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BCA FIRE SAFETY CAPABILITY ASSESSMENT

for

RECREATIONAL FLIGHT SCHOOL

FROGS HOLLOW, NSW 2550

Certified System

Quality
ISO 9001
SAI GLOBAL

Document Verification History

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Title: Building Fire Safety Compliance and Recommendations Report

REVISION	ISSUE DATE	COMMENTS	
A	24.10.2017	For client issue	
		PREPARED BY	**CHECKED AND APPROVED BY**
		Leonard Tunhavasana	Steven Moon

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1 REPORT INTENT

The intent of this report is to determine the fire safety provisions which are required to satisfy the prescriptive deemed-to-satisfy (DtS) provisions of the Building Code of Australia (BCA), 2016 and subsequent referenced Australian Standards therein, for the proposed recreational flight school located at 1062 Princes Highway, Frogs Hollow NSW.

This report is limited to the review of the DtS provisions of the BCA in terms of identifying the building characteristics and applicable fire safety provisions to achieve a minimum level of occupant safety that would be considered satisfactory to satisfy the mandatory performance requirements of the BCA. Assessment of access for people with disabilities (Part D3 of BCA 2016) is not included within the scope of this report.

2 BASIS OF REPORT

The information contained within this report is based on a desktop review of the drawing documents and other correspondence provided by Norm Boyle Consulting Services Pty Ltd. Table 1 below identifies the list of drawings prepared by Tasman Engineering Consultants, which were referred to for the purpose of carrying out this compliance assessment.

Drawing Number	Drawing Name	Issue Date
S518-01	Detailed Survey	16.10.2017
S518-02	Localisation Plan	16.10.2017
S518-03	Development Plan Showing Proposed Infrastructure – Stage 1	16.10.2017
S518-04	Development Plan Showing Proposed Infrastructure – Stage 1-9	16.10.2017
S518-06	Main Building – Ground Floor Plan	16.10.2017
S518-07	Main Building – Roof Plan	16.10.2017
S518-08	Main Building – Sections and Elevations	16.10.2017
S518-09	Workshop – Ground Floor and Roof Plans	16.10.2017
S518-10	Workshop – Sections and Elevations	16.10.2017
S518-11	Hangar – Ground Floor, Roof, and Bowser Location Plans	16.10.2017
S518-12	Hangar – Sections and Elevations	16.10.2017
S518-13	Squadron Compound – Ground Floor Plan	16.10.2017
S518-14	Student Accommodation Building – Ground Floor and Roof Plans	16.10.2017
S518-15	Student Rooms – Sections and Elevations	16.10.2017
S518-16	Laundry – Plans, Section and Elevations	16.10.2017
S518-17	Classroom – Plans, Section and Elevations	16.10.2017
S518-18	Canopy Over Utility Area – Roof Plan and Elevations	16.10.2017
S518-19	Communal Area – Plans and Elevations	16.10.2017
S518-20	Carpark - Ground Floor and Roof Plans	16.10.2017
S518-21	Carpark - Elevations	16.10.2017

Table 1: Schedule of Referenced Drawings

3 REPORT LIMITATIONS

The following limitations apply to the assessment:

- All changes to any of the buildings' proposed function, use, building layout, or construction will require a reassessment with respect to compliance with the DtS provisions of the BCA;
- Details with regards to access for people with disabilities has not been included in this assessment. Assessment for access provisions under the BCA, the Disability Discrimination Act 1992 (DDA) and AS1428 series is not included within the scope of this report;
- All proposed fire services are assumed to comply with the relevant code and standard requirements as applicable;
- The report assumes that the proposed building structures are adequate with respect to satisfying the DtS requirements of Section B of the BCA;
- All BCA requirements not referenced within this report are expected to satisfy the minimum DtS requirements of the BCA, or compliance is expected to be readily achievable;
- Determination of whether the subject building is considered to contain "special hazards" is not considered within this report. All additional special hazard requirements is assumed to be detailed within a dangerous goods assessment and/or a fire safety study as part of the Environmental Impact Study of the site;
- The report does not consider the requirements of legislation other than the specific requirements of the BCA, and therefore excludes the following provisions:
    - Local council planning requirements
    - NSW Public Health Acts and Regulations
    - OH&S Act and Regulations
    - Work Cover authority requirements
    - Water drainage, telecommunications, gas and electrical supply requirements
    - Construction Safety requirements or the like.

4 SITE CHARACTERISTICS

The subject development is proposed to be located at 1062 Princes Highway, Frogs Hollow NSW (Lot 1, DP 109606). The development proposes the construction of multiple buildings having a range of uses which includes a main assembly/dining area, workshops, hangars, student compounds consisting of student accommodation, class rooms, laundry, and a general communal area. The proposed locations of the various buildings are illustrated in Figure 1 below.

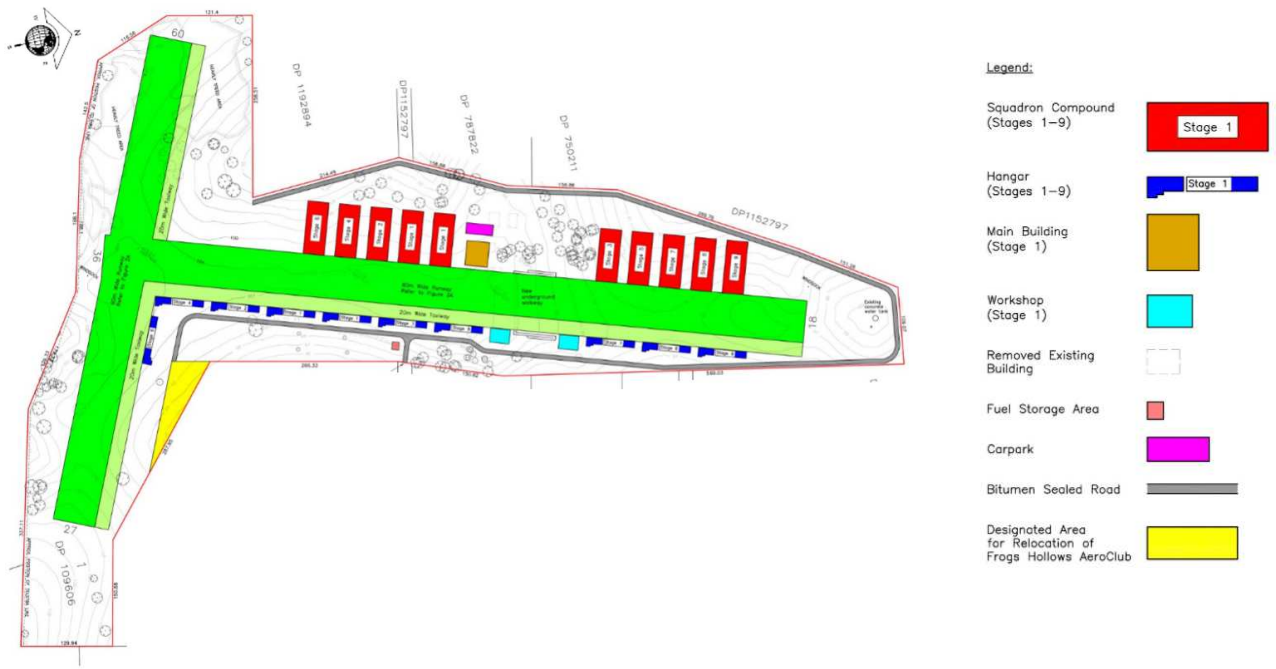


Figure 1: Proposed Site and Building Locations

Each type of building / compound is assessed as a separate section within this report, where information regarding the building characteristics and any identified departures with respect to the prescriptive DtS provisions of the BCA are outlined accordingly.

5 MAIN BUILDING

The main building of the subject development is proposed to be used for dining / assembly, offices, and other associated uses including a kitchen, bathrooms and minor storage. Figure 2 provides a plan layout of the main building.

