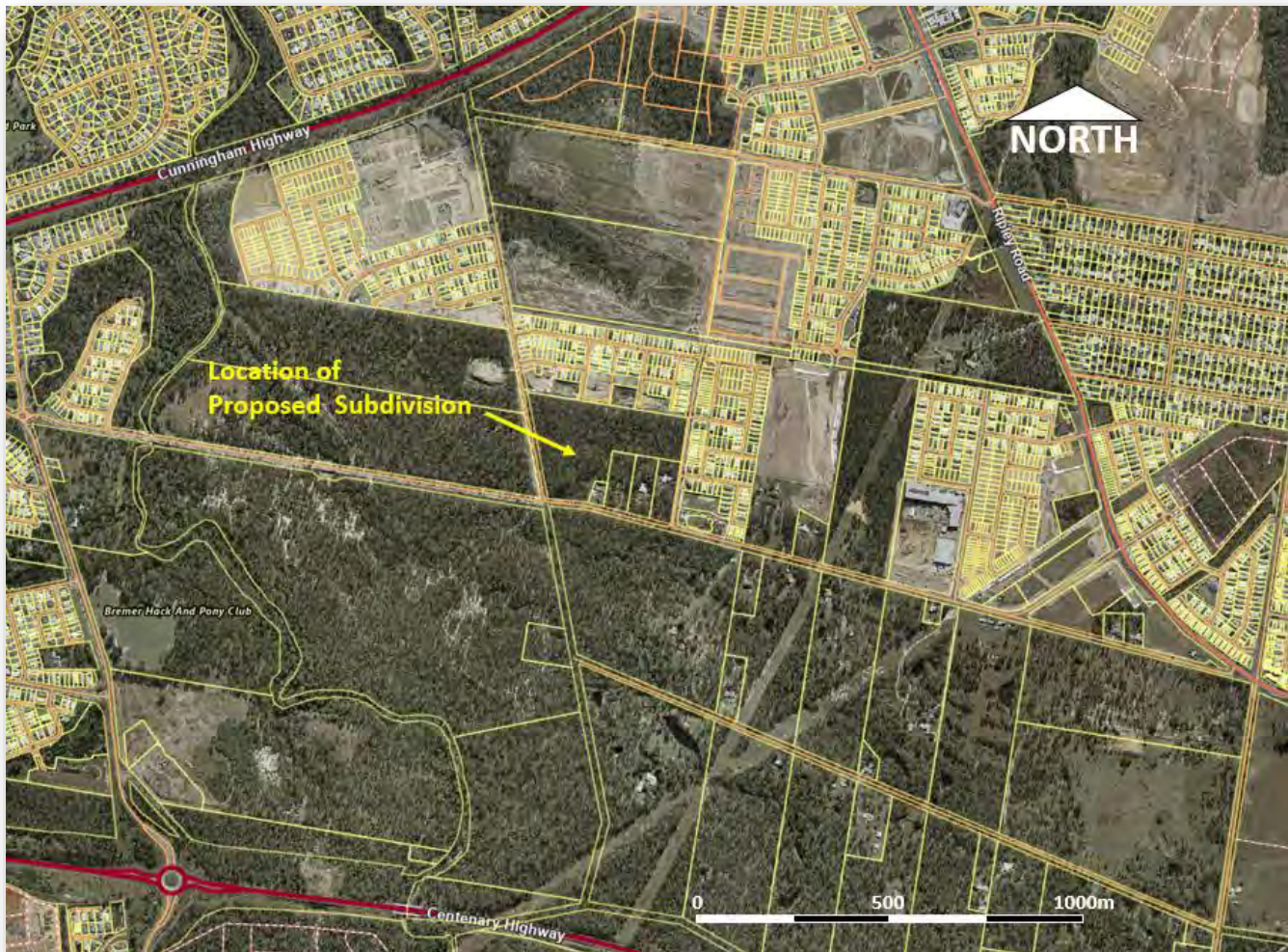


Figure 1. Broader area showing the location of the proposed development.

Located on the northern side of Binnies Road, between Daleys Road and Tempo Drive, the Subject Lot will be fully cleared at the outset. Three larger abutting Lots to the south east have recently been cleared for approved development. Intact unmanaged open forest vegetation on the western side of Daleys Road and on the southern side of Binnies Road poses a bushfire hazard for the site, lessened by the separation provided by these two roads.

In the southern section of the proposed development, the largest Detention Reserve is more than 0.5ha in extent, and it will be designed and planted in order to limit the future threat that it poses to the two closest Lots in particular, these being Lots 58 and 92.

The development will be initially be accessed from the east via Tempo Drive and from the north via Tango Way, for Stage 1. Stage 2 will provide additional access/egress via the north and west.

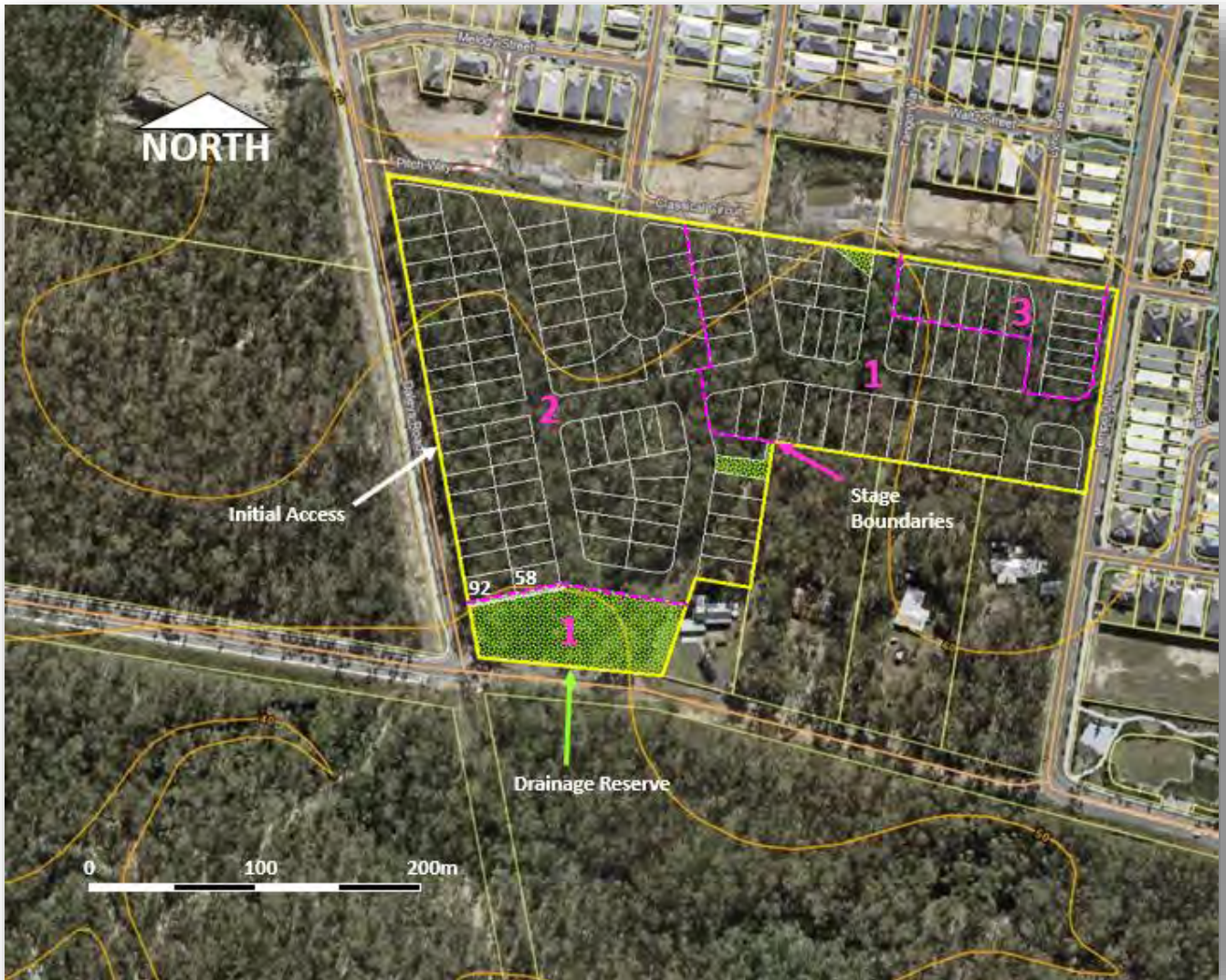


Figure 2. Proposed Subdivision

The site is located within 3 km of the nearest Queensland Fire and Emergency Services (Ripley Rural Fire Station).

3.0 Bushfire Hazard Assessment

3.1 Bushfire hazard classification

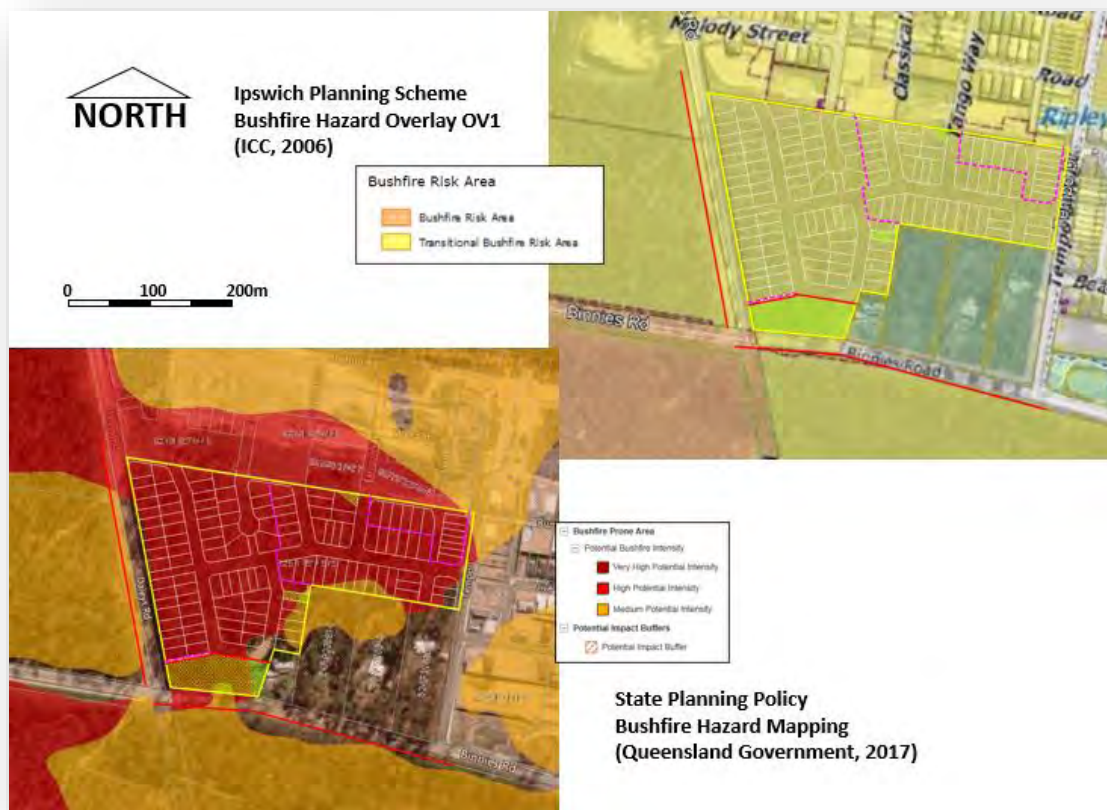


Figure 3. Council and latest State bushfire hazard mapping

“Bushfire Prone Land” is defined under the BCA and SPP01/03 as an area **identified as such by Local Government** (using the methodology specified in Appendix 3 of SPP01/03); and using “medium and high hazard” as indicators of bushfire prone land. Table 1 validates the site as “medium” hazard (and hence BPA) according to this methodology. Neither State nor Council hazard overlay claim to be perfect, and both are subject to ground validation.

Bushfire hazard assessment SPP01/03 Methodology		
Date: 1st April 2024		
Characteristic	Description	Hazard score
Vegetation	Eucalypt forest with dry shrub ladder fuels	6
Slope	Undulating > 5 – 10%	2
Aspect	West to south	2
Total hazard score	Medium	10

Table 1. SPP01/03 Methodology applied to forested areas closest to the site

AS3959-2018 specifies building implications within 100m of designated bushfire prone land, or more strictly speaking, within 100m of intact, classified vegetation (50m in the case of grassland). This BMP establishes Bushfire Attack Levels (BALs) for affected Lots, using a combination of Methods 1 and 2 approach under AS3959-2018.

SPP 01/03 was replaced by State Planning Policy – Natural hazards, risk and resilience – Bushfire (October 2019) accompanied by the *Bushfire Resilient Communities Technical Reference Guide* (BRC)(October 2019) with bushfire hazard mapping shown in Figure 3 which designates the entire site as “bushfire prone area” (BPA). This is validated in Section 6.3 of this Plan.

3.2 Vegetation Assessment, Slope and Separation Distances from Proposed Development



Figure 4. Fuel Zones Assessed Solid yellow arrows indicate most likely direction of bushfire attack, dotted arrows in the form of embers. Contours shown are 10m.

The vegetation community in Areas 2 and 3 is taken as open “forest” under AS3959-2018, and as a modified form of grassland in Area 3 (the main Detention Reserve).

The effective slope beneath vegetation being assessed in Areas 1 and 2 is taken as 5° downslope; and in Area 3 effectively flat, once the Detention Reserve is formed.

Section 6 objectively calculates and determines the potential nature and severity of bushfire attack more thoroughly. This serves as a basis for determining the construction and other bushfire protection measures outlined in this BAL Assessment.

The fuel values applied to fire modelling in Section 6.3 are taken from the Queensland Government (QFES) dataset, as required under AS3959-2018.

3.3 Fuel Assessment – Area 1



Figure 5. Fuel Assessment – Area 1

Fuel hazard estimate	Assessment according to Hines et al 2010		
Date: 1st April 2024			
Layer	Rating	Description / Comments	Equivalent fuel load t/ha
Surface and near surface	High	Moderate litter bed 10 - 20mm with Moderate to high NS fuels as <i>Aristida sp</i> , <i>Cymbopogon sp</i> , <i>Themeda sp</i> , <i>Lomandra sp</i> .	10 - 13
Elevated	Moderate	Canopy recruiters, with <i>Acacia spp</i> . Relatively easy to choose path through, brush against vegetation occasionally.	2
Bark	Moderate	Some ribbon barks (<i>E.tereticornis</i>) Otherwise low bark hazard species. (<i>E.crebra</i> , <i>C. citriodora</i>)	1
Overall rating	High		13 - 16 t/ha

Table 2. Fuel Assessment - Area 1

The vegetation community present is most consistent with Regional Ecosystem (RE) 12.9 – 10.2 mapped in the area, for which State government (QFES dataset) attributes a total of 18t/ha of total available fuel. A total available fuel value of 18t/ha (17t/ha of which is surface and near surface fuel) is applied to site specific fire modelling in Section 6 of this Plan.

3.4 Fuel Assessment – Area 2



Figure 6. Fuel Assessment – Area 2

Fuel hazard estimate	Assessment according to Hines et al 2010		
Date: 1st April 2024			
Layer	Rating	Description / Comments	Equivalent fuel load t/ha
Surface and near surface	High	Moderate litter bed 10 - 20mm with Moderate to high NS fuels as <i>Aristida sp</i> , <i>Cymbopogon sp</i> , <i>Themeda sp</i> , <i>Lomandra sp</i> .	10 - 13
Elevated	Moderate	Canopy recruiters, with <i>Acacia spp</i> . Relatively easy to choose path through, brush against vegetation occasionally.	2
Bark	Low	Low bark hazard species. (<i>E.crebra</i> , <i>C. citriodora</i>)	0
Overall rating	High		12 - 15 t/ha

Table 3. Fuel Assessment - Area 2

The vegetation community present is most consistent with Regional Ecosystem (RE) 12.9 – 10.2 mapped in the area, for which State government (QFES dataset) attributes a total of 18t/ha of total available fuel. A total available fuel value of 18t/ha (17t/ha of which is surface and near surface fuel) is applied to site specific fire modelling in Section 6 of this Plan.

3.5 Fuel Assessment – Area 3

In the southern section of the proposed development, the largest Drainage Reserve is more than 0.5ha in extent, and it will be designed and planted in order to limit the future threat that it poses to the two closest Lots in particular, these being Lots 58 and 92.

It will be created as a modified form of “grassland”, with no more than 10% canopy cover of low combustibility tree species, no shrubs, and a dense planting of low combustibility grasses (Lomandra, Liriope, sedges). A 3m wide maintenance track along the interface with Lots 58 and 92 provides part of the 5m minimum separation for adjacent dwellings to ensure that their construction does not exceed BAL 29. The other 2m separation will be provided as a “Dwelling Exclusion Zone” on the lots themselves. To provide added redundancy, and not as a condition of consent, consideration should be given to constructing a 1.8m non combustible wall (colorbond or similar) along the southern boundary of both lots.

4.0 Site constraints and environmental values which may limit mitigation options

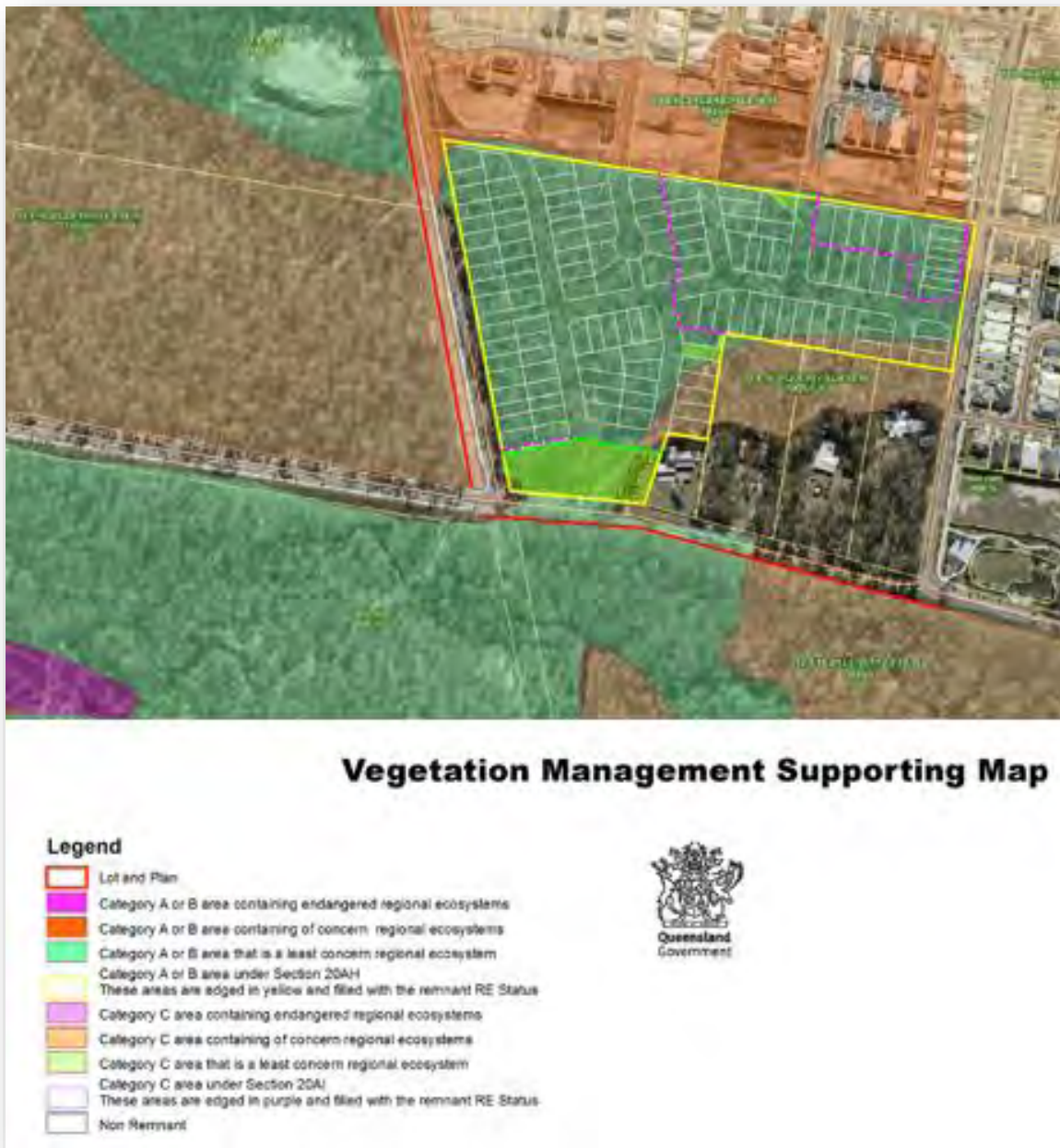


Figure 7. Regional Ecosystem (RE) Mapping

Figure 7 shows the proposed development location in relation to vegetation mapped by the Queensland Department of Natural Resources, Mines and Energy as comprising remnant “Of Least Concern” RE 12.9-10.2. Site assessment supports the predominant vegetation community being RE 12.9 – 10.2.

DNRME provides the following Description and recommended fire guidelines for the vegetation communities mapped.

Regional Ecosystem	Description	Fire Guidelines
RE 12.9 – 10.2 Of Least Concern	<p>Open-forest or woodland of <i>Corymbia citriodora</i>, usually with <i>Eucalyptus crebra</i>. Other species such as <i>Eucalyptus tereticornis</i> and <i>Corymbia intermedia</i> may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of <i>Lophostemon confertus</i> (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 10b)</p> <p>Vegetation Hazard Class (VHC) 10.2 18t/ha Total Available Fuel Load (State Default Value)</p>	<p>OPTIMAL 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.</p>

Table 4. Regional Ecosystem Descriptions and Fire Guidelines

The areas of open forest vegetation are unlikely to be provided with managed fire, along with the temporary hazard reduction benefits this brings. Planning is not based on any assumptions regarding hazard reduction; and has to be based on fuel levels reaching a long term maximum stable state, coinciding with ignition under worst case foreseeable fire weather conditions.

4.1 Fire History and Frequency

This study found old indicators of prior fire. Recurrence of fire at some time has to be regarded as possible, potentially coinciding with maximum fuel accumulation and worst case fire weather conditions.

5.0 Specific risk factors associated with the development proposal

5.1 Nature of activities anticipated on site

Normal residential activities are anticipated to occur in the area, which includes the potential inclination of juveniles and others to make temporary “camps” in bushland, and others to undertake illegal dumping or torching of vehicles. The number of fire incidents expected by QFES varies in direct proportion to the numbers of people present. The proposed development adds significantly to the number of people living in the area or likely to cause ignition or likely to be exposed to bushfire. However only a limited number of new Lots are directly exposed.

5.2 Numbers of people likely to be present

2 - 4 residents could be expected to be present on each of the 127 Lots. The proposed development adds significantly to the number of people living in the area or potentially exposed to the possibility of unplanned fire, however the design of the development and road layout, together with the mitigation measures required under this Plan serve to reduce risk to a level that can be deemed acceptable.

6.0 Nature and Severity of Potential Bushfire Attack

6.1 Bushfire season and Fire Weather

The “typical fire season” in this area peaks between September and November. The predominant winds in the area are south easterly, however during the fire season, hot gusty westerlies of over 30 kph can be expected, with Relative Humidity falling to 10% and less. Temperatures on these days can climb over 35°C , and for two or three days a year, fire weather conditions equivalent to FDI levels of around 50 - 60 can be anticipated. (Note that this is in contrast to the value of 40 which Queensland is currently using in the recently revised AS3959 - 2018).

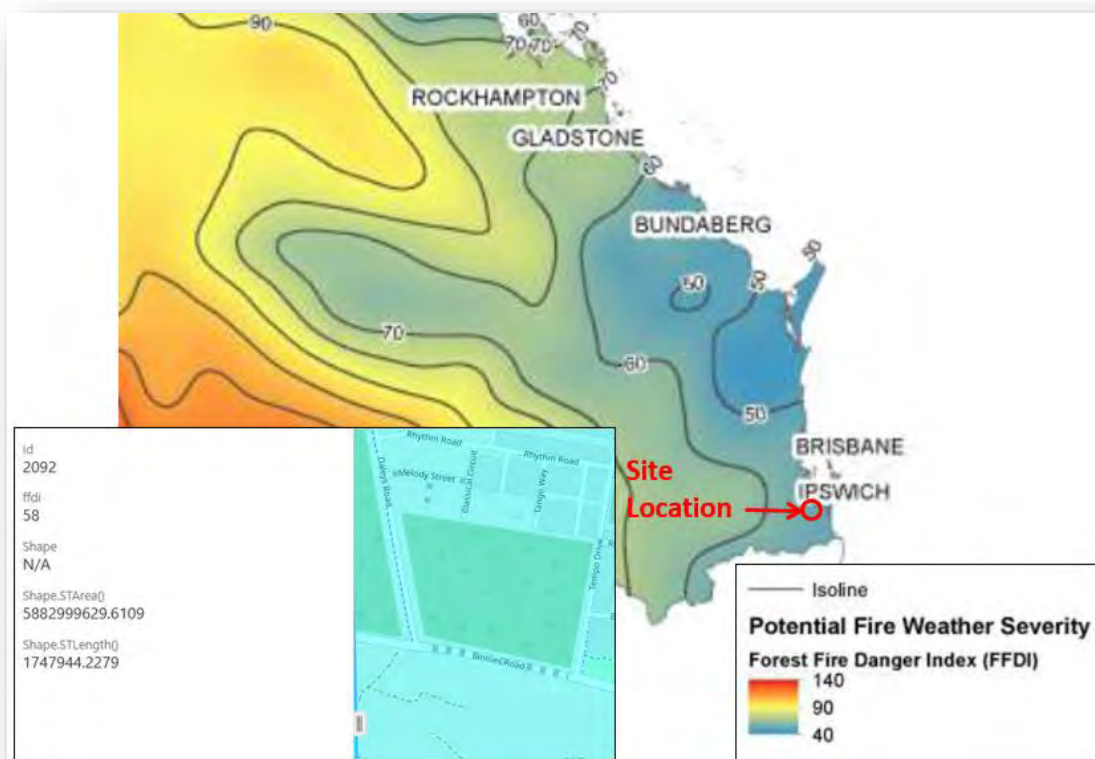


Figure 8. State Government revised FDI values to FDI 58 for the area involved. (QDES Catalyst, 2023).

6.2 Anticipated direction of bushfire attack

The probability of unplanned “wildfire” attack is currently regarded as possible, or even likely. The potential directions of attack is from the west or south as indicated in Figure 4. The direction of worst case fire weather is generally westerly to north westerly.

Bushfire attack comes in a number of forms: direct flame, radiant heat, embers, smoke and wind. Research shows that over 80% of houses lost to bushfire in Australia can be attributed to ember attack, within 100m of bushland.

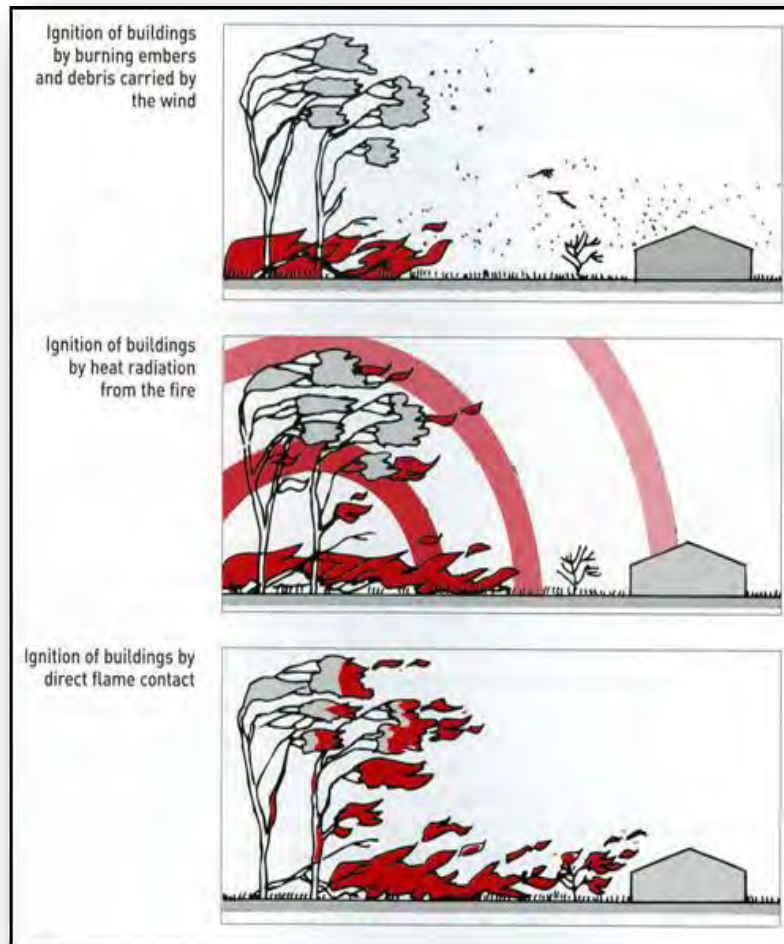


Figure 9. Main Bushfire Attack mechanisms (Image courtesy of Ramsay & Rudolf, 2003)

6.3 Anticipated severity of bushfire attack

Values for vegetation type, fuel load and slope are carried forward to Table 4, to predict the key fire parameters for the potential worst case fire scenarios.

Fire Scenario – Area 1 and 2	Fire Scenario – Area 1 and 2	Fire Scenario – Area 3
Method 2 AS3959-2018 FDI 58 Forest @ 17/18t/ha. Effective Slope under vegetation 5° Downslope	Method 1 AS3959 – 2018 FDI 40 Forest Effective Slope under vegetation > 0 - 5° Downslope	Method 1 AS3959 – 2018 FDI 40 Grassland Effective Slope under vegetation 0°
Fire Intensity (Byram, 1959) 15 537W/m ("MEDIUM")		
Rate of Spread (Noble et al, 1980) 1.67kph		
Flame Height (modified Mc Arthur V equation, NSW RFS 2001) 13.02m		
Flame Width 100m		
Elevation of Receiver 2.4m		
BAL FZ within <11m of intact unmanaged vegetation BAL 40 from 11 - <15m BAL 29 from 15 - <22m BAL 19 from 22 - <31m BAL 12.5 from 31 – 100m	BAL FZ within <12m of intact unmanaged vegetation BAL 40 from 12 - <16m BAL 29 from 16 - <24m BAL 19 from 24 - <34m BAL 12.5 from 34 – 100m	BAL FZ within <4m of intact unmanaged vegetation BAL 40 from 4 - <5m BAL 29 from 5 - <8m BAL 19 from 8 - <12m BAL 12.5 from 12 – 50m

Table 5. Calculated values for potential bushfire characteristics, and methods used.

The radiant heat flux values for Methods 1 and 2 are compared as Bushfire Attack Levels (BALs) in Table 5 and Figure 10. The predicted fireline intensity for unmanaged vegetation interfaces is in the “Medium” range, validating classification as BPA. Application of Method 2 under AS3959-2018 has derived lower BAL ratings than Method 1.

A minimum setback of 3m for the maintenance track south of the boundaries of Lots 100 and 249, together with a 2m wide “Dwelling Exclusion Zone” on the lots themselves ensures that BAL 29 is not exceeded for construction of dwellings on these Lots.

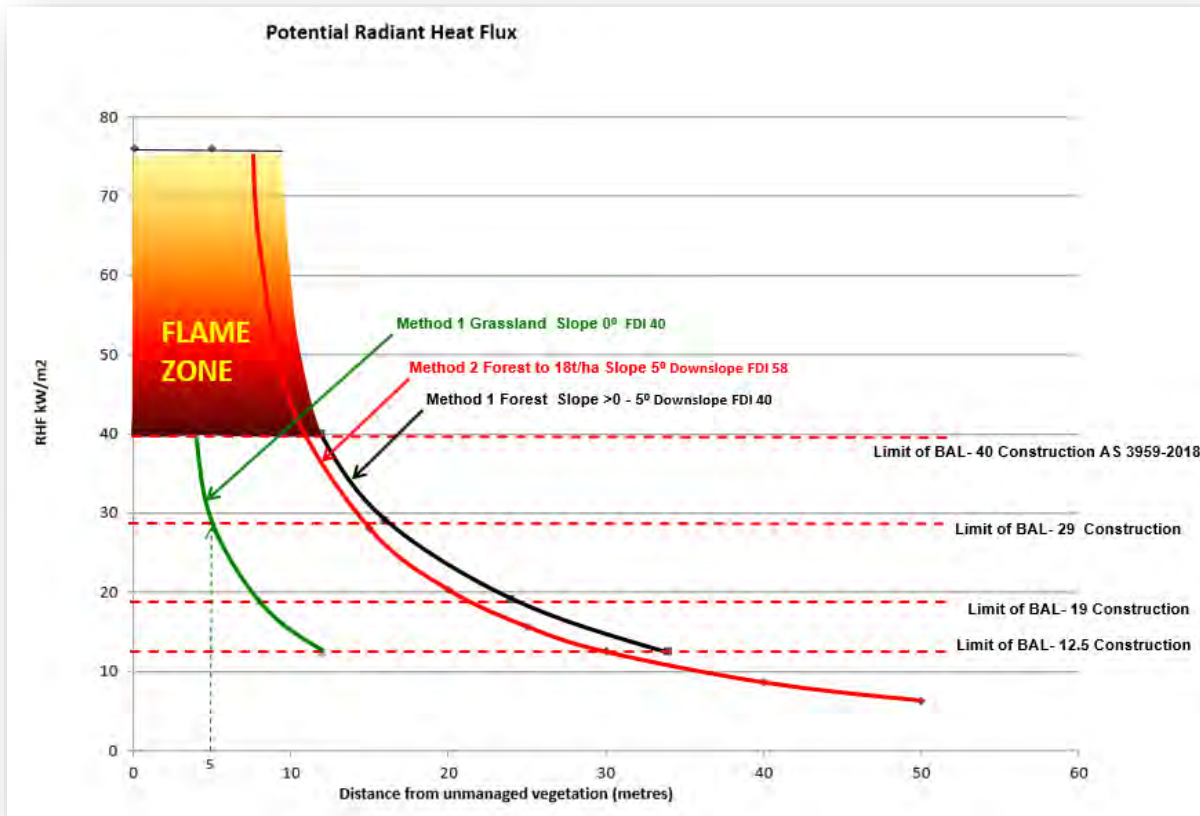


Figure 10. Radiant Heat Flux Predicted by Methods 1 and 2.

The radiant heat flux values are represented as BAL contours in Figure 12.

The significance of the radiant heat flux levels discussed is shown below in Table 6.

Radiant Heat Flux (kW/m ²)	Likely Effects
>40 - 110	Flame Zone. Even the toughest glass fails.
29 - 40	Latest technology in toughened glass may survive. Most will not. Timber ignites without pilot flame. Limit of BAL-40 Construction AS3959-2018.
29	Ignition of timbers without piloted ignition (3 minutes exposure) during the passage of a bushfire. Most types of toughened glass could fail. Limit of BAL-29 Construction AS3959-2018.
19	Screened float glass could fail during the passage of a bushfire. Limit of BAL-19 Construction AS3959-2018.
12.5	Standard float glass could fail during the passage of a bushfire. Limit of BAL-40 Construction AS3959-2018. Some timbers can ignite with prolonged exposure and with pilot ignition sources (eg. Embers)
10	Critical conditions. Firefighters not expected to operate in these conditions. Considered life threatening in under a minute in protective equipment. Fabrics inside a building could ignite spontaneously with long exposures.
7	Likely fatal to unprotected persons after exposure of several minutes.
4.7	Extreme conditions. Firefighter in protective clothing will feel pain after 60 seconds exposure.
3	Hazardous conditions. Firefighters expected to operate for a short period (10 minutes).
2.1	Unprotected person will feel pain after 1 minute exposure - non fatal.

Table 6. Significance of various RHF levels (Source: NSW RFS, 2006)

7.0 Bushfire Protection Measures in Combination

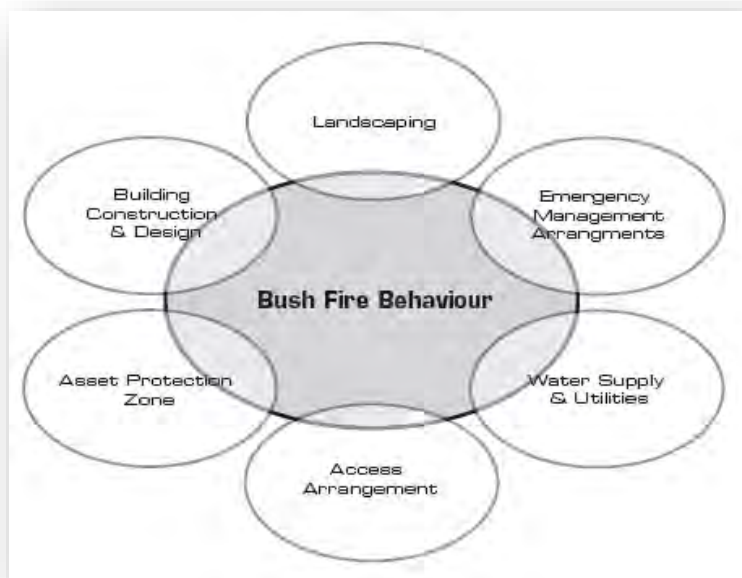


Figure 11. Bushfire Planning Measures in Combination (Source: NSW RFS, 2006)

Figure 11, taken from *Planning for Bushfire Protection* (NSW Rural Fire Service, 2006) illustrates that there are other factors and measures which need to be integrated to mutually support one another to provide protection against bushfire.

Simply removing the hazard (bushland) is one possible way of removing risk to life and property, but this approach is not desirable. The safety of life and property can be achieved whilst retaining the natural amenity and value of bushland areas, provided these integrated bushfire protection measures are applied.

7.1 Building Construction and Design

The proposed design serves to avoid construction to greater than BAL 29 under AS3959-2018.

Figure 12 shows the BAL contours affecting new Lots. Any Class 10a structure built within 6m of any dwelling will also need to be constructed in accordance with AS3959-2018.



Figure 12. BAL contours for affected Lots.

7.2 Asset Protection Zones and Landscaping

Asset protection zones are the most strategically valuable defense against radiant heat and flame, and to a lesser extent embers.

The landscaping plan shall maintain an “Inner Protection Area” (IPA) for the entire unbuilt area of all Lots, effectively free of available fuel.