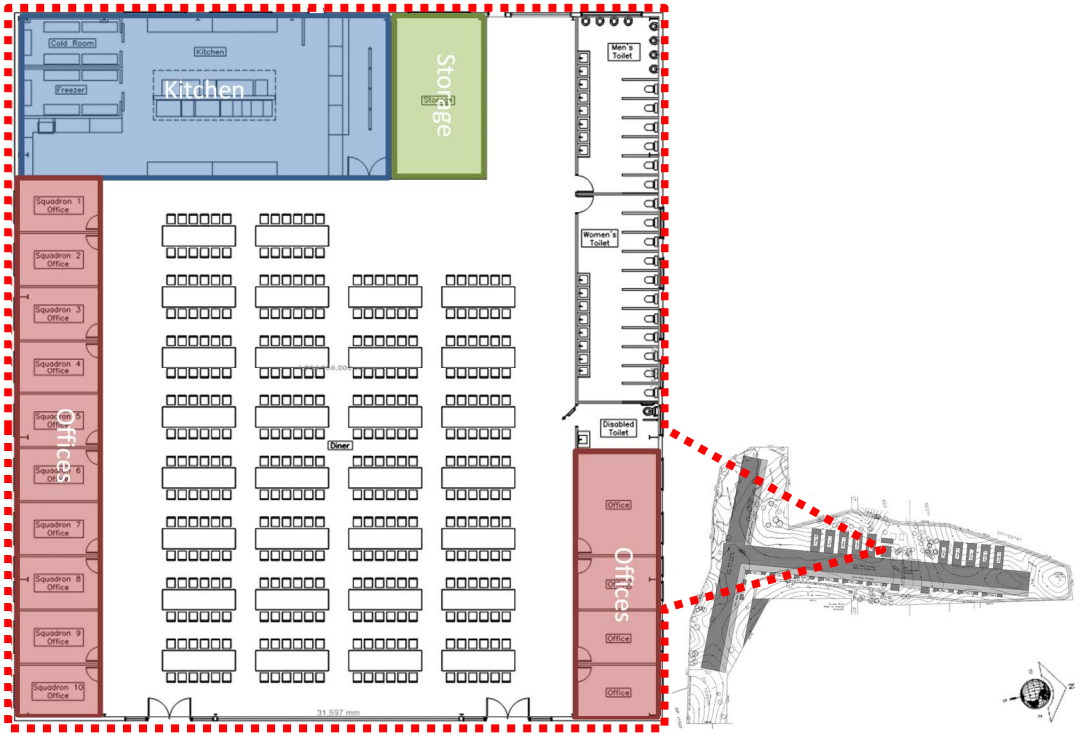


Figure 2: Floor Plan - Main Building

Table 2 below provides building characteristic details with relation to the Main Building.

Characteristic	Description
Rise in storeys (as per BCA)	1
Effective height (as per BCA)	Less than 25m
Building use classifications	Class 5 (offices) and Class 9b (assembly / dining area)
Proposed floor areas and volumes (approximate)	<table><tr><th>Building Use</th><th>Classification</th><th>Area m²</th><th>Volume m³</th></tr><tr><td>**Dining Area / Assembly, Kitchen associated Storage**</td><td>9b</td><td>160</td><td>670</td></tr><tr><td>**Offices**</td><td>5</td><td>940</td><td>5,170</td></tr><tr><td></td><td>**Total**</td><td>1,100</td><td>5,840</td></tr></table> *Note: The kitchen/storage uses contribute less than 10% the total floor area of the building, and are therefore considered minor uses in accordance with Clause A3.3 of the BCA.*
Required Type of construction	Type C
Fire and smoke compartmentalisation	The Main Building is considered to be a single fire compartment, where the external walls are to primarily consist of steel structural framing and steel external cladding throughout. The nearest building external to the Main Building is the Carpark, approximately 10m west of the subject building.

Table 2: Building Characteristic Details – Main Building

5.1 BCA Compliance – Fire Resistance & Compartmentation (Section C)

The fire resistance & compartmentation proposed for the Main Building is capable of complying with the prescriptive DtS provisions noted within Section C of the BCA, where the requirements of Type C construction apply. The minimum required FRL's for Type C building elements are noted within Table 5 of Specification C1.1 of the BCA. Figure 3 below highlights the relevant FRL's as applicable to the building.

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	–/–/–	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS-				
Bounding *public corridors*, public lobbies and the like—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Figure 3: Required FRL's - Main Building

5.2 BCA Compliance – Egress Provisions (Section D)

The following egress provisions have been identified as departures with respect to the DtS provisions based on the requirements of Section D of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other Section D provisions are considered to be satisfactory, where compliance is readily achievable with the supply and confirmation of the final design drawings.

DtS Clause	Comments
D1.10 Discharge from exits	All exits discharging from the building are located in a manner which could be prone to blockage by vehicles. *Bollards are recommended to be installed outside of exits discharging to open space, which are intended to prevent vehicles from blocking exits.*
D2.20 Swinging doors	The two double leaf doors serving as required exits on the eastern external wall swing in a direction which opposes the direction of egress. *Re-swing the proposed doors, such that they swing in the direction of egress to satisfy the prescriptive DtS requirements of Clause D2.20(b) of the BCA.*
NSW D2.21 Operation of latch	The type of door hardware is not indicated within the drawings of the building. *The exit doors of Class 9b buildings which serve more than 100 persons are required to be installed with panic bar/s or similar. The bars are to be located between 0.9m and 1.2m from the floor, on the side that faces a person seeking egress.*

Table 3: Deemed-to-Satisfy Requirements of Section D

5.3 BCA Compliance – Essential Fire Safety Measures (Section E)

The following essential fire safety measures have been identified as departures with respect to the DtS provisions based on the requirements of Section E of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other Section E provisions are considered to be satisfactory, where compliance is readily achievable with the supply and confirmation of the final design drawings.

DtS Clause	Comments
E1.3 Fire Hydrants	The size of the Main Building requires the installation of a fire hydrant system to serve all parts of the subject building. *Multiple buildings which are proposed to be a part of the subject development require the installation of a fire hydrant system due to their total floor area.* *A fire hydrant system serving portions of the overall site must be installed in accordance with the requirements of AS2419.1-2005. The proposed fire hydrant system is expected to incorporate external fire hydrants as a means of providing adequate hose coverage to the Main Building in accordance with Clause 3.2.2 of AS2419.1-2005.*
E1.4 Fire Hose Reels	The size of the Main Building requires the installation of a fire hose reel system to serve all parts of the subject building. *A fire hose reel system serving the building shall be designed and installed in accordance with AS2441-2005, where fire hose reels must be located within 4m of an exit. Where coverage in accordance with Clause 10.2 of AS2441-2005 cannot be attained from fire hose reels adjacent to exits, additional hose reels can be located on a path of travel to an exit.*
E1.6 Portable fire extinguishers	The location of portable fire extinguishers within the workshops are not noted within the drawings provided. *The following portable fire extinguishers are required to be installed within the building:* - *A Class AE type located adjacent to emergency services switchboard (i.e. the board serving the required emergency lighting for the building;* - *A Class F type (and B type if storage or usage of cooking oils exceed 50L) located within the kitchen;* *All portable fire extinguishers are required to be installed in accordance with AS2444-2001.*
NSW E2.2 Smoke Hazard Management	The current documentation does not provide details of any proposed air handling systems which may be installed within the building *Where a proposed air handling system is ducted or has a capacity greater than 1000L/s, automatic shutdown of the system is required.* *Automatic shutdown shall be initiated by the activation of smoke detectors installed in accordance with Clause 5 of Specification E2.2a.*
E4.2 Emergency Lighting	The location of Emergency lighting is not detailed within the drawings provided. *Clause E4.2(b) of the BCA requires all paths of travel to require emergency lighting which would include the dining area and kitchen. Emergency lighting design and operation shall be in accordance with AS2293.1-2005.*
E4.5 Exits Signs	The location of exit signs is not detailed within the drawings provided. *Exit signs shall be located above or adjacent to each exit doorway. The design and operation of the exit signs shall be accordance with the requirements noted in AS2293.1-2005.*

DtS Clause	Comments
E4.9 Sound systems and intercom systems for emergency purposes	The subject building exceeds a floor area size of 1000m^2, and as such requires the installation of a SSISEP which is not detailed or specified within the current design drawings. *The activation of emergency warning within a SSISEP system is to be triggered by:* - *emergency (manual) call points located at the Control and Indicating Equipment of the system, or adjacent to warden intercom points (phones); or* - *Via an emergency detection system which can include the smoke detectors as noted in Clause E2.2 of this report.* *The design and operation of the SSISEP shall comply with AS1670.4-2015.*

Table 4: Deemed-to-Satisfy Requirements of Section E

6 WORKSHOP BUILDINGS

A total of two workshop buildings are proposed to be constructed as part of the subject development. Both workshop buildings are proposed to have identical construction and floor layouts. The workshops are proposed to be used for aircraft maintenance, and include for other associated uses including a staff room, bathrooms and record storage. Figure 4 provides a plan layout of the proposed workshop buildings.