- Plants retained in or introduced into the IPA should be selected based on low combustibility, by virtue of high moisture content, low volatile oil content, high leaf mineral levels, large fleshy leaves, absence of shedding bark.
- Plant arrangement is just as important as low combustibility. Plants should be placed so as to minimize either vertical or horizontal connectedness of plant material. Appendix 1 provides examples of less hazardous native plant species.
- Combustible vegetation shall not be allowed to come into contact with combustible parts of buildings.
- Trees should not be allowed to directly overhang roof lines.
- Regular yard maintenance should be undertaken to remove available fine fuels and debris, particularly throughout the fire season.

An Outer Protection Area involves removal of the understorey so as to deprive an advancing fire front of its fuel continuity, and thereby collapsing the fire front. In this case the APZ recommended for the new lots shall be constructed and maintained as IPA.

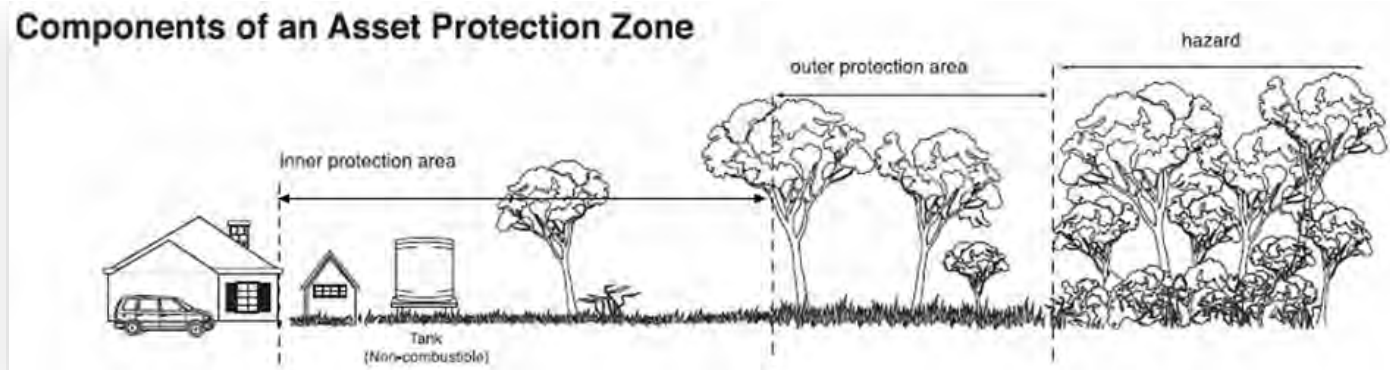


Figure 13. Components of an Asset Protection Zone (APZ)

The Drainage areas will be densely planted to non curing and low combustibility groundcovers (Lomandra, lirioppe, sedges) which are generally not supportive of fire. In the largest Detention Reserve, the landscaping plan will target no more than 10% canopy cover (at maturity) of low combustibility tree species. As a consequence it can be regarded as a modified form of “grassland” under AS3959.

7.3 Access and Egress Management

The site is within approximately 3km by road of the nearest Queensland Fire and Emergency Services (Ripley Rural Fire Station).

The development will be initially be accessed from the west via Daleys Road, for Stages 1 and 2. Stage 3 will provide additional access/egress to the north and east.

A 3m wide maintenance track in the Drainage Reserve abutting Lots 100 and 249 provides part of the 5m minimum separation for adjacent dwellings to ensure that their construction does not exceed BAL 29. The other 2m separation will be provided as a “Dwelling Exclusion Zone” on the lots themselves. To provide added redundancy, and not as a condition of consent, consideration should be given to constructing a 1.8m non combustible wall (colorbond or similar) along the southern boundary of Lots 100 and 249.

The maintenance track will have a minimum formed width of 3m. The trail should be supplied with a padlocked slide rail and bollards to prevent unauthorized use.

Access and egress for fire fighters will be provided in accordance with the Queensland Fire and Emergency Services Guideline (*Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots, 2015*). The guideline is attached as Appendix 2.

The proposed internal road system provides for continuous traffic flow and for through roads. Ample turning opportunities are also available for large urban fire fighting appliances (a minimum inside radius of 6m and minimum outside radius of 12m).

7.4 Water Supplies and Utilities

Water supply for the development will be connected to Council mains reticulated supply, with hydrants installed in accordance with AS2419.1-2005 and with volumes and pressure under the control of Council water utilities provider. Fire fighting water supply and fire hydrants will be provided in accordance with the Queensland Fire and Emergency Services Guideline (*Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots, 2015*).

Electricity supply to the site will be supplied underground.

Any reticulated or bottled gas shall be installed and maintained in accordance with AS1596 – 2002. Metal piping is to be used. Any fixed LPG tanks shall be kept clear of flammable materials, and located on the non hazard side of the building. Any gas cylinders which need to be kept close to a building shall have release valves directed away from the building. Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.

7.5 Fire Fighting and Emergency Management Arrangements

The development is serviced by the proposed road and driveways for Emergency Services use. The maintenance of a mown or slashed grass surface of all Lots provides safe defendable space around key assets in the unlikely event of bush fire.

Obstructions to access onto individual Lots and the rear of buildings should be avoided.

Residents shall be made aware of the existence of this Plan, and their need to comply with the relevant provisions, in particular building construction, APZ maintenance, optimizing access around buildings and emergency response preparations.

Residents shall decide on their Stay and Defend / or Go Early strategy before each fire season so as to ensure this decision is not made too late, when smoke and emergency vehicles prevent an orderly evacuation. Staying to defend is a viable and preferable option for the proposed development.

Residents staying to defend should ensure that they have adequate protective clothing , including full length cotton or denim garments, sturdy boots, gloves, smoke mask (minimum P2 with valves) and smoke goggles.

Appendix 2 provides guidance for Residents’ Emergency Management Planning in relation to bushfire.

8.0 Assessment of proposal against Ipswich Planning Scheme 2006 Part 11, Division 4 – Bushfire Hazard Areas Overlay Code

Specific Outcomes	Probable Solutions
<p>8.1 (SO1) Design, Siting and Construction (1) Uses and works in bushfire risk areas are designed, sited, and constructed to— (a) minimise the number of people and properties subject to bushfire risk; (b) improve the survivability of buildings and the protection of life during the passage of a firefront; (c) minimise costs and threats to emergency services; and (d) facilitate evacuation in the event of a bushfire</p>	<p>PS1 is applied in that:</p> <p>(1) (a) Uses and works are sited— (i) in existing cleared areas able to accommodate the use within an adequate fire protection buffer generally as identified in (iii) below, and this Plan demonstrates the setbacks available to be adequate to avoid exceeding BAL 29; and (ii) on land and parts of a site which are least prone to bushfire risk with regard to aspect, slope, elevation and vegetation type— (A) away from the tops of ridgelines and with the flatter portion of the lot being used as building sites; and (B) on land with a slope gradient less than 15%, and generally on level ground; and (iii) generally with a minimum 20 metre wide area (measured from the horizontal from the building) serving as a fire protection buffer around the building of which at least the first 10 metres from the building is a cleared area (fuel free inner zone), while the outer 10 metres (fuel reduced outer zone) may be planted with fire retardant vegetation species or grassed; and (iv) to ensure that any outbuilding (such as garages and carports) is built as part of the main building or located at least 5 metres from the main building.</p> <p>(b) If trees are planted they— (i) are of a species that grow to over 2 metres in height to maintain separation between lower canopy and the ground; (ii) have vertical and horizontal separation between each plant to ensure the canopy is not continuous; and (iii) do not grow closer to the building than a distance equivalent to the tree’s expected mature height so that branches do not overhang the eaves of the building.</p>

	<p>(c) Buildings—</p> <ul style="list-style-type: none"> (i) have a continuous roof line avoiding roof valleys, multiple hips and a combination of pitched and flat roofs on the same building – as these provide catchment areas for debris; and (ii) have low pitched roofs between 12 and 21 degrees to reduce radiation pick up; and (iii) are of slab-on-ground construction where this is responsive to the site; or (iv) “pole based structures” with floors elevated off the ground with all external openings (between the floor and the ground) sealed to prevent the entry of burning debris; and (v) minimise large expansive walls as these expose a greater surface area to a bushfire; and (vi) shall be constructed in accordance with AS3959-2018.
<p>8.2 (SO2) Uses and works avoid a high concentration of people living or congregating in a high bushfire risk area.</p>	<p>PS2 is applied in that: The proposed development does not involve uses where people are likely to congregate, including a caravan park, camping ground, or other high concentration uses.</p>
<p>8.3 (SO3) Water Storage and Supply Uses and works provide sufficient and accessible water storage and supply for firefighting purposes by—</p> <ul style="list-style-type: none"> (a) connection to a reticulated water supply, if available to the site, having sufficient pressure and flow for firefighting purposes; or (b) where reticulated water supply is not available to the site, a dam, lake, water tank or swimming pool are provided with sufficient capacity for water pumping in times of bushfire. 	<p>PS3 is applied in that: Where reticulated water supply is available— Water supply outlet pipes are located within 40m of dwellings.</p>
<p>8.4 (SO4) Vehicular Access and Fire Trails Fire trails or perimeter roads are provided to mitigate against bushfire risk by—</p> <ul style="list-style-type: none"> (a) separating uses and works from surrounding vegetated areas; and (b) being of sufficient width to serve as an effective fire trail which allows continuous access for firefighting vehicles; and (c) being in secure tenure and maintained. 	<p>PS5 is not applied in that: Uses and works (including where reconfiguring a lot) does not incorporate—</p> <ul style="list-style-type: none"> (a) a perimeter road— as such is not warranted given the existence of Binnies Road, Daleys Road, Tempo Drive and imminent adjacent development. (b) a fire trail is recommended within the largest Drainage Reserve abutting Lots 58 and 71, with a minimum cleared width of 6m, minimum formed width of 4m; with

<p>8.5 (SO5) Residential uses and works (including reconfiguring a lot) are designed to mitigate potential bushfire risk and provide safe sites for dwellings.</p>	<p>authorised use only, protected by a padlocked slide rail and bollards.</p> <p>PS6 is applied in that: Wherever possible the road layout provides through roads and avoids the use of culs de-sac and dead end roads.</p> <p>PS1 is applied utilising the areas of lowest risk on the site; and the use will adhere to the requirements specified by this Plan.</p>
<p>8.6 (SO6) Where the use involves the reconfiguring a Lot and the opening of a new road, the road layout provides vehicular access which is designed to— (a) mitigate against bushfire risk by ensuring adequate access for firefighting and other emergency vehicles; and (b) allow for evacuation in the event of a bushfire; and (c) provide for the safe and effective operation of water supply and equipment for fire fighting vehicles</p>	<p>PS5 is applied to the extent outlined above.</p> <p>PS6 is applied in that: Wherever possible the road layout provides through roads and avoids the use of culs de-sac and dead end roads.</p> <p>PS7 is applied in that: Road gradients are no more than 12.5%, or are from 12.5% to not more than 20% over a maximum distance of 50 metres.</p>
<p>8.7 (SO7) The size and shape of residential Lots and the design and location of access paths facilitate emergency access to buildings and firefighting infrastructure, and the incorporation of suitable on-site bushfire mitigation measures.</p>	<p>PS 1, 5, 6 and 7 are applied.</p>
<p>8.8 (SO8) New residents are informed about the nature of the bushfire hazard and mitigation measures.</p>	<p>Lot Buyers shall be made aware of this Plan at the point of purchase, including a property note attached to land title.</p>

9.0 Assessment of proposal against State Planning Policy – Natural hazards, risk and resilience 2019

State Planning Policy – Natural hazards, risk and resilience - Bushfire (SPP, October 2019) replaces State Planning Policy 1/03 *Mitigating the Adverse Impacts of Flood, Bushfire and Landslide*. The SPP Guideline – Natural hazards, risk and resilience – bushfire provides development assessment benchmarks to ensure that State interests are appropriately considered in relation to natural hazards, including bushfire hazard areas. These provisions serve as general guidelines to either avoid or otherwise adequately mitigate bushfire risk.

Interim Development Assessment Benchmarks	Solutions Provided
(3) Development avoids natural hazard areas or where it is not possible to avoid the natural hazard area, development mitigates the risks to people and property to an acceptable or tolerable level, and	This Plan establishes the nature and potential severity of the adjacent hazard and provides a combination of bushfire protection measures to mitigate risk including construction, asset protection zones, access, water supplies and utilities, and emergency management arrangements.
(4) Development supports, and does not unduly burden, disaster management response or recovery capacity and capabilities, and	The combined effect of the bushfire protection measures specified by this Plan serves to reduce risk to a low level and ensure resilience and preparedness for unplanned fire so that the response or recovery capacity and capability of emergency services is not unduly burdened or impeded. This Plan serves to protect life and property from bushfire without depending on emergency services for protection.
(5) Development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties, and	The development decreases the nature of the existing hazard, and site layout and landscaping on the site is designed to moderate the exposure of buildings. The potential for damage to other properties is not increased as a consequence of the proposed development.
(6) Risks to public safety and the environment from the location of hazardous materials and the release of these materials is avoided, and	Hazardous materials are not stored in quantities or locations on the site which would pose a risk to the public or the environment.
(7) The natural processes and the protective function of landforms and the vegetation that can mitigate risks associated with the natural hazard are maintained or enhanced.	The development maintains the natural processes and protective function of vegetation that previously existed for the site.

10.0 Recommendations

1. That future dwellings shall be constructed in accordance with AS3959-2018, as summarised in Table 5 and Figure 12 of this Plan. A Dwelling Exclusion Zone will be designated inside the southern boundary of Lots 58 and 92.

Any Class 10a structure built within 6m of any residence shall be constructed in accordance with this AS3959.

Builders should warrant that they have a copy of this Standard, and that it shall be used consistently throughout the design and construction of dwellings and other structures located within 6m of them.

As an enhancement and not as a condition of consent, its is recommended that consideration is given to constructing to constructing a 1.8m non combustible wall (colorbond or similar) along the southern boundary of Lots 58 and 92.

2. Asset Protection Zones will be constructed and maintained on all new Lots in the form of IPA as described in Section 7.2 of this Plan. The Drainage Reserves will be designed and planted as described in Section 7.2 of this Plan.
3. It is recommended that a maintenance track is constructed in the largest Drainage Reserve abutting Lots 58 and 92, with a minimum formed width of 3m, and supplied with a padlocked slide rail and bollards to prevent unauthorized use.
4. Fire fighting water supply and fire hydrants will be provided in accordance with the Queensland Fire and Emergency Services Guideline (*Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots, 2015*).
5. Lot buyers shall be made aware of the existence of this Plan and their responsibilities outlined within it, in particular construction, asset protection zone and emergency management.

11.0 Summary

The area of “hazard” faced by the proposed development is significant, but the site is well set back from the hazard. The likelihood of wildfire occurring at some time is regarded as likely, warranting protection measures to be taken, as outlined in this Plan. This Plan demonstrates compliance with legislative requirements of State and Local Government, and the BCA.

Along with adequate water supply and emergency management arrangements, compliant construction under AS3959-2018 and APZs to reduce the exposure of life and property to bushfire, these combined measures assist to prepare residents for the possibility of fire in the area.

12.0 References

- ABCB (2016), *Building Code of Australia*, Australian Building Codes Board, Canberra.
- Building Regulation (2006), Queensland Government, Queensland.
- Environmental Protection Act (1994), Queensland Government, Queensland.
- Hines, F., Tolhurst, K.G., & Wilson, A.A.G., (2010) *Overall Fuel Hazard Assessment - Research Report No. 82 4th Edition*, DSE Victoria.
- Ipswich City Council (2011), *Ipswich Planning Scheme*, ICC, Queensland.
- Queensland Fire and Emergency Services (2015) *Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots*, Queensland Government, Queensland.
- Queensland Government Department of Local Government and Planning (May 2003), *State Planning Policy 01/03*, Queensland.
- Queensland Government Department of Local Government and Planning (October 2019), *State Planning Policy – Natural hazards, risk and resilience - Bushfire*, Queensland.
- Queensland Government Department of Local Government and Planning (October 2019), *Bushfire Resilient Communities – Technical Reference Guide for the State Planning Policy “ Natural hazards, risk and resilience - Bushfire*, Queensland.
- Leonard, J., Newnham, G., Opie, K., and Bianchi, R. (2014), *A new methodology for State-wide mapping of bushfire prone areas in Queensland*, CSIRO, Australia.
- NSW Rural Fire Service (2006), *Planning for Bushfire Protection*, NSW.
- Planning Act (2016), Queensland Government, Queensland.
- Ramsay, C. and Rudolph, L. (2003), *Landscape and Building Design for Bushfire Areas*, CSIRO Publishing, Collingwood, Victoria.
- Standards Australia (2005), *AS 2419.1– 2005, Fire hydrant installations – System design, installation and commissioning*, Sydney, NSW.
- Standards Australia (2002), *AS 1596 The storage and handling of LP Gas*, Sydney, NSW.
- Standards Australia (2018), *AS 3959 – 2018, Construction of buildings in bushfire-prone areas*, Sydney, NSW.
- Vegetation Management Act (1999), Queensland Government, Queensland.
- Webster, J. (2000), *The Complete Bushfire Safety Book*, Random House Australia, NSW.

Appendix 1

Less combustible native plants list

Source: Bowden, J (1999)

10

APPENDIX

Fire Retardant Native Plants

Form: S = Shrub; T = Tree; V = Vine; H = Herb; Gc = Ground cover; eO = epiphytic Orchid; eF = epiphytic Fern; tF = terrestrial Fern.

Fire-retardance: Lm = due to leaf water contents; St = due to salt content; Sl = succulent leaves

Comments: Wb = suitable for windbreak/fire barrier; Ad = suitable as addition to windbreak/fire barrier but not as main species; Us = suitable for understory of windbreak/fire barrier; Oa = suitable for open areas near houses; Sa = suitable for sheltered areas near house; Pf = suitable if protected from direct flames; De = Deciduous in winter, in flower or in dry periods

(-) = may not occur naturally in Pine Rivers Valley but has not proved invasive.

Fire-Retardant Plants for Small Gardens

Scientific Name	Common Name	Form	Fire Retardance	Comments
GYMNOSPERMS				
Zamaceae				
<i>Lepidozamia peroffskyana</i>	Shining Burrawang	S	Lm	Us Sa
<i>Macrozamia lucida</i>	Pineapple Zamia	S	Lm	Us Sa
<i>Macrozamia miquelii</i>	Wild Pineapple	S	Lm	Us Oa Sa
Agavaceae				
<i>Cordyline petiolaris</i>	Broad-leaf Palm Lily	S	Lm	Us Sa
<i>Cordyline rubra</i>	Red-fruit Palm Lily	S	Lm	Us Sa
<i>Cordyline stricta</i>	Slender Palm Lily	S	Lm	Us Sa
MONOCOTYLEDONS				
Amaryllidaceae				
<i>Critium pedunculatum</i>	River Lily	H	Lm Sl	Us Oa Sa
<i>Doryanthes palmeri</i> (-)	Spear Lily	H	Lm Sl	Us Oa Sa
<i>Proiphys cunninghamii</i>	Brisbane Lily	H	Lm Sl	Us Sa
Araceae				
<i>Alocasia brisbanensis</i>	Conjevoi	H	Lm	Us Sa
<i>Gymnostachys anceps</i>	Settlers Flax	H	Lm	Us Sa
<i>Pothos longipes</i>	Pothos	V	Lm	Us Sa
<i>Typhonium brownii</i>	Stinking Lily	H	Lm	Us Sa
Areaceae				
<i>Lindospadix monostachya</i>	Walking Stick Palm	P	Lm	Us Sa

Scientific Name

Common Name

Form

Fire Retardance

Comments

Commelinaceae

<i>Aneilema acuminatum</i>	Aneilema	H Gc	Lm	Us Sa
<i>Aneilema biflorum</i> (-)	Aneilema	H Gc	Lm	Us Sa
<i>Commelina cyanea</i>	Scurvy Plant	H Gc	Lm	Us Op Sa
<i>Pollia crispata</i>	Snake Weed	H Gc	Lm	Us Sa
<i>Pollia macrophylla</i>	Large Snake Weed	H Gc	Lm	Us Sa

Dioscoreaceae

<i>Dioscorea transversa</i>	Native Yam	V	Lm	Us Sa
-----------------------------	------------	---	----	-------

Liliaceae

<i>Bulbine bulbosa</i> (-)	Bulbine Lily	H	Lm Sl	Oa
<i>Dianella brevipedunculata</i>	Blue Flax Lily	H	Lm	Us Oa Sa
<i>Dianella caerulea</i>	Blue Flax Lily	H	Lm	Us Oa Sa
<i>Dianella revoluta</i>	Flax Lily	H	Lm	Us Oa Sa
<i>Drymophila moorei</i> (-)	Orange Berry	H	Lm	Us Sa
<i>Tripladenia cunninghamii</i>	Bush Lily	H	Lm	Us Sa

Orchidaceae

<i>Dendrobium gracilicaule</i>	Spotted Orchid	eO	Lm	Sa
<i>Dendrobium X gracillimum</i>	Natural Hybrid	eO	Lm	Sa
<i>Dendrobium monophyllum</i>	Lily of the Valley			
	Orchid	eO	Lm	Sa

Dendrobium schoenitum

(*D. beckeri*)

Dendrobium speciosum

Dendrobium teretifolium

Dendrobium tetragonum

Dendrobium tetragonum

Philetiaceae

<i>Eustrephus latifolius</i>	Wombat Berry	V	Lm	Us Oa Sa
<i>Geitonoplesium cymosum</i>	Scrambling Lily	V	Lm	Us Sa

Philydraceae

<i>Philydrum lanuginosum</i>	Frogmouth	aH	Lm Sl	Oa Wet areas
------------------------------	-----------	----	-------	--------------

Smilacaceae

<i>Smilax glycyphylla</i>	Sweet Satsparilla	V	Lm	Us Sa
---------------------------	-------------------	---	----	-------

Xanthorrhoeaceae

<i>Lomandra confertifolia</i>	Mat Rush	H	Lm	Oa
<i>Lomandra hystrix</i>	Creek Mat Rush	H	Lm	Us Sa
<i>Lomandra longifolia</i>	Long-leaf Mat Rush	H	Lm	Us Oa Sa
<i>Lomandra filiformis</i>	Fine-leaf Mat Rush	H	Lm	Oa
<i>Lomandra multiflora</i>	Many-flower Mat Rush	H	Lm	Oa
<i>Lomandra spicata</i>	Mountain Mat Rush	H	Lm	Us Oa Sa

Zingiberaceae

<i>Alpinia arundeliana</i>	Wild Ginger	H	Lm	Us Sa
<i>Alpinia coerulea</i>	Native Ginger	H	Lm	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
DICOTYLEDONS				
Aizoaceae				
<i>Carpobrotus glaucescens</i>	Pig Face	H Gc	Lm SI	Oa
Acanthaceae				
<i>Graptophyllum excelsum</i> (-)	Scarlet Fuchsia	S	Lm	Us Sa
<i>Graptophyllum spinigerum</i>	Samford Holly	S	Lm	Us Sa
<i>Pseuderanthemum tenellum</i>	Pseuderanthemum	H	Lm	Us Sa
<i>Pseuderanthemum variabile</i>	Love Flower	H	Lm	Us Sa
Apiaceae				
<i>Centella australis</i>	Pennywort	H Gc	Lm	Oa
<i>Hydrocotyle acutiloba</i>	Pennywort	H Gc	Lm	Us Sa
<i>Hydrocotyle pedicellosa</i>	Pennywort	H Gc	Lm	Us Sa
Apocynaceae				
<i>Alyxia ruscifolia</i>	Chain fruit	S	Lm	Us Sa
<i>Carissa ovata</i>	Current Bush	S	Lm	Us Oa Sa
<i>Neisosperma poweri</i> (-)	Milkbush	S	Lm	Us Sa
<i>Ochrosia moorei</i> (-)	Southern Ochrosia	S	Lm	Us Sa
<i>Parsonsia lenticellata</i>	Narrow-leaf Silkpod	V	Lm	Us Sa
<i>Parsonsia litacina</i>	Delicate Silkpod	V	Lm	Us Sa
<i>Tabernaemontana pandacagu</i>	Banana Bush	S	Lm	Us Sa
Aristolochiaceae				
<i>Aristolochia</i> sp. aff. <i>pubera</i>	Pipe Vine	V	Lm	Us Sa
<i>Aristolochia praevanosa</i>	Richmond Birdwing Vine	V	Lm	Us Sa
Asclepiadaceae				
<i>Hoya australis</i>	Wax Flower	V	Lm	Us Sa
<i>Marsdenia longiloba</i>	Slender Milk Vine	V	Lm	Us Sa
<i>Secamone elliptica</i>	Corky Milk Vine	V	Lm	Us Sa
<i>Tylophora paniculata</i>	Thin-leaf Tylophora	V	Lm	Us Sa
Bignoniaceae				
<i>Pandorea floribunda</i>	New sp. Pine R	V	Lm	Us Oa Sa
<i>Pandorea jasminoides</i>	Bower of Beauty	V	Lm	Us Oa Sa
Caesalpiniaceae				
<i>Cassia artemisioides</i> (-)	Silver Cassia	S	Lm	Oa
Campanulaceae				
<i>Lobelia trigonocaulis</i>	Forest Lobelia	H Gc	Lm	Us Oa
<i>Wahlenbergia gracilis</i>	Bluebells	H	Lm	Oa
Capparidaceae				
<i>Capparis arborea</i>	Native Caper	S/T	Lm	Us Sa
<i>Capparis sarmentosa</i>	Scrambling Caper	V	Lm	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
Celastraceae				
<i>Cassine australis</i>	Red Olive Berry	S/T	Lm	Us Sa
<i>Denhamia celastroides</i>	Orange Boxwood	S/T	Lm	Us Sa
<i>Denhamia pittosporoides</i>	Orange Boxwood	S/T	Lm	Us Sa
<i>Maytenus bilocularis</i>	Orangebark	S/T	Lm	Us Sa
Chenopodiaceae				
<i>Einadia hastata</i>	Berry Salt Bush	S Gc	St	Oa
<i>Enchylaena tomentosa</i>	Ruby Salt Bush	S Gc	St SI	Oa
<i>Halosarcia indica</i>	Samphire	S Gc	St SI	Oa Salty soil
<i>Sarcocornia quinqueflora</i>	Samphire	S Gc	St SI	Oa Salty soil
<i>Suaeda australis</i>	Seablite	S Gc	St SI	Oa Salty soil
<i>Suaeda arbusculoides</i>	Jellybean Plant	S Gc	St SI	Oa Salty soil
Convolvulaceae				
<i>Convolvulus erubescens</i>	Australian Bindweed	V	Lm	Oa
<i>Dichondra repens</i>	Kidney Weed	H Gc	Lm	Us Sa
<i>Polymeria calycina</i>	Swamp Bindweed	V	Lm	Oa
Cunoniaceae				
<i>Aphanopetalum resinosum</i>	Gum Vine	V Gc	Lm	Us Sa
<i>Vesselowskyia rubifolia</i> (-)	Southern Marara	S/T	Lm	Us Sa
Davidsoniaceae				
<i>Davidsonia pruriens</i> (-)	Davidson's Plum	T	Lm	Us Sa
Dilleniaceae				
<i>Hibbertia aspera</i>	Rough Guinea Flower	S	Lm	Oa
<i>Hibbertia dentata</i>	Toothed Guinea Flower	V	Lm	Us Oa Sa
<i>Hibbertia linearis</i>	Showy Guinea Flower	S	Lm	Oa
<i>Hibbertia linearifolia</i>	Hoary Guinea Flower	S	Lm	Oa
<i>Hibbertia stricta</i>	Erect Guinea Flower	S	Lm	Oa
<i>Hibbertia scandens</i>	Twining Guinea Flower	V	Lm	Us Oa Sa
Elaeocarpaceae				
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	S/T	Lm	Us Oa Sa
Epacridaceae				
<i>Trochocarpa laurina</i>	Tree Heath	S/T	Lm	Us Sa
Escalloniaceae				
<i>Abrophyllum ornans</i>	Native Hydrangea	S	Lm	Us Sa
<i>Polyosma cunninghamii</i>	Featherwood	S/T	Lm	Us Sa
Euphorbiaceae				
<i>Acalypha capillipes</i>	Small-leaf Acalypha	S	Lm	Us Sa
<i>Acalypha eremorum</i>	Native Acalypha	S	Lm	Us Sa
<i>Acalypha nemorum</i>	Southern Acalypha	S	Lm	Us Sa
<i>Actephila lindleyi</i>	Actephila	S/T	Lm	Us Sa
<i>Alchornea ilicifolia</i>	Native Holly	S	Lm	Us Sa
<i>Breynia oblongifolia</i>	Native Coffee Bush	S	Lm	Us Oa Sa
<i>Cleistanthes cunninghamii</i>	Cleistanthes	S/T	Lm	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
<i>Croton phlebalioides</i>	Narrow-leaf Croton	S	Lm	Us Sa
<i>Croton verrucosus</i>	Native Cascarilla	S/T	Lm	Us Sa
<i>Macaranga tanarius</i>	Macaranga	S/T	Lm	Us
<i>Mallotus laoxyloides</i>	Scrub Odour Bush	S/T	Lm	Us Sa
<i>Oncalanthus nutans</i> (<i>O. populifolius</i>)	Old Bleeding Heart	S/T	Lm	Us Sa
Eupomatiaceae				
<i>Eupomatia bennettii</i>	Small Bolwarra	S	Lm	Us Sa
<i>Eupomatia laurina</i>	Bolwarra	S	Lm	Us Sa
Escaloniaeaceae				
<i>Cuttisia viburnea</i> (-)	Native Elderberry	T	Lm	Us Sa
Fabaceae				
<i>Abrus precatorius</i>	Crabs Eye Vine	V	Lm	Us Oa St
<i>Aotus lanigera</i>	Pointed Aotis	S	Lm	Oa Sa
<i>Glycine clandestina</i>	Twining Glycine	V	Lm	Oa
<i>Glycine tomentella</i>	Woolly Glycine	V	Lm	Oa
<i>Hardenbergia violacea</i>	False Sarsparilla	V	Lm	Oa
<i>Hovea linearis</i>	Common Hovea	S	Lm	Oa
<i>Hovea longipes</i> (-)	Brush Hovea	S	Lm	Oa
<i>Indigophora australis</i>	Australian Indigo	S	Lm	Oa
<i>Kennedia rubicunda</i>	Dusky Coral Pea	V	Lm	Oa
<i>Oxylobium ilicifolium</i> (-)	Holly Pea	S	Lm	Oa
<i>Oxylobium scandens</i> (-)	Netted Shaggy Pea	S	Lm	Oa
<i>Pultenaea retusa</i>	Blunt-leaf Bush Pea	S	Lm	Oa
<i>Pultenaea spinulosa</i> (-)	Prickly Pea	S	Lm	Oa
<i>Pultenaea villosa</i> (-)	Hairy Bush Pea	S	Lm	Oa
<i>Swinsona galegifolia</i>	Darling Pea	S	Lm	Oa
Goodeniaceae				
<i>Goodenia rotundifolia</i>	Star Goodenia	H Gc	Lm	Oa
<i>Scaevola aemula</i> (-)	Fairy Fan Flower	H Gc	Lm	Oa
<i>Scaevola albida</i> (-)	Fan Flower	H Gc	Lm	Oa
<i>Scaevola calandulacea</i> (-)	Scented Fan Flower	H Gc	Lm	Oa
<i>Scaevola ramosissima</i> (-)	A Fan Flower	H Gc	Lm	Oa
Lamiaceae				
<i>Ajuga australis</i>	Southern Bugle	H	Lm	Oa
<i>Plectranthus argenteus</i> (-)	Silver Native Coleus	H	Lm	Us Sa
<i>Plectranthus graveolens</i>	Native Coleus	H	Lm	Us Sa
<i>Plectranthus parviflorus</i>	Cockspur Flower	H	Lm	Us Sa
<i>Prostanthera ovalifolia</i>	Oval-leaf Mint Bush	S	Lm	Os Sa
Lauraceae				
<i>Cryptocarya laevigata</i>	Glossy Laurel	S/T	Lm	Us Sa
<i>Cryptocarya meisneriana</i>	Thick-leaf Laurel	S/T	Lm	Us Sa
Leeaceae				
<i>Leea indica</i> (-)	Bandicoot Berry	S	Lm	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
Lythraceae				
<i>Lagerstroemia archeriana</i> (-)	Native Crepe Myrtle	S/T	Lm	Us Oa Sa De
Malvaceae				
<i>Pavonia hastata</i> (-)	Pavonia	S	Lm	Oa Sa
<i>Hibiscus heterophyllus</i>	Native Rosella	S/T	Lm	Us Sa
<i>Hibiscus geranioides</i> (-)		S	Lm	Oa
Melastomaceae				
<i>Melastoma affine</i>	Pink Lasiandra	S	Lm	Us Sa Oa
Meliaceae				
<i>Turraca pubescens</i> (<i>brownii</i>)	Native Witch-Hazel	S/T	Lm	Us Sa
Menispermaceae				
<i>Pleogyne australis</i>	Pleogyne	V	Lm	Us Sa
Mimosaceae				
<i>Acacia complanata</i>	Flat-stem Wattle	S		Oa Pf
<i>Acacia hubbardiana</i>	Yellow Prickly Moses	S		Oa Pf
<i>Acacia irrorata</i>	Blue Skin	S		Oa Pf
<i>Acacia myrtifolia</i>	Myrtle Wattle	S		Oa Pf
<i>Acacia suaveolens</i>	Sweet Wattle	S		Oa Pf
<i>Acacia ulicifolia</i>	Prickly Moses	S		Oa Pf
<i>Archidendron lovelliae</i> (-)	Baconwood	S/T	Lm	Us Sa
Monimiaceae				
<i>Wilkiea huegeliana</i>	Tetra Beech	S/T	Lm	Us Sa
<i>Wilkiea macrophylla</i>	Large-leaf Wilkiea	S/T	Lm	Us Sa
Myoporaceae				
<i>Erenophila debilis</i>	Winter Apple	S Gc	Lm	Os
<i>Myoporum boninense</i> (<i>M. ellipticum</i>)	Boobialla	S Gc	Lm	Os
<i>Myoporum montanum</i>	Mountain Boobialla	S	Lm	Os
Myrsinaceae				
<i>Aegiceras corniculatum</i>	Milky Mangrove	S/T	Lm St	Oa Constal
<i>Rapanea howittiana</i>	Scrub Muttonwood	S/T	Lm	Us Sa
<i>Rapanea subsessilis</i>	Red Muttonwood	S/T	Lm	Us Sa
Myrtaceae				
<i>Archirohodomyrtus beckeri</i> (-)	Rose Myrtle	S	Lm	Us Sa
<i>Austroryrtus fragrantissima</i> (-)	Sweet Myrtle	T	Lm	Us Sa
<i>Austroryrtus hillii</i>	Scaly Myrtle	S/T	Lm	Us Sa
<i>Austroryrtus inophloia</i>	Thread-bark Myrtle	S/T	Lm	Us Sa
<i>Austroryrtus aff. lasioclada</i> (-)	Velvet Myrtle	T	Lm	Us Sa
<i>Austroryrtus metrosideros</i> (-)		S	Lm	Us Sa
<i>Ptilidostigma glabrum</i> (-)	Plum Myrtle	S	Lm	Us Sa
<i>Ptilidostigma rhytisperma</i>	Small-leaf Plum Myrtle	S	Lm	Us Sa
<i>Rhodamnia acuminata</i> (-)	Cooloola Ironwood	S	Lm	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
<i>Rhodammia dumicola</i>	Rib-fruit Malletwood	S/T	Im	Us Sa
<i>Rhodammia maidenii</i> (-)	Smooth Scrub Turpentine	S	Im	Us Sa
<i>Rhodomyrtus psidioides</i>	Native Guava	S	Im	Us Sa
<i>Syzygium wilsonii</i> (-)	Powder-puff Lilly Pilly	S	Im	Us Sa
Nyctaginaceae				
<i>Pisonia aculeata</i>	Native Bougainvillea	V	Im	Us Sa
Oleaceae				
<i>Jasminum simplicifolium</i>	Slender Jasmine	V	Im	Us Sa
<i>Notelaea ovata</i>	Netted Mock Olive	S	Im	Us Sa
<i>Notelaea venosa</i>	Veined Mock Olive	S	Im	Us Sa
Passifloraceae				
<i>Passiflora aurantia</i>	Red Passion Flower	V	Im	Us Oa Sa
<i>Passiflora herbertaina</i>	Yellow Passion Flower	V	Im	Us Oa Sa
Peperomiaceae				
<i>Peperomia blanda</i> (<i>leptostachya</i>)	Native Peperomia	H	Im	Us Sa
<i>Peperomia tetraphylla</i>	Native Peperomia	H	Im	Us Sa
Pittosporaceae				
<i>Citriobatus linearis</i>	Black-fruit Thornbush	S	Im	Us Sa
<i>Citriobatus paucifloris</i>	Orange Thornbush	S	Im	Us Sa
<i>Pittosporum revolutum</i>	Brisbane Laurel	S	Im	Us/Wb Sa/Oa
Proteaceae				
<i>Banksia oblongifolia</i>	Dwarf Banksia	S		Oa Pf
<i>Banksia robur</i>	Swamp Banksia	S		Oa Pf
<i>Grevillea leptophylla</i>	Wallum Grevillea	S		Oa Pf
<i>Grevillea 'Robyn Gordon'</i>	G. 'Robyn Gordon'	S		Oa Pf
<i>Grevillea sericea</i>	Pink Spider Flower	S		Oa Pf
<i>Grevillea 'Shirley Howie'</i>	G. 'Shirley Howie'	S		Oa Pf
<i>Grevillea 'Superb'</i>	G. 'Superb'	S		Oa Pf
<i>Hakea florulenta</i>	Hakea	S		Oa Pf
<i>Hakea purpurea</i>	Purple Hakea	S		Oa Pf
<i>Lambertia formosa</i> (-)	Mountain Devil	S		Oa Pf
<i>Lomatia silaifolia</i>	Crinkle-Bush	S		Oa Pf
<i>Stenocarpus angusifolia</i> (-)		S		Oa Pf
Rhizophoraceae				
<i>Bruguiera gymnorhiza</i>	Orange Mangrove	S/T	Lm St	Oa Coastal
<i>Ceriops tagal</i>	Yellow Mangrove	S/T	Lm St	Oa Coastal
<i>Rhizophora stylosa</i>	Stilted Mangrove	S/T	Lm St	Oa Coastal
Rosaceae				
<i>Rubus parvifolia</i>	Pink Raspberry	S	Im	Oa
<i>Rubus rosifolius</i>	Native Raspberry	S	Im	Us Sa
Rubiaceae				
<i>Canthium coprosmoides</i>	Coast Canthium	S/T	Im	Us Oa Sa
<i>Canthium lamprophyllum</i>	Large-leaf Canthium	S/T	Im	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
<i>Canthium microphyllum</i>	Small-leaf Canthium	S	Im	Us Sa
<i>Ixora bleckleri</i>	Brown Coffeewood	S/T	Im	Us Sa
<i>Morinda acutifolia</i>	Veiny Morinda	V	Im	Us Sa
<i>Morinda jasminoides</i>	Sweet Morinda	V	Im	Us Sa
<i>Pavetta australiensis</i>	Pavetta	S	Im	Us Sa
<i>Psychotria daphnoides</i>	Smooth Psychotria	S	Im	Us Sa
<i>Psychotria loniceroides</i>	Hairy Psychotria	S	Im	Us Sa
<i>Psychotria simmondsiana</i>	Small Psychotria	S	Im	Us Sa
<i>Randia benthamiana</i>	Native Gardenia	S	Im	Us Sa
<i>Randia chartacea</i>	Narrow-leaf Gardenia	S	Im	Us Sa
Rutaceae				
<i>Clausena brevistyla</i> (-)	Clausena	S	Im	Us Sa
<i>Microcitrus australasica</i> (-)	Finger Lime	S	Im	Us Sa
<i>Murraya ovatifoliolata</i> (-)	Native Murraya	S/T	Im	Us Sa
<i>Phebalium woomybe</i> (-)	Phebalium	S	Im	Oa
Sambucaceae				
<i>Sambucus australasica</i>	Yellow Elderberry	S	Im	Us Sa
Sapindaceae				
<i>Alecryon coriaceous</i> (-)	Beach Bird's Eye	S/T	Im	Wb Oa
<i>Arytera microphylla</i> (-)	Dwarf Coogara	S	Im	Us Sa
<i>Cupaniopsis newmanii</i> (-)	Long-leaf Tuckeroo	T	Im	Us Sa Oa
<i>Cupaniopsis serrata</i>	Rusty Tuckeroo	S/T	Im	Us Sa Oa
<i>Cupaniopsis wadswoorthii</i> (-)	Dwarf Tuckeroo	S	Im	Us Sa
<i>Harpullia alata</i> (-)	Wing-leaf Tulip	S	Im	Us Sa
<i>Mischocarpus sundaticus</i>	Red Pear-fruit	T	Im	Us Sa
Sapotaceae				
<i>Planchonella myrsinoides</i>	Yellow Plumwood	S/T	Im	Us Sa
Scrophulariaceae				
<i>Artenema fimbriatum</i>	Koala bells	H	Im	Oa
Tetragoniaceae				
<i>Tetragonia tetragonioides</i>	Native Spinach	H Gc	St Sc	Oa
Solanaceae				
<i>Duboisia myoporoides</i>	Corkwood	S/T	Im	Us Sa
<i>Solanum aviculare</i>	Kangaroo Apple	S	Im	Us Sa Oa
<i>Solanum densevestitum</i> (-)	Furry Nightshade	S	Im	Us Sa
<i>Solanum stelligerum</i> (-)	Star Nightshade	S	Im	Us Sa
Sterculiaceae				
<i>Brachyhiton bidwillii</i>	Little Kurrajong	S	Im	Us Sa Oa
<i>Commersonia fraserii</i>	Scrub Kurrajong	S	Im	Us Sa Oa
Symplocaceae				
<i>Symplocos baeuerlenii</i> (-)	Shrubby Hazelwood	S	Im	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
Thymeliaceae				
<i>Phaleria clerodendron</i> (-)		S	Lm	Us Sa
<i>Phaleria chermisideana</i>	Scrub Daphne	S/T	Lm	Us Sa
<i>Pimelea linifolia</i>	Slender Rice Flower	S		Oa
<i>Wikstroemia indica</i>	Tie Bush	S	Lm	Us Oa Sa
Tiliaceae				
<i>Corchorus cunninghamii</i>	Corchorus	S	Lm	Us Sa
Urticaceae				
<i>Elatostema reticulatum</i>	Rainforest Spinach	H	Lm	Us Sa
<i>Elatostema stipitatum</i> (-)	Small Soft Nettle	H	Lm	Us Sa
<i>Pipturus argenteus</i>	Native Mulberry	S/T	Lm	Us Sa
Verbenaceae				
<i>Callicarpa pedunculata</i>	Velvet-leaf	S	Lm	Us Sa
<i>Clerodendrum floribundum</i>	Lolly Bush	S/T	Lm	Us Oa Sa
<i>Clerodendrum tomentosum</i>	Hairy Lolly Bush	S/T	Lm	Us Oa Sa
<i>Phyla nodiflora</i> (-)	Condamine Couch	H Gc	Lm	Oa
<i>Vitex ovata</i> (-)	Vitex	S Gc	Lm	Oa
Violaceae				
<i>Viola betonicifolia</i>	Purple Violet	H	Lm	Us Sa
<i>Viola hederacea</i>	Native Violet	H	Lm	Us Sa
Vitaceae				
<i>Cayratia acris</i>	Hairy Water Vine	V	Lm	Us Sa
<i>Cayratia clematidea</i>	Slender Grape	V	Lm	Us Oa Sa
<i>Cayratia euryneia</i>	Soft Water Vine	V	Lm	Us Sa
<i>Cissus opaca</i>	Small-leaf Water Vine	V	Lm	Us Oa Sa
Winteraceae				
<i>Tasmannia insipida</i>	Pepper Bush	S	Lm	Us Sa
PTERIDOPHYTES				
Aspleniaceae				
<i>Asplenium attenuatum</i>	A Spleenwort	F	Lm	Sa
<i>Asplenium australasicum</i>	Crow's Nest Fern	eF	Lm	Sa
Osmondaceae				
<i>Todea barbara</i>	King Fern	tF	Lm	Us Sa
Polypodiaceae				
<i>Drynaria rigidula</i>	Basket Fern	eF	Lm	Sa
<i>Phymatodes scandens</i>	Scented Climbing Fern	tF	Lm	Sa
<i>Platyserium bifurcatum</i>	Elkhorn	eF	Lm	Sa
<i>Platyserium superbum</i>	Staghorn	F	Lm	Sa
<i>Pyrosia confluens</i>	Felt Fern	eF	Lm	Sa
<i>Pyrosia rupestris</i>	Rock Felt Fern	eF	Lm	Sa