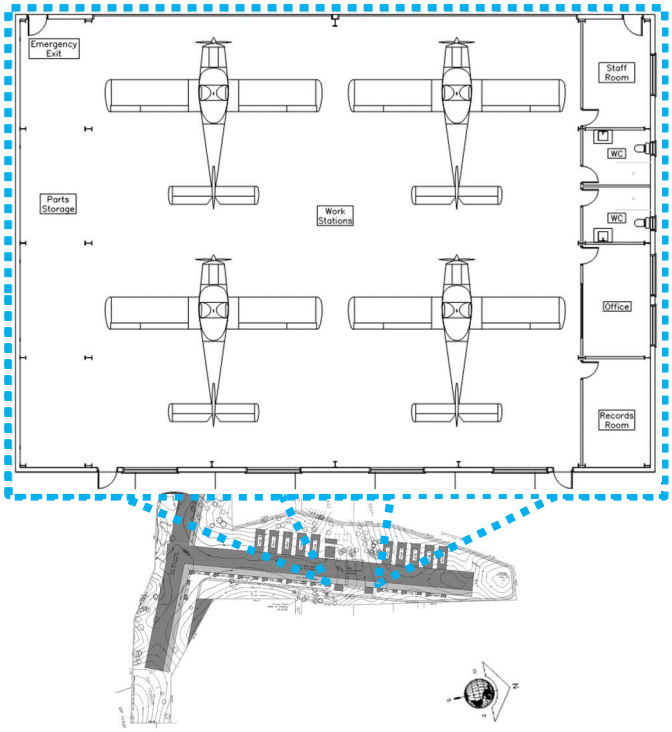


Figure 4: Floor Plan – Workshop building layout

Table 5 below provides building characteristic details with relation to the workshop buildings.

Characteristic	Description
Rise in storeys (as per BCA)	1
Effective height (as per BCA)	Less than 25m
Building use classifications	Class 8 (maintenance workshop)
Proposed floor areas and volumes (approximate)	<table><tr><th>Building Use</th><th>Classification</th><th>Area m²</th><th>Volume m³</th></tr><tr><td>**Workshop & associated uses**</td><td>8</td><td>540</td><td>2,700</td></tr></table> *Note: The staff room, bathrooms and record storage individually contribute less than 10% the total floor area of the building, and are therefore considered minor uses in accordance with Clause A3.3 of the BCA.*
Required Type of construction	Type C
Fire and smoke compartmentalisation	The workshops are each considered as single fire compartments, where the external walls are proposed to consist of steel structural framing and steel external cladding throughout. The nearest buildings external to the workshops are the aircraft hangars, located approximately 13m east and west from the subject buildings.

Table 5: Building Characteristic Details – Workshop Buildings

6.1 BCA Compliance – Fire Resistance & Compartmentation (Section C)

The fire resistance & compartmentation proposed for the workshop buildings are capable of complying with the prescriptive DtS provisions noted within Section C of the BCA, where the requirements of Type C construction apply. The minimum required FRL's for Type C building elements are noted within Table 5 of Specification C1.1 of the BCA. Figure 5 below highlights the relevant FRL's as applicable to the workshop buildings.

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	–/–/–	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS-				
Bounding *public corridors*, public lobbies and the like—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Figure 5: Required FRL's - Workshop Buildings

6.2 BCA Compliance – Egress Provisions (Section D)

The following egress provisions have been identified as departures with respect to the DtS provisions based on the requirements of Section D of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other Section D provisions are considered to be satisfactory, where compliance is readily achievable with the supply and confirmation of the final design drawings.

DtS Clause	Comments
D1.10 Discharge from exits	All exits discharging from the building are located in a manner which could be prone to blockage by vehicles. *Bollards are recommended to be installed outside of exits discharging to open space, which are intended to prevent vehicles from blocking exits.*
D2.20 Swinging doors	The two single leaf doors serving as required exits on the western external wall swing in a direction which opposes the direction of egress. *Re-swing the proposed doors, such that they swing in the direction of egress to satisfy the prescriptive DtS requirements of Clause D2.20(b) of the BCA.*
NSW D2.21 Operation of latch	The type of door hardware is not indicated within the drawings of the building. *The exit doors of the workshop buildings are required to be installed with single hand downward/push action devices. These devices are to be located between 0.9m and 1.1m from the floor, on the side that faces a person seeking egress.*

Table 6: Deemed-to-Satisfy Requirements of Section D

6.3 BCA Compliance – Essential Fire Safety Measures (Section E)

The following essential fire safety measures have been identified as departures with respect to the DtS provisions based on the requirements of Section E of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other Section E provisions are considered to be satisfactory, where compliance is readily achievable with the supply and confirmation of the final design drawings.

DtS Clause	Comments
E1.3 Fire Hydrants	The size of the workshops requires the installation of a fire hydrant system to serve all parts of each workshop building. *Multiple buildings which are proposed to be a part of the subject development require the installation of a fire hydrant system due to their total floor area.* *A fire hydrant system serving portions of the overall site must be installed in accordance with the requirements of AS2419.1-2005. The proposed fire hydrant system is expected to incorporate external fire hydrants as a means of providing adequate hose coverage to each workshop in accordance with Clause 3.2.2 of AS2419.1-2005.*
E1.4 Fire Hose Reels	The size of the workshops requires the installation of a fire hose reel system to serve all parts of each building. *A fire hose reel system serving the workshops shall be designed and installed in accordance with AS2441-2005, where fire hose reels must be located within 4m of an exit. Where coverage in accordance with Clause 10.2 of AS2441-2005 cannot be attained from fire hose reels adjacent to exits, additional hose reels can be located on a path of travel to an exit.*
E1.6 Portable fire extinguishers	The location of portable fire extinguishers within the workshops are not noted within the drawings provided. *The following portable fire extinguishers are required to be installed within the building:* - *A Class AE type located adjacent to emergency services switchboard i.e. the board serving the required emergency lighting for the building; and* - *A Class B type where storage of flammable liquids exceeds 50L within the workshop;* *All portable fire extinguishers are required to be installed in accordance with AS2444-2001.*
E2.3 Provisions for special hazards	*Determination of whether the subject building is considered to contain "special hazards" is outside the scope of this report. However, the hazardous nature of the workshops is usually considered during an environmental impact study of the site which may include for a dangerous goods assessment and/or a fire safety study.* *Any additional smoke hazard management measures would be noted as part of these assessments.*
E4.2 Emergency Lighting	The location of emergency lighting is not detailed within the drawings provided. *Clause E4.2(b) of the BCA requires all paths of travel to require emergency lighting which would include the entire workshop area. Emergency lighting design and operation shall be in accordance with AS2293.1-2005.*
E4.5 Exits Signs	The location of exit signs is not detailed within the drawings provided. *Exit signs shall be located above or adjacent to each exit doorway within both buildings. The design and operation of the exit signs shall be accordance with the requirements noted in AS2293.1-2005.*

Table 7: Deemed-to-Satisfy Requirements of Section E

7 HANGAR BUILDINGS

A total of 20 hangar buildings (i.e. 10 sets x 2 buildings) as part of the overall subject development are proposed to be used for the storage and refuelling of aircrafts, and other associated uses including a briefing room and bathrooms. All sets of hangars are proposed to have identical construction and floor layout. Figure 6 provides a plan layout for each set of workshop buildings.

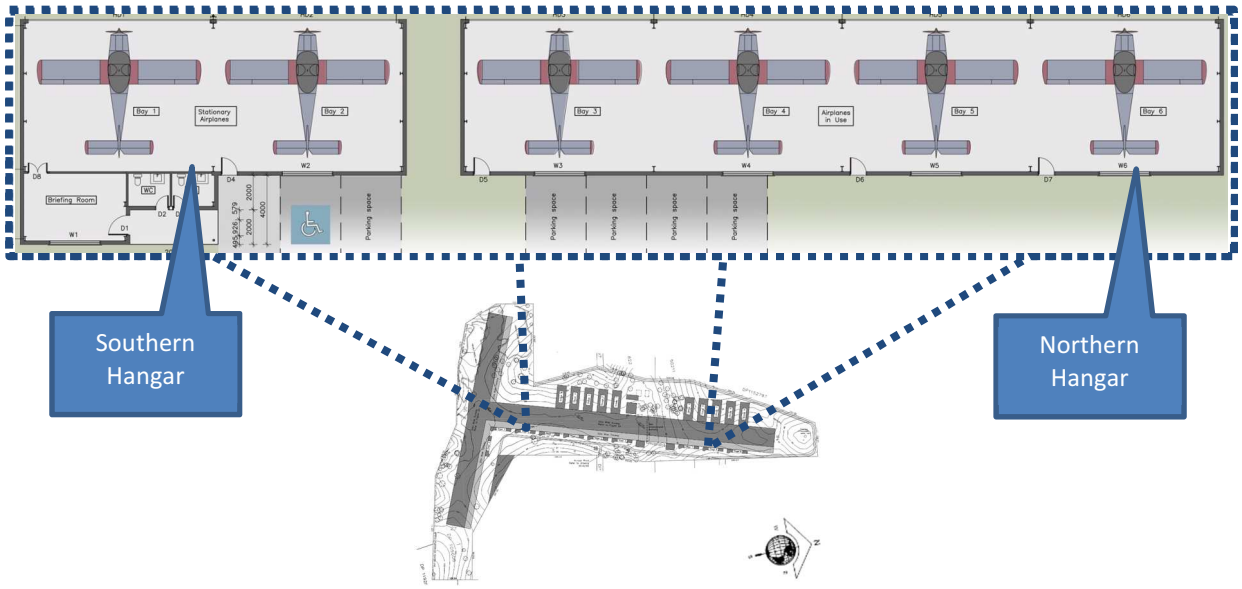


Figure 6: Floor Plan – Hangar building Set Layout

Table 8 below provides building characteristic details with relation to the workshop buildings.

Characteristic	Description
Rise in storeys (as per BCA)	1
Effective height (as per BCA)	Less than 25m
Building use classifications	Class 7b (storage)
Proposed floor areas and volumes (approximate)	**Building Use** / **Classification** / **Area m²** / **Volume m³** **Northern Hangar** / 7b / 390 / 1,950 **Southern Hangar** / 7b / 245 / 1,225 *Note: The briefing room and bathrooms individually contribute less than 10% the total floor area of the building, and are therefore considered minor uses in accordance with Clause A3.3 of the BCA.*
Required Type of construction	Type C
Fire and smoke compartmentalisation	Each hangar building is considered a single fire compartment, where the external walls primarily consist of steel structural framing and steel cladding throughout. Each northern and southern set of buildings is separated by 3m of open space. All other external walls are at least 13m away from any other building.

Table 8: Building Characteristic Details – Workshop Buildings

7.1 BCA Compliance – Fire Resistance & Compartmentation (Section C)

The fire resistance & compartmentation proposed for the hangar buildings are capable of complying with the prescriptive DtS provisions noted within Section C of the BCA, where the requirements of Type C construction apply. The minimum required FRL's for Type C building elements are noted within Table 5 of Specification C1.1 of the BCA. Figure 7 below highlights the relevant FRL's as applicable to the hangar buildings.

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	–/–/–	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS-				
Bounding *public corridors*, public lobbies and the like—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Figure 7: Required FRL's - Hangar Buildings

7.2 BCA Compliance – Egress Provisions (Section D)

The following egress provisions have been identified as departures with respect to the DtS provisions based on the requirements of Section D of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other Section D provisions are considered to be satisfactory, where compliance is readily achievable with the supply and confirmation of the final design drawings.

DtS Clause	Comments
D1.10 Discharge from exits	All exits discharging from the building are located in a manner which could be prone to blockage by vehicles. *bollards are proposed to be installed outside of exits discharging to open space which will prevent vehicles from blocking exits.*
D2.20 Swinging doors	All single leaf doors serving as exits on the eastern end of the buildings swing in a direction which opposes the direction of egress. *Re-swing the proposed doors, such that they swing in the direction of egress to satisfy the prescriptive DtS requirements of Clause D2.20(b) of the BCA.*
NSW D2.21 Operation of latch	The type of door hardware is not indicated within the drawings provided. *The exits discharging direct to open space are required to be installed with single hand downward/push action device, or similar, between 0.9m and 1.1m from the floor, on the side that faces a person seeking egress.*

Table 9: Deemed-to-Satisfy Requirements of Section D

7.3 BCA Compliance – Essential Fire Safety Measures (Section E)

The following essential fire safety measures have been identified as departures with respect to the DtS provisions based on the requirements of Section E of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other Section E provisions are considered to be satisfactory, where compliance is readily achievable with the supply and confirmation of the final design drawings.

DtS Clause	Comments
E1.6 Portable fire extinguishers	The function and use of each hangar contains combustible and flammable material which requires the installation of portable fire extinguishers throughout. *The following portable fire extinguishers are required to be installed within the building:* - *A Class AE type located adjacent to emergency services switchboard i.e. the board serving the required emergency lighting for the building; and* - *A Class A type within the hangars which are not provided with a fire hose reel;* - *A Class B type where storage of flammable liquids exceeds 50L within the hangars;* *All installed portable fire extinguishers are required to be installed in accordance with AS2444-2001.*
E2.3 Provisions for special hazards	*Determination of whether the hangars are considered to contain "special hazards" is outside the scope of this report, however, determination of the hazardous nature of the workshops is usually considered during an Environmental Impact Study for the site which may include a dangerous goods assessment and/or a fire safety study.* *Any additional smoke hazard management measures would be included as part of these assessments.*
E4.2 Emergency Lighting	Emergency lighting is required within the northern hangar of each hangar set. The location of Emergency lighting is not detailed within the drawings provided. *Clause E4.2(b) of the BCA requires all paths of travel to require emergency lighting which would include the entire northern hangar area. Emergency lighting design and operation shall be in accordance with AS2293.1-2005.*
E4.5 Exits Signs	Exit signs are required within the northern hangar of each hangar set. The location of exit signs is not detailed within the drawings provided. *Exit signs shall be located above or adjacent to each exit doorway in the northern hangar. The design and operation of the exit signs shall be accordance with the requirements noted in AS2293.1-2005.*

Table 10: Deemed-to-Satisfy Requirements of Section E

8 SQUADRON COMPOUNDS

A total of ten squadron compounds are proposed to be constructed as part of the overall development. Each compound is made of for the following group of buildings:

- 3 x student accommodation buildings;
- 3 x classroom buildings;
- 1 x communal area;
- 1 x laundry building;
- 1 x utility area.

All compounds are proposed to have identical construction and site layout. Figure 6 provides a typical plan layout of the squadron compound.