Fire-Retardant Plants for Medium Gardens

The following plants can be used in addition to the list of plants for small gardens.

Scientific Name	Common Name	Form	Fire Retardance	Comments
MONOCOTYLEDONS				
Areaceae				
<i>Archontophoenix cunninghamii</i>	Picabeen Palm	P	Lm	Ad
<i>Calamus muelleri</i>	Lawyer Cane Vine	P	Lm	Ad
<i>Livistona australis</i>	Cabbage Palm	P	Lm	Ad
Smilacaceae				
<i>Ripogonum fawcettianum</i>	Small Supplejack	V	Lm	Sa
<i>Smilax australis</i>	Barb-wire Vine	V	Lm	Sa Oa
DICOTYLEDONS				
Akaniaceae				
<i>Akania lucens</i>	Turnipwood	T	Lm	Us
Alangiaceae				
<i>Alangium villosum polyosmoides</i>	Muskwood	T	Lm	Us
<i>Alangium villosum tomentosum</i>	Muskwood	T	Lm	Us
Annonaceae				
<i>Polyalthia nitidissima</i>	Canary Beech	T	Lm	Us
Apocynaceae				
<i>Alstonia constricta</i>	Quinine Tree	T	Lm	Us
<i>Melodinus acutiflorus</i>	Merangarra	V	Lm	Sa
<i>Melodinus australis</i>	Southern Melodinus	V	Lm	Sa
Araliaceae				
<i>Cephalalaria cephalobotrys</i>	Climbing Panax	V	Lm	Sa
Bignoniaceae				
<i>Pandorea pandorana</i>	Wonga Vine	V	Lm	Oa Sa
Caesalpinjiaceae				
<i>Barklya syringifolia</i>	Crown of Gold Tree	T	Lm	Us Sa Oa
<i>Cassia tomentella</i> (-)	Velvet Bean	S/T	Lm	Us Oa
Cunoniaceae				
<i>Callicoma serratifolia</i> (-)	White Alder	S/T	Lm	Us
Dilleniaceae				
<i>Tecomathe hillii</i> (-)	Fraser Island Climber	V	Lm	Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
Ebenaceae				
<i>Diospyros australis</i>	Black Plum	T	Lm	Us/Wb
<i>Diospyros geminata</i>	Scaly Ebony	T	Lm	Us/Wb
<i>Diospyros mabacea</i> (-)	Red-fruited Ebony	T	Lm	Us
Escalloniaceae				
<i>Anopteryx macleanus</i> (-)	Queensland Laurel	T	Lm	Us
<i>Polyalthia nitidissima</i>	Canary Beech	T	Lm	Us
Euphorbiaceae				
<i>Claoxylon australe</i>	Brittlewood	S/T	Lm	Us
<i>Croton achroynchioides</i>	Thick-leaved Croton	S/T	Lm	Us
<i>Croton insularis</i>	Queensland Cascarilla	S/T	Lm	Us
<i>Croton stigmatosus</i>	White Croton	T	Lm	Us
Fabaceae				
<i>Erythrina vespertilio</i>	Bat's Wing Coral Tree	T	Lm	Ad De
Hernandiaceae				
<i>Hernandia bivalvis</i>	Cudgerie	T	Lm	Wb
Lauraceae				
<i>Cryptocarya bidwillii</i>	Yellow Laurel	T	Lm	Wb
<i>Cryptocarya meisneriana</i>	Thick-leaf Laurel	T	Lm	Wb
<i>Cryptocarya sclerophylla</i>	Boonah Laurel	T	Lm	Wb
<i>Cryptocarya triplinervis</i>	Brown Laurel	T	Lm	Wb
<i>Cryptocarya triplinervis</i> var. <i>pubens</i>	Hairy Brown Laurel	T	Lm	Wb
Meliaceae				
<i>Owenia venosa</i>	Crow's Apple	T	Lm	Us/Wb
<i>Synoum glandulosum</i>	Scentless Rosewood	S/T	Lm	Us
<i>Turraea pubescens</i> (T. brownii)	Native Witch-Hazel	T	Lm	Us
Menispermaceae				
<i>Stephania japonica</i> var. <i>discolor</i>	Tape Vine	V	Lm	Sa Oa
Mimosaceae				
<i>Acacia aulacocarpa</i>	Hickory Wattle	T	Lm	Wb/Pf
<i>Acacia implexa</i>	Light Wood	T	Lm	Wb/Pf
<i>Acacia melanoxylon</i>	Blackwood	T	Lm	Wb/Pf
<i>Acacia cincinnata</i>	Wattle	S/T	Lm	Wb/Pf
<i>Pararchidendron pruinosum</i>	Snowwood	T	Lm	Us/Wb
Moraceae				
<i>Ficus coronata</i>	Creek Sandpaper Fig	T	Lm	Us/Wb
<i>Ficus fraseri</i>	A Sandpaper Fig	T	Lm	Us/Wb
<i>Ficus opposita</i>	A Sandpaper Fig	T	Lm	Us/Wb
<i>Streblus brunonianus</i> (S. pendulinus)	Whalebone Tree	T	Lm	Us/Wb

Scientific Name	Common Name	Form	Fire Retardance	Comments
Myoporaceae				
<i>Myoporum acuminatum</i>	Coast Boobialla	S/T	Lm	Wb Oa
Myrsinaceae				
<i>Rapanea variabilis</i>	Muttonwood	T	Lm	Us
Myrtaceae				
<i>Acmena smithii</i> (small varieties)	Creek Lilly Pilly	T	Lm	Us/Wb
<i>Decaspermum humile</i>	Silky Myrtle	S/T	Lm	Us
<i>Metrosideros queenslandica</i> (-)	Pink Myrtle	T	Lm	Us
<i>Rhodamnia rubescens</i>	Brown Malletwood	T	Lm	Us/Wb
<i>Syzygium hodgkinsonia</i> (-)	Smooth-bark Rose Apple	T	Lm	Us
Oleaceae				
<i>Notelaea johnsonii</i>	Veinless Mock Olive	S/T	Lm	Us
<i>Notelaea longifolia</i>	Large Mock Olive	S/T	Lm	Us/Wb
<i>Notelaea microcarpa</i>	Velvet Mock Olive	S/T	Lm	Us/Wb
Pittosporaceae				
<i>Hymenosporum flavum</i>	Native Frangipani	T	Lm	Us Ad
<i>Pittosporum undulatum</i>	Mock Orange	T	Lm	Us/Wb
Proteaceae				
<i>Buckinghamia celsissima</i> (-)	Ivory Curl Flower	T	Lm	Wb
<i>Grevillea helmsiae</i> (-)	Red Boppel Nut	T	Lm	Us Pf
<i>Hicksbeachia pinnatifolia</i> (-)	Tree Lomatia	T	Lm	Us Ad Pf
<i>Lomatia arborescens</i> (-)	Queensland Nut	S/T	Lm	Us Pf
<i>Macadamia integrifolia</i>	Maroochy Nut	T	Lm	Wb
<i>Macadamia ternifolia</i>	Rough Shell Bush Nut	T	Lm	Wb
<i>Macadamia tetraphylla</i>	Spice Bush	T	Lm	Wb
<i>Triunia youngiana</i>		T	Lm	Us
Rubiaceae				
<i>Coelospermum paniculatum</i>	Coelospermum	V	Lm	Sa
<i>Hodgkinsonia ovatiflora</i>	Golden Ash	T	Lm	Us/Wb
Rununculaceae				
<i>Clematis glycinoides</i>	Headache Vine	V	Lm	Sa
Rutaceae				
<i>Acronychia imperforata</i>	Coast Aspen	S/T	Lm	Us/Wb
<i>Acronychia pauciflora</i>	Soft Acronychia	S/T	Lm	Us
<i>Microcitrus australis</i>	Round Lime	S	Lm	Us
Sapindaceae				
<i>Alectryon connatus</i>	Alectryon	T	Lm	Wb Show at first
<i>Alectryon subcinerus</i>	Wild Quince	T	Lm	Wb
<i>Alectryon subdentatus</i>	Holly-leaf Bird's Eye	T	Lm	Wb
<i>Alectryon tomentosus</i>	Hairy Bird's Eye	T	Lm	Wb
<i>Arytera distylis</i>	Twin-leaf Coogera	T	Lm	Wb

Scientific Name	Common Name	Form	Fire Retardance	Comments
<i>Arytera divaricata</i>	Rose Tamarind	T	Lm	Wb
<i>Arytera foveolata</i>	Pitted Coogera	T	Lm	Wb
<i>Cupaniopsis parvifolia</i>	Small-leaf Tuckeroo	T	Lm	Wb
<i>Cupaniopsis shirleyana</i> (-)	Wedge-leaf Tuckeroo	T	Lm	Us/Wb
<i>Cupaniopsis tomentella</i> (-)	Boonah Tuckeroo	T	Lm	Wb
<i>Elattostachys nervosa</i>	Beetroot	T	Lm	Us/Wb
<i>Elattostachys xylocarpa</i>	White Tamarind	T	Lm	Wb
<i>Guioa semiglaucula</i>	Wild Quince	T	Lm	Wb
<i>Lepiderema pulchella</i> (-)	Fine-leaf Tuckeroo	T	Lm	Wb
<i>Mischocarpus australis</i>	Red Pear-fruit	T	Lm	Wb
<i>Toechima tenax</i>	Scrub Teak	T	Lm	Wb
Sapotaceae				
<i>Planchonella chartacea</i>	Thin-leaf Plum	S/T	Lm	Us Sa
<i>Planchonella cotinifolia</i>	Small-leaf Plum	S/T	Lm	Us Sa
Simaroubaceae				
<i>Guifsoyia monostylis</i>	Native Plum	T	Lm	Us
Symplocaceae				
<i>Symplocos thwaitesii</i>	Buff Hazelwood	S/T	Lm	Us
PTERIDOPHYTES				
Cyatheaceae				
<i>Cyathea australis</i>	Rough Tree Fern	tF	Lm	Us
<i>Cyathea cooperi</i>	Common Tree Fern	tF	Lm	Us
<i>Cyathea leichhardtiana</i>	Prickly Tree Fern	tF	Lm	Us

Fire-Retardant Plants for Large Gardens, Acreage Blocks, Parks and Farms

The following plants can be used in addition to the lists of plants for small and medium gardens.

Scientific Name	Common Name	Form	Fire Retardance	Comments
GYMNOSPERMS				
Araucariaceae				
<i>Agathis robusta</i> (-)	Qld Kauri	T	Lm	Pf - resin
<i>Araucaria bidwillii</i> (-)	Bunya Pine	T	Lm	Pf - resin
<i>Araucaria cunninghamii</i>	Hoop Pine	T	Lm	Pf - resin
Podocarpaceae				
<i>Podocarpus elatus</i>	Brown or Plum Pine	T	Lm	Pf - resin
MONOCOTYLEDONS				
Araceae (Palmae)				
<i>Calamus muelleri</i>	Lawyer Cane Vine	V	Lm	Sa Oa

Scientific Name	Common Name	Form	Fire Retardance	Comments
-----------------	-------------	------	-----------------	----------

Flagellariaceae				
<i>Flagellaria indica</i>	Supplejack	V	Lm	Sa
Pandanaceae				
<i>Freyinetia excelsa</i>	Climbing Pandanus	V	Lm	Sa
<i>Freyinetia scandens</i>	Climbing Pandanus	V	Lm	Sa
Smilacaceae				
<i>Ripogonum album</i>	White Supplejack	V	Lm	Sa
<i>Ripogonum brevifolium</i>	Supplejack	V	Lm	Sa
<i>Ripogonum discolor</i>	Prickly Supplejack	V	Lm	Sa
<i>Ripogonum elseyanum</i>	Hairy Supplejack	V	Lm	Sa

DICOTYLEDONS

Anacardiaceae				
<i>Euroschinus falcata</i>	Ribbonwood	T	Lm	Wb
<i>Rhodospaera rhodanthema</i>	Deep Yellowwood	T	Lm	Wb
Annonaceae				
<i>Melodorum leichhardtii</i> (<i>Rauwenhoffia</i> L.)	Zig-Zag Vine	V	Lm	Sa
Apocynaceae				
<i>Alstonia constricta</i>	Quinine Tree	T	Lm	Wb
<i>Melodinus acutiflorus</i>	Merangarra	V	Lm	Sa
<i>Melodinus australis</i>	Southern Melodinus	V	Lm	Sa
<i>Parsonsia eucalyptophylla</i>	Gargaloo	V	Lm	Sa Oa
<i>Parsonsia fulva</i>	Furry Silkpod	V	Lm	Sa
<i>Parsonsia lanceolata</i>	Northern Silkpod	V	Lm	Sa
<i>Parsonsia latifolia</i>	Monkey Vine	V	Lm	Sa
<i>Parsonsia straminea</i>	Monkey Rope	V	Lm	Sa Oa
<i>Parsonsia velutina</i>	Velvet Silkpod	V	Lm	Sa Oa
<i>Parsonsia ventricosa</i>	Pointed Silkpod	V	Lm	Sa
Araceae				
<i>Calamus muelleri</i>	Lawyer Cane	V	Lm	Sa
Araliaceae				
<i>Cephalalaria cephalobotrys</i>	Climbing Panax	V	Lm	Sa
<i>Polyscias elegans</i>	Celerywood	T	Lm	Wb/Ad Oa
<i>Polyscias murrayi</i>	Pencil Cedar	T	Lm	Sa
Asclepiadaceae				
<i>Marsdenia rostrata</i>	Common Milk Vine	V	Lm	Sa
Atherospermataceae				
<i>Daphnandra micrantha</i>	Socketwood	T	Lm	Wb