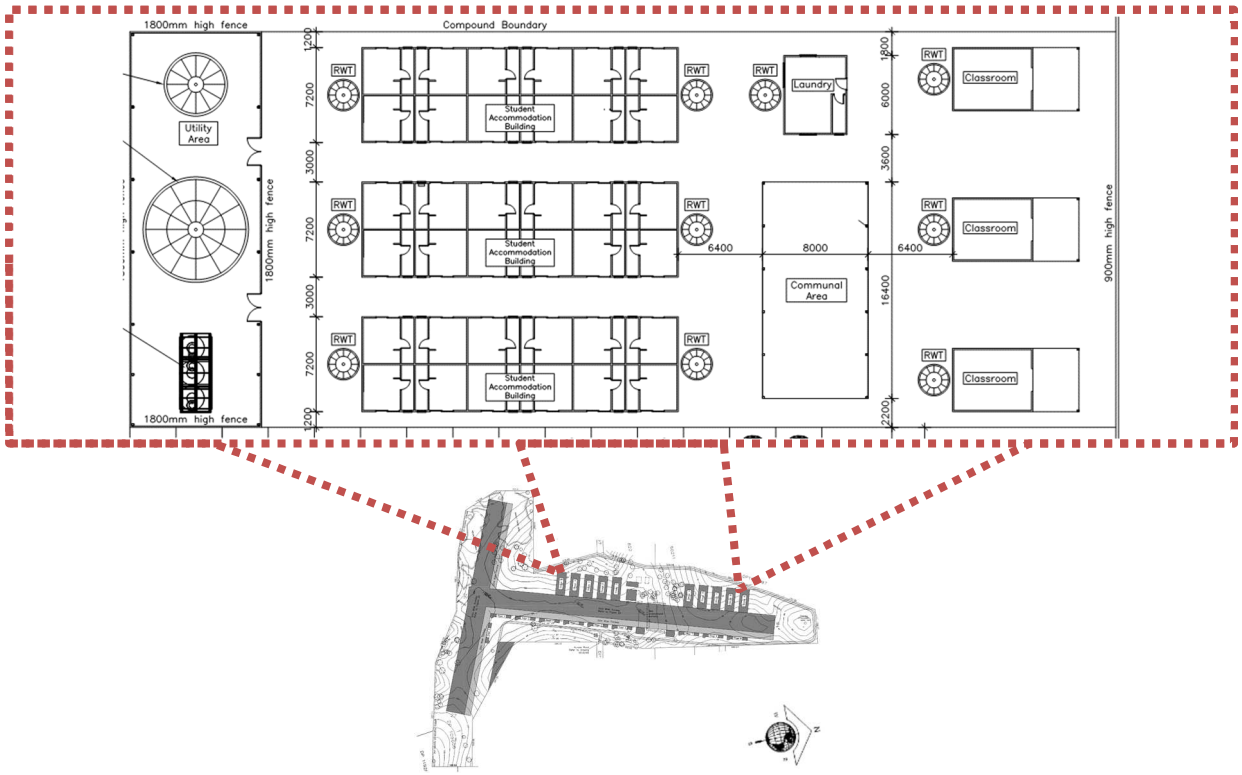


Figure 8: Floor Plan – Compound building layout

Table 8 below provides building characteristic details with relation to the squadron compounds.

Characteristic	Description
Rise in storeys (as per BCA)	1
Effective height (as per BCA)	Less than 25m
Building use classifications	Class 3 (accommodation – school), Class 9b (classroom and communal area), and Class 10a (utility area and laundry).
Proposed floor areas and volumes (approximate)	

Building Use	Classification	Area m^2	Volume m^3
Student Accommodation - per building	3	170	442
Classroom	9b	46	120
Communal Area	9b	150	575
Utility Area	10a	300	1,800
Laundry	10a	27	76

Characteristic	Description
Required Type of construction	Type C (accommodation, classrooms, communal area). *Note: Type of construction is not applicable to Class 10a buildings.*
Fire and smoke compartmentalisation	Each building within the compound is considered to be a separate fire compartment. All buildings are separated by open space with the closest distance between buildings being 3.6m (communal area to laundry).

Table 11: Building Characteristic Details – Compound Site Buildings

8.1 BCA Compliance – Class 10a Fire Safety Requirements

The requirements for Class 10a buildings are referenced within Volume 2 of the BCA. These requirements are considered less stringent than the fire safety requirements noted in Volume 1 which is applicable to Class 2 to 9 buildings.

Fire safety provisions for Class 10a buildings (Section 3 of the BCA Volume 2) relates specifically to requirements for fire separation. Both the utility area and laundry comply with requirements for Class 10a buildings in accordance with the following DtS provisions:

- 1.8m of separation distance from any onsite buildings; and
- 0.9m of separation distance from any site boundary.

8.2 BCA Compliance – Fire Resistance & Compartmentation (Section C)

The following fire resistance & compartmentation provisions have been identified as departures with respect to the DtS provisions based on the requirements of Section C of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other fire resistance & compartmentation requirements for the compound are capable of complying with the prescriptive DtS provisions noted within Section C of the BCA, where the requirements of Type C construction apply. The minimum required FRL's for Type C building elements are noted within Table 5 of Specification C1.1 of the BCA. Figure 9 below highlights the relevant FRL's as applicable to the building.

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	–/–/–	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS-				
Bounding *public corridors*, public lobbies and the like—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Figure 9: Required FRL's - Compound Buildings

DtS Clause	Comments
C1.1 and Spec C1.1 Type of Construction Required	The internal walls separating sole occupancy units (SOUs) within the proposed student accommodation buildings are proposed to be constructed using Versiclad Wall Panels which do not provide the minimum 60/60/60 FRL in accordance with Table 5 of Spec C1.1 of the BCA. *The bounding internal walls serving the student accommodation SOU's are required to be provided with a construction capable of providing a minimum FRL of 60/60/60 to achieve compliance with Specification C1.1 and Specification C1.8 (if constructed with light weight construction). Furthermore, the fire rated walls are required to be constructed to the underside of the roof, with the exclusion of roof battens (non-combustible) no larger than 75mm x 50mm and sarking-type material.* *Any openings proposed within the fire rated wall shall also be fire rated to provide a minimum FRL of --/60/60 in accordance with C3.11 of the BCA.*

Table 12: Deemed-to-Satisfy Requirements of Section E

8.3 BCA Compliance – Egress Provisions (Section D)

The following egress provisions have been identified as departures with respect to the DtS provisions based on the requirements of Section D of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other Section D provisions are considered to be satisfactory, where compliance is readily achievable with the supply and confirmation of the final design drawings.

DtS Clause	Comments
D2.19 Doorways and doors	The sliding doorways serving the classrooms are considered non-compliant as they do not lead directly to open space (opens into a covered veranda area). *Compliance with the DtS provision can be achieved by proposing a swing door. The swing door shall open in the direction of egress and incorporate door hardware in accordance with D2.20 and D2.21 of the BCA respectively.*

Table 13: Deemed-to-Satisfy Requirements of Section D

8.4 BCA Compliance – Essential Fire Safety Measures (Section E)

The following essential fire safety measures have been identified as departures with respect to the DtS provisions based on the requirements of Section E of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other Section E provisions are considered to be satisfactory, where compliance is readily achievable with the supply and confirmation of the final design drawings.

DtS Clause	Comments
E1.6 Portable fire extinguishers	The location of portable fire extinguishers within the compounds are not noted within the drawings provided. *The following portable fire extinguishers are required to be installed within each of the compounds:* - *A Class A type located within the classrooms and covered area* - *A Class ABE type located externally adjacent to the student accommodation.* *All installed portable fire extinguishers are required to be installed in accordance with AS2444-2001.*

Table 14: Deemed-to-Satisfy Requirements of Section E

9 CARPARK BUILDING

An undercover carpark is proposed to be constructed to serve the overall development. The carpark is used specifically for the parking of motor vehicles. Figure 10 provides a plan layout of the carpark.

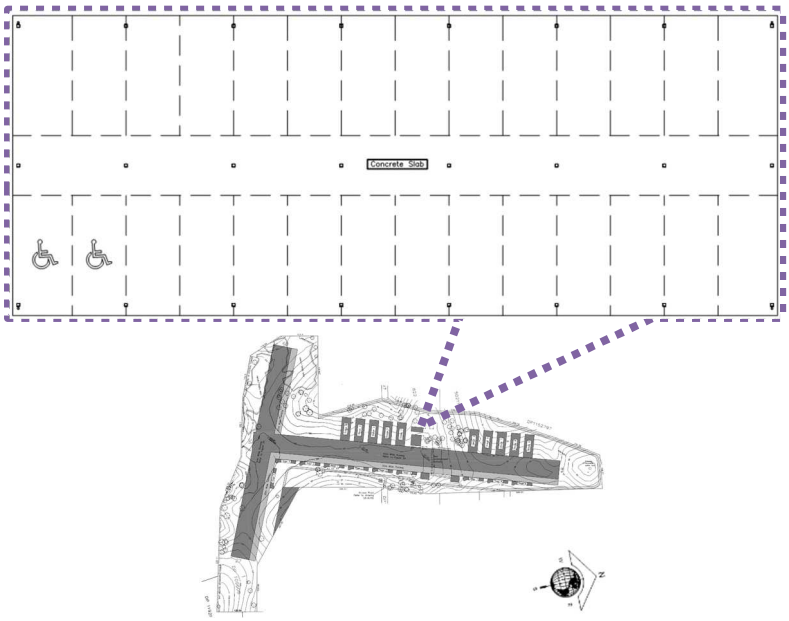


Figure 10: Floor Plan – Carpark building layout

Table 15 below provides building characteristic details with relation to the workshop buildings.