A P P E N D I C E S

Scientific Name	Common Name	Form	Fire Retardance	Comments
Avicenniaceae				
<i>Avicennia marina</i>	Grey Mangrove	T	Lm St	Oa Coastal
Burseraceae				
<i>Canarium australasicum</i>	Carrotwood	T	Lm	Wb
Caesalpinjiaceae				
<i>Cassia marksiiana</i> (-)	Native Laburnum	T	Lm	Wb
<i>Caesalpinia bonduc</i>	Caesalpinia	V	Lm	Sa
<i>Caesalpinia scortechinii</i>	Large Prickle Vine	V	Lm	Sa
<i>Caesalpinia subtropica</i>	Corky Prickle Vine	V	Lm	Sa
Celastraceae				
<i>Celastrus australis</i>	Staff Climber	V	Lm	Sa
<i>Celastrus subspicatus</i>	Large Staff Vine	V	Lm	Sa
<i>Loeseneriella barbata</i> (<i>Hippocratea</i> b.)	Knot Vine	V	Lm	Sa
Cunoniaceae				
<i>Caldcluvia paniculosa</i>	Rose-leaf Marara	T	Lm	Wb
<i>Ceratopetalum apetalum</i> (-)	Coachwood	T	Lm	Wb
<i>Geissois benthamii</i>	Red Carabeen	T	Lm	Wb
<i>Pseudoweinmannia lachnocarpa</i>	Marara	T	Lm	Wb
<i>Schizomeria ovata</i>	White Birch	T	Lm	Us/Wb
Ebenaceae				
<i>Diospyros fasciculosa</i>	Grey Ebony	T	Lm	Wb
<i>Diospyros pentamera</i>	Myrtle Ebony	T	Lm	Wb
Ehretiaceae				
<i>Cordia dichotoma</i> (-)	Cordia	T	Lm	Wb
<i>Ehretia acuminata</i>	Koda	T	Lm	Ad De
Elaeocarpaceae				
<i>Elaeocarpus eumundi</i>	Eumundi Quandong	T	Lm	Wb
<i>Elaeocarpus grandis</i>	Blue Quandong	T	Lm	Wb
<i>Elaeocarpus kirtonii</i>	White Quandong	T	Lm	Wb
<i>Elaeocarpus obovatus</i>	Hard Quandong	T	Lm	Wb
<i>Sloanea australis</i>	Maiden's Blush	T	Lm	Wb
<i>Sloanea woollsi</i>	Yellow Carabeen	T	Lm	Wb
Escalloniaceae				
<i>Quintinia verdonii</i>	Grey Possumwood	T	Lm	Wb
Euphorbiaceae				
<i>Austrobauxis swainii</i> (-)	Pink Cherry	T	Lm	Wb
<i>Baloghia inophylla</i> (<i>B. lucida</i>)	Scrub Bloodwood	T	Lm	Wb
<i>Bridelia exaltata</i>	Scrub Ironbark	T	Lm	Wb
<i>Bridelia leichhardtii</i>	Leichhardt's Ironbark	T	Lm	Wb
<i>Claoxylon australe</i>	Brittlewood	T	Lm	Wb
Scientific Name	Common Name	Form	Fire Retardance	Comments
<i>Dissiliaria baloghoides</i>	Lancewood	T	Lm	Wb
<i>Drypetes australasica</i>	Yellow Tulip	T	Lm	Wb
<i>Excoecaria agallocha</i>	Milky Mangrove	T	Lm St	Ad Coastal
<i>Excoecaria dallachyana</i>	Scrub Poison Tree	T	Lm	Wb
<i>Glochidion ferdinandi</i>	Cheese Tree	T	Lm	Wb
<i>Glochidion sumatranum</i>	Buttonwood	T	Lm	Wb
<i>Mallotus discolor</i>	Yellow Kamala	T	Lm	Wb
<i>Mallotus philippensis</i>	Red Kamala	T	Lm	Wb
Fabaceae				
<i>Austrosteenisia blackii</i>	Blood Vine	V	Lm	Sa Oa
<i>Castanospermum australe</i>	Black Bean	T	Lm	Wb
<i>Derris involuta</i>	Native Derris	V	Lm	Sa
<i>Erythrina sp. Lacey's Creek</i>	Corkwood	T	Lm	Ad De
<i>Erythrina vesperitilo</i>	Batswing Coral Tree	T	Lm	Ad De
<i>Mucuna gigantea</i>	Bumy Bean	V	Lm	Sa
Flacourtiaceae				
<i>Scolopia braunii</i>	Flintwood	T	Lm	Wb
Flindersiaceae				
<i>Flindersia australis</i>	Crows Ash	T	Lm	Wb
<i>Flindersia bennettiana</i>	Bennett's Ash	T	Lm	Wb
<i>Flindersia collina</i>	Leopard Ash	T	Lm	Wb
<i>Flindersia schottiana</i>	Cudgerie or Bumpy Ash	T	Lm	Wb
<i>Flindersia xanthoxyla</i>	Yellowwood	T	Lm	Wb
Icacinaceae				
<i>Citronella moorei</i>	Churnwood	T	Lm	Wb
<i>Pennantia cunninghamii</i>	Brown Beech	T	Lm	Wb
Lauraceae				
<i>Cryptocarya erythroxylon</i>	Pigeonberry Ash	T	Lm	Wb
<i>Cryptocarya hypospodia</i>	Rib-fruit Pepperberry	T	Lm	Wb
<i>Cryptocarya macdonaldii</i>	Cooloola Laurel	T	Lm	Wb
<i>Cryptocarya microneura</i>	Murrogum	T	Lm	Wb
<i>Cryptocarya obovata</i>	Pepperberry Tree	T	Lm	Wb
<i>Endiandra muelleri</i>	Mueller's Walnut	T	Lm	Wb
<i>Endiandra pubens</i>	Hairy Walnut	T	Lm	Wb
<i>Endiandra sieberi</i> (-)	Hard Corkwood	T	Lm	Wb
<i>Neolitsea australiensis</i>	Grey Bolly Gum	T	Lm	Wb
<i>Neolitsea dealbata</i>	White Bolly Gum	T	Lm	Us/Wb
Malvaceae				
<i>Hibiscus tiliaceus</i>	Cotton Tree	T	Lm	Wb
<i>Lagunaria patersonii</i> (-)	Norfolk Is Hibiscus	T	Lm	Wb
Meliaceae				
<i>Anthocarapa nitidula</i> (<i>Pseudocarapa nitidula</i>)	Incense Cedar	T	Lm	Wb
<i>Dysoxylum fraserianum</i>	Rosewood	T	Lm	Wb

Scientific Name	Common Name	Form	Fire Retardance	Comments
<i>Dysoxylum mollissimum</i>	Red Bean	T	Lm	Wb
<i>ssp. molle (D. muelleri)</i>	Hairy Rosewood	T	Lm	Wb
<i>Dysoxylum rufum</i>	White Cedar	T	Lm	Wb/Ad Dv
<i>Melia azedarach</i>	Onion Cedar	T	Lm	Wb
<i>Owenia cepiodora</i>	Red Cedar	T	Lm	Wb/Ad Dv
<i>Toona australis</i>				
Menispermaceae				
<i>Legnephora moorei</i>	Wild Grape	V	Lm	Sa
<i>Sarcopetalum harveyanum</i>	Pearl Vine	V	Lm	Sa
<i>Stephania aculeata</i>	Prickly Snake Vine	V	Lm	Sa
<i>Tinospora smilacina</i>	Snake Vine	V	Lm	Sa
<i>Tinospora tinoporoides</i>	Arrow-head Vine	V	Lm	Sa
Mimosaceae				
<i>Acacia aulacocarpa</i> var. <i>aulacocarpa</i>	Hickory Wattle	T	Lm	Wb Pf
<i>Acacia bakeri</i>	Marblewood	T	Lm	Wb Pf
<i>Acacia harpophylla</i> (-)	Brigalow Wattle	T	Lm	Wb
<i>Acacia melanoxylon</i>	Blackwood	T	Lm	Wb Pf
<i>Archidendron grandiflorum</i>	Lace Flower	T	Lm	Wb
Monimiaceae				
<i>Palmeria scandens</i>	Anchor Vine	V	Lm	Sa
Moraceae				
<i>Ficus macrophylla</i>	Moreton Bay Fig	T	Lm	Wb
<i>Ficus obliqua</i>	Small-leafed Fig	T	Lm	Wb
<i>Ficus platypoda</i>	Rock Fig	T	Lm	Wb
<i>Ficus superba</i> var. <i>henniana</i>	Deciduous Fig	T	Lm	Ad De
<i>Ficus virens</i> var. <i>sublanceolata</i>	White Fig	T	Lm	Wb
<i>Ficus waltkinsiana</i>	Nipple Fig	T	Lm	Wb
<i>Maclura cochinchinensis</i> (Cudrania c.)	Cockspear Thorn	V	Lm	Oa Sa
<i>Malaisia scandens</i>	Burny Vine	V	Lm	Sa
Myrtaceae				
<i>Acmena hemilampra</i>	Blush Satinash	V	Lm	Wb
<i>Acmena ingens</i> (A. brachyandra)	Red Apple	V	Lm	Wb
<i>Acmena smithii</i>	Creek Lilly Pilly	T	Lm	Wb
<i>Lophostemon confertus</i>	Brush Box	T	Lm	Wb
<i>Syncarpia glomulifera</i>	Turpentine	T	Lm	Wb
<i>Syzygium australe</i>	Scrub Cherry	T	Lm	Wb
<i>Syzygium corynanthum</i>	Sour cherry	T	Lm	Wb
<i>Syzygium crebrinerve</i>	Purple Cherry	T	Lm	Wb
<i>Syzygium moorei</i> (-)	Durobby	T	Lm	Wb
Nyctaginaceae				
<i>Pisonia aculeata</i>	Native Bougainvillea	V	Lm	Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
Oleaceae				
<i>Olea paniculata</i>	Native Olive	T	Lm	Wb
Piperaceae				
<i>Piper novae-hollandiae</i>	Native Pepper Vine	V	Lm	Sa
Pittosporaceae				
<i>Pittosporum rhombifolium</i>	Hollywood	T	Lm	Wb
Proteaceae				
<i>Floydia praealta</i>	Ball Nut	T	Lm	Wb
<i>Grevillea hilliana</i> (-)	Hill's Silky Oak	T	Lm	Pf
<i>Grevillea robusta</i>	Silky Oak	T	Lm	Pf
<i>Helictia glabriflora</i>	Smooth Helictia	T	Lm	Pf
<i>Macadamia integrifolia</i>	Queensland Nut	T	Lm	Wb
<i>Macadamia ternifolia</i>	Maroochy Nut	T	Lm	Wb
<i>Macadamia tetraphylla</i> (-)	Rough-shell Bush Nut	T	Lm	Wb
<i>Oriocallis pinnata</i> (-)	Pink Silky Oak	T	Lm	Pf
<i>Oriocallis wickhamii</i> (-)	Satin Oak	T	Lm	Pf
(<i>Alloxylon flammeum</i>)				
<i>Stenocarpus saltignus</i> (-)	Scrub Beefwood	T	Lm	Pf
<i>Stenocarpus sinuatus</i>	Wheel of Fire Tree	T	Lm	Wb
Ranunculaceae				
<i>Clematis aristata</i>	Old Man's Beard	V	Lm	Sa
Rhamnaceae				
<i>Alphitonia excelsa</i>	Red Ash	T	Lm	Wb
<i>Alphitonia petrei</i>	Pink Ash	T	Lm	Wb
<i>Emmenosperma alphitonioides</i>	Yellow Ash	T	Lm	Wb
Rosaceae				
<i>Rubus moluccanus</i>	Moltucca Bramble	V	Lm	Sa
Rutaceae				
<i>Acronychia oblongifolia</i>	White Lilly Pilly	ST	Lm	Wb
<i>Acronychia suberosa</i>	Corky Acronychia	T	Lm	Wb
<i>Sarcomelicope simplicifolia</i>	Bauerella	T	Lm	Wb
Sapindaceae				
<i>Alectryon reticulatus</i>	Alectryon	T	Lm	Wb
<i>Arytera lautererana</i>	Corduroy Tamarind	T	Lm	Wb
<i>Atalaya multiflora</i>	Broad-leaf Whitewood	T	Lm	Wb
<i>Atalaya salicifolia</i> (A. virens)	Scrub Whitewood	T	Lm	Wb
<i>Castanospora aphanandi</i> (-)	Brown Tamarind	T	Lm	Wb
<i>Cupaniopsis anacardioides</i>	Tuckeroo	T	Lm	Wb
<i>Cupaniopsis flagelliformis</i> (-)	Brown Tuckeroo	ST	Lm	Wb
<i>Diploglottis campbellii</i> (-)	Small-leaf Tamarind	T	Lm	Wb
<i>Diploglottis cunninghamii</i>	Native Tamarind	T	Lm	Wb/Ad
<i>Harpullia hillei</i>	Blunt-leaf Tulip	T	Lm	Wb
<i>Harpullia pendula</i>	Tulipwood	T	Lm	Wb

Scientific Name	Common Name	Form	Fire Retardance	Comments
<i>Jagera pseudorhus</i>	Foam Bark Tree	T	Lm	Wb
<i>Mischocarpus anodontus</i>	Veiny Pear-fruit	T	Lm	Wb
<i>Mischocarpus pyriformis</i>	Yellow Pear-fruit	T	Lm	Wb
<i>Rhysotoechia bifoliolata</i> (-)	Twin-leaf Tuckeroo	T	Lm	Wb
<i>Sarcopteryx stipata</i>	Corduroy	T	Lm	Wb
<i>Toechima dasyrrhache</i>	Blunt-leaf Steelwood	T	Lm	Wb
Sapotaceae				
<i>Amorphospermum antilogum</i>	Brown Pearwood	T	Lm	Wb
<i>Amorphospermum whitei</i> (-)	Rusty Plum	T	Lm	Wb
<i>Planchonella australis</i>	Black Apple	T	Lm	Wb
<i>Planchonella laurifolia</i> (-)	Blush Coondoo	T	Lm	Wb
<i>Planchonella pohimantana</i>	Yellow Boxwood	T	Lm	Wb
Simaroubaceae				
<i>Ailanthus triphysa</i>	White Siris	T	Lm	Wb
<i>Guilfoylia monostylis</i>	Native Plum	T	Lm	Wb
Siphonodontaceae				
<i>Siphonodon australis</i>	Ivorywood	T	Lm	Wb
Sterculiaceae				
<i>Argyrodendron actinophyllum</i>	Black Booyong	T	Lm	Wb
<i>Argyrodendron trifoliolatum</i>	Brown Tulip Oak	T	Lm	Wb
<i>Brachychiton acerifolius</i>	Flame Tree	T	Lm	Ad De
<i>Brachychiton discolor</i>	Lace Bark	T	Lm	Ad De
<i>Brachychiton populneus</i>	Kurrajong	T	Lm	Wb
<i>Brachychiton rupestris</i> (-)	Qld Bottletree	T	Lm	Ad De
<i>Brachychiton</i> sp. (-)	Ormeau Bottletree	T	Lm	Ad De
<i>Commersonia bartramia</i>	Brown Kurrajong	T	Lm	Us/Wb
<i>Sterculia quadrifida</i>	Peanut Tree	T	Lm	Ad De
Symplocaceae				
<i>Symplocos stawelli</i>	White Hazelwood	T	Lm	Wb
Ulmaceae				
<i>Aplatanthe philippinensis</i>	Native Elm	T	Lm	Wb
<i>Celtis paniculata</i>	Investigator Tree	T	Lm	Wb
Urticaceae				
<i>Dendrocnide excelsa</i>	Giant Stinging Tree	T	Lm	Wb
<i>Dendrocnide photinophylla</i>	Mulberry Stinger	T	Lm	Wb
Verbenaceae				
<i>Gmelina leichhardtii</i>	White Beech	T	Lm	Wb
<i>Premna lignum-vitae</i>	Lignum-vitae	T	Lm	Wb
Vitaceae				
<i>Cissus antarctica</i>	Kangaroo Vine	V	Lm	Wb
<i>Cissus hypoglauca</i>	Five-leaf Watervine	V	Lm	Wb
<i>Cissus sterculiifolia</i>	Long-leaf Watervine	V	Lm	Wb
<i>Tetrasigma nitens</i>	Shining Grape	V	Lm	Wb

Appendix 2

Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots

Source: Queensland Fire and Emergency Services (2015)

Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots



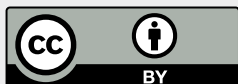
1. Table of Contents

1. Scope	3
2. Introduction	3
3. Where Do These Guidelines Apply?	3
4. Water Supply Specification	4
<i>Figure 1 – Reticulated Hydrant System</i>	4
<i>Figure 2 – Use of Hydrant System</i>	4
<i>Figure 3 – Hydrant Markers</i>	5
<i>Figure 4 – Hydrant marker posts</i>	5
<i>Figure 5 – Location of cats eyes on a sealed roadway</i>	5
<i>Figure 6 – Hydrant System design to minimum standards</i>	6
5. Vehicle Access Requirements.....	6
<i>Figure 7 – Vehicle Turning Provisions</i>	7

Glossary of Terms

In this document, the terms are limited to the meanings described below.

Building:	A building is a fixed structure that is wholly or partly enclosed by walls or is roofed.
Structure:	For this document refer to definition of a Building.
Fire Appliance:	A vehicle used to combat a fire. A typical fire appliance (a pumper) is approximately 2.5m wide, 7.7m long and it is typically used in urban residential areas. Further specifications of fire appliances and larger appliances are available from the QFES if design solutions are required for specific situations.
Hydrant:	An assembly installed on a branch from a water pipeline, which provides a valved outlet to permit a supply of water to be taken from the pipeline for fire fighting. These include above and below ground hydrants.
QFES:	Queensland Fire and Emergency Services.
Material Change of Use:	As per the <i>Sustainable Planning Act 2009</i>
Reconfiguration of a Lot:	As per the <i>Sustainable Planning Act 2009</i>
Reticulated Water Supply:	Is a permanent infrastructure provided to deliver treated water to lots from an Urban Utility Authority through a system of pipes, mains, control valves etc. for household or industrial use. It will supply uninterrupted water at a positive pressure for fire fighting purposes.
Road or Carriageway:	Construction which is specifically designed for all vehicle travel (may or may not include a sealed top surface layer).
A Constructed Road:	For the purpose of defining widths, includes the part of the road reserve set aside for traffic and also includes roll-over kerbs but does not include the remaining part of the road reserve.
Trafficable Width:	Refers to that width of the constructed road that is unimpeded by encroachments such as street furniture or landscaping, and is available for free movement of fire appliances.



© State of Queensland (Queensland Fire and Emergency Services) 2015

The Queensland Government, acting through the Queensland Fire and Emergency Services, supports and encourages the dissemination and exchange of publicly funded information and endorses the use of the Australian Governments Open Access and Licensing Framework (AusGOAL). All Queensland Fire and Emergency Services material in this document – except the QPS logo, any material protected by a trademark, and unless otherwise noted – is licensed under a [Creative Commons Attribution 4.0 licence](#). The Queensland Fire and Emergency Services has undertaken reasonable enquiries to identify material owned by third parties and secure permission for its reproduction. Permission may need to be obtained from third parties to re-use their material.

Written requests relating to the copyright in this document should be addressed to:

Intellectual Property Coordinator
 Information Management, Ministerial and Executive Services
 Public Safety Business Agency
 GPO Box 9879, Brisbane 4001
 EM: PSBA.Copyright@PSBA.qld.gov.au

Public Safety Business Agency working in partnership with the Queensland Fire and Emergency Services.

1. Scope

For applications seeking development approval for material change of use or reconfiguring a lot for the purpose of building, where streets and common access ways are proposed regardless of building classification.

Where reticulated hydrant systems and vehicle access are not currently required under the *Sustainable Planning Act 2009* (SPA), the *Building Act 1975* or Building Code of Australia (BCA) the measures in this document should be adopted.

Australian Standard (AS) 2419.1 2005 Appendix B is a minimum standard of design and performance for the State of Queensland. In a Local Government Authority where a local Water Authority specifies a design and performance criteria above the requirements of AS 2419.1 2005 Appendix B, the Local Water Authority requirements will be adopted.

For the installed reticulated hydrant systems the minimum water flow rate and pressure is to be 10 L/S @ 200 Kpa as per AS 2419.1 2005 Table 2.2. In a Local Government Authority where a local Water Authority specifies a flow rate and pressure above the requirements of AS 2419.1 2005 Table 2.2, the Local Water Authority requirements will be adopted.

For fire appliance access, a minimum width and height clearance for roadways is required. Constructed roads must comply with Government legislation such as the "Road Planning and Design Manual".

2. Introduction

The Queensland Fire and Emergency Services (QFES) is the primary provider of fire and rescue services throughout Queensland. The QFES is responsible for community safety, the protection of people, property and the environment from fire and chemical incidents and, in conjunction with other agencies, the rescue of people trapped in vehicles, buildings and other emergency situations.

The loss of life and property damage by fire in residential, commercial and industrial premises is a major concern to the QFES, and for this reason, these lot reconfigurations need to be designed to provide ready access for fire appliances, whilst providing a fire fighting water supply from a Hydrant System.

Water supply and access requirements for material change of use or reconfiguring a lot within this document are a planning tool and advice for building and developer applicants, it is not the intent of this document for land development applications to be referred to the QFES. They outline fire safety requirements to enable the QFES to efficiently manage fire incidents.

This document reflects Queensland Government policy of promoting sustainable development that achieves economic, social and environmental objectives, including safety. The provisions are flexible allowing planners and designers to economically achieve safety objectives without compromising aesthetics or amenity.

3. Where Do These Guidelines Apply?

These guidelines apply to all material change of use or reconfiguration of a lot that will include streets and common access ways within a common private title in areas serviced by reticulated water within Queensland, for residential buildings, both attached and detached commercial or industrial buildings that are not covered in other legislation or planning provisions.

For example, this would apply to planned townships or reconfigurations regardless of current fire service intervention.

4. Water Supply Specification

Installed reticulated hydrant systems are to be located on roadways or access ways for all material change of use and reconfigured lots for fire fighting purposes as per AS 2419.1 2005 Appendix B that provides a minimum standard for hydrant intervals. In a Local Government Authority where a Local Water Authority specifies a design and performance criteria above the requirements of AS 2419.1 2005 Appendix B, the Local Water Authority requirements will be adopted.

For the installed reticulated hydrant systems the minimum water flow rate and pressure is to be 10 L/S @ 200 Kpa as per AS 2419.1 2005 Table 2.2. In a Local Government Authority where a local Water Authority specifies a flow rate and pressure above the requirements of AS 2419.1 2005 Table 2.2, the Local Water Authority requirements will be adopted.

4.1 Hydrant Provision:

Hydrant Provision	
Expectation	Acceptable Outcomes
Where reticulated water is available, operable hydrants are to be provided.	Hydrants above or below ground should be provided and maintained to the minimum required performance standard as per AS 2419.1 2005.

Rationale:

Firefighters use water as a prime extinguishing medium for structure fires. Reticulated water mains have hydrants placed at regular intervals to enable firefighters to connect into the reticulated system. The water is pressurised by pumps in the fire appliance and delivered via hoses to the fire.

Figure 1 illustrates hydrant locations on reticulated water mains.



Figure 1 – Reticulated Hydrant System



Figure 2 – Use of Hydrant System

4.2 Hydrant Markers

Hydrant Markers	
Expectation	Acceptable Outcomes
Hydrants are suitably identified so that firefighters can locate them at all hours.	Blue cats eyes are preferred for sealed roads. Marker posts at the fence line should be used to identify hydrants where there is an unsealed road as road (HR) or path (HP) hydrants. The Figures 3-6 are examples of marker locations.

Rationale:

Firefighters need to quickly locate water supplies in emergencies. Hydrant indicators need to be visually identifiable from both directions by the approaching fire appliance crews and must identify the location of the hydrant.



Figure 3 – Hydrant Markers

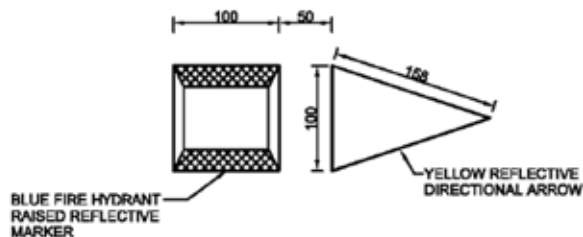
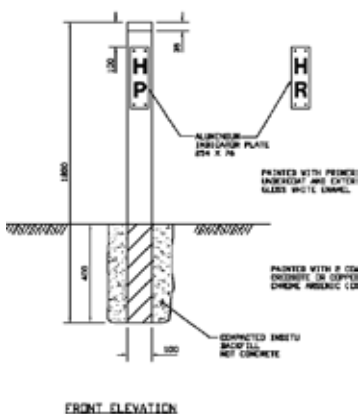


Figure 5 – Marker/directional arrow spacing detail



- INDICATOR PLATES**
- 254 x 76 aluminium indicator plate.
 - Fix top and bottom with galvanised clouts.
 - HP indicates hydrant located in footpath.
 - HR indicate hydrant located in road carriageway.

Figure 4 – Hydrant marker posts

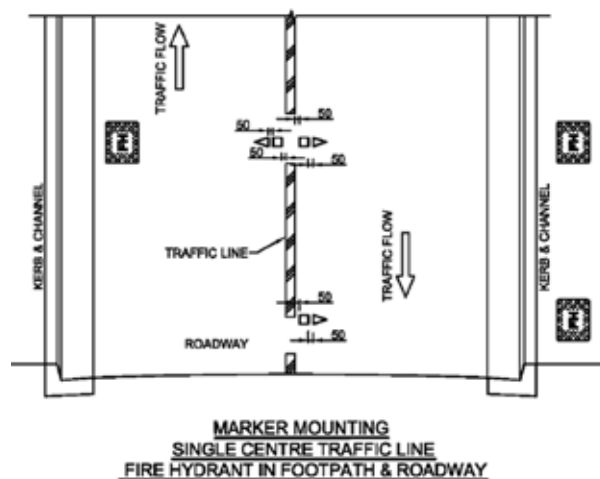


Figure 6 – Location of cats eyes on a sealed roadway

4.3 Hydrant Location

Hydrant Location	
Expectation	Acceptable Outcomes
Hydrants are located in positions that will enable firefighters to access water safely, effectively and efficiently.	<p>Residential Streets and Accessways</p> <p>Above or below ground fire hydrants should be provided at not more than 120m intervals along residential streets and at each street intersection. Above ground fire hydrants may be single outlet.</p> <p>Commercial and Industrial Streets and Accessways</p> <p>Within streets serving commercial properties such as factories, warehouses and offices, above or below ground fire hydrants should be provided at not more than 90 m intervals and at each street intersection. Above ground fire hydrants should have dual valved outlets.</p>

Rationale:

Upon arriving at a structure fire, firefighters site the fire appliance with considerations to safety, access to the fire, other responding appliances and accessible water supply for fire fighting purposes. Firefighters have an expectation that fire hydrants will be located on reticulated water systems no more than 120 metres apart as per AS 2419.1 2005, Appendix B. QFES equipment, procedures and the training of personnel is based on this preferred standard of fire hydrant placement and associated access requirements.



Note: Hydrants should be located at each intersection. With this in mind hydrant interval distances should not exceed 120 metres.

Figure 6 – Hydrant System design to minimum standards

5. Vehicle Access Requirements

Fire service vehicular access is to enable the service to intervene to fight the fire, assist with evacuation and stop the spread of fire to another building.

A minimum roadway clearance of 3.5m wide by 4.8m high is required for a fire appliance. Constructed roads must comply with Government legislation as specified in the “Road Planning and Design Manual”.

5.1 Road Width and Height

Road Width and Height	
Performance Outcomes	QFES Acceptable Outcomes
Roads are wide enough for fire appliances to gain access to a safe working area close to dwellings and water supplies whether or not on-street parking spaces are occupied.	Constructed roads must be as specified in the “Road Planning and Design Manual”.

Rationale:

Fire appliances often used in residential areas are typically 2.5 m wide and 7.7m long. The road width must allow room for safe passage of a fire appliance with additional margins for human error and safe clearances.

5.2 Road Construction

Road Construction	
Performance Outcomes	QFES Acceptable Outcomes
Roads must be constructed to facilitate the safe passage of a laden fire appliance in all weather conditions.	Roads must be constructed to a standard so that they are accessible in all weather conditions and capable of accommodating a vehicle of 15 tonnes for the trafficable road width as specified in the “Road Planning and Design Manual”.

Rationale:

Roads must be trafficable in all weather conditions. Most appliances in residential areas currently weigh less than 13 tonnes.

5.3 Road Grades

Road Grades	
Performance Outcomes	QFES Acceptable Outcomes
Grades of roads must facilitate the safe passage of fire appliances.	The average grades, dips, and exit angles must be addressed as specified in the “Road Planning and Design Manual”.

Rationale:

Steep slopes affect the free movement of appliances and hinder safe fire fighting. Severe short dips may limit access due to the overhang of the body from the wheels.

5.4 Turning Bays

Turning Bays	
Performance Outcomes	QFES Acceptable Outcomes
Provision is made for fire appliances to turn at the end of dead end roads.	Constructed roads more than 60m in length from the nearest intersection must have a turning circle with a minimum radius of 8m (including roll-over kerbs if they are provided). Other solutions using T or Y heads of specified dimensions are also appropriate. See figure 2 in the “Road Planning and Design Manual” .

Rationale:

It is dangerous for emergency vehicles to be required to reverse along roads for excessive distances in urban areas. Turning is normally carried out after the incident is under control when emergency movement is not required. Even then, large appliances reversing in residential areas create safety concerns. Fire appliances occasionally need to seek an alternative route necessitating a 180 degree turn in emergency conditions. Using a three point turn, fire appliances require a turning circle radius of 8m to turn safely. Alternative designs using specified T or Y heads are also appropriate. This area needs to be clear of obstructions.

Turning Examples

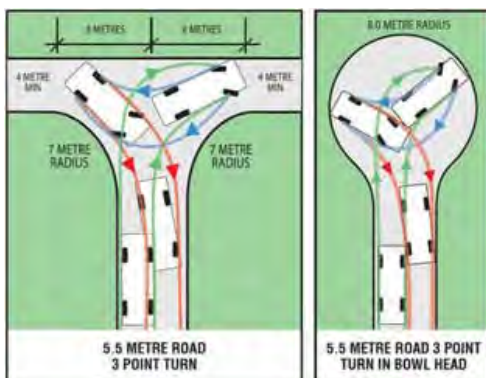


Figure 7 – Vehicle Turning Provisions

Disclaimer

Any representation, statement, opinion or advice expressed or implied in this publication is made in good faith but on the basis that the State of Queensland, its agents and employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement, opinion or advice referred to above.

Appendix 3

Bushfire Survival Plan Guideline / Template

Source: Queensland Fire and Emergency Services

Bushfire Survival Plan

PREPARE. ACT. SURVIVE.

Tomorrow's Queensland: strong, green, smart, healthy and fair



You must **PREPARE**. **ACT**. **SURVIVE**.

Your main priority is to ensure that you and your family are safe. During a bushfire you and your family's survival and safety depend on your preparations, and the decisions you make.

The lives of you and your family are more important than any building.

Whether your plan is to leave early or stay, you must prepare your home and property to increase their level of resilience and your chances of survival.

Bushfires in Queensland

The fire season in Queensland normally commences in the far north of the state in July and progresses through to southern areas as spring approaches. The fire season can extend through to February in southern and far south-western Queensland. These time frames can vary significantly from year to year, depending on the fuel loads, long-term climate and short-term weather conditions in each area.

There are four key considerations for dealing with bushfire:

- The safety of you and your family.
- The resilience of your property.
- The protection of irreplaceable valuables and important documents.
- The maintenance of adequate levels of insurance.

This document will provide you with information about the things you need to consider to prepare yourself and your home for the bushfire season, and how to make your own personal Bushfire Survival Plan.

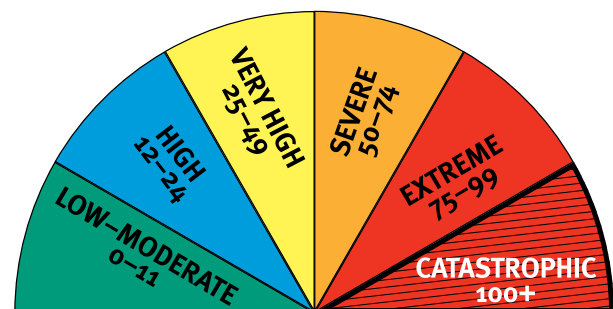
It is your responsibility to prepare yourself, your family and your home for the threat of bushfire.

Understand your risk

The first step in planning to survive a bushfire is to understand your own level of risk. By understanding your own level of risk you will be able to make informed decisions that are right for you and your family. Included with this Bushfire Survival Plan is a self-assessment tool that will enable you to assess the risk level associated with your property. If you are still unsure of your level of risk or require assistance contact your local fire station for more information. To book a Bushfire Safety presentation call 1300 369 003.

Fire danger ratings

The increased frequency of extreme bushfires in Australia in the last 10 years and the recent experience of the Black Saturday fires in Victoria have encouraged fire services throughout Australia to introduce new levels of Fire Danger Rating (FDR). A lift-out chart of the FDR system is contained within this document. Display it in a prominent place in your home or keep it with your Bushfire Survival Plan.



Catastrophic fire danger rating

The highest level is catastrophic. On a day of catastrophic FDR leaving early is the only option to ensure your survival. You must relocate early to a safer location, hours or the day before a fire occurs. Under no circumstances will it be safe to stay with your property.

Extreme fire danger rating

The second highest level is extreme. Should a fire occur in your area on a day of extreme FDR leaving early will always be the only option. Staying can only be considered for homes that:

- Have been designed and constructed specifically to address the threat of bushfire.
- Have been maintained to those levels and are currently well prepared.
- Can be actively defended by people with the skills, knowledge and confidence to implement a well-rehearsed Bushfire Survival Plan.

On days of catastrophic or extreme FDR:

- Fires are likely to be uncontrollable, unpredictable and very fast moving with highly aggressive flames extending high above tree tops and buildings.
- Thousands of embers may be violently blown into and around homes causing other fires to start rapidly and spread quickly up to 20 kilometres ahead of the main fire.
- Fire can threaten suddenly, without warning, and the heat and wind will make it difficult to see, hear and breathe as the fire approaches.
- People in the path of such fires will almost certainly be injured or die and a significant number of homes and businesses will be destroyed or damaged.
- Even well-prepared and constructed homes will not be safe.
- Expect power, water and phone networks to fail as severe winds bring down trees, power lines and blow roofs off buildings well ahead of the fire.

It is vital that you understand on these days that your survival will depend solely on how well you have prepared and how decisively you act.

Leaving late can be
a deadly option.
If you are in any doubt,
make the decision to
LEAVE EARLY.

What will you do?

At all times you need to **PREPARE.ACT.SURVIVE.**

When the fire danger rating is '**catastrophic**' leaving early is the safest option.

When the fire danger rating is lower than '**catastrophic**', one of the most important decisions you need to make is whether you will leave early or stay with a well prepared property. This decision is the basis of your Bushfire Survival Plan.

The following questions may help you make the right decision for whether you will leave early or stay:

- Do you need to consider family members who are young, elderly or infirm?
- Are you physically and emotionally prepared to stay with your property?
- Do you have the knowledge, skills, and confidence to stay with your property?
- Is your home adequately constructed, maintained and prepared to withstand the impact of a fire? In other words, is your home prepared to withstand the impact of a bushfire?
- Do you have well-maintained resources and equipment to fight fire, and do you know how to use them?
- Do you have appropriate protective clothing to fight a fire?
- What will you do if a rapid onset fire leaves you with no time to leave? Where will you shelter?



Leave early

If you plan to leave early then you must leave your home well before a bushfire threatens and travelling by road becomes hazardous. Your leave early preparations include:

Step 1: Preparation – your property should be well prepared for bushfire even if you intend to leave early.

Step 2: What you will do – make your Bushfire Survival Plan in accordance with your decision to leave early.

Step 3: Make a contingency plan – the FDR, the preparedness of your home, a change in household circumstances, a change in your physical preparedness or unexpected visitors are some things that may require you to reconsider your Bushfire Survival Plan.

Planning to stay

Planning is critical to successfully staying with your home may involve the risk of psychological trauma, injury or death.

Step 1: Preparation – your property must be able to withstand the impact of bushfire and well prepared to shelter you and your family.

Step 2: What you will do – make your Bushfire Survival Plan in accordance with your decision to stay.

Step 3: Make a contingency plan – the FDR, the preparedness of your home, a change in household circumstances, a change in your physical preparedness or unexpected visitors are some things that may require you to reconsider your Bushfire Survival Plan.

In making your decision to stay, here are a few things you need to consider.

- Is your property able to withstand the impact of a bushfire?
- Are you physically and emotionally prepared to stay with your property?
- Do you have well-maintained resources and equipment and do you know how to use them?
- Do you have appropriate protective clothing?
- Will your bushfire survival plan need to be different for weekdays, weekends or if someone is sick at home?
- Do you have a contingency plan?

Preparing your Bushfire Survival Plan

Preparation is the key to survival. Being involved in a fire will be one of the most traumatic experiences of your life.

- Prepare yourself – you need to be both mentally and physically prepared to carry out your Bushfire Survival Plan.
- Prepare your Bushfire Survival Plan.
- Prepare your Bushfire Survival Kit.
- Prepare your Bushfire Relocation Kit.
- Prepare your property.

When writing your plan you need to consider:

- Have you made the right choice: to leave early or stay?
- Have you discussed your choice with your family, friends and neighbours?
- Who will take charge and lead other family members by carefully communicating the various tasks set out in the plan?
- If you have chosen to stay what will you do to protect your property when the fire arrives?
- What will you put in your Bushfire Survival Kit and where will you store it?
- Do your friends, family and neighbours know the details of your plan?

- What will you do if your Bushfire Survival Plan fails?
- Do you have an alternative option or contingency plan if your plan fails?
- Do you have a Neighbourhood Safer Place (NSP) you can go to as a last resort? For more information on NSPs see www.ruralfire.qld.gov.au.
- Is it safe to travel there?