Characteristic	Description
Rise in storeys (as per BCA)	1
Effective height (as per BCA)	Less than 25m
Building use classifications	Class 7a (carpark)
Proposed floor areas an volumes (approximate)	**Building Use** / **Classification** / **Area m²** / **Volume m³** **Carpark** / 7a / 575 / 2,070
Required Type of construction	Type C
Fire and smoke compartmentalisation	The carpark is considered to be an open-deck carpark, where the structure is open on all sides with a roof structure consisting if steel structural framing and corrugated sheeting. The nearest building to the carpark is the Main Building located 10m south.

Table 15: Building Characteristic Details – Carpark

9.1 BCA Compliance – Fire Resistance & Compartmentation (Section C)

The fire resistance & compartmentation proposed for the carpark is capable of complying with the prescriptive DtS provisions noted within Section C of the BCA, where the requirements of Type C construction apply. The minimum required FRL's for Type C building elements are noted within Table 5 of Specification C1.1 of the BCA. Figure 11 below highlights the relevant FRL's as applicable to the building.

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	–/–/–	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS-				
Bounding *public corridors*, public lobbies and the like—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Figure 11: Required FRL's - Carpark

9.2 BCA Compliance – Egress Provisions (Section D)

The availability of direct access and egress throughout the perimeter of the carpark, achieves compliance for all egress provisions noted within Section D of the BCA. compliance shall be confirmed on review of the final design drawings for the building.

9.3 BCA Compliance – Essential Fire Safety Measures (Section E)

The following essential fire safety measures have been identified as departures with respect to the DtS provisions based on the requirements of Section E of the BCA. Recommendations for rectification are noted in *italics* below each identified item.

All other Section E provisions are considered to be satisfactory, where compliance is readily achievable with the supply and confirmation of the final design drawings.

DtS Clause	Comments
E1.3 Fire Hydrants	The size of the carpark requires the installation of a fire hydrant system to serve all parts of the subject building. *Multiple buildings which are proposed to be a part of the subject development require the installation of a fire hydrant system due to their total floor area.* *A fire hydrant system serving portions of the overall site must be installed in accordance with the requirements of AS2419.1-2005. The proposed fire hydrant system is expected to incorporate external fire hydrants as a means of providing adequate hose coverage to the carpark in accordance with Clause 3.2.2 of AS2419.1-2005.*
E1.4 Fire Hose Reels	The size of the carpark requires the installation of a fire hose reel system to serve all parts of the subject building. *A fire hose reel system serving the building shall be designed and installed in accordance with AS2441-2005, where fire hose reels must be located within 4m of an exit. Where coverage in accordance with Clause 10.2 of AS2441-2005 cannot be attained from fire hose reels adjacent to exits, additional hose reels can be located on a path of travel to an exit.*

DtS Clause	Comments
E1.6 Portable fire extinguishers	The location of portable fire extinguishers within the workshops are not noted within the drawings provided. *The following portable fire extinguishers are required to be installed within the building:* - *A Class AE type located adjacent to emergency services switchboard i.e. the board serving the required emergency lighting for the building; and* *All installed portable fire extinguishers are required to be installed in accordance with AS2444-2001.*
E4.2 Emergency Lighting	The location of emergency lighting is not detailed within the drawings provided. *Clause E4.2(b) of the BCA requires all paths of travel to require emergency lighting which would include the entire carpark area. Emergency lighting design and operation shall be in accordance with AS2293.1-2005.*

Table 16: Deemed-to-Satisfy Requirements of Section E

10 CONCLUSION

This report has identified a number of items to be confirmed or rectified with respect to DtS provisions of the BCA and the proposed buildings for the following fire safety issues:

- Clause C1.1 and Spec C1.1 – Fire rated construction bounding SOU's;
- Clause 1.10 – Exits discharging to open space which are prone to being blocked;
- Clause D1.4 – Exit travel distances within the hangar buildings;
- Clause D2.19 – Doorways and doors used as an exit for the classrooms;
- Clause D2.20 – Swing of doors;
- Clause D2.21 – Door hardware;
- Clause E1.3 – Fire hydrant installation;
- Clause E1.4 – Fire hose reel installation;
- Clause E1.6 – Portable fire extinguisher installation;
- Clause E2.2 – Smoke detection installation within the Main Building;
- Clause E4.2, E4.4, E4.5, NSW E4.6 and E4.8 – provisions for emergency lights, exit signs and directional signs;
- Clause E4.9 – Sound system and intercom system for emergency purposes within the Main Building.

Where compliance with respect to the DtS provisions cannot be achieved, it may be possible to justify the identified departure(s) as part of a performance solution to satisfy the relevant performance requirements of the BCA.

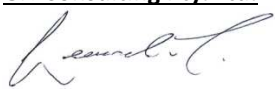
Note: This assessment is based on the drawings utilised within the Development Application stage of the project. All noted design omissions and/or requirements are required to be rectified prior to lodgement of the Construction Certificate Application.

We trust that this report will provide the client and consent authority with sufficient information concerning the fire safety provisions for the proposed development.

Please do not hesitate to contact the undersigned if you have any further questions.

Signed on behalf of,

GN Consulting Pty. Ltd.



Leonard Tunhavasana
BEng(Civil & Enviro), DipEngPrac, MEngMgmt, GradDip(Bushfire)
ASSOCIATE

Q.A Reviewed on behalf of,

GN Consulting Pty. Ltd.

Steven Moon
BEng(Mech), DipEngPrac, MEng(Fire)
MIEAust
DIRECTOR

Qualification: We support the recommendations made in this assessment only so long as the operation, use and floor layout remain as per the drawing documents noted in this report. If there are any changes to the operation, use or floor plan arrangements in the future, a new assessment would be required at that time.

Fuel Hazard Analysis Report (SEPP 33)

For

Sports Aviation Flight College Australia Ltd

Proposed Flight College at Frogs Hollow Airstrip

Prepared by: **Whamcorp Pty Ltd**

Author: **W.V.Peter Hunt**
B.E., Grad Dip Ops Mgt, M.Bus,
F.I.Chem E, F.I.E.Aust, C.P.ENG, N.P.E.R.
M.A.I.D.G.C.

Authorised by: **Mitchell Boyle**
Director
Sports Aviation Flight College Australia Ltd

17 October 2017

Whamcorp Pty Ltd
42 Shirley Road, Roseville, NSW, 2069
Ph: 02 9416 2194, Fax 02 9924 2804

Contents

Note. This report is identical to that issued on 28 Sep 2017 except that Appendix A shows a revised site plan, but with the same tank location

EXECUTIVE SUMMARY

Sports Aviation Flight College Australia Ltd (SAFCA) proposes to construct and operate a flight training college, with provision for fuelling light aircraft

The proposal has been reviewed against the criteria for “potentially hazardous” development:

- Types and quantities of material held on site
- Frequency of transport movements

It has also been reviewed against the criteria for “potentially offensive” development:

- Any pollution control licences
- Any receiving environment issues

Full details of the analysis are provided in the report.

The analysis concludes that the proposed development as described herein is, under the Guidelines:

- not classifiable as “potentially hazardous”, and
- not classified as “potentially offensive”.

Accordingly SEPP 33 does not apply and a Preliminary Hazard Assessment (PHA) is not required.

1 INTRODUCTION

1.1 General

The existing airstrip is located approximately 10 km south west of Bega and has been in use since before World War II. The land is zoned SP-2, Air transport facility. The proposal is to build and operate a residential flight training college for recreational flying, including facilities for fuelling light aircraft.

As part of the assessment of a development application, the consent authority is required to consider State Environmental Planning Policy No. 33 - Hazardous and Offensive Development."

This report assesses the proposal against SEPP 33

1.2 SEPP 33

SEPP 33 Clause 8 requires that, when determining if the proposed development is so classified, "consideration must be given to the current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development."

1.3 Guidelines

The relevant guidelines are contained in "Applying SEPP 33; Hazardous and Offensive Development Application Guidelines", published by Department of Planning in January 2011 (The Guidelines). There are two tests, one for hazard potential and one for pollution potential ("offensiveness"):

- The test for hazard potential is a risk screening method, which compares the types and quantities of materials kept on site with screening thresholds. There are also criteria relating to frequency of transport of dangerous goods to and from site and also proximity to hospitals, schools and other "sensitive" places.
- The prime test for pollution potential is whether the development requires any pollution control licences (e.g. from Environment Protection Authority (EPA))

2 PROPOSED OPERATION

2.1 General description

The main runway is aligned approximately north-south. On the western side will be accommodation, administration offices, carpark etc. On the eastern side of the runway will be a taxiway and on the eastern side of that will be a series of hangers and a workshop. An internal service roadway on the outside of all the buildings. This is shown in the drawing attached as Appendix A

The fuel will be stored in one or two above ground, double walled, self-bunded tanks. There are two options for the tanks; either one 55,000 L tank or two 30,000 L tanks with the decision to be made on cost and availability at the time.

The tank(s) will be located on the eastern side of the hangers, as shown on the drawing. Underground piping will run from the tank(s) to a number of dispensers on the taxiway in front of the hangers.

During flight training, the light aircraft will be fuelled as required from the dispensers

2.2 Hazardous materials

2.2.1 Definition

For planning purposes, hazardous materials are defined by the Guidelines as "substances falling within the classification of the *Australian Code for the Transportation of Dangerous Goods by Road and Rail"*. The current edition of this Code is version 7.5, commonly referred to as ADG 7.5.

The proponent intends to store light aircraft fuel, being either aviation gasoline or 98 octane petrol, both of which are classified under ADG 7.5 as UN 1203, gasoline or petrol, Flammable liquid, Class 3, Packing Group (PG) II

2.2.2 Inventory

Storage of up to a maximum of 60,000 litres is proposed

3 RISK SCREENING FOR POTENTIAL HAZARD

3.1 Inventory

The Guidelines require the total quantity (stored in the same general area) of each Class/Division of hazardous materials to be determined and compared with screening thresholds for each Class (in this case, only Class 3 flammable liquids).

In the case of flammable liquids, the threshold is specified as a combination of maximum inventory against distance from the property boundary. It is further specified according to whether or not the adjacent land use is "sensitive" or not. In this case, the surrounding land is zoned RU 1 – primary production, which is not a sensitive use.

The storage of flammable liquids must comply with Work Health and Safety legislation, administered by SafeWork NSW (formerly WorkCover NSW) and separation from site boundaries and various facilities is specified in an Australian Standard, AS 1940:2017 "The storage and handling of flammable and combustible liquids". Accordingly, the proposed tank(s) will be located at least 14 m from the eastern boundary.

The SEPP 33 screening threshold for Class 3 PG II flammable liquids is provided in Fig 9 of the Guidelines. This is reproduced in Appendix B with the proposed maximum inventory of 60, 000 L indicated and showing that if the storage is at least 10 m from the boundary, the threshold is not exceeded.

The proposed 60,000 maximum inventory, located at least 14m from the boundary, does not exceed the screening threshold

3.2 Transportation issues

The Guidelines require consideration of the number of traffic movements for significant loads of hazardous materials entering or leaving the site.

It is proposed to receive bulk fuel deliveries in full tanker loads approximately once per week, when the tank(s) can receive the full load. Usage of fuel when in full operation is estimated at around 20,000 L per week, with a maximum of 24,000 L per week. Flying operations run for 10 months per year

The transport thresholds for Class 3 PG II are provided in Table 2 of the Guidelines and estimated movements are well below those thresholds, as shown

Movements	**SEPP 33 threshold**	**Proposed**	**Is threshold exceeded?**
Cumulative annual	> 750	Maximum 50	No
Peek weekly	> 45	Maximum 2	No

3.3 Conclusion re hazard

The proposed development is <u>not</u> "potentially hazardous".

4 ASSESSMENT FOR POTENTIAL OFFENCE

4.1 General

The guidelines provide for a simple test, namely whether the development requires any pollution control licences (e.g. from the EPA) and if so whether any licence conditions can be met". It also requires consideration of the sensitivity of the "receiving environment" where licences or approvals are not required.

4.2 Licensing issues

The basis for pollution control licences is the Protection of the Environment Operations Act 1997. Schedule 1 of that Act lists premises-based activities which require licensing. The relevant activities are "petroleum products storage" where a licence is required if the quantity exceeds 2,000 tonnes. The proposed quantity is less than 60 tonnes and so no approval or licence is required.

Accordingly the proposal is not classified as "potentially offensive" under this criterion.

4.3 Receiving environment issues

This criterion is noted in the Guidelines as "a matter for judgement". Having regard to the quantity stored, the nature of the operation, the distance from the boundary and the surrounding land use, reasonable judgement would asses no cause for offence

4.4 Conclusion re offence

The proposed development is <u>not</u> "potentially offensive"

5 APPLICATION OF SEPP 33 - CONCLUSION

From the above review of the proposal in accordance with the Guidelines, it is concluded that the proposed development:

- is not classified as “potentially hazardous”, and
- is not classified as “potentially offensive”,

Accordingly SEPP 33 does not apply and a Preliminary Hazard Assessment (PHA) is not required.