If your decision is to leave early, you must include the following information or action items in your Bushfire Survival Plan:

- Monitor media outlets – radio, TV, mobile phone and internet for bushfire alerts.
- When will you leave?
- What will be your trigger for action?
- Will your plan be different for weekdays, weekends, or if someone is at home sick or injured?
- What will you take with you (Relocation Kit)?
- Where will you and your family go when you leave early?
- What route will you take to get there?
- What will you do with your pets?
- What will you do if there are consecutive or multiple **'catastrophic'** or extreme fire danger days?
- Will you go into work on days when the FDR is in the upper levels?
- Will you send your children to school when the FDR is in the upper levels?
- Will all members of your household leave early?
- What will you do to prepare your property?
- What is your contingency plan in the event that it is unsafe to leave?

If your decision is to stay you must include the following information or actions items in your Bushfire Survival Plan:

- Monitor media outlets – Radio, TV, mobile phone and internet.
- Locate your Bushfire Survival Kit.
- Put on protective clothing.
- Remain hydrated by drinking lots of water.

- Move any stock to fully grazed paddocks.
- Move cars to a safe location.
- Remove garden furniture, doormats and other items.
- Close windows and doors and shut blinds.
- Take down curtains and move furniture away from windows.
- Seal gaps under doors and window screens with wet towels.
- Place pets inside, restrain them, and provide water.
- Block downpipes and fill gutters with water.
- Wet down the sides of buildings facing the approaching fire front.
- Wet down decks and verandas.
- Wet down fine fuels close to buildings.
- Turn on sprinklers in garden before bushfire arrives.
- Fill containers with water; bath, sinks, buckets, wheelie bins, etc.
- Have ladders ready for roof space access (inside) and against roof (outside).
- Have generator or petrol pump ready.
- Start checking and patrolling for embers outside.

When the fire front arrives:

- Take all fire fighting equipment inside such as hoses and pumps as they may melt during the fire.
- Go inside and shelter away from the fire front.
- Patrol the inside of your home, including the ceiling space, for embers or small fires that may start.
- Drink lots of water.
- Check family and pets.

After the fire front has passed:

- Wear protective equipment.
- Go outside once it is safe.
- Check for small spot fires and burning embers:
 - inside roof space
 - under floor boards
 - under house space
 - on veranda and decks

- on window ledges and door sills
- in roof lines and gutters
- garden beds and mulch
- wood heaps
- outdoor furniture
- sheds and carports
- Continue to drink lots of water.
- Stay at your property until the surrounding area is clear of fire.
- Monitor media outlets – radio, TV, mobile phone and internet.

You need to be both mentally and physically prepared to carry out your Bushfire Survival Plan

There may be other actions to include, depending on your individual property and the level of bushfire risk you are exposed to.

Include the whole family in creating your Bushfire Survival Plan. You and your family should be aware of the actions you will take at the various FDR levels and it is important to ensure this is incorporated into your Bushfire Survival Plan. The FDR for your area can be found on roadside signs and by visiting www.ruralfire.qld.gov.au and following the FDR link.

It is important that your Bushfire Survival Plan does not rely solely on receiving an alert.

Once you have completed your Bushfire Survival Plan, practise it regularly to ensure everyone involved knows exactly what to do in the event of a fire.

Preparing your Bushfire Survival Kit

It is essential that you have a Bushfire Survival Kit if your choice is to stay with your property. This kit will ensure you and your family have the important equipment you need to stay. For a comprehensive list of equipment needed in a Bushfire Survival Kit see page 14.

Preparing your Bushfire Relocation Kit

It is equally important to have a relocation kit if your choice is to leave early. This kit will ensure you and your family have important items and equipment required to relocate for the time needed. For a comprehensive list of items and equipment needed in a Bushfire Relocation Kit see page 15.

Making a contingency plan

No matter whether your decision is to leave early, well before a bush fire threatens or to stay you should still have a contingency plan as part of your Bushfire Survival Plan. There are many scenarios to consider, such as what you will do if a rapid onset fire starts in your local area making roads impassable or travel particularly dangerous. You should have other options if road travel is not safe.

- Is your house well prepared?
- Can it provide you with protection from radiant heat?
- Have you identified a safer location such as an NSP?

Sheltering in a well-prepared property is far safer than being out in the open or in a vehicle

Preparing your property

An unprepared property is not only at risk itself, but may also present an increased danger for your neighbours and their homes.

Planning is absolutely critical to safely staying with your home. Staying home involves the risk of psychological trauma, injury and death.

There are a number of measures you can take to prepare your home and property for bushfire. These include several preparations you must take annually prior to the bushfire season.

Your pre-season property preparations should include:

- Displaying a prominent house number.
- Ensuring there is adequate access for fire trucks to your property – 4 metres wide by 4 metres high with a turn-around area. Reduce vegetation loads along the access path.
- Mowing your grass regularly.
- Removing excess ground fuels and combustible material (long dry grass, dead leaves and branches).
- Clearing of leaves, twigs, bark and other debris from the roof and gutters.
- Purchasing and testing the effectiveness of gutter plugs.
- Trimming low-lying branches 2 metres from the ground surrounding your home.
- Enclosing open areas under your decks and floors.
- Installing fine steel wire mesh screens on all windows, doors, vents and weep holes.
- Pointing LPG cylinder relief valves away from the house.
- Conducting maintenance checks on pumps, generators and water systems.
- Checking that you have sufficient personal protective clothing and equipment.
- Relocating flammable items away from your home including woodpiles, paper, boxes, crates, hanging baskets and garden furniture.
- Sealing all gaps in external roof and wall cladding.
- Checking that the first aid kit is fully stocked.

Bushfire Alerts

If you receive an emergency warning about a bushfire or other emergency, take notice as it could save your life.

There are three types of alert messages to help you make the right safety choices:

Bushfire Advice Message – a fire has started – general information to keep you up to date.

Bushfire Watch and Act Message – represents a heightened level of threat. Conditions are changing, a fire is approaching; lives may come under threat. Take appropriate action.

Bushfire Emergency Warning – is the highest level message advising of impending danger. It may be preceded with the Standard Emergency Warning Signal (SEWS).

An Emergency Warning
means there is a threat
to lives and protective
action is required
immediately.

When a bushfire strikes

You have made your decision to **PREPARE.ACT.SURVIVE**. You have prepared your property before the fire season. You have made your Bushfire Survival Plan. You have practised your Bushfire Survival Plan.

A bushfire is threatening? What do you do?

- Know the FDR for any given day.
- Regularly check the FDR on the Rural Fire Services website at www.ruralfire.qld.gov.au.
- Monitor your media outlets for warnings on bushfire activity.
- Seek out information if you have to, and do not assume that you will receive a warning.
- Leave early or stay according to your Bushfire Survival Plan.
- Act decisively in accordance with your Bushfire Survival Plan.
- Do not adopt the 'wait and see' option.

Travelling in your vehicle near a bushfire

Sheltering inside a vehicle is a high-risk strategy that can result in death. Whilst sheltering inside a vehicle offers you a slightly higher chance of survival than being caught in the open, having a leave early or stay strategy is a much safer option.

You should never take a journey into areas where the fire danger is catastrophic or extreme. You should consider postponing or finding alternative routes if necessary. If you can smell or see smoke in the distance it is best to u-turn and drive away from the danger.

If you are caught in smoke or flames while on the road:

- Turn on the vehicle's headlights and hazard warning lights.
- If you need to shelter in your vehicle drive your car into a bare, clear area well away from surrounding trees, leaving lights on. Position vehicle to prevent side impact from advancing fire front.
- Close all windows and vents.
- Leave the engine running and turn off the air conditioning system.
- Cover your entire body with woollen or cotton blankets to protect from radiant heat.
- Take shelter below the window level.
- Drink water frequently and stay in the vehicle until the fire front has passed.
- Once the fire front has passed exit the vehicle to inspect the damage and ensure other passengers are safe.

Neighbourhood Safer Places

A Neighbourhood Safer Place (NSP) is a place of last resort for people during a bushfire. An NSP may form part of a back-up plan when:

- Your Bushfire Survival Plan has failed.
- Your plan was to stay but the extent of the fire means that your home cannot withstand the impact of the fire and therefore your home is not a safe place to shelter.
- The fire has escalated to an extreme or catastrophic level and relocation is the safest option.

An NSP is an identified building or open space within the community that can provide a level of protection from the immediate life-threatening effects of a bushfire. NSPs still entail some risk, both in moving to them and while sheltering in them and cannot be considered completely safe.

They are a place of *last resort* in bushfire emergencies only. The following limitations of NSPs need to be considered within your Bushfire Survival Plan:

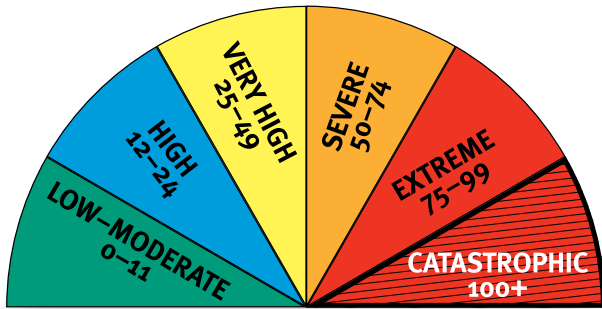
- NSPs do not cater for pets.
- Firefighters may not be present as they will be fighting the main fire front elsewhere.
- NSPs do not provide meals or amenities.
- They may not provide shelter from the elements, particularly flying embers.

If you are a person with special needs you should give consideration to what assistance you may require at an NSP.

Although QFRS cannot guarantee an immediate presence during a bushfire, every effort will be made to provide support as soon as resources are available.

If an NSP is part of your contingency plan it should not require extended travel through fire-affected areas to get there.

FIRE DANGER RATING



The Fire Danger Rating (FDR) is an early indicator of potential danger and should act as your first trigger for action. The higher the rating the greater the need for you to act.

The FDR is an assessment of the potential fire behaviour, the difficulty of suppressing a fire, and the potential impact on the community should a bushfire occur on a given day.

A Fire Danger Index (FDI) of 'low-moderate' means that fire will burn slowly and that it will be easily controlled, whereas a FDI in excess of 'catastrophic 100+' means that fire will burn so fast and so hot that it will be uncontrollable.

CATASTROPHIC 100+

A fire with a rating of 'catastrophic' may be uncontrollable, unpredictable and fast moving. The flames will be higher than roof tops. Many people will be injured and many homes and businesses will be destroyed.

During a 'catastrophic' fire, well-prepared and constructed homes will not be safe. Leaving is the only option for your survival.

EXTREME 75-99

A fire with an 'extreme' rating may be uncontrollable, unpredictable and fast moving. The flames will be higher than roof tops. During an 'extreme' fire, people will be injured and homes and businesses will be destroyed.

During an 'extreme' fire, well-prepared and well-constructed homes may not be safe. Leaving is the only option for your survival.

SEVERE 50-74

A fire with a 'severe' rating may be uncontrollable and move quickly, with flames that may be higher than roof tops. A 'severe' fire may cause injuries and some homes or businesses will be destroyed.

During a fire with a 'severe' rating, leaving is the safest option for your survival. Use your home as a place of safety only if it is well-prepared and well-constructed.

VERY HIGH 25-49

A fire with a 'very high' danger rating is a fire that can be difficult to control with flames that may burn into the tree tops. During a fire of this type some homes and businesses may be damaged or destroyed.

During a fire with a 'very high' danger rating, you should use your home as a place of safety only if it is well prepared and well-constructed.

HIGH 12-24

A fire with a 'high' danger rating is a fire that can be controlled where loss of life is unlikely and damage to property will be limited.

During a fire with a 'high' danger rating, you should know where to get more information and monitor the situation for any changes.

LOW-MODERATE 0-11

A fire with a 'low to moderate' rating can be easily controlled and pose little/or no risk to life or property.

During a fire with a 'low to moderate' rating, you should know where to get more information and monitor the situation for any changes.

BUSHFIRE SURVIVAL PLAN

Complete your personalised Bushfire Survival Plan lift-out.

Personal details:

Important phone numbers: **000** (Fire, Police and Ambulance)

Family: _____ Family: _____ Family: _____

Work: _____ Friends: _____ Friends: _____

School: _____

Important contact details – name and phone number:

Insurer: _____ Policy Number: _____ Phone: _____

Electricity: _____ Phone: _____

Water: _____ Phone: _____

Gas: _____ Phone: _____

Phone Company: _____ Phone: _____

Council: _____ Phone: _____

Leave early:

List all names and contact phone numbers of household members who have decided to leave early then complete Section 1.

Names: _____

Phone: _____

Stay:

List all names and contact phone numbers of household members who have decided to stay, then complete Section 2.

Names: _____

Phone: _____

Leave early – Section 1

Pull this Bushfire Survival Plan lift-out from this document and keep in a safe place.

Leaving early will always be the safest option for you and your family. It is extremely important for you to prepare a detailed leave early plan to ensure everyone understands what to do and when. Use the boxes below to list tasks to do.

When to go – Think of different triggers that will cause you and your family to leave early. Think about what you will do if you have sent the children to school that day. Think about whether or not you will have to travel from work into the fire zone.

Where to go – Identify one or more safer locations. Consider putting on personal protective clothing before you leave home.

How to get there – What roads will you take to your destination? Have an alternative route if your first choice is impassable.

What to take – Make a list of your most valuable items (e.g. insurance papers, electronic records, photo albums, passports, birth certificates and other important documents).

Stay – Section 2

Anyone who is not going to leave early must be involved in completing this stay and defend plan to ensure they know what to do. Every stay plan will be different depending on your circumstances. Use the boxes below to list tasks to do.

Before the fire approaches – Start getting yourself and your property ready for a bushfire.

As the fire approaches – Prepare for ember attack on or near your home.
Remember to put on personal protective clothing.

As the fire front arrives – Stay safe by monitoring the fire from inside your home.

After the fire has passed – Patrol your property and extinguish any spot fires or burning embers.
You may need to keep this up for several hours.

Everyone must have a contingency plan

Have a contingency plan – what will you do if you can't activate your Bushfire Survival Plan? Remember that leaving late can lead to loss of lives.

Know where your nearest NSP is and how to get there.

ACTIVATING YOUR BUSHFIRE SURVIVAL PLAN

Once you have prepared your Bushfire Survival Plan and completed your preparations, it is absolutely essential that you regularly practise and review your plan. This will make sure you and your family are well organised in the event of a bushfire. If a bushfire threatens the health and safety of you, your family, home or property, you should follow these steps:

Step 1 – Activate your Bushfire Survival Plan

Someone must take charge and lead other family members through this emotional experience by carefully communicating the various tasks set out in the plan. Know who is going to leave early and who is going to stay.

Step 2 – Put on your personal protective clothing

Every member of the family must change into their personal protective clothing, including long pants, long-sleeve-shirt and closed-in shoes.

Step 3A – Pack your vehicle and leave early

If your plan is to leave early, pack all valuables in your vehicle (see Relocation Kit) and relocate to your designated safer location. Give yourself enough time to get you and your family to safety. Don't return home until it is safe to do so.

OR

Step 3B – Implement your strategy to stay and defend

If your plan is to stay ensure you have all the items in the Bushfire Survival Kit ready to go. This can be a dangerous option and you should be physically and mentally prepared.

Step 4 – Keep informed of bushfire activity

Listen to the radio, television, internet, firefighters and/or police for information on the fire in your local area. Bushfire is dynamic and unpredictable so you need to be prepared for the unexpected. Warnings are not guaranteed so do whatever is necessary to ensure you remain safe.

BUSHFIRE SURVIVAL KIT

You need to have a Bushfire Survival Kit stored in an area of the house that is safe and easy to access. It should contain:

- protective clothing
- mop
- gloves
- torch
- hoses
- shovel
- towels
- buckets
- safety goggles
- ladder
- medications
- bottled drinking water
- fire extinguishers
- battery operated radio
- spare batteries
- smoke mask
- woollen blankets
- first aid kit
- knapsack sprayer
- protective clothing for the whole family.



RELOCATION KIT

Write a list of all items your family will need before, during and after your relocation. The list below shows items that you might like to put in your relocation kit.

- protective clothing for the whole family
- battery operated radio and spare batteries
- safety goggles
- mobile phone and battery charger
- medications
- wallet or purse and money
- clothing (two sets of clothes for each family member)
- identity information (passports, birth certificates)
- bottled water (enough for each relocated family member)
- family and friends' phone numbers
- items of high importance (e.g. family photos, valuables, important documents)
- blankets (natural fibres)
- children's toys



BUSHFIRE RISK SELF-ASSESSMENT CHECKLIST



This basic self-assessment checklist is designed to give you a greater understanding of the bushfire risk level relevant to your property. Information provided in this assessment will assist you when completing your Bushfire Survival Plan.

Address:

Postcode:

Property Owner/Property Name:

ACCESS/EGRESS

Road/Street/Driveway PLEASE ✓ APPROPRIATE BOX

Clear of overhanging vegetation	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Unrestricted gate access	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Clear of overhead power lines	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Able to reverse in	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Turning/passing areas	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Heavy vehicle access on cattle grid/bridge	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Alternative way out	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Two wheel drive access	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

STRUCTURE/S

Exterior walls – non-combustible	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Roof ridge capping sealed	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Eaves enclosed	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Roofing gutters and valleys clear of leaf litter and fine fuels	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Underfloor enclosed	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Vents screened	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Windows – non-combustible finishing	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Deck/veranda non-combustible	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

WATER SUPPLY

Reticulated water supply	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Tank supply with QFRS access – 50mm male camlock fitting so fire fighters can use water if needed	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
QFRS accessible external open water supply (dam/pool)	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Firefighting pump and hose connected to water supply	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

Other considerations

There are a range of other things to be considered regardless of your decision to leave early or stay:

- Firefighting equipment such as pumps, hoses and sprinkler systems should be tested regularly and maintained in maximum operational working condition.
- Firefighters may need access to your property during a bushfire so it is in your best interests to allow enough space for fire trucks (4 metres wide by 4 metres high).
- Your pets, livestock and other animals require proper care and attention during fires. Consider food, medication, transportation and sleeping arrangements for your animals.

Myths versus Reality

Myths	Reality
There will always be a fire truck available to fight a bushfire threatening my home.	Firefighters may be required to fight many fronts of a large fire. Fire trucks and firefighters are finite resources so it is important they are deployed in an appropriate manner to best manage the fire.
I know the back streets in town like the back of my hand so it is OK for me to leave at the last minute.	If your decision in your Bushfire Survival Plan is to leave early, then you should leave well before the fire front reaches your property. Irrespective of your local area knowledge you must stick to your plan and leave early. Leaving late can be fatal.
Someone from an emergency service will knock on my door when it is time to leave.	Emergency services personnel may not be available to alert the community by door-knocking and encouraging you to leave. You need to monitor the bushfire alerts by listening to the radio, watching TV or checking the rural fire website. You need to be ready to leave early if your life or the people in your care are at risk.
My house will not burn down because there is more than 50 metres between my home and nearby bushland.	Most houses which burn down during bushfires have been attacked by flying embers. Under certain conditions embers can cause ignitions up to 20kms in front of the main fire. A combination of your level of preparation and your home's construction will determine the survivability of your home.
I only have to clean my gutters and mow my lawns to prepare my property for bushfire.	Fire requires fuel, heat and oxygen to occur. This means that flames or embers do not necessarily rely solely on your gutters and lawns for fuel. They might utilise overhanging trees, woodpiles, old building materials under the deck or chemicals in the garden shed to sustain them. Take the time to properly prepare your whole property, which includes yourself, your house and your land.