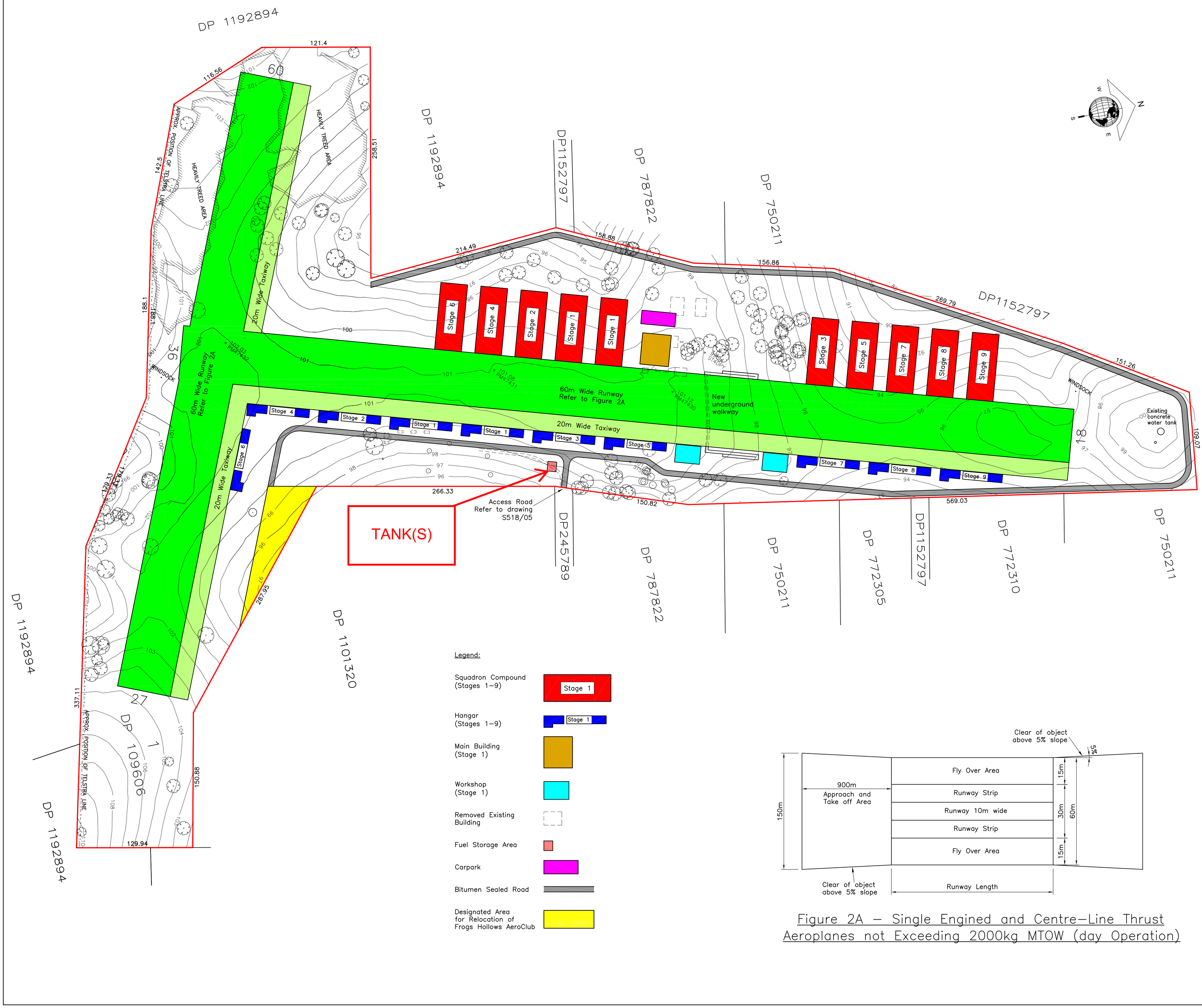
References

"Applying SEPP 33; Hazardous and Offensive Development Application Guidelines", published by Department of Planning, dated January 2011

"Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code)", Version 7.5

NSW Protection of the Environment Operations Act 1997, as amended.

State Environmental Planning Policy (SEPP) No 33 (Hazardous and Offensive Development) under the Environmental Planning and Assessment Act 1979, as amended.



Legend:

- Squadron Compound (Stages 1–9) — Stage 1
- Hangar (Stages 1–9) — Stage 1
- Main Building (Stage 1)
- Workshop (Stage 1)
- Removed Existing Building
- Fuel Storage Area
- Carpark
- Bitumen Sealed Road
- Designated Area for Relocation of Frogs Hollows AeroClub

Figure 2A – Single Engined and Centre–Line Thrust Aeroplanes not Exceeding 2000kg MTOW (day Operation)

Development Description Notes:

1. The proposed development consist of:

1a. Construction of 10 seperate Squodron Compounds. All buildings within the compounds will be single storey. Each compound will provide accomodation and infrustructure for 36 students at the same time.

1b. Construction of 10 single storey hangars. Each hangar consists of two separate units.

1c. Construction of 1 single storey main building containing kitchen and to be used for showroom, offices and diner.

1d. Construction of 2 single storey workshop buildings used for maintanance of planes.

1e. Construction of roads including new intersection between Princes Highway and access road.

1f. Construction of new bridge located along the right of way access road.

1g. Construction of required infrastructure and services.

2. The development willl be completed in 9 seperate stages. First stage will consist of construction of the main building, workshops, squadron compounds 1 and 2, hangars 1 and 2, roads and bridge (possibly intersection between Princess Highway and access road). The following 8 stages will be spread over 4 years period. Each stage will be carried out every six months until the development is completed.

3. The development will be caried out and operated in accordance with guidlines, requirements and specifications provided by Recreational Aviation Australia. Refer to Operational Manual Issue 7.1–August 2016.

4. This drawing to be read in conjunction with all relevant Architects, Engineers & Specialist drawings, sketches and specifications.

APPENDIX A
TO SEPP 33 REPORT

Rev	Date	Comment
.	16.10.17	ISSUED FOR DA SUBMISSION

Tasman Engineering Consultants

Office 1, Main Street Centre
62 Main Street
Merimbula
NSW 2548
P.O.Box 79 Merimbula NSW 2548
Ph : (02) 64 954 776 Mob: 0408 608 150
Email: adam@tasmaneng.com.au

Project

Establishment of Recreational Flight School
Frogs Hollow, 2550, NSW

Title

Development Plan Showing Proposed Infrustructure Stages 1–9

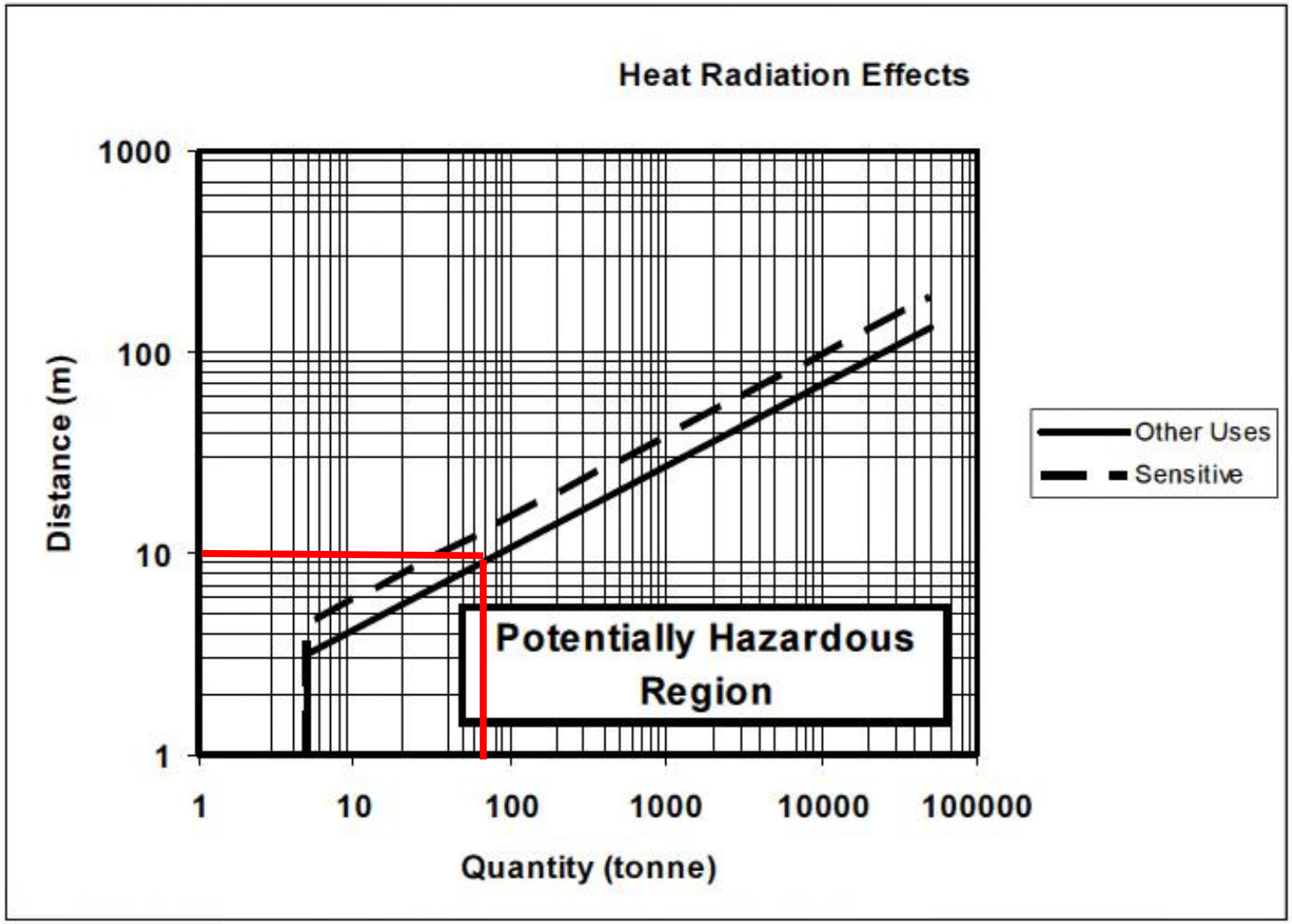
Drawn by	Checked by	Date	Scale
AJH	AJH	Oct 2017	1:2000

Sheet No.	Rev
S518–04	.

Cad File: \Network\Tasman Files\S518_Frogs Hollows_SAFC

Appendix B Guidelines Figure 9

Figure 9: Class 3PGII and 3PGIII Flammable Liquids



For up to 60 tonnes of petrol or avgas stored above ground, separation required from non-sensitive uses is 10m